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In-Patients’ Satisfaction with Food Served in Imo State University Teaching Hospital, Orlu

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Abstract

The study was carried out to assess in-patients satisfaction with food served at Imo State University Teaching Hospital, Orlu. The daily intake of food rich in all classes of nutrients help in promoting wound healing; decrease the occurrence of complications; as well as aiding the patient’s recovery from diseases or injuries. Three research questions gave direction to the study. Descriptive survey research design was adopted for the study. The target population for the study consisted of two hundred and thirty two (232) in-patients in different wards of Imo State University Teaching Hospital (IMSUTH). The accessible total population of in-patients as at the time of study was one hundred and fifty four (154). The main instrument for data collection was structured questionnaire. Face validation was done by a jury of Medical and Health workers in Universities, South East of Nigeria to determine the extent to which the items on the structured questionnaire are in uniformity with the stated research questions. The reliability of the instrument was done using test-retest technique (r = 0.74). The data collected were analyzed using descriptive statistics of frequency counts, percentages and charts. The result revealed that only 5.3% and 3.3% of the respondents have high and moderate levels of satisfaction respectively with the food served in their wards. Among the factors responsible for food dissatisfaction were unattractive plates and dishes “any how plate” (40.7%), foods were served cold (37.3%), appearance of food not appetizing (45.3%), unfriendly attitude of food servers (24.7%) and serving meals late (29.3%). The respondents suggested that foods should be well presented (49.3%) and that the hospital should introduce meal options (47.3%) and to serve meals warm or hot (63.3%) so as to improve their satisfaction with food served in IMSUTH wards. Based on the findings, the researcher recommended that nurses as the ward managers and patients advocates, should liaise with the appropriate health personnel such as dietician, nutritionists etc. in the food service through a periodic interactive session with a view to relaying clients’ needs and complaints to appropriate authorities. This will go a long way to encourage adequate nutrition and promote speedy recovery of the patients.

Keywords: In-patients, food, food satisfaction.

Introduction

The daily intake of adequate food rich in all classes of nutrients help in promoting wound healing, decrease the occurrence of complications as well as aid the patient’s recovery from diseases or injuries. Every client has a fundamental right to receive qualitative care that upholds the client’s individual beliefs, self-esteem, culture, religion, values and preferences.

Food services like other care rendered in hospital is supposed to provide client optimal satisfaction as no aspect of health care is insignificant but rather work together to provide patient’s recovery (Li-Jen & Anita, 2013). Adequate food services enhance the overall rating of the quality or hospital service. Food service managers who desire to improve their patient satisfaction should focus their attention on meeting or exceeding patient’s expectation for food quality (Clarkson, 2014).

Food is any substance (solid or liquid) usually composed of macronutrients (such as carbohydrates, fat and oil, protein and water) and micronutrients (vitamins and minerals) which could either be eaten or drunk by animal or human for nutrient or pleasure (Wikipedia...
Encyclopedia (2009). The body requires fuel to provide energy for organ functions, body movement, and maintenance for enzymatic function, for growth and development, replacement and repair of body cells. All nutrients are needed in right proportions and combinations to enhance or promote healthy living. Adequate nutrition (that which contain all the nutrients in the right proportion) is also fundamental to health maintenance (Sue, 2005).

According to Kozier & Erb (2008), nutrition is the sum of all the interactions between an organism and the food it consumes. In other words, nutrition is what a person eats and how the body uses it. Nutrients are organic and inorganic substances found in foods that are required for body function. Adequate food intake consists of a balance of nutrients, water, carbohydrates, proteins, fats, vitamins and minerals. Foods differ greatly in their nutritive value (the nutrient content of a specified amount of food) and no one food provides all essential nutrients. Nutrients have three major functions, providing energy for body processes and movement, providing structural material for body tissues, and regulating body processes (Sue, 2005).

A balanced diet contains all nutrients required for health in appropriate proportions, and is normally achieved by eating a variety of foods. If any nutrient is eaten in excess, or is deficient, health may be adversely affected. For example, a high energy diet can lead to obesity while iron-deficiency can result to anaemia (Anne & Allison, 2006).

Florence Nightingale incorporated a diet kitchen into the British Hospital in Turkey and stressed the health care service to be rendered (Grant & Kennedy, 2013). Food is very important for the sustenance and survival of all living things. It plays a major role in health and illness. It is one of the basic physiological needs of man. The effects of food consumed whether adequate or inadequate in quantity and quality cut across the physical, physiological, psychological and mental health of the consumer.

An adage says “you are what you eat”. Daily consumption of a healthy diet builds up immunity; promote healthy living and also quick recovery from illness. Adequate nutrition is that which contains all the food nutrients in the right proportion and combination. It is important at all ages and stages of life for growth and development.

The food we eat are grouped into several classes and are made of nutrients which are carbohydrates, proteins, fats and oils, water, vitamins and minerals. The health care provider has a mandatory role to ensure that these nutrients are adequately provided in client’s meal until they become independent when the nurse teaches them how to maintain a healthy living through what they eat (BMC Health Service Research, 2011).

The influence of adequate nutrition on the immune system

The immune system is a complex of organs with highly specified cells (white cells, B-cells and T cells) that circulate in the lymphatic fluid in the body to protect one from infection. The innate immune system is the body’s first line of defense programmed to protect the body against premature aging and chronic health problems. Some cells produce antibodies that attach to foreign matter and tag it for destruction thus preventing infection. Other cells act like scavengers that destroy microbes (Bjerrum, 2012).

According to World Health Organization (2012), whether or not a person contacts any disease or illness, he/she has less to do with the exposure to that disease but much more with how effective the person’s immune system is functioning at the time of exposure. Poor diet with empty calories found in processed food, prolong medication e.g. steroids, inadequate sleep, physical or emotional stress, lack of exercise, heavy mental exposure, smoking, alcoholism and aging are factors that could impair the functionality of the immune system. Excessive intake of refined white sugar is the single underrated cause of the impairment of the immune system (Patrick, 2013).

Without adequate nutrition, the immune system is clearly deprived of the components needed to generate an effective immune response. Human malnutrition is usually a complex syndrome of multiple nutrient deficiencies. Poor functioning immune systems are evidenced by symptoms like prolong recovery from cold, constant fatigue, history of recurring infection,
chronic cough, poor appetite or indigestion (Waitzberg, 2007). Vitamin, minerals and antioxidants must be taken in balanced way as it otherwise causes deficiencies. About 60-80% of the lymphatic system is located in the small intestine, thus assimilation of total proper nutrient is essential (Jesse, 2007). Without macronutrients, people suffer malnutrition, starvation and death and conversely without micronutrient there will be deficiency disease, a precipitous decline and death.

Some nutrients that support immune functions are vitamin C, vitamin E, vitamin A, selenium and glutathione, vitamin B6 (Grimble, 2014). The addition of the deficient nutrient back to the diet can restore immune function and resistance to infection. However, excessive amounts of some nutrients e.g. fats and oil also impair immune function (Calder & Kew, 2008).

Factors that promote satisfaction of food served

These factors are those parameters which measures or predict the patients’ satisfaction of the food they eat. Preparation of a good meal is both a science and art. The science show the way to include nutritious food in diet while the arts is involved in combining the needed nutritious food into meals that are attractive, appetizing and satisfying in all ways. These factors must be considered when planning the patient’s meal.

Factors that promote satisfaction of food are the food temperature, the food taste, the food presentation (Jacob, 2013), the appearance of the food (Stanga & Tanner, 2010), the eating environment (Anna, 2008), the food quality and quantity (American Diet Association, 2011). Other factors include, culture, socio economic status, and the state of health (Adeak, 2011). According to National Health Service (NHS, 2011), previous research has established that the nutritional status of hospitalized patient can be compromised by a number of factors, including the failure to detect poor nutrition, poor recording of information about patients nutritional status (such as weight loss), poor referral systems, fragmented working practices, inadequate educational or training programmes, inadequate ward staffing and confusion over who has the primary responsibility for patients nutrition.

The nature and extent of nurses involvement in nutritional care has varied over time. By the mid- twentieth century, matrons and senior nurse had relinquished direct managerial control over catering and other housekeeping functions in hospitals. It provide difficulty for senior nurses to retain influence over standards of service provided particularly following the wide spreading ‘contracting out’ of catering and domestic services, at the ward level. There was some blurring of the roles and responsibilities of nurses and non- nurses in the preparation and serving of food and helping those patients who could not manage to eat unaided. The provision of housekeeping staff help nurses to concentrate on their clinical responsibility (Li-Jen & Anita, 2013). National Health Services (2011) carried out a plan to ensure quality of food served in the wards. The plans stated that patients should have a minimum service of breakfast, light lunch, two course dinner and snacks on at least two occasions during the day;

- Food and drink should be available around the clock, with a snack box for patient admitted out of hours or who miss meals because of tests.
- Consideration of moving the main meal to the evening.
- Menus should include three chefs that dish food daily
- Menus must meet the nutritional needs of the population group and analyzed by a dietician.

It is also suggested that ward housekeepers should be introduced to ensure that the quality, presentation and portion size of meals meet patient’s needs, and that patients especially elderly patients are able to eat the food they are offered.

Factors responsible for dissatisfaction of food served in the wards

Li Jen & Anita (2013) outlined certain factors as being responsible for dissatisfaction of food served in the wards. They are:
Appearance: evaluation of the appearance of the meals may be more important than actual quality of the food in one instance; a nursing home received low food services scores. The root cause of these scores was traced to poor evaluations of pureed foods. Quality improvements were made to pureed food, but the scores did not improve, more research revealed that the residents were not completing the survey. These guardians or caregivers found that pureed food was rated poorly because it looked unappetizing. When care givers actually sample the food themselves, they highly complement it quality.

Fixed food service delivery schedules may also have a disproportionate impact on food service evaluation. For example a patient’s meal may be delivered to his room when he is not there or a patient receiving chemotherapy may be unable to eat the fixed food delivery schedules, and may need to eat at 2am when nothing is readily available.

Li Jen & Anita also opined that hospitals may develop strategies for changing their food service system to address problems such as these and those strategies may successfully raise food service satisfaction scores.

Best ways of serving food to make it attractive
- Serving food in a clean plate and trays is one of the ways of making food attractive, it includes proper arrangements of the spoon and cup in the tray.
- The food must be served warm, not very hot unless the patient requires it.
- The food should be garnished with balanced diet in adequate amount (Anna, 2008).

Ways of providing satisfaction
Adeak (2011), explained specific tips on how to improve patient satisfaction with food which are;
- Being with the meal option, is there a good variety? How are meals options explained to patient? If a patient has special meals plan ordered by her doctor, what information is available to help her understand her meal options and how they work for her? For each of the above, consider how information is shared with the patients. Is it in writing? When the meal options are selected. Is anyone available to answer her questions prior to turning them in? Could the process be managed better? Best practices include using “room service” selections verses limited meal options. When food servers come by to pick up the meal selection, they can ask the patient if she has any question about her meal options.
- Next is delivery, when do meal show up at each floor? Review the timing of delivery round on each floor and ask nurses what feedback they have about the timing or meal services. Also ask if the food arrives at the proper temperature? Nurses are often the first to know how a patient feels about her meal service.
- Presentation and service: how is the food presented to the patient? Adeak went further to outline the five fundamentals of services based on presentation and delivery which are: acknowledge, introduce, describe, explain and thank you.

WHO (2012), suggested that it is very important that the health care providers have good understanding of the principle of dietetics so that they do not impede the patients recovery either by giving insipid diet which patient will refuse to eat or giving the wrong food through ignorance.

This however, reaffirmed that the role of nutrition in the care of the sick cannot be underestimated as it helps build their immunity, provides energy for all metabolic activities in the body and also promote patient’s quick recovery from illness and injury. It was observed by the research that patients admitted in the wards of Imo State University Teaching Hospital sometime refuse their food or prefer to bring home food, this prompted the interest of the researcher, hence the study “in patients satisfaction with food served in the ward of Imo State University Teaching Hospital (IMSUTH), Orlu.

Research questions
1. What is the level of patients’ satisfaction with food served in the wards of Imo State University Teaching Hospital?
2. What are the factors responsible for patients’ dissatisfaction with food served in IMSUTH wards?
3. What are the patients’ suggestions on ways of improving their satisfaction with food served in IMSUTH wards?

Methodology

The design for this study was a non-experimental, descriptive study to determine in-patients satisfaction with food served in the wards of Imo State University Teaching Hospital (IMSUTH), Orlu. Descriptive research design summarizes the status of phenomena, its purpose is to observe, describe, and document aspects of a situation as it naturally occurs. Corilee & Watters (2013) used descriptive study design to explore patients’ satisfaction with food service. Imo State University Teaching Hospital (IMSUTH), Orlu was created in 2004. The hospital is located in Orlu Local Government Area of Imo State and it is in Umuna Community in Orlu. The hospital has its wards grouped into male, female and amenity wards. There are 3 male wards, 4 female wards and 1 amenity ward. Patients with medical, surgical, obstetrical and gynecological cases are admitted in the wards as indicated. Each ward has 21 beds, bathroom, toilet, doctor’s room, nurses’ station, chief nursing officer’s office, a side laboratory and a store. The hospital also has a catering department that serves food to patients in the wards.

The target population of this study consisted of all in-patients in different wards (4 females, 3 males and 1 amenity) in the hospital. Ejifugha (2006) defined population as total number of persons inhabiting an area that has one or more characteristics. The accessible population for the study consisted of one hundred and fifty four (154) patients from the ten (10) wards in the hospital. Accessible populations, according to Nworgu (2006) are those elements in a group within the reach of the researcher. Nworgu further defined target population as all the member of a specified group which the investigation relates. The sample for the study was all the one hundred and fifty four (154) in-patients in the ten (10) wards of IMSUTH at the time of the study. There was no sample and sampling technique. A total number of one hundred and fifty four (154) patients in IMSUTH Orlu were used for the study.

An eighteen (18) item structured questionnaire was the instrument used to elicit information, structured questions which were presented in logical order to answer the research questions. The questions were grouped into three sections (A, B & C). Section A contained four questions on level of satisfaction with food served in the wards which were grouped into high (very satisfied), moderate/fair (satisfied), poor (dissatisfied) and very poor (very dissatisfied). Section B consisted of six questions on factors responsible for patients’ dissatisfaction and section C contained eight questions on patients’ suggestions on ways to improve their satisfaction with food served in IMSUTH wards. Face validation was done by a jury of Medical and Health workers in Universities, South East of Nigeria to determine the extent to which the items on the structured questionnaire are in uniformity with the stated research questions. Reliability of the study was ascertained by using test-retest method. Ten (10) copies of the questionnaire were distributed to ten (10) in-patients at Primary Health Centre, Ogbakau (an outreach of IMSUTH). Two weeks later; the same but fresh copies of the questionnaire were redistributed to the same respondents. The first (test) and second (retest) results were analyzed using Spearman Rank Order Correlation Coefficient which yielded a high positive correlation of 0.74.

A letter of introduction was presented to the Medical Director and HOD nursing of IMSUTH. The researcher visited the hospital wards from Monday to Friday to collect data from the entire patient in the various wards and ensured the patients of their confidentiality. The researcher explained the questions in the questionnaire one after the other then finally distributed the questionnaire to the patients who filled the questionnaire. Out of one hundred and fifty four (154) copies of questionnaire distributed, one hundred and fifty (150) copies were correctly filled and same collected making a return rate of 97%. Data were analyzed using descriptive statistics of frequency counts and normative percentages.
Data analysis

Research question 1: What is the level of patients’ satisfaction with food served in the wards of Imo State University Teaching Hospital, Orlu?

Table 1. Patients’ rating of their level of satisfaction with food served in the wards

<table>
<thead>
<tr>
<th>S/No</th>
<th>Patients’ level of satisfaction with food served in IMSUTH wards</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High (very satisfied)</td>
<td>8</td>
<td>5.3</td>
</tr>
<tr>
<td>2</td>
<td>Moderate/fair (satisfied)</td>
<td>5</td>
<td>3.3</td>
</tr>
<tr>
<td>3</td>
<td>Poor (dissatisfied)</td>
<td>67</td>
<td>44.7</td>
</tr>
<tr>
<td>4</td>
<td>Very poor (very dissatisfied)</td>
<td>70</td>
<td>46.7</td>
</tr>
</tbody>
</table>

The result shows that 8(5.3%) respondents revealed high level of satisfaction, 5(3.3%) disclosed moderate/fair satisfaction, 67(44.7%) revealed poor level of satisfaction, 70(46.7%) disclosed very poor level of satisfaction of food served in the wards.

Research question 2: What are the factors responsible for patients’ dissatisfaction with food served in IMSUTH wards?

Table 2. Factors responsible for patients’ dissatisfaction with food served in IMSUTH wards N = 150

<table>
<thead>
<tr>
<th>S/No</th>
<th>Factors that cause patients’ dissatisfaction with food served in IMSUTH wards</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not serving the food at the appropriate time</td>
<td>44</td>
<td>29.3</td>
</tr>
<tr>
<td>2</td>
<td>Appearance of food not appetizing</td>
<td>68</td>
<td>45.3</td>
</tr>
<tr>
<td>3</td>
<td>Serving food while cold</td>
<td>56</td>
<td>37.3</td>
</tr>
<tr>
<td>4</td>
<td>The staff are not serving the food in a friendly manner</td>
<td>37</td>
<td>24.7</td>
</tr>
<tr>
<td>5</td>
<td>Serving food in dirty environment</td>
<td>8</td>
<td>5.3</td>
</tr>
<tr>
<td>6</td>
<td>Serving the food with unattractive plates and dishes (&quot;any how plate&quot;)</td>
<td>61</td>
<td>40.7</td>
</tr>
</tbody>
</table>

NB: Multiple responses were allowed

Table 2 shows the frequency distribution of factors responsible for patients’ dissatisfaction with food served in IMSUTH wards. 44(29.3%) emphasized that not serving food at the appropriate time is the cause of their dissatisfaction, 68(45.3%) emphasized that the appearance of the food not appetizing leads to their dissatisfaction of food served in the wards. Also 56 (37.3%) opined that serving of food while cold causes their dissatisfaction of food served in the wards. 37(24.7%) affirmed that the staff not serving the food in a friendly manner causes their dissatisfaction of food served, 8(5.3%) emphasized that serving the food in a dirty environment causes their dissatisfaction while 61(40.7%) opined that serving the food with unattractive plates and dishes (“any how plate”) causes their dissatisfaction with food served in IMSUTH wards.

Research question 3: What are the patients’ suggestions on ways of improving their satisfaction with food served in IMSUTH wards?
Table 3 shows the frequency distribution of ways of improving satisfaction with food served in wards as suggested by the patients. 69 (46.7%) of the respondents opined that food should be served at appropriate time, 74 (49.3%) emphasized that food should be well presented, 70 (46.7%) opined that serving the food with good plates and spoons will solve the problem of dissatisfaction of food served in the wards, 58 (33.7%) opined they will be satisfied if fruits were served after meal, 71 (47.3%) of the respondents suggested that meal option should be introduced so that they will have opportunity of choosing from the options. 95 (63.3%) of the respondents opined that their satisfaction will be improved when foods are served warm or very hot rather than cold, 86 (57.3%) opined that food should be garnished and in a very attractive way, and 56 (37.3%) emphasized that the environment where foods are served should be clean, and conducive for patients to be satisfied with food served.

Discussion of findings

Research Question 1: sought to ascertain the level of patient’s satisfaction with food served in the wards of Imo State University Teaching Hospital

The result showed that 8(5.3%) of the respondents have high level of satisfaction, 5 (3.3%) have moderate level of satisfaction, 67 (44.7%) have fair level of satisfaction whereas 70 (46.7%) has poor level of satisfaction of food served in their wards. This corresponds with Valentine (2010) who carried out a study on patients’ satisfaction of food served in the ward of FMC, Asaba, who found out that 8% of the patients had high satisfaction, 32% had moderate satisfaction and 60% had low level of satisfaction with food served in the ward. Anita (2013) affirmed that food services like other care rendered in hospital is supposed to provide client optimal satisfaction as no aspect of health care is insignificant but rather work together to provide patients recovery.

Adequate food services enhance the overall rating of the quality or hospital service. Food service managers who desire to improve their patient’s satisfaction should focus their attention on meeting or exceeding patients’ expectation for food quality (Clarkson, 2014).

Research Question 2: sought to ascertain the factors responsible for patient’s dissatisfaction with food served in the wards.

Result from table 2 revealed that among the options listed, the respondents/patients outlined the following in order of magnitude as the factors that cause their dissatisfaction with food served in the various wards of the hospital. They are; 68 (45.3%) affirmed that appearance of food cause their dissatisfaction, 61 (40.7%) opined that they receive food on unattractive plates and dishes “any how plate”, 56 (37.3%) opined that foods were served cold, 44 (29.3%) complained that most times meals were served late. Also 37 (24.7%) and 8 (5.3%) of the respondents complained of unfriendly attitude of the food servers and serving food on a dirty plate respectively were among the factors responsible for their dissatisfaction with food served in the various wards of IMSUTH.
This corresponds with the work done by David (2008) who carried out research on the factors affecting general satisfaction level of patients with food served in a Military Hospital in Turkey, who found that appearance of food and using of dirty plates/dishes to serve food causes dissatisfaction. Li-Jen & Anita (2013) emphasized that evaluation at appearance of meals may be more important than actual quality of the food. Factors that promote satisfaction of food are the food temperature, the food taste, the food presentation (Jacob, 2013), the appearance of food (Stanga & Tanner, 2010), the eating environment (Anna, 2007).

**Research Question 3:** sought to ascertain ways of improving satisfaction with food served in the various wards of IMSUTH as suggested by the patients.

Result in table 3 showed patients responses on ways of improving their satisfaction with food served to them. More than half 95 (63.3%) and 86 (57.3%) of the respondents indicated that they will be satisfied when their foods were served warm or hot rather than cold and also for the food to be garnished and served in an attractive way respectively. Nearly half of the respondents suggested the following ways to improve their satisfaction with food that were served to them; 74 (49.3%) suggested that foods should be well presented, 71 (47.3%) suggested for introduction of meal options so that they can be given opportunity to choose from the meal options of the day. 70 (46.7%) indicated that food should be served at appropriate time and with good plates and spoons. 58 (38.7%) of the respondents suggested that their being satisfied will depend on serving fruits after meal, also56 (37.3%) were of the opinion that environment where foods are served should be neat and clean to improve their satisfaction of meals served in IMSUTH wards.

This corresponds with Li-Jen & Anita; (2013) who opined that the provision of food and drinks for patients remained a largely unexplored multidimensional phenomenon. However, bridging the gap that existed between perception and expectations can improve the quality of meal services for the purpose of maximizing patient satisfaction and ultimately aiding patients’ recovery. This agrees with the present study as the respondents suggested several dimensions that have not been fully explored which invariably contributes to the improvement in the food services of the hospital.

**Conclusion**

The study revealed the following:

1. Most of the respondents 137 (91.4%) were not satisfied with the food served in the ward. Most of them complained that meal presentation was poor and was served late and at the same time cold, also food servers were unfriendly.
2. Factors responsible for patients’ dissatisfactions in order of magnitude were:
   i. Appearance of food is not appetizing 68 (45.3%)
   ii. Serving foods with unattractive plates and dishes 61 (40.7%)
   iii. Foods were served cold 56 (37.3%)
   iv. Foods were served late 44 (29.3%)
   v. Unfriendliness of food servers 37 (24.7%)
3. Patients suggested the following ways for improving their satisfaction with foods served in IMSUTH wards; food should be served hot or warm, foods should be garnished and served in an attractive way, meal options should be introduced so that they can choose from the options, foods should be served with good plates and dishes and at appropriate time. They also suggested that food should be well presented to improve appetite.

These identified parts of food services in Imo State University Teaching Hospital, Orlu are very important to improve patients’ satisfaction with meals served as well as the health care delivery system.
Recommendations

Based on the findings and conclusion, the following recommendations were made;

(1) The hospital management and the relevant stakeholders should take the patients’ satisfaction as a priority in health care delivery through periodic interactive session with the patients with a view of listening to clients’ needs and at the same time implementing their needs which will go a long way in promoting quick recovery.

(2) The dieticians should make it a point of duty to participate in patient’s management through interacting with the patients, listening to them and adhering to their suggestions on how to improve their satisfaction with foods served to them. They should introduce daily menu where the patients can choose from.

(3) Nurses as ward managers and patients’ advocates should liaise with the appropriate health personnel (dieticians, nutritionists etc. in the food service with a view to relaying clients’ needs and complaints to appropriate authorities so as to encourage adequate nutrition.

(4) The food serves should serve food in a presentable and attractive way to stimulate patients’ appetite and aid fast recovery and for optimum health and wellbeing.

References


Societal Variables and Prevalence of Substance Abuse among Youths in Calabar, Cross River State, Nigeria

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Abstract

The purpose of this study was to examine societal variables and prevalence of substance abuse in Calabar, Cross River State, Nigeria. In order to achieve this purpose, four objectives, four research questions and four hypotheses were formulated to guide the study. The ex-post facto research design was used for the study. This design was considered suitable for the study because the variables under study are assumed to have occurred and could not be experimentally manipulated in the course of the study. The population of this study comprised 371,022 youths of Calabar Municipality and Calabar South Local Government Areas of Cross River State, Nigeria. The sample of this study consisted of 1000 youths. Simple random sampling technique was used for this selection. An instrument titled ‘societal variables and prevalence of substance abuse among youths Questionnaire’ was used for data collection. Simple Percentages and Pearson Product Moment Correlation Analysis were the statistical tools used for data analysis. The result of the analysis revealed that there are significant relationship between tradition, availability of substance agents, peer group as well as government security agents and the prevalence of substance abuse among youths. Based on this result, it was concluded that societal variables contributes to the prevalence of substance abuse among youths. It was recommended that government should arrests and punishes substance abusers.

Keywords

Societal Variables: These are various environmental factors that influence youths to substance abuse like age, sex, family background, and lack of supervision, belief system, employment, peer group, government activities, and others (Ebosele, 2010).

Prevalence of substance abuse: This indicates existence and indiscriminate use of illicit and proactive substance like alcohol, Indian hemp and cocaine by majority of youths in Calabar

Drug: National Institute of Drug Abuse (NIDA, (2015) said this is a chemical substance working to modify the physical and psychological status of the body.

Substance Abuse: this is also referred to as drug abuse, a situation where an individual consumes the substance to the quantity and manner that it becomes injurious to him and others (Wikipedia, 2014).

Substance: here they are illicit proactive drugs like tobacco, cocaine, heroin, cannabis, opioids and others (WedMD, 2016).

Dependence: This is psychological and physiological reliance on a particular substance which results in habitual intake, and followed by compulsive demand.

Introduction

Generally, in Nigeria societies and the world over substance abuse are common among youths and adults who feels they are frustrated, unemployed and cannot do well in life and as such indulge themselves into substance abuse Simon, Chen, Abram, & Haynie,(2014). Substance abuse is an excessive intake of psychoactive substance, illicit drugs and alcohol like beer (WHO, 2015). These are drugs consumed to obtain high feelings with false sense of self satisfaction, which continual usage produces dependence syndrome—clusters of behavioural, cognitive and physiological phenomena. They are chemical agents that changes
activities of the mind and body. Drugs of easy abuse are alcohol, pot, cocaine, tobacco and marijuana (webMD.com, 2015). Reckless use of substance and alcohol is a public health issue posing over 4.0% of global disease burden—Poznyak, Saracemo, & Obot (2005). Sadock, (2007), reports that youths are the largest abusers of alcohol, cannabis, nicotine and opioids. This is because they take substance to feel good, stop feeling bad, or perform well in school, work and play (webMD.com, 2015). It’s estimated that over 120 million uses substances like cocaine, Indian hemp, heroin, and others. Global Burden of Disease study (GBD), 2013 reports on 127,000 deaths from drug abusers; 51,000 from Opioid users, 4,300 from Cocaine users, 3,800 from amphetamine and 139,000 from alcohol users.

Societal variables are close and accessible factors that convince subjects on usefulness of substance. They range from parents, peer group, neighbourhood, economic status and government activities (Nestler, 2004). Calabar is reported of constituting major locations with recreational centres and entertainments (Felix, & Ukwayi, 2014). Here numerous people gather in their leisure time to drink variety of alcohol and smoke cigarettes without questionings.

Eze & Omeje (1999) confirmed in his socio-cultural findings that, Efiks and Ibibios who are major occupants of Calabar incorporate alcohol consumption in their cultural practice. This is observed in their ritual pouring of libation, entertainment and organization of celebrations with ufofop (local gin), palm wine (Efik wine), hot drink and beer. These accounts for their apathy and none reporting of smokers and alcoholics who live with them, and even carry out anti-social practices on its effects (Adeniyi, 2013).

The World Health Organization (WHO) resolution adopted by the 58th World Health Assembly in 2005 pleads for global, regional and country’s efforts to address the social determinants of harmful use of alcohol and reduce its related dangers (Fekjaer, HD, 1992). In effort to clean up Calabar of narcotics indulgers, Adeniyi, (2013), a National Drug Law Enforcement Agency (NDLEA) officer in Calabar said they raided the town and arrested 115 suspects: 101 males and 14 female. Out of this 38 persons were prosecuted and only 16 convicted. Nmodu, Ojih, Okojie, & Abubakar, (2014) reports on Calabar being an NDLEA counselling zone for arrested drug addicts to be put on proper reorientation.

It is on the light of the foregoing the researcher is poised to investigate on societal variables and prevalence of substance abuse in Calabar, Cross River State-Nigeria.

Key variables of the study are:

Independent variables which are represented here as:

• Tradition
• Availability of substance agents,
• Peer and family influence on substance abuse and
• Government security agents on substance abuse. While,

Dependent variables are the practice of substance abuse in Calabar which permit users to:

• Perfect in antisocial practices
• Meditate well in their spiritual aspirations
• Perform well in sex
• Work hard in their physical labours
• Read well for their academics
• Gain stamina in physical labours
• Regain lost appetite and promotes eating habit
• Increases body defence against sickness
• Boosts moral to face challenges
• Quicken child’s activity and development
Statement of the problem

The issue of drug abuse in Nigeria, in the contemporary time has become one major case casting gloomy shadows on the entire nation including youths in Calabar, Cross River State, even to the world over.

Nevertheless, user of drug either by youths of Calabar, Cross River State-Nigeria or other members of the larger society in all its ramifications appears to be a social problem. This problem is widely spread, affecting all and sundry.

Observation have also shown that drug abuse does not only hinders individual progress, but wrecks down subjects, shatters family and weakens the entire society/community with its burden of socio-economic loss, increased health cost, lawlessness and crime. Drug abuse may promote a lot of social problem ranging from family neglect, deviance behaviours and crime involvement.

In Federal Psychiatric Hospital Calabar records revealed that over 80% of male admission, either as a fresh case or in a relapsed state is related to substance abuse. Many teenagers in Calabar-South who are cultists and non-cultists smoke and sniff hard drug which they call ‘itiat or stone’—a stimulant that pushes them to anti-social practice like violent, rape, stealing and kidnapping. Some times in broad day light, youths are seen in small groups sharing lighters to ignite their Indian hemp and cigarettes in public view without fear and remorse. Occupants of Calabar hold in view that the presence of lunatics on the street results from abuse of narcotics.

One factor hindering the eradication of drug abuse among youth is because our health care workers, security agencies like National Drug Law Enforcement (NDLEA), Nigerian Police Force and the Military are equal partakers and could not do their best to check this scourge.

To this end and judging from the aforementioned problems, this study aims at ascertaining social variables and prevalence of substance abuse among youths in Calabar, Cross River State-Nigeria.

General objective

The general objective of this study is to find out societal variables related to prevalence of substance abuse among youths of Calabar in Cross River of Nigeria. In the study they are traditions of the people of Calabar, availability of substance within Calabar, peer/family influence to lure in more youths to the habit and activities of the government security agents.

Specific objectives of the study

1. To examine the relationship between traditions and prevalence of substance abuse among youths.
2. To determine the relationship between availability of substance agents and prevalence of substance abuse among youths.
3. To examine relationship between peer group and prevalence of substance abuse on youths.
4. To determine the relationship between government security agents and prevalence of substance abuse among youths.

Research questions

1. To what extent does traditions relate with prevalence of substance abuse among youths?
2. To what extent does availability of substance agents relate with prevalence of substance abuse among youths?
3. How does peer group relate with prevalence of substance abuse among youths?
4. What relationship exists between government security agents and prevalence of substance abuse among youths?
Hypothesis

The following null hypotheses are formulated to guide the studies:
1. There is no significant relationship between traditions and substance abuse among youths in Calabar.
2. There is no significant relationship between availability of substance agents and prevalence of substance abuse among youths in Calabar.
3. There is no significant relationship between peer group and prevalence of substance abuse among youths in Calabar.
4. There is no significant relationship between government security agents and prevalence of substance abuse among youths in Calabar.

Limitation of studies

The study is hindered with lots of problems like:
1. Majority of the approached respondents were unwilling to respond to the items for fear of prosecution.
2. Shuttles between work schedules, family commitments, and Church activities almost hindered the work.
3. Poor funding as its only individual effort to procure power supply, computer accessories, internet subscriptions, transportations, employing research assistant and motivating some respondents to co-operate.

Rationale of the study

This study would help the researcher in the following ways:
- understand several drugs of abuse commonly used by Calabar youths
- understand routes that youths get reach at substance
- understand why several youths consume substance
- use the medium to relate with substance users

Significant of studies

The study would be a useful tool in Federal Psychiatric Hospital, Calabar in counselling of youths over proper use of their time to attain a better future. Family would also be well directed on parental guide and child’s upbringing.

The results from studies would furnish the public to be aware of the effects of the abused drug on their health.

Information from management of substance abuse might be useful to government and healthcare providers in counselling and directing on how to live without drug.

More so, the information may be helpful to government security agents on where and how to curb drug traffickers, block their route and apprehend culprits.

Finally, this research may be helpful to other researchers and provide outlet for further research study.

Scope/Delimitation of studies

The scope of this study was Calabar, also regarded as Canaan city—Falola, (2007). It comprises of Calabar Municipality and Calabar South Local Government Areas of Cross River State in Nigeria. The study is also delimitated to four variables which are relationship between traditions of Efik/Calabar; availability of substance; influence of peer group; as well as government security agents and effects of the prevailing substance abuse on the partaking youths.

Methodology

Research design

The ex-post facto research design is used for the study. This design is considered suitable for the study because the variables under investigation are assumed to have occurred and
cannot be experimentally manipulated in the process of the study. This research design utilizes instruments like questionnaire and interview for the collection of data in order to accurately and objectively study causes after they might have presumably exerted influence on another variable. This research design is suitable for opinion and attitude studies, hence the reason for adoption in this study.

**Area of the study**

The area for this study is Calabar comprising of Calabar Municipal Council and Calabar South Local Government Areas Cross River State. It was the first capital city of Nigeria from 1914, and now one of the 36 states of Nigeria. Calabar is a business and commercial city with sea port, air port, export processing zone, and a Tinapa business resort—Tinapa Free Zone & Resort”, (2009). Simon, (2010) described the city as measuring 157 square meter with a population of 371,022 at the census of 2006. Calabar is bounded northward by Odukpani local government area, southward by Calabar River, eastward by Cameroon Republic and westward by Akwa Ibom State. Calabar is made up of 3 ethnic tribes: Efik, Efut, Quas and host of other neighbouring tribes like Ibibio, Oron, Anang, Atam, Igbo, Yoruba and Hausas who live and settle together for business and civil duties. It is equipped with a prominent university—University of Cabalar, Cross River State University, sport stadium, cultural centre complex and a botanical garden. It is also blessed with grand hotels, resort and amusement park. The inhabitants are hospitable, very accommodative and peaceful. Calabar is regarded as home for tourists, always receptive and welcoming to visitors, as the name interpreted in a slogan—‘Come and Live and Be At Rest’. This then prompts lawlessness, indiscipline, non-supervision, porous borders for free trafficking and consumption of substance, alcoholism and substance abuse, leading to insanity and poor mental state. This made Adeniyi, (2012) blamed the public of apathy and unwillingness to furnish NDLEA officials on area of cultivation, trafficking, and transaction of substance in the town.

**Population of studies**

The population of the study comprised all the youths in Calabar Municipality and Calabar South Local Government Area, Cross River State of Nigeria. This is composed of ten political wards of 179,392 youths in Calabar Municipality and twelve political wards with 192,000 youths in Calabar South; totalling 371,022 youths (Simon, 2015).

**Duration of study**

The study lasted for 7 months starting from November, 2015 till May, 2016

**Sampling size**

The sampling size of the study is 1000 youths from all wards of Calabar Municipality and Calabar South Local Government Area of Cross River State, Nigeria.

**Sampling method/techniques**

A sample size of 1000 youths was used for the study with respondents met at various drinking spots across the 22 wards of Calabar was done using simple random sampling technique among substance users. The criterion used for inclusion of subjects in the study was “those who consume alcoholic drinks”, while the exclusion criterion was based on “those who do not consume alcohol “.

In order to ensure representation, the researcher administered the instruments in all the drinking spots in Calabar Municipality and Calabar South Local Government Areas.

**Data analysis, results and discussion**

The results of data analysis carried out on data collected for the study are presented in this chapter. The findings that emerged from the analyses are also presented. The presentation was done according to the trend of the four research questions and hypotheses directing the study.
**Answering of research questions**

**Research question one**

To what extent does traditions relate with prevalence of substance abuse among youths in Calabar?

A simple percentage was used for answering the research question, the result of the analysis is as presented in Table 1:

**Table 1.** Simple percentages of the responses of youths on the relationship between tradition and prevalence of substance abuse among youths in Calabar.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Traditions</th>
<th>SA Freq</th>
<th>SA %</th>
<th>A Freq</th>
<th>A %</th>
<th>D Freq</th>
<th>D %</th>
<th>SD Freq</th>
<th>SD %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Our tradition forbids members from taking substance</td>
<td>276</td>
<td>27.6</td>
<td>164</td>
<td>16.4</td>
<td>307</td>
<td>30.7</td>
<td>253</td>
<td>25.3</td>
</tr>
<tr>
<td>2.</td>
<td>Our society accepts alcohol as traditional rites</td>
<td>322</td>
<td>32.2</td>
<td>394</td>
<td>39.4</td>
<td>90</td>
<td>9.0</td>
<td>194</td>
<td>19.4</td>
</tr>
<tr>
<td>3.</td>
<td>Our society uses alcohol for entertainments</td>
<td>506</td>
<td>50.6</td>
<td>318</td>
<td>31.8</td>
<td>79</td>
<td>7.9</td>
<td>97</td>
<td>9.7</td>
</tr>
<tr>
<td>4.</td>
<td>Our community uses hot drinks to pray and appease the gods and ancestors</td>
<td>444</td>
<td>44.4</td>
<td>364</td>
<td>36.4</td>
<td>88</td>
<td>8.8</td>
<td>104</td>
<td>10.4</td>
</tr>
<tr>
<td>5.</td>
<td>Our community offers substance to youths for motivation</td>
<td>297</td>
<td>29.7</td>
<td>399</td>
<td>39.9</td>
<td>125</td>
<td>12.5</td>
<td>179</td>
<td>17.9</td>
</tr>
</tbody>
</table>

The result of item 1 in Table 1 reveals that 276 respondents representing 27.6 % strongly agreed that their tradition forbids members from taking substance, 164 respondents representing 16.4% agreed, while 307 respondents representing 30.7% disagreed and 253 respondents representing 25.3% strongly disagreed. This was followed by item 2 with 322 respondents representing 32.2% strongly agreeing that their society accepts alcohol as traditional rites, 394 respondents representing 39.4% agreed while 90 respondents representing 9.0% disagreed and 194 respondents representing 19.4% strongly disagreed. The Table also reveals that 506 respondents representing 50.6% agreed that their society uses alcohol for entertainments, 318 respondents representing 31.8 % agreed while 79 respondents representing 7.9% disagreed and 97 respondents representing 9.7% strongly disagreed. The Table also reveals that 297 respondents representing 29.7% strongly agreed that the community offers substance to youths for motivation, 399 respondents representing 39.9% agreed while 125 respondents representing 12.5% disagreed and 179 respondents representing 17.9 % strongly disagreed. This result implies that traditions relate with prevalence of substance abuse among youths in Calabar.

**Research question two**

To what extent does availability of substance agents relate with prevalence of substance abuse among youths in Calabar?

A simple percentage was used for answering the research question, the result of the analysis is as presented in Table 2:
Table 2. Simple percentages of the responses of youths on the relationship between availability of substance agents and prevalence of substance abuse among youths in Calabar.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Availability of substance agents and substance abuse</th>
<th>SA Freq</th>
<th>SA %</th>
<th>A Freq</th>
<th>A %</th>
<th>D Freq</th>
<th>D %</th>
<th>SD Freq</th>
<th>SD %</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Substance are available in my environment</td>
<td>312</td>
<td>31.2</td>
<td>236</td>
<td>23.6</td>
<td>211</td>
<td>21.1</td>
<td>241</td>
<td>24.1</td>
</tr>
<tr>
<td>7.</td>
<td>Substance can easily be transported</td>
<td>356</td>
<td>35.6</td>
<td>276</td>
<td>27.6</td>
<td>186</td>
<td>18.6</td>
<td>182</td>
<td>18.2</td>
</tr>
<tr>
<td>8.</td>
<td>I have money from dealing on substance</td>
<td>189</td>
<td>18.9</td>
<td>247</td>
<td>24.7</td>
<td>314</td>
<td>31.4</td>
<td>250</td>
<td>25.0</td>
</tr>
<tr>
<td>9.</td>
<td>Substance are planted in my environment</td>
<td>197</td>
<td>19.7</td>
<td>191</td>
<td>19.1</td>
<td>388</td>
<td>38.8</td>
<td>224</td>
<td>22.4</td>
</tr>
<tr>
<td>10.</td>
<td>Substance are cheaper for me to buy</td>
<td>233</td>
<td>23.3</td>
<td>363</td>
<td>36.3</td>
<td>227</td>
<td>22.7</td>
<td>177</td>
<td>17.7</td>
</tr>
</tbody>
</table>

The result of item 6 in Table 2 reveals that 312 respondents representing 31.2% strongly agreed that substance are available in their environment, 236 respondents representing 23.6% agreed while 211 respondents representing 21.1% disagreed and 241 respondents representing 24.1% strongly disagreed. This was followed by item 7 with 356 respondents representing 35.6% strongly agreeing that substance can easily be transported, 276 respondents representing 27.6% agreed, while 186 respondents representing 18.6% disagreed and 182 respondents representing 18.2% strongly disagreed. The Table also reveals that 189 respondents representing 18.9% strongly agreed that they have money from dealing on substance, 247 respondents representing 24.7% agreed while 314 respondents representing 31.4% disagreed and 250 respondents representing 25.0% strongly disagreed. The Table also reveals that 197 respondents representing 19.7% strongly agreed that Substance are planted in their environment, 191 respondents representing 19.1% agreed while 388 respondents representing 38.8% disagreed and 224 respondents representing 22.4% strongly disagreed. This result implies that availability of substance agents relate with prevalence of substance abuse among youths in Calabar.

Research question three

How does peer group relate with prevalence of substance abuse among youths?

A simple percentage was used for answering the research question, the result of the analysis is as presented in Table 3:

Table 3. Simple percentages of the responses of youths on relationship between peer group and prevalence of substance abuse among youths in Calabar.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Peer groups</th>
<th>SA Freq</th>
<th>SA %</th>
<th>A Freq</th>
<th>A %</th>
<th>D Freq</th>
<th>D %</th>
<th>SD Freq</th>
<th>SD %</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td>Most of my friends from school uses substance</td>
<td>301</td>
<td>30.1</td>
<td>203</td>
<td>20.3</td>
<td>198</td>
<td>19.8</td>
<td>298</td>
<td>29.8</td>
</tr>
<tr>
<td>12.</td>
<td>Sometimes I have substance from friends free of charge</td>
<td>122</td>
<td>12.2</td>
<td>331</td>
<td>33.1</td>
<td>376</td>
<td>37.6</td>
<td>171</td>
<td>17.1</td>
</tr>
<tr>
<td>13.</td>
<td>I was introduced into substance by a friend</td>
<td>371</td>
<td>37.1</td>
<td>229</td>
<td>22.9</td>
<td>218</td>
<td>21.8</td>
<td>182</td>
<td>18.2</td>
</tr>
<tr>
<td>14.</td>
<td>All my friends are substance users</td>
<td>155</td>
<td>15.5</td>
<td>319</td>
<td>31.9</td>
<td>322</td>
<td>32.2</td>
<td>204</td>
<td>20.4</td>
</tr>
<tr>
<td>15.</td>
<td>I enjoy smoking with friends</td>
<td>382</td>
<td>38.2</td>
<td>340</td>
<td>34.0</td>
<td>212</td>
<td>21.2</td>
<td>66</td>
<td>6.6</td>
</tr>
</tbody>
</table>
The result of item 11 in Table 3 reveals that 301 respondents representing 30.1% strongly agreed that Most of their friends from school use substance, 203 respondents representing 20.3% agreed while 198 respondents representing 19.8% disagreed and 298 respondents representing 29.8% strongly disagreed. This was followed by item 12 with 122 respondents representing 12.2% strongly agreeing that sometimes they have substance from friends free of charge, 331 respondents representing 33.1% agreed while 376 respondents representing 37.6% disagreeing and 171 respondents representing 17.1% strongly disagreed. The Table also reveals that 371 respondents representing 37.1% strongly agreed that they were introduced into substance by a friend, 229 respondents representing 22.9% agreed while 218 respondents representing 21.8% disagreed and 182 respondents representing 18.2% strongly disagreed. The Table also reveals that 382 respondents representing 38.2% strongly agreed that they enjoy smoking with friends, 340 respondents representing 34.0% agreed while 212 respondents representing 21.2% disagreed and 66 respondents representing 6.6% strongly agreed. This result implies that peer group relate with prevalence of substance abuse among youths in Calabar.

Research question four

What relationship exists between government security agents and prevalence of substance abuse among youths in Calabar?

A simple percentage was used for answering the research question, the result of the analysis is as presented in Table 4:

Table 4. Simple percentages of the responses of youths on the relationship between government security agents and prevalence of substance abuse

<table>
<thead>
<tr>
<th>S/N</th>
<th>Government security agents</th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.</td>
<td>Government security agents had been storming our area regularly to apprehend drug abusers</td>
<td>421</td>
<td>42.1</td>
<td>367</td>
<td>36.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>105</td>
<td>10.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>107</td>
<td>10.7</td>
</tr>
<tr>
<td>17</td>
<td>Government officials do smoke with us</td>
<td>394</td>
<td>39.4</td>
<td>334</td>
<td>33.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>96</td>
<td>9.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>176</td>
<td>17.6</td>
</tr>
<tr>
<td>18</td>
<td>I had been arrested for using substance before</td>
<td>288</td>
<td>28.8</td>
<td>300</td>
<td>30.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>215</td>
<td>21.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>197</td>
<td>19.7</td>
</tr>
<tr>
<td>19</td>
<td>Governments officials obtain bribe and allow us traffic and use substance</td>
<td>375</td>
<td>37.5</td>
<td>369</td>
<td>36.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>111</td>
<td>11.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>145</td>
<td>14.5</td>
</tr>
<tr>
<td>20</td>
<td>Some government officials do not support use of substance</td>
<td>297</td>
<td>29.7</td>
<td>347</td>
<td>34.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>212</td>
<td>21.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>144</td>
<td>14.4</td>
</tr>
</tbody>
</table>

The result of item 16 in Table 4 reveals that 421 respondents representing 42.1% strongly agreed that Government security agents had been storming their areas regularly to apprehend drug abusers, 367 respondents representing 36.7% agreed while 105 respondents representing 10.5% disagreed and 107 respondents representing 10.7% strongly disagreed. This was followed by item 17 with 394 respondents representing 39.4% strongly agreeing that Government officials do smoke with them, 334 respondents representing 33.4% agreed while 96 respondents representing 9.6% disagreeing and 176 respondents representing 17.6% strongly disagreeing. The Table also reveals that 375 respondents representing 37.5% strongly agreed that Governments obtain bribe and allow them traffic and use substance, 369 respondents representing 36.9% agreed while 111 respondents representing 11.1% disagreed and 145 respondents representing 14.5% strongly agreed. This result implies that government security agents relates with the prevalence of substance abuse among youths in Calabar.
Hypotheses testing

Hypothesis one

There is no significant relationship between traditions and prevalence of substance abuse among youths in Calabar.

Pearson Product Moment Correlation was used to test this hypothesis. The result of the analysis is as presented in Table 5:

Table 5. Pearson Product Moment Correlation analysis of the relationship between traditions and prevalence of substance abuse among youths in Calabar (N= 1000).

<table>
<thead>
<tr>
<th>Variables</th>
<th>$\sum X$</th>
<th>$\sum X^2$</th>
<th>$\sum XY$</th>
<th>$r$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditions</td>
<td>13385</td>
<td>25420</td>
<td>248765</td>
<td>0.72</td>
</tr>
</tbody>
</table>

Significant at .05 level, critical $r = .052$, $df = 998$

The result in Table 5 shows that the calculated r-value of 0.72 is greater than the critical r-value of .052 at .05 level of significance with 998 degrees of freedom. With this result, the null hypothesis that says there is no significant relationship between traditions and prevalence of substance abuse among youths in Calabar was rejected. This implies that there is a significant relationship between traditions and prevalence of substance abuse among youths in Calabar.

Hypothesis two

There is no significant relationship between availability of substance agents and prevalence of substance abuse among youths in Calabar.

Pearson Product Moment Correlation was used to test this hypothesis. The result of the analysis is as presented in Table 6:


<table>
<thead>
<tr>
<th>Variables</th>
<th>$\sum X$</th>
<th>$\sum X^2$</th>
<th>$\sum XY$</th>
<th>$r$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of substance agents</td>
<td>12965</td>
<td>24900</td>
<td>237105</td>
<td>0.69</td>
</tr>
</tbody>
</table>

Significant at .05 level, critical $r = .052$, $df = 998$

The result in Table 6 shows that the calculated r-value of 0.69 is greater than the critical r-value of .052 at .05 level of significance with 998 degrees of freedom. With this result, the null hypothesis that says there is no significant relationship between availability of substance agents and prevalence of substance abuse among youths in Calabar was rejected. This implies that there is a significant relationship between availability of substance agents and prevalence of substance abuse among youths in Calabar.

Hypothesis three

There is no significant relationship between peer group and prevalence of substance abuse among youths in Calabar.
Pearson Product Moment Correlation was used to test this hypothesis. The result of the analysis is as presented in Table 7:

**Table 7.** Pearson Product Moment Correlation analysis of the relationship between peer group and prevalence of substance abuse among youths in Calabar (N= 1000).

<table>
<thead>
<tr>
<th>Variables</th>
<th>ΣX</th>
<th>ΣX²</th>
<th>ΣXY</th>
<th>r-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer group</td>
<td>12305</td>
<td>24860</td>
<td>217875</td>
<td>0.64</td>
</tr>
<tr>
<td>Prevalence of substance abuse</td>
<td>11555</td>
<td>22405</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant at .05 level, critical r = .052, df = 998

The result in Table 7 shows that the calculated r-value of 0.64 is greater than the critical r-value of 0.052 at .05 level of significance with 998 degrees of freedom. With this result, the null hypothesis that says there is no significant relationship between peer group and prevalence of substance abuse among youths in Calabar was rejected. This implies that there is a significant relationship between peer group and prevalence of substance abuse among youths in Calabar.

**Hypothesis four**

There is no significant relationship between government security agents and prevalence of substance abuse among youths in Calabar.

Pearson Product Moment Correlation was used to test this hypothesis. The result of the analysis is as presented in Table 8:

**Table 8.** Pearson Product Moment Correlation analysis of the relationship between government security agents and prevalence of substance abuse among youths in Calabar (N= 1000).

<table>
<thead>
<tr>
<th>Variables</th>
<th>ΣX</th>
<th>ΣX²</th>
<th>ΣXY</th>
<th>r-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Agencies</td>
<td>12485</td>
<td>24835</td>
<td>238495</td>
<td>0.78</td>
</tr>
<tr>
<td>Prevalence of substance abuse</td>
<td>11555</td>
<td>22405</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant at .05 level, critical r = .052, df = 998

The result in Table 8 shows that the calculated r-value of 0.78 is greater than the critical r-value of 0.052 at .05 level of significance with 998 degrees of freedom. With this result, the null hypothesis that says there is no significant relationship between government agencies and prevalence of substance abuse among youths in Calabar was rejected. This implies that there is a significant relationship between government agencies and prevalence of substance abuse among youths in Calabar.

**Observation of findings of the project**

From the study in this project, it therefore reveals that:

- Tradition of Calabar relates with prevalence of substance abuse among youths in Calabar.
- Availability of substance agents in Calabar relates with prevalence of substance abuse among youths in Calabar.
- Peer group relationships in Calabar relates with prevalence of substance abuse among youths in Calabar.
- Government security agents of Calabar relates with the prevalence of substance abuse among youths in Calabar.
Discussion of findings

The result of the analysis of the relationship between tradition and prevalence of substance abuse among youths in Calabar reveals that there is a significant relationship between tradition and prevalence of substance abuse among youths in Calabar. This result could be attributed to the fact that youths are observed being remunerated and motivated during farming, construction work and into risky errands (ticks) with substances like native gin (ufotop), snuff, cigarette, palm wine, combine and hemp. This keeps them alert and awake at night, and those with evil intent goes on the effect to steal and loath people’s property with other social vices in the town. This result supports that of Eze & Omeje (1999), who confirmed in their socio-cultural findings that, Efiks and Ibibios who are major occupants of Calabar, incorporate alcohol consumption in their cultural practice. This is observed in their ritual pouring of libation, entertainment and organization of celebrations with ufofop (local gin), palm wine (Efik wine), hot drink and beer. These accounts for their apathy and none reporting of smokers and alcoholics who live with them, and even carry out anti-social practices on its effects (Adeniyi, 2013).

The result of the analysis of the relationship between availability of substance agents and prevalence of substance abuse among youths in Calabar reveals that there is a significant relationship between availability of substance agents and prevalence of substance abuse among youths in Calabar. This result is possible in view of the fact that with the availability of substance agents close to the youths, they are more likely to engage in substance abuse. This result corroborates Affe, (2012), who wrote that criminals and lunatics in Calabar take advantage of drug outlets which are scattered around Calabar metropolis to traffic and abuse substance. And every day both group have been meeting at designated spots to sell and consume their substance. The findings also supports the Studies conducted by Bello, Oyo-Ita, Fatiregun, & Ikpeme, (2011), which revealed that availability and access of substance is the most determinants of abuse.

The result of the analysis of the relationship between peer group and prevalence of substance abuse among youths in Calabar reveals that there is a significant relationship between peer group and prevalence of substance abuse among youths in Calabar. This result is possible in view of the fact that majority of the deviant behaviours indulged in by youths are introduced by peers. This is because most youths tends to do what they observe their fellow youths do in order to be counted among the big boys or girls, most of them smoke or drink substances for fear of rejection. This finding however supports the reports of Botvin (1998), that drinking with peer is paramount cause of substance use, and if it is associated with family background then the influence will be more marked.

The result of the analysis of the relationship between government security agents and prevalence of substance abuse among youths in Calabar reveals that there is a significant relationship between government security agents and prevalence of substance abuse among youths in Calabar. This is possible because if the government security agents arrests and punishing substance abusers according, cases of substance abuse will dramatically reduced but in cases where government policies against substance are not properly enforced and government officials are equal partakers in substance consumption with youth, cases of drug abusers will increase. This result corroborates with NIDA, (2013), reports that the rate of alcohol drinking and illicit consumption among men and women in military service is far above what is found among civilian. And, this makes Bassey, R. (2013) to blame NDLEA for laxity, negligence of their duty, freeing of arrested cases brought to them for lack of evidence and lodging several excuses that prevents prosecution of suspects.
Conclusion

Based on the findings of the study, that:
- There is significant relationship between tradition and prevalence of substance abuse among youths in Calabar.
- There is significant relationship between availability of substance and prevalence of substance abuse among youths in Calabar.
- There is significant relationship between peer group and prevalence of substance abuse among youths in Calabar.
- There is significant relationship between government agencies and prevalence of substance abuse among youths in Calabar.

It is concluded that societal variables contribute to prevalence of substance abuse in Calabar, Cross River State.

Acknowledgement

I am grateful to the Almighty God who grants me health, ability and knowledge to foster, complete and succeed in this project despite numerous hitches, commitments and distractions.

I am indebted to my beloved wife: Mrs. Nkoyo Edet Okon, and my children who were ever beside me to assist, perform and do most of my commitments which would have occupied and prevented me from attaining most part of this project.

I am also grateful to my supervisor, DR. (Mrs.) Emilia J. Oyira, Dr. Jinu, and Vanitha my co-ordinator for their professional support and attention to my complaint. God would bless them.

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Motivation and Job Satisfaction among Hospital Nurses Working in Port-Harcourt, Rivers State

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Abstract

Background: Employee motivation and job satisfaction has been one of the single most important factor that determine work output in any organization. This also applies to the nurses who make up the majority (58.05%) of the health care services providers in the health sector in Nigeria (Omoluabi, 2014). This suggests that a lot of healthcare outcome is dependent on their work output in the health sector. It impacts on patient safety, staff morale, productivity, and performance, quality of care, and commitment to the organisation and profession. The prevalence of dissatisfaction among nurses has been given considerable importance in recent years as it affects patient satisfaction. Lack of satisfaction with work which could be as a result of several factors could have several consequences which are negative on the health sector at large. Which has led to emigration to other countries for greener pastures, leaving the nursing profession to go to other professions entirely or working at suboptimal levels thereby providing substandard healthcare.

Objective: The objectives of the study are: to find out how motivated nurses are in hospital environment, to find out the contributing factors to the motivation and job satisfaction, and to determine what factors influence their motivation the most. This will be examined using questionnaires developed and pre-tested, to be served to nurses in hospitals in the Port Harcourt metropolis.

Method: A cross-sectional study was conducted among nurses working in Port Harcourt, Rivers Hospitals. The study population consist of all the nurses that attend the mandatory continuous professional development program (MCPDP) for nurses in Port-Harcourt in March 2016. Non-probability sampling by consecutive recruitment of volunteers until all the nurses that are present at the centre are recruited. A questionnaire that was pre-tested before the study was used to obtain information on socio-demographic data and motivation variables. The data was analysed using Statistical Package for the Social Sciences (SPSS version 16.0) software. Frequencies and percentages were used to describe categorical variables. Similarly, continuous variables were described using the measures of central tendency (mean, median) and measures of dispersion (range, standard deviation) as appropriate. Statistical significance of differences between means was determined using analysis of variance (ANOVA). Significant association of job satisfaction and performance with socio-demographic, employment characteristics and leadership styles were tested using Pearson’s Coefficient of Correlation for quantitative variables. Regression analysis made done using cumulative odds ordinal logistic regression with proportional odds. Statistical significance was considered at P < 0.05.

Results: the study found the level of satisfaction to be just 32.1%. This is possibly because of the high cost of living in the study location and it has been shown in earlier studies that remuneration and cost of living is most associated with motivation and job satisfaction (Cortse, 2012; Hennessy and Minnaar, 2009). It also showed that the chances of a nurse who had diploma/RN/RM to be more satisfied and motivated to work is significant, this could mean there is more enthusiasm to work among the newly employed nurse who have not had additional education, and could mean additional education makes the nurses feel less than their actual worth. This is in concert with studies made by Timilsina et al, 2015. Conclusion: The level of motivation and job satisfaction among the nurses interviewed by the questionnaire is low as compared to other studies. The government and relevant authorities
should look into ensuring that all the factors associated with job motivation and satisfaction among the nurses should be looked into and optimized so as to prevent nurses leaving their profession or worst travelling out of the country in search of better opportunities.

Keywords: Job satisfaction, and Motivation

Introduction

Employee motivation and job satisfaction has been one of the single most important factor that determine work output in any organization in any sector – both government and private. It is the drive that causes an employee to pursue the given tasks or goals of an organization.

According to the World Health Organization (2016), the health sector of a country is made up of the people, institutions and resources, in addition to the above, developing countries like Nigeria have not-for-profit health care providers as an important part of their health sector. In Nigeria, nurses make up the majority (58.05%) of the health care services providers in the health sector (Omoluabi, 2014). This suggests that a lot of healthcare outcome is dependent on their work output in the health sector. Nurses are found in virtually every health establishment in every part of Nigeria, no matter how local or urbanized.

Lack of satisfaction with work which could be as a result of several factors could have several consequences which are negative on the health sector at large. These could be emigration to other countries for greener pastures, leaving the nursing profession to go to another profession entirely or working at suboptimal levels thereby providing substandard healthcare.

Research problem

The lack of motivation and job satisfaction among the nurses in Nigeria has had devastating consequences on the healthcare system and on the nation at large. However, there is paucity of data on this subject in Rivers state, hence the need for this study. Also, there is no standardized job satisfaction score or index that is universally endorsed by both the WHO and national health departments but various previous studies have employed hierarchical answers to determine the level of satisfaction of nurses, this study developed a questionnaire that I hope will meet this need.

Significance of the study

This study provided the level of motivation the nursing services. The findings from this study may be an eye opener to the things the government and related authorities need to take important when trying to motivate and improve the job satisfaction of the nurses. This study could also reveal the lapses in the current system as perceived by the nurses. Employers can develop employees who are motivated, productive, and fulfilled which will ensure quality patient are and a higher satisfaction level for clients.

Objectives of the study

The objectives of the study are: to find out how motivated nurses are in hospital environment, to find out the contributing factors to the motivation and job satisfaction, and to determine what factors influence their motivation the most. This will be examined using questionnaires developed and pre-tested, to be served to nurses in hospitals in the Port Harcourt metropolis.

Definition of terms

Job satisfaction- it is simply how content an individual is with his or her job, in other words, whether or not they like the job or individual aspects or facets of jobs. Motivation- the reasons for people's actions, desires, and needs.

Motivation- it is a behavior that explains the reason why people take certain actions. It is what causes people to take certain actions and drives people to choose a goal and to do everything to achieve it.
Intrinsic Motivation - the personal satisfaction we get when we carry out a task.
Extrinsic Motivation - the drive that moves us to carry out an action to get something in return due to a promised reward or a threat of punishment.

MCPDP- Mandatory Continuous Professional Development Program

Scope of the study

The questionnaire was circulated to 100 nurses working in hospitals in the Port Harcourt metropolis. It comprises of two sections: 1. Basic and socioeconomic data. 2. Questions about job motivation and satisfaction. The questionnaire was self-administered and the nurses that took part ranged from recently employed nurses to Principal nursing officers, all within both the government and the private sector.

Literature review

Introduction

This section presents the relevant literature taken from primary and secondary sources of either research or conceptual literature.

The nursing and midwifery workforce services has the largest group of skilled health-care providers (WHO, 2010) who are actively involved in the prevention and control of diseases through surveillance, early detection, and the promotion of health and healthy living (Kemppainen et al, 2012). Nurses provide a wide range of services in both hospital and primary healthcare settings, from disease control to accident and emergency through to palliative care.

Despite their contribution, nurses and midwives are usually not regarded as important stakeholders when making health policies (WHO, 2010). Knowing that motivation and job satisfaction goes a long way in determining the wellbeing and consequently, the decisions and work output of an employee (Halcomb and Ashley, 2016; Kumar et al, 2016; Galletta et al, 2016, Chang et al, 2015), it is of paramount importance for both parties because when motivation and satisfaction is optimum in a job, the quality of service/profits can be maximized. Before now, the level of motivation and satisfaction among several categories of health workers has been extensively researched in different parts of the world (Harris and Burman, 2016; Dimitrova and Veselinova, 2015; Talucci et al, 2015; Hickson, 2015; Ogiwara and Araki, 2006; Mozaffari et al, 2015; Spence and Fida, 2015; Omolase et al., 2010). Urden (1999) found out that job satisfaction is the single most important reason why nurses choose to stay in a particular job.

Measures of determining motivation

Several components have been identified as key measures of determining motivation and job satisfaction, this includes: job security (), opportunities for advancement (Al-Aameri, 2000; Tzeng, 2002a), support for additional training (Lu et al, 2007), monthly salary (Price, 2002; Lu et al, 2007), working hours (Adams and Bond, 2000), recognition (Price, 2002), independence (Masroor and Fakir, 2010), relationship with superiors (Saifuddin et al, 2008; Aiken et al., 2001), hospital management (Tzeng, 2002b; Cortse, 2012; Lephalala et al, 2008), work environment (Saifuddin et al, 2008) among others.

Every nurse leader wants to motivate their staff and keep them engaged when they are at work so as to provide safe care to clients, however this is a challenge especially in this tough times. One method according to Grensing-Pophal (2013) is to use positive Recognition- they are rewarded for performance. This should be done equitably so that they feel that they are appreciated. It does not necessarily need to be money.

Nurse leaders and motivation

One of the ingredients a leader needs to boost the morale of their staff is motivation because it improves productivity. It is also a challenge to keep employees motivated, hence leaders should find out what drives individual workers because people are unique and
different. What drives one person may differ from the other. Some staff need to be praised, recognized and approved by colleagues. While some just want to have job security to flourish or even compliments. motivation of nurses is of great utmost importance and is inversely related to patient satisfaction and high quality service. That is why it is of utmost importance for nurse managers to implement the appropriate motivational strategies. Therefore, both monetary and non-monetary incentives be used to motivate nurses. (Lambrou et al 2010 and Prytherch et al. 2013).

Motivation is a big challenge in the work place for managers especially in a world that is constantly changing. Praise is a motivator, it helps to release – serotonin and dopamine which are neurotransmitters (Salamone, J. D. et al. 2012). They provide an incentive for people to repeat a behavior and also gives one a sense of pride. So we need not under estimate the power of praise. In a study carried out by Fletcher (2001), it was found that one of the demotivating factors was the feeling of their job not be valued by administrators and others. Nurses perceive that the profits were placed above patients.

Nurse autonomy is another key motivator that enhances job satisfaction as demonstrated by Yolanda (2009). Nurses strive when they practice autonomously where they have the freedom to practice and take decision based on the knowledge they have acquired.

Finally nurse leaders need to know that they cannot force their staff to be motivated because it is an intrinsic quality but they need to create the enabling environment that will inspire and awaken the desire for them to be motivated. Using both the intrinsic and extrinsic motivators will help in keeping their drive for efficiency and satisfaction level high. Intrinsic motivation is the personal satisfaction we get when we carry out a task while the extrinsic is the drive that moves us to carry out an action to get something in return. The intrinsic and extrinsic (money, power, recognition) motivation factors are good for the individual and the employer. Negarandeh, et al, (2015)

**Methodology**

**Study location**

The study was carried out among the nurses that attended the Mandatory Continuous Professional Development Program (MCPDP) for nurses in Port-Harcourt in March 2016.

**Type of study**

This study was a cross-sectional study that was collected from a representative subset of nurses living and working in the Port Harcourt metropolis that attended an MCPDP programme. All the nurses in attendance were served the questionnaire.

**Sample size/population**

The study population consisted of all the nurses that attended the MCPDP who are also practicing as nurses and working within Rivers State. A total of 90 nurses attended the program. Only those who accepted to be part of the study and meet the inclusion criteria were recruited, totaling 87 nurses. A response rate of 96.7%.

**Sampling strategy**

Non-probability sampling (convenience sampling) by consecutive recruitment of volunteers until all the nurses that are present at the centre are recruited.

**Selection criteria for the subjects**

**Inclusion criteria**

i. Qualified nurses practicing and working within Port Harcourt, Rivers State
ii. Nurses older than 18 years
iii. Nurses that are from Nigeria.
iv. Informed consent to be enrolled
Exclusion criteria

i. Nurses who are not practicing
ii. Those who declined consent
iii. Nurses practicing outside Port Harcourt, Rivers State

Materials

Proforma/questionnaire was used to obtain information on socio-demographic data; and was pre-tested before the study. The questionnaire had 3 pages and is divided into two sections: section A and section B. Section A contained sociodemographic data like age, gender, marital status etc. Other work related questions are also present in section A. Section B contained data about job motivation and satisfaction in twenty eight (28) domains (Appendix C). The second section was scored using a liekart scale from very satisfied (VS) to satisfied (S) to neutral (N) to dissatisfied (DS) to very dissatisfied (VDS).

Subject assessment

Informed consent obtained from all the subjects participating in the study. They were then assessed using the study proforma.

Statistical analysis

The data was analysed using Statistical Package for the Social Sciences (SPSS version 16.0) software. Frequencies and percentages were used to describe categorical variables. Similarly, continuous variables were described using the measures of central tendency (mean, median) and measures of dispersion (range, standard deviation) as appropriate. Statistical significance of differences between means was determined using analysis of variance (ANOVA). Significant association of job satisfaction and performance with sociodemographic, employment characteristics and leadership styles were tested using Pearson’s Coefficient of Correlation for quantitative variables. Regression analysis made done using cumulative odds ordinal logistic regression with proportional odds. Statistical significance was considered at P < 0.05.

Ethical clearance

Ethical clearance was obtained from the Ethics and Research Committee of the (Nursing dept) Ministry of health, Rivers State, Nigeria.

Results

This section presents the results of the study based on the sequence by which the research questions were raised. The profile of the respondents is presented first followed by the results and discussion.

Respondent’s profile (Age, sex and years of qualification)

Majority of the respondents were female (96.6%) and are less than 45 years old (77.0%) as shown in table 1. The mean age was 39.37±9.01. Seventy-two (72.8%) were married, while all were Christians. Also, the average number of years of qualification is 15.72±9.94, which is divided into; ≤ 10 years (37.9%), 11–20 years (32.2%), 21 – 30 years (18.4%), ≥ 31 years (10.3%). Most of them (73.6%) have spent less than six years in their present ward/unit, while equal numbers (4.6%) have spent between twenty-one and thirty and greater than thirty years respectively.

Respondent’s profile (Education, position and employer)
Educationally, 66.7% had Diploma/RN/RM, while the remainder (23.0% and 10.3%) had B.Sc (Nursing) and postgraduate degrees respectively. Most (55.2%) of the respondents are nursing officer I or II, followed by senior nursing officers (16.1%) and chief nursing officers (12.6%), the others are assistant chief nursing officers (6.9%), principal nursing officers (5.7%), assistant director nursing services (2.3%), and deputy director nursing services (1.1%). Government employees (comprising of federal (18.4%), state (29.9%), and local government (1.1%)) makes up 49.4% of the respondents, others are private hospital employees, company hospital employees, and missionary hospital employees, and these all make up 33.3%, 13.8% and 3.4% respectively. Other information about the ward/unit where they work and their shift duty are as shown in table 2.
Table 2. Characteristics related to work of the respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>N = 87</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years of Qualification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 10</td>
<td>33</td>
<td>37.9</td>
<td></td>
</tr>
<tr>
<td>11 – 20</td>
<td>28</td>
<td>32.2</td>
<td></td>
</tr>
<tr>
<td>21 – 30</td>
<td>16</td>
<td>18.4</td>
<td></td>
</tr>
<tr>
<td>≥ 31</td>
<td>9</td>
<td>10.3</td>
<td></td>
</tr>
<tr>
<td><strong>Mean ± SD</strong></td>
<td>15.72 ± 9.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Median (Range)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Years in present ward/unit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 5</td>
<td>64</td>
<td>73.6</td>
<td></td>
</tr>
<tr>
<td>6 – 10</td>
<td>15</td>
<td>17.2</td>
<td></td>
</tr>
<tr>
<td>11 – 15</td>
<td>4</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>≥ 16</td>
<td>4</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td><strong>Mean ± SD</strong></td>
<td>3.00 (31.50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Median (Range)</strong></td>
<td>3.00 (19.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Last promotion (Years)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ward/Unit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A&amp;E</td>
<td>3</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td>3</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>Antenatal</td>
<td>4</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>Family Medicine</td>
<td>2</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>General Ward</td>
<td>11</td>
<td>12.6</td>
<td></td>
</tr>
<tr>
<td>Health Centre</td>
<td>1</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Intensive Care Unit</td>
<td>3</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>Labour Ward</td>
<td>3</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>Maternity</td>
<td>14</td>
<td>16.1</td>
<td></td>
</tr>
<tr>
<td>Medicine</td>
<td>13</td>
<td>14.9</td>
<td></td>
</tr>
<tr>
<td>Mental Health</td>
<td>1</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td>2</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>Out-Patient Department</td>
<td>5</td>
<td>5.7</td>
<td></td>
</tr>
<tr>
<td>Orthopedic</td>
<td>4</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>Paediatrics</td>
<td>5</td>
<td>5.7</td>
<td></td>
</tr>
<tr>
<td>Primary Healthcare Centre</td>
<td>2</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>Postnatal</td>
<td>1</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Renal</td>
<td>1</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Sickbay</td>
<td>1</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Surgery</td>
<td>6</td>
<td>6.9</td>
<td></td>
</tr>
<tr>
<td>Theatre</td>
<td>2</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td><strong>Rank</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing Officer I or II</td>
<td>48</td>
<td>55.2</td>
<td></td>
</tr>
</tbody>
</table>
Motivation and job satisfaction

About job security, 57.5% were at least satisfied while the rest were either indifferent, dissatisfied or very dissatisfied and slightly more than half (55.1%) are satisfied with the opportunities for advancement in their current position. A reasonably low percentage (28.7%, 21.8%, 35.6%, 20.7% and 26.4%) of the respondents are satisfied with their monthly salary, rate of promotion, leadership style of the hospital management, duration of last promotion and the benefits/hazard allowance respectively. Also, more than 52% (and in some cases up to 88.5%) of the respondents were at least satisfied with respect to other questions about support, work hours and volume, recognition, independence, supervision, number of workers, surrounding and work condition, availability of tools and consumables/instrument and equipment, waste disposal, relationship, patients care, and work schedule as shown in table 3.

Table 3. Response of the respondents about different factors affecting job motivation and satisfaction.

<table>
<thead>
<tr>
<th>Question</th>
<th>Frequency (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Job security</strong></td>
<td></td>
</tr>
<tr>
<td>Very Satisfied</td>
<td>20 (23.0)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>30 (34.5)</td>
</tr>
<tr>
<td>Neither</td>
<td>13 (14.9)</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>17 (19.5)</td>
</tr>
<tr>
<td>Very Dissatisfied</td>
<td>7 (8.0)</td>
</tr>
<tr>
<td><strong>2. The opportunities for advancement in this position</strong></td>
<td></td>
</tr>
<tr>
<td>Very Satisfied</td>
<td>15 (17.2)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>33 (37.9)</td>
</tr>
<tr>
<td>Neither</td>
<td>19 (21.8)</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>12 (13.8)</td>
</tr>
<tr>
<td>Very Dissatisfied</td>
<td>8 (9.2)</td>
</tr>
<tr>
<td><strong>3. Support for additional training and education</strong></td>
<td></td>
</tr>
<tr>
<td>Very Satisfied</td>
<td>19 (21.8)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>29 (33.3)</td>
</tr>
<tr>
<td>4. Monthly salary</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>---</td>
</tr>
<tr>
<td>Very Satisfied</td>
<td>13 (14.9)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>12 (13.8)</td>
</tr>
<tr>
<td>Neither</td>
<td>19 (21.8)</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>21 (24.1)</td>
</tr>
<tr>
<td>Very Dissatisfied</td>
<td>22 (25.3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Hours worked each day and week</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Satisfied</td>
<td>13 (14.9)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>37 (42.5)</td>
</tr>
<tr>
<td>Neither</td>
<td>14 (16.1)</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>5 (5.7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Recognition for work accomplished</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Satisfied</td>
<td>16 (18.4)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>39 (44.8)</td>
</tr>
<tr>
<td>Neither</td>
<td>9 (10.3)</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>16 (18.4)</td>
</tr>
<tr>
<td>Very Dissatisfied</td>
<td>7 (8.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. Degree of independence associated with work role (autonomy)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Satisfied</td>
<td>15 (17.2)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>45 (51.7)</td>
</tr>
<tr>
<td>Neither</td>
<td>13 (14.9)</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>10 (11.5)</td>
</tr>
<tr>
<td>Very Dissatisfied</td>
<td>4 (4.6)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8. The way supervisor relates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Satisfied</td>
<td>21 (24.1)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>43 (49.4)</td>
</tr>
<tr>
<td>Neither</td>
<td>13 (14.9)</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>9 (10.3)</td>
</tr>
<tr>
<td>Very Dissatisfied</td>
<td>1 (1.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. The rate of promotion</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Satisfied</td>
<td>4 (4.6)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>15 (17.2)</td>
</tr>
<tr>
<td>Neither</td>
<td>10 (11.5)</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>31 (35.6)</td>
</tr>
<tr>
<td>Very Dissatisfied</td>
<td>27 (31.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. The volume/amount of work done</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Satisfied</td>
<td>7 (8.0)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>41 (47.1)</td>
</tr>
<tr>
<td>Neither</td>
<td>11 (12.6)</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>14 (16.1)</td>
</tr>
<tr>
<td>Very Dissatisfied</td>
<td>14 (16.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. The way supervisor delegates work to staff members</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Satisfied</td>
<td>13 (14.9)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>43 (49.4)</td>
</tr>
<tr>
<td>Neither</td>
<td>11 (12.6)</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>15 (17.2)</td>
</tr>
<tr>
<td>Very Dissatisfied</td>
<td>5 (5.7)</td>
</tr>
<tr>
<td>12. The number of workers in units</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---</td>
</tr>
<tr>
<td><strong>Very Satisfied</strong></td>
<td>6 (6.9)</td>
</tr>
<tr>
<td><strong>Satisfied</strong></td>
<td>31 (35.6)</td>
</tr>
<tr>
<td><strong>Neither</strong></td>
<td>6 (6.9)</td>
</tr>
<tr>
<td><strong>Dissatisfied</strong></td>
<td>32 (36.8)</td>
</tr>
<tr>
<td><strong>Very Dissatisfied</strong></td>
<td>12 (13.8)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. Leadership style of the hospital management</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very Satisfied</strong></td>
<td>7 (8.0)</td>
</tr>
<tr>
<td><strong>Satisfied</strong></td>
<td>24 (27.6)</td>
</tr>
<tr>
<td><strong>Neither</strong></td>
<td>17 (19.5)</td>
</tr>
<tr>
<td><strong>Dissatisfied</strong></td>
<td>23 (26.4)</td>
</tr>
<tr>
<td><strong>Very Dissatisfied</strong></td>
<td>16 (18.4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. The physical surrounding (neatness, flower, landscaping, paint colour)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very Satisfied</strong></td>
<td>22 (25.3)</td>
</tr>
<tr>
<td><strong>Satisfied</strong></td>
<td>32 (36.8)</td>
</tr>
<tr>
<td><strong>Neither</strong></td>
<td>13 (14.9)</td>
</tr>
<tr>
<td><strong>Dissatisfied</strong></td>
<td>10 (11.5)</td>
</tr>
<tr>
<td><strong>Very Dissatisfied</strong></td>
<td>10 (11.5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. Physical work conditions (light, water, air-conditioning etc)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very Satisfied</strong></td>
<td>21 (24.1)</td>
</tr>
<tr>
<td><strong>Satisfied</strong></td>
<td>26 (29.9)</td>
</tr>
<tr>
<td><strong>Neither</strong></td>
<td>7 (8.0)</td>
</tr>
<tr>
<td><strong>Dissatisfied</strong></td>
<td>19 (21.8)</td>
</tr>
<tr>
<td><strong>Very Dissatisfied</strong></td>
<td>14 (16.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. Availability of tools and consumables</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very Satisfied</strong></td>
<td>16 (18.4)</td>
</tr>
<tr>
<td><strong>Satisfied</strong></td>
<td>30 (34.5)</td>
</tr>
<tr>
<td><strong>Neither</strong></td>
<td>12 (13.8)</td>
</tr>
<tr>
<td><strong>Dissatisfied</strong></td>
<td>15 (17.2)</td>
</tr>
<tr>
<td><strong>Very Dissatisfied</strong></td>
<td>14 (16.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17. Availability of instruments and equipment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very Satisfied</strong></td>
<td>15 (17.2)</td>
</tr>
<tr>
<td><strong>Satisfied</strong></td>
<td>33 (37.9)</td>
</tr>
<tr>
<td><strong>Neither</strong></td>
<td>9 (10.3)</td>
</tr>
<tr>
<td><strong>Dissatisfied</strong></td>
<td>16 (18.4)</td>
</tr>
<tr>
<td><strong>Very Dissatisfied</strong></td>
<td>14 (16.1)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>18. Availability of personal protective devices (gloves, facemask, goggles, boots)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very Satisfied</strong></td>
<td>19 (21.8)</td>
</tr>
<tr>
<td><strong>Satisfied</strong></td>
<td>25 (28.7)</td>
</tr>
<tr>
<td><strong>Neither</strong></td>
<td>10 (11.5)</td>
</tr>
<tr>
<td><strong>Dissatisfied</strong></td>
<td>17 (19.5)</td>
</tr>
<tr>
<td><strong>Very Dissatisfied</strong></td>
<td>16 (18.4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>19. Safe means of waste disposal</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very Satisfied</strong></td>
<td>17 (19.5)</td>
</tr>
<tr>
<td><strong>Satisfied</strong></td>
<td>36 (41.4)</td>
</tr>
<tr>
<td><strong>Neither</strong></td>
<td>7 (8.0)</td>
</tr>
<tr>
<td><strong>Dissatisfied</strong></td>
<td>17 (19.5)</td>
</tr>
<tr>
<td><strong>Very Dissatisfied</strong></td>
<td>10 (11.5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>20. The spirit of co-operation among my co-workers</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very Satisfied</strong></td>
<td>14 (16.1)</td>
</tr>
<tr>
<td>Question</td>
<td>Satisfied</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>21. Relationship with my supervisors</td>
<td>54 (62.1)</td>
</tr>
<tr>
<td>22. Relationship with my subordinates</td>
<td>15 (17.2)</td>
</tr>
<tr>
<td>23. Working relationship between Doctors and Nurses</td>
<td>19 (21.8)</td>
</tr>
<tr>
<td>24. Professional dignity and respect as a nurse</td>
<td>22 (25.3)</td>
</tr>
<tr>
<td>25. Patients care</td>
<td>26 (29.9)</td>
</tr>
<tr>
<td>26. Work schedule</td>
<td>7 (8.0)</td>
</tr>
<tr>
<td>27. Benefits/hazards allowance, health insurance, life insurance</td>
<td>4 (4.6)</td>
</tr>
<tr>
<td>28. Duration of last promotion</td>
<td>2 (2.3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Neither</th>
<th>Dissatisfied</th>
<th>Very Dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. Relationship with my supervisors</td>
<td>15 (17.2)</td>
<td>55 (63.2)</td>
<td>9 (10.3)</td>
<td>6 (6.9)</td>
</tr>
<tr>
<td>22. Relationship with my subordinates</td>
<td>19 (21.8)</td>
<td>58 (66.7)</td>
<td>5 (5.7)</td>
<td>2 (2.3)</td>
</tr>
<tr>
<td>23. Working relationship between Doctors and Nurses</td>
<td>19 (21.8)</td>
<td>58 (66.7)</td>
<td>5 (5.7)</td>
<td>2 (2.3)</td>
</tr>
<tr>
<td>24. Professional dignity and respect as a nurse</td>
<td>22 (25.3)</td>
<td>42 (48.3)</td>
<td>9 (10.3)</td>
<td>11 (12.6)</td>
</tr>
<tr>
<td>25. Patients care</td>
<td>26 (29.9)</td>
<td>46 (52.9)</td>
<td>6 (6.9)</td>
<td>1 (1.1)</td>
</tr>
<tr>
<td>26. Work schedule</td>
<td>7 (8.0)</td>
<td>52 (59.8)</td>
<td>12 (13.8)</td>
<td>11 (12.6)</td>
</tr>
<tr>
<td>27. Benefits/hazards allowance, health insurance, life insurance</td>
<td>4 (4.6)</td>
<td>19 (21.8)</td>
<td>7 (8.0)</td>
<td>24 (27.6)</td>
</tr>
<tr>
<td>28. Duration of last promotion</td>
<td>2 (2.3)</td>
<td>16 (18.4)</td>
<td>16 (18.4)</td>
<td>21 (24.1)</td>
</tr>
</tbody>
</table>
Overall satisfaction

Overall, a high percentage (48.36%) of the respondents are neither satisfied nor dissatisfied with their job, other are satisfied (28.7%), dissatisfied (19.5%) or very satisfied (3.4%) (Fig. 1). There was a positive correlation between all the components of job satisfaction and the overall job satisfaction as shown in table 4.

Table 4. Correlation between determinants of job satisfaction and overall job satisfaction in the respondents

<table>
<thead>
<tr>
<th>Question</th>
<th>N</th>
<th>r</th>
<th>p – value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job security</td>
<td>87</td>
<td>0.373</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>The opportunities for advancement in this position</td>
<td>87</td>
<td>0.498</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Support for additional training and education</td>
<td>87</td>
<td>0.560</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Monthly salary</td>
<td>87</td>
<td>0.631</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Hours worked each day and week</td>
<td>87</td>
<td>0.261</td>
<td>0.015</td>
</tr>
<tr>
<td>Recognition for work accomplished</td>
<td>87</td>
<td>0.531</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Degree of independence associated with work role (autonomy)</td>
<td>87</td>
<td>0.484</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>The way supervisor relates</td>
<td>87</td>
<td>0.518</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>The rate of promotion</td>
<td>87</td>
<td>0.520</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>The volume/amount of work done</td>
<td>87</td>
<td>0.558</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>The way supervisor delegates work to staff members</td>
<td>87</td>
<td>0.540</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>The number of workers in units</td>
<td>87</td>
<td>0.497</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Leadership style of the hospital management</td>
<td>87</td>
<td>0.686</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>The physical surrounding (neatness, flower, landscapping, paint colour)</td>
<td>87</td>
<td>0.649</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Physical work conditions (light, water, air-conditioning etc)</td>
<td>87</td>
<td>0.669</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Availability of tools and consumables</td>
<td>87</td>
<td>0.710</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Availability of instruments and equipment</td>
<td>87</td>
<td>0.696</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Availability of personal protective devices (gloves, facemask, goggles, boots)</td>
<td>87</td>
<td>0.682</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Safe means of waste disposal</td>
<td>87</td>
<td>0.671</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>The spirit of co-operation among my co-workers</td>
<td>87</td>
<td>0.528</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Relationship with my supervisors</td>
<td>87</td>
<td>0.490</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Relationship with my subordinates</td>
<td>87</td>
<td>0.365</td>
<td>0.001</td>
</tr>
<tr>
<td>Working relationship between Doctors and Nurses</td>
<td>87</td>
<td>0.484</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Professional dignity and respect as a nurse</td>
<td>87</td>
<td>0.555</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Patients care</td>
<td>87</td>
<td>0.429</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Work schedule</td>
<td>87</td>
<td>0.555</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Benefits/hazards allowance, health insurance, life insurance etc</td>
<td>87</td>
<td>0.700</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Duration of last promotion</td>
<td>87</td>
<td>0.495</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

On multiple regression analysis, the odds of respondents working in the private to be satisfied is 0.207 times (95% CI, 0.063 – 0.683) times that of workers in other institutions, a statistically significant effect, $X^2 = 6.687, p = 0.010$. (Table 5).
Table 5. Regression analysis of the predictors for overall job satisfaction amidst the respondents.

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>Wald (X²)</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>p – value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1</td>
<td>0.009</td>
<td>1.006</td>
<td>0.894 – 1.131</td>
<td>0.926</td>
</tr>
<tr>
<td>Years qualified as a nurse</td>
<td>1</td>
<td>0.005</td>
<td>1.004</td>
<td>0.893 – 1.129</td>
<td>0.945</td>
</tr>
<tr>
<td>Length in current ward/unit</td>
<td>1</td>
<td>0.370</td>
<td>1.033</td>
<td>0.931 – 1.145</td>
<td>0.543</td>
</tr>
<tr>
<td>Education (Diploma)</td>
<td>1</td>
<td>0.230</td>
<td>1.631</td>
<td>0.221 -12.023</td>
<td>0.631</td>
</tr>
<tr>
<td>Education (B.Sc Nursing)</td>
<td>1</td>
<td>0.011</td>
<td>0.899</td>
<td>0.127 – 6.374</td>
<td>0.915</td>
</tr>
<tr>
<td>Marital Status</td>
<td>1</td>
<td>0.006</td>
<td>0.952</td>
<td>0.267 – 3.388</td>
<td>0.939</td>
</tr>
<tr>
<td>Shift Duty</td>
<td>1</td>
<td>1.967</td>
<td>2.330</td>
<td>0.714 – 7.601</td>
<td>0.161</td>
</tr>
<tr>
<td>Institution</td>
<td>1</td>
<td>6.687</td>
<td>0.207</td>
<td>0.063 – 0.683</td>
<td>0.010</td>
</tr>
</tbody>
</table>

Discussion of findings

This study shows that most of the nurses were not dissatisfied about their levels of satisfaction about their job as was found out by Saifuddin et al, 2008 and Lashonda-Bare, 2004. It is also noteworthy that all of the individual factors had positive significant correlation with the overall job satisfaction. This is consistent with the findings of Best and Thurston, 2004 and the more recent study of Edoho et al, 2015. Almost all of the respondents in this study are females as expected, probably because most of the people in the nursing profession in Nigeria are females. Our study shows that agewise, most of the nurses are in their thirties and early to middles forties. This compares with other studies carried out in Kano and Al-Mukramh were their where most of their respondents are between the ages of 31–40 years and 40–45 years respectively.

The nurses in this study are not as dissatisfied with their job security as much as they are with their monthly income and their rate of promotion. This is not surprising as Lu et al, 2007 has shown that monthly income is the single most important factor for nurses leaving their jobs. Although nurses in Canada and the United States feel more satisfied with their salary (Lu et al, 2007), their counterparts in Nigeria feel that their pays are not comparable with the pay of other health care providers, especially doctors. Baruwa, 2001; Esiekpe, 2003; and Akah et al, 2011 also made findings regarding this in Nigeria. In fact, there has been reports that nurses feel as just assistants in the hospital setting and not as clinicians, and feel threatened with replacement (Norrish and Rundall, 2001). And there is evidence that nurses esteem relationship than pay (Murrells et al, 2008).

In the past, association between hours worked, recognition, advancement opportunities, support for training, independence, leadership styles, supervision, physical surrounding and work conditions, availability of tools, instruments and personal protective devices and work itself has been documented (Aiken et al, 2001; McShane and Glinow, 2010; Adams and Bond, 2000; Hennessy and Minnaar, 2009; Kettle, 2001; Tzeng, 2002a; Tzeng, 2002b, Lephalala et al, 2008; Castle, 2006, Ojeme, 2009), and this has been shown to correlate strongly with overall job satisfaction, this was also shown in our study. This is in contrast with a very recent report of Ugwa, 2016 which showed a weak relationship.

Although other studies have shown very high levels of overall job satisfaction among nurses (Ofili et al, 2004; Ayanlowo et al, 2013; Edoho et al, 2015), our study found the level of satisfaction to be just 32.1%. This is possibly because of the high cost of living in the study location and it has been shown in earlier studies that remuneration and cost of living is most associated with motivation and job satisfaction (Cortse, 2012; Kemppainen et al, 2012; Hennessy and Minnaar, 2009).

Our study showed that the chances of a nurse who had diploma/RN/RM to be more satisfied and motivated to work is significant, this could mean there is more enthusiasm to work among the newly employed nurse who have not had additional education, and could mean additional education makes the nurses feel less than their actual worth.
Summary, limitations, conclusions, and recommendations

Summary

This study examined how motivated the nurses working in Port Harcourt metropolis of Nigeria are to their job and how satisfied they are with their jobs. The study also examined the factors associated and to what extent what factor affect the overall score of job motivation and satisfaction. This was examined using a pretested questionnaire designed in two sections; 1. The sociodemographic section and 2. The section about the questions of motivation and job satisfaction. Eighty-seven (87) nurses were served with the questionnaire and the same were collected and analysed. Frequencies and percentages were used to describe categorical variables. Similarly, continuous variables were described using the measures of central tendency (mean, median) and measures of dispersion (range, standard deviation) as appropriate. Statistical significance of differences between means was determined using analysis of variance (ANOVA). Significant association of job satisfaction and performance with socio-demographic, employment characteristics and leadership styles were tested using Pearson’s Coefficient of Correlation for quantitative variables. Regression analysis made done using cumulative odds ordinal logistic regression with proportional odds. Statistical significance was considered at P < 0.05. The results show that monthly income (salary) has tremendous effect on motivation and job satisfaction for the respondents and that the overall level of job satisfaction is 32.1%. All the individual components of job satisfaction correlates positively with the overall job satisfaction and working in the private sector could predict satisfaction for the nurses.

Limitations

The lack of finance and time were the constraints to the study as it was not funded by any facility and this puts all the financial burden on the researcher. The researcher did not receive any grant to fund this research project in any way, this placed a limitation on the number of nurses the researcher could reach as this would mean additional money be spent. Provision of fund would make this study be able to include more people from more diverse background and get the perspective of more people on the subject matter in Rivers state.

Conclusion

The level of motivation and job satisfaction among the nurses interviewed by the questionnaire is low as compared to other studies. The government and relevant authorities should look into ensuring that all the factors associated with job motivation and satisfaction among the nurses should be looked into and optimized so as to prevent nurses leaving their profession or worst travelling out of the country in search of better opportunities.

Recommendation

A bigger study with larger sample size and covering larger population could be beneficial to really get the outlook of other nurses on a larger scale. This study will include nurses in the rural areas of Rivers state and could even be as large as research the whole south-south geopolitical region of Nigeria. The relevant authorities should not take with levity the perception of the nurses of their level of motivation and job satisfaction.

Acknowledgement

My heartfelt gratitude goes to GOD Almighty and Dr. Olamoyegun Michael towards the success of this research.
References


Factors Affecting use of E-Learning in Nursing Education: A Literature Review

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Abstract

Purpose: The review paper presents the factors which are viewed as barriers affecting utilization of eLearning among nurse educators.

Objectives: The aim of the review paper is to analyze critically available literature on use of eLearning as one of the innovative teaching strategies in nursing education and associated challenges in its utilization by identifying factors and barriers affecting use of eLearning. Identify how lack of using eLearning affect quality of teaching and learning and to establish how nurse educators can be assisted to overcome the identified barriers.

Rationale: The rationale for undertaking this exploration is grounded from the fact that information technology has developed and expanded. The benefits of electronic learning (e-learning) is rapidly gaining popularity and it is seen as an essential tool that can enhance and facilitate lifelong learning.

Methodology: Literature was retrieved using credible databases Ebscohost, Pubmed and Google scholar utilizing key words highlighted below and only articles which discussed the related topic were considered for the development of the paper.

Results: Results revealed that there are several factors which inhibit the utilization of eLearning by nurse educators which includes, lack of faculty skills regarding ICT, lack of support, lack of funds and fear to lose control by nurse educators in learning and teaching process.

Recommendations: Due to the emerging use of technology and the requirement for nurse educators to integrate technology in teaching and learning it is recommended that Faculty ICT development programmes be a priority and strengthening of existing ICT policies in nursing education.

Keywords: eLearning, eLearning models, Nursing education, Information technology, eCompetence, Barriers for eLearning.

Introduction

The use of information and communication technology (ICT) in health professional education or even high education is rapidly increasing. Nurse educators are required to be responsive to these changing paradigm. The health care delivery environment is dramatically changing which pose a challenge to nurse educators to prepare healthcare providers who are competent and who can cope in this highly digital environment. (Daniel & Oyetunde, 2013).

eLearning is emerging as the new paradigm of modern education and it is described as having an advantage of liberating interactions between learners and instructors or interaction between learners and learners. (Pei-Chen, Tsai, Finger Yueh-Yang & Yeh, 200)

It is of no doubt that education is a principal measure of bringing about changes in the lives of individual and this has led to many countries making the creation and diffusion of information and communication technology. eLearning has become synonymous with the latest approaches in providing quality care. However there has been a series of barriers which inhibits full and effective utilization of eLearning technology. The purpose of this paper capstone Project is to analyze literature review to establish factors affecting the use of
eLearning in nursing education and to identify which measures should be put in place to overcome such barriers.

**Statement of the problem**

Learning technology enhances communication and interaction between facilitators and learners as it offers a wide range of options. Utilization of eLearning assist in designing learner centered, interactive and facilitated learning. However most nurse educators have not exploited eLearning as as an innovative teaching strategy because of several factors and barriers. Schneckenberg (2010), Barrios and Carsternson, (2004) have found that only 5 % of the active faculty in German Speaking University use learning technology for their courses. Some studies suggests that nurse educators are battling to integrate information and communication technology skills into undergraduate nursing curricula because of lack of adequate preparation, and lack of support in implementing eLearning approaches. (Kiteley &Graham, Wilmer, 2005). Allen and Seaman, 2007 state the inadequate level of eCompetence as one of the reason for the slow adoption of eLearning in teaching and learning practice. However Nurse educators have a key role to play in terms of modeling the significance of ICT and eLearning skills in relation to nursing practice.

**Purpose of the paper**

The purpose of this review is to identify the factors which interfere with the utilization of eLearning as a teaching strategy amongst Nurse Educators.

Objectives are:

1) To identify the factors and barriers affecting use of eLearning as strategy
2) To identify how lack of using eLearning affect quality of teaching and learning
3) To identify how Nurse Educators can be assisted to overcome identified factors.

**Literature review**

The nursing education nowadays focuses on the shift from teaching to learning hence the advantages of electronic (eLearning) is gradually gaining popularity (kala, Isaramalai & ponthong, 2012, Francis, 2013)

eLearning has been described as a web-based system that makes information or knowledge available to users or learners with no geographical restrictions. It is an instructional method which has several advantages such as emphasis on interaction and communication through internet channels, videoconferencing, teleconferencing in asynchronous sessions or synchronized sessions. (Odunayo, Olugbeko and Izu, 2013). Lecturing has been viewed for several years as a cost effective way of presenting new ideas and concepts especially to a large group of students. However most scholars recommend a paradigm shift to begin to utilize methods of teaching which may stimulate students critical thinking skills to reduce the passiveness which students display when lecturing is used as the sole method of delivery. (White & Sykes, 2012).

More scholars have described benefits of eLearning and nurse training as a flexible method which utilizes student centered approach which would enhance continuing professional development and lifelong learning which are critical aspects in nursing practice.(Woodall, 2013, Darvish, etal, 2014, Francis, 2013)

Despite the benefits of utilizing eLearning as an instructional approach several authors have documentant a wide range of factors which inhibit the use of eLearning in higher education and also nursing education. Such factors have been outlined as inadequate eCompetence among faculty, lack of adequate ICT resources in some institutions and slow or lack of internet services, geographic location of learners, economic factors such as inability to buy ICT gadgets by learners. (Allen & Seaman, 2007, Barrett & Carney, 2005, Odunayo, 2013). Other factors associated with low utilization of eLearning are the fear of instructors losing control in the learning process, human interaction is reduced hence reducing chances of
providing guidance and motivation for students and thus students feeling isolated (Yung-Ming, 2014).

The researchers highlighted the importance of government support in developing policy which can enhance ICT training and in prioritizing structural and environmental developments to enhance ICT access. It is also evident that in today’s dynamic health systems, technology plays an important role in education so it is very appropriate for Nurse Educators to possess ICT competencies in general. (Darvish, Bahramnezhad, Keyhanian & Navidhamidi, 2014). Other observation which have been revealed by researchers are that there are several models which have been developed to understand eLearning but there has been an omission in interrogating the social factors which may promote acceptance of electronic learning. (Pi-Tzong, His-Peng & Tzu-Chuan, 2012)

**Literature synthesis**

There is consistency and agreement in the studies reviewed that there is a rapid growth in information communication technology with an increased focus on educational delivery methods and that nurse educators have to integrate eLearning technology into nursing education to develop enhanced skills among graduate nurses. (D’Souza, Kardada & Castro, 2014).

There is also an agreement that eLearning is viewed as an innovative approach for delivering designed, learner-centered, interactive and facilitated learning environment and found to enable students to be independent, have a self-directed and self-discipline. (Noesgaard & Orngreen, 2015, Pourghaznein, Sabeghi & Shariatinejad, 2015).

Some authors have a view that learning should be blended and not entirely rely on eLearning and throwing away other traditional pedagogies so as to reduce student isolation as some situation in teaching and learning requires face to face interaction. There is an agreement that even though eLearning is a preferred method of instructions there are certain factors which may affect and limit its utilization. (Odinayo, 2013, White & Sykes, 2012).

**Methodology**

This literature review was conducted to identify factors affecting the use of eLearning in nursing education. Data search was done electronically utilizing credible source such as Ebsco, Google search and Pubmed. Key words utilized to search were eLearning, nursing education, eCompetence, information technology and barriers for eLearning.

**Inclusion criteria**

Credible articles from peer reviewed and reputable journals were used to retrieve information related to barriers and utilization of eLearning in nursing education.

**Exclusion criteria**

Articles which did not relate to utilization of eLearning nursing education, barriers affecting learners were not considered for the discussion.

**Results**

The findings of this literature review indicates that attitude of educators towards use of ICT in teaching and learning, provision and access to ICT resources, cost, time has been outlined as the common factors which affect the use of eLearning. (Pie-Chen, et al, 2007) This congruent with the findings by Odunayo, et al, (2013). Who also highlighted factors such as economic factors which include the cost of purchasing ICT gadgets, the geographical location of students which contributes to poor ICT access and the lack of required ICT skills. The above are the major factors which inhibit lecturers utilization of eLearning. Robin & Graham, (2009) emphasized the need for government policies to support the structure and resources required for adequate implementation of eLearning and including Nurse educator preparation in obtaining ICT skills as the play the major role in teaching and learning.
### Table 1. Benefits of eLearning in nursing education

<table>
<thead>
<tr>
<th>Authors</th>
<th>Name of article</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kala, S, isaramalai, S &amp; Pohthong, A. (2010)</td>
<td>Electronic Learning and Constructivism: A Model for Designing Effective Learning Experiences</td>
<td>Providing consistency with the delivery of educational activities, reducing instruction time, enhancing cognitive recall and mastery of learning</td>
</tr>
</tbody>
</table>

### Table 2. Barriers affecting utilization of eLearning in nursing education

<table>
<thead>
<tr>
<th>Authors</th>
<th>Name of Article</th>
<th>Barriers</th>
</tr>
</thead>
</table>
Discussion

The findings of this review demonstrated various barriers that hinder utilization of eLearning in teaching nursing. Factors such as lack of ICT skills or eCompetence, lack of resources and cost are outstanding. However despite the barriers highlighted benefits of utilizing eLearning can not be over emphasized such as encouraging critical thinking through independent learning and accessing information despite the geographical location. Some authors feel that eLearning be blended with the traditional face to face approach to avoid students isolation and to enhance student’s guidance.

Recommendation

Based on the literature reviewed and with the highlighted barriers to utilization of elearning the following recommendation are proposed:

1) Faculty development in eLearning pedagogy
2) There should be establishment of professional development programmes carefully designed to support educators to transform their ICT knowledge
3) Government policies should encourage provision of ICT facilities and infrastructures in rural areas to reduce the access gap.
4) Clear eCompetences required for nurse educators should be established

Lesson learnt

Nursing education nowadays has changed from teaching to learning and therefore this paradigm shift challenges educators to design educational experiences that enhances cognitive mastery by integrating technology in the teaching and learning process. There are factors which can affect eLearning performance despite its preference over other methods of teaching and learning. Despite the advantages of eLearning traditional approaches are not to be abandoned as they also provide benefits which would not be achieved by eLearning such as reducing students isolation and situations which may require face to face interaction.

Conclusion

The review of this paper was focusing on the factors affecting utilization of eLearning as an emerging teaching pedagogy. eLearning is viewed as an alternative method of teaching to the traditional face to face education which can be utilized to meet students needs and enables learner to learn anywhere without being limited by geographical location. It provides several advantages such as improved independence in learning and enhance development of critical thinking skills. However there are barriers which educators face which pose challenge in adequately utilizing technology in the teaching and learning process.

It is very imperative that nurse educators be equipped with the skills of integrating technology in their teaching which requires support and resources.

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Factors affecting Compliance to Infection Prevention and Control guidelines, by Nurses at St. Dominic Mission Hospital, Ndola Copperbelt, Zambia

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Abstract

Background: Compliance to infection prevention and control is a major problem worldwide in Health Care Facilities and especially in developing countries, putting patients at higher risk of Health Care Associated Infections, imposing avoidable suffering, longer hospital stay, disability and death on patients; increasing extra costs on healthcare system and wider economy. Health Care Associated Infections in developing countries including St. Dominic’s mission Hospital in Zambia are at an increase.

Main objective: To assess factors affecting compliance to Infection Prevention and Control guidelines by nurses at St. Dominic’s Mission Hospital, Zambia.

Method: A cross-sectional study was conducted to elicit factors affecting compliance to Infection Prevention and Control guidelines. Data collected by self-structured questionnaire of both closed and open ended questions. Purposeful sample of 30 nurses participated.

Results: 30 nurses participated: 19 females and 11 males; aged 21 to 50 years. Majority (82%) diploma Holders, did registered nursing. Findings revealed that (42.2%) had knowledge on use of red containers, (68.5%) used yellow containers correctly. (39.3%) indicated inadequate knowledge, concerning Infection Prevention and Control. Participants’ general information about Infection Prevention and Control guidelines availability, who was supposed to comply and when, was adequate and 99% valued the importance of Infection Prevention and Control guidelines. Factors affecting Infection Prevention and Control compliance were: Inadequate materials and equipment (76.6%), workload (47.9 %), shortage of staff and negative attitude 38.3%. Others were: Overcrowding 33%, inadequate knowledge and finance 16%, also lack of supervision and inadequate departmental meetings on Infection Prevention and Control.

Conclusion and recommendation: Despite participants’ knowledge on Infection Prevention and Control guidelines, compliance needed to be encouraged through supervision and having departmental meetings.

Keywords: Infection, infection control, compliance, health care-associated infections guidelines, health care providers, nurses, St. Dominic Mission Hospital, factors affecting.

Introduction

Purpose and significance of the research: This research has been conducted to assess factors affecting compliance to infection prevention and control guidelines among nurses at St. Dominic’s Mission Hospital. When health care associated infections are not prevented, result is serious illnesses, leading to suffering and death of patients, healthcare system is affected in terms of many patients is hospitalized, wider economy and society equally affected negatively as the hospitalized patients become less or un productive.

The significance of this research has added to evidence based researches on factors affecting compliance among healthcare providers, especially nurses. Findings are beneficial to both patients and Health Care Professionals in improving compliance; prevent infections, providing quality health services, preventing avoidable suffering on patients and families, and preserving life.
This research was a reminder to nurses that they have patients’ lives in their hands, hence they need to be acquainted, equipped, and emulate Florence Nightingale's observation regarding patient care, which says that the first responsibility to the patient is to do no harm.

**Problem to be solved:** Compliance to infection prevention and control has remain the major challenge and problem in most countries especially in developing countries, even in Health Care institutions, exposing patients to high risk of developing Health Care Associated Infections, resulting in imposing avoidable suffering on patients and their families, longer hospital stay, permanent disability and death; increasing extra costs on the healthcare system and wider economy. The Health care associated infections are mainly caused by contact with contaminated hands of nurses, equipment (stethoscopes, blood pressure machines), health care interventions (surgery, diagnostic testing or invasive devices), and environmental.

Health Care Providers, mainly nurses are often in contact with patients, and handle different instruments in Health Care Facilities, there-by they can be source of Health Care Associated Infections. This is the reason why nurses should strictly comply with infection prevention guidelines/ standard precautions like washing of hands in between contacts with patients, body secretions, excretions, any invasive procedure, and contaminated equipment (Kozier et al., 2004).

**Existing solution to the problem:** To combat this problem, infection prevention and control guidelines are in place in most countries, Health Care Associated Infections are preventable through compliance to guidelines, which many times has been very difficult among Health Care Providers (Gould 2009).

World Health organization (WHO), states that, Health care Associated Infections occur worldwide, irrespective of country’s level of development; sadly in developing countries are 2-20 times higher than those reported in developed countries (WHO, 2010). Furthermore, Infection Control Africa Network, reported that there are issues related to practices by Health Care Providers that continue to fuel transmission of Health Care Associated Infections in Africa; among them are attitude and behaviour (ICAN, 2011).

Many evidence- based interventions for reducing health care associated infections have been suggested, and Centre for Disease Control has developed specific guidelines aimed at preventing transmission of micro-organisms within hospital facility, (Siegel J. et al., 2007).

In Zambia, a study done at Ronald Ross general hospital in Mufulira (Katowa P. et al.,2007) found out that Health Care Associated Infections are still a major challenge as demonstrated by the increase in wound infections among patients with caesarean section (30%), indicating the need for compliance.

Moreover, in 2010 the researcher had observed that some Health Care Providers in some Hospital in Zambia, showed no interest in complying with Infection Prevention and Control guidelines resulting in spreading of preventable Health Care Associated infections which has been escalating in developing countries (St. Dominic Mission Hospital inclusive); hence the urge to find out factors affecting compliance with Infection Prevention and Control guidelines among Nurses at St. Dominic’s Mission Hospital.

**Study limitations:** Study participants were only nurses; excluded other professionals and support staff. This could result in missing other key informant’s rich information on Infection Prevention and Control, from those working at St. Dominic’s Mission Hospital.

Due to running out of time during data collection period, some missing responses in the questionnaire could not be followed up; hence important information could have been missed, to make the report richer

**Method used**

The research was done at St. Dominic’s Mission Hospital, Ndola district, Copperbelt province, Zambia. This is the first level Hospital that was recently upgraded from a Health Centre. The Hospital was established 1993, has the bed capacity of 100 and 50 cots.

The research used a cross-sectional quantitative design, rationale being that cross sectional is suitable as it saves time and resources (Saunders et al., 2007).
The research was conducted in August/September 2016. Data was collected at one point in time which was appropriate due to limited time and inadequate resources for the whole research. Collected data gave details on factors affecting compliance of infection prevention and control guidelines among nurses. Findings would assist policy makers in identifying appropriate ways of preventing and controlling health care associated infections.

Purposive sampling, a type of non-probability sampling, which is extremely useful was used to gain useful and rich, also in-depth information about nurses working in male and female medical wards, male and female surgical wards and maternity wards, simply where nurses come in direct contact with patients.

Data collection method was self-administered structured questionnaire of both open and closed ended questions. Questionnaires were hand delivered to 30 nurses and then hand collected, to ensure confidentiality; and data collected were verified for quality. Primary and secondary data were collected; primary data included; social demographic, respondents’ characteristics of age and sex, marital status, and number of years in service which assisted in assessing factors affecting compliance, and secondary data looked at guidelines available at the facility.

**Strengths of data collection method**

The method was easy as respondents were given a self-structured questionnaire only once, which was cheap.

**Limitations during data collection period**

There was limited time for the researcher to interview and to distribute the questionnaires to a bigger number of participants; hence some missing values were encountered in some questionnaires.

**Results**

From 30 participants, majority 27(99%) had learnt about Infection Prevention and Control, 20(93%) were familiar with Infection Prevention and Control guidelines, 23 (97.9%) agreed that St. Dominic’s Mission Hospital has Infection Prevention and Control guidelines available, and (86%) had Infection Prevention and Control guidelines in their departments. Therefore, results portray knowledge on information about Infection Prevention and Control, and availability of Infection Prevention and Control in the hospital and departments.

Concerning source of Infection Prevention and Control information, (66%) participants received from training (schools), while minority (1%) got from internet and books. Frequency of Infection Prevention and Control meetings, (37%) had it quarterly and (34%) during performance assessment, (20.9%) never attended any Infection Prevention and Control meeting. A great number of participants (96%) knew that every healthcare provider was responsible in implementing IPC guidelines.

For individual Infection Prevention and Control practice; (47%) said that they always practice, while (50%) do it at times; 2.4% rarely implement Infection Prevention and Control.

45% of participants said that Health Care Association Infections had decreased in the year 2012, 17% had an increase of Health Care Association Infections, while 38% did not know anything.

Hands were known to transmit infections more in health facility by (72.9%); and (95.9%) participants knew that hand washing was priority in Infection Prevention Control. Knowledge level was adequate.

Recommendation of gloving as a barrier protection to reduce the risk of contamination during contact with body fluids and when drawing blood was known by 95% participants and 5% mentioned while examining patients.

The research results showed that participants had adequate knowledge; (94.5%) response was that before any invasive surgical procedure, you needed to wash hands, this was strongly
believed; as well as before any procedure (84.4%). However, when you arrive and before leaving work had (50%), which was average knowledge.

45% of participants said that Health Care Associated Infections had decreased in the year 2012, 17% had an increase of Health Care Associated Infections, while 38% did not know anything.

Recommendation of gloving as a barrier protection to reduce the risk of contamination during contact with body fluids and when drawing blood was known by 95% participants and 5% mentioned while examining patients.

**Discussion**

**Social demographic characteristics of study participants**

Total number of study participants was 30 nurses. Their age ranged from 21 to 60 years, majority were 31-35 years. 55% of the study participants were married, reason being that, at this time they had completed their diploma course, as reflected by high number 82% of diploma holders and mostly as registered nurses 57%; having worked between 1-5 years.

**Participants’ general information about Infection Prevention and Control**

Findings revealed that most participants had heard about Infection Prevention and Control during professional training and that they were familiar with Infection Prevention Control guidelines, and that the guidelines were available in their hospital and departments.

Concerning source of Infection Prevention and Control information, majority knew from training (schools), while minority from internet and books. Mostly participants attended meetings on Infection Prevention and Control quarterly or during performance assessment, while (20.9%) never attended any Infection Prevention and Control meeting. Therefore, results shows adequate participants’ general knowledge on Infection Prevention and Control, and Infection Prevention and Control guidelines availability in hospital and departments; however, Infection Prevention and Control meetings needed to be strengthened.

Having Infection Prevention and Control guidelines in place was in line with evidence-based interventions for reducing Health Care Associated Infections, and Centre for Disease Control had developed specific guidelines aimed at preventing transmission of microorganisms within hospital facility (Siegel J. et al., 2007).

**Knowledge of nurses towards infection prevention and control**

Specific objectives on participants’ Infection Prevention and Control knowledge level were: finding out who was responsible in implementing Infection Prevention and Control guidelines, what transmitted infections more in health facilities, when individuals had to practice Infection Prevention and Control, priority in Infection Prevention and Control when providing care to client, when gloving was recommended as a barrier protection, when hand hygiene was done; also what red, black and yellow containers/bin liners in hospital were used for, and when health care providers were complying with Infection Prevention and Control practices.

The findings indicated that 96% of participants knew who was responsible to implement Infection Prevention and Control, and 95.9% that hands transmitted infections was priority in Infection Prevention and Control. 90% of participants knew that every time healthcare providers were supposed to comply with Infection Prevention and Control.

Coming to ‘when hand hygiene should be done’, most answers proved participants’ adequate knowledge, for instance: ‘before any invasive surgical procedure’ 94.5% strongly agreed to be true. Therefore, reflecting on given results, majority of participants had adequate knowledge, this was as a result of the series of training attended at school, meetings and during performance appraisal.

However, response for washing hands when you arrive and before leaving work, scored only 50.0%, implying that another 50% participants did not practice. This is in agreement with a study by Askarian Mehrdad et al., (2009) among a group of nursing and midwifery
instructors and students on education and knowledge, found that there were poor practices, and stated the importance of continuous education to acquire adequate knowledge to aid compliance to Infection Prevention and Control guidelines (Askarian Mehrdad et al., 2009).

The low response on washing of hands (50.0%) when nurses came for work and before leaving work signified noncompliance to Infection Prevention and Control guidelines. Literature has it that Health Care Associated Infections are potentially preventable and it was possible to reduce the rate through compliance to Infection Prevention and Control, the difficulty came from non-compliance (Gould, 2009).

**Inadequate materials and equipment**

This ranked on top as factor affecting Infection Prevention and Control. Samuel has supported this fact in a study done on availability of Infection Prevention and Control logistics, stated that, lack of water, and poor quality of available soaps, lack of funds, overworked staff, reduced motivation and increased the spread of Health Care Associated Infections, and reduced compliance (Samuel et al., 2005).

Other studies supported that inadequate equipment, inadequate space, and staff shortage contributes to poor Infection Prevention and Control despite having Infection Prevention and Control guidelines in place (Of et al., 2010).

Workload and shortage of staff, also as factors affecting compliance to Infection Prevention and Control, This was supported with a study conducted by Yassi on shortage of staff and workload, indicating that although the gap between the need for Health Care Providers and the supply was experienced globally, the disproportion was huge, that the regions with the greatest need had the fewest providers: sub-Saharan Africa and southeast Asia together had 53% of the global disease burden but only 15% of the world's Health Care Providers. Moreover, the shortage experienced by countries that can least afford was worsened by Health Care Providers' migration to high-income countries, especially in sub-Saharan Africa (Yassi A et al., 2009).

WHO had also indicated that 36 out of identified 57 countries with critical shortages of Health Care Providers were in Africa (WHO, 2010).

Overcrowding of patients and limited space was also mentioned as a factor (33%); less facilities was emphasized by 65% respondents saying that their departments had less facilities for Infection Prevention and Control. 63.2%, of participants indicated that bed occupancy compromised good Infection Prevention and Control practices, with more emphasis that overcrowding affected Infection Prevention and Control, while 28.6% participants disagreed to this fact. This truth is supported by Florence Nightingale, first nurse on record who attempted to prevent infections during her work in the Crimean War, by recognizing that placing a large number of patients in limited space contributed to spreading of infections, introduced many hygiene protocols to be complied with (Perry, 2007).

Overcrowding as a risk factor for Health Care Associated Infections has been confirmed by Hamel, in a retrospective cohort of adult patients, with exposures characterized as total daily roommate exposures and daily unique roommate exposures (Hamel M et al., 2010).

Brown and Arshak agreed to the fact that high bed occupancy, low staff-to-patient ratio contributed to spreading of Health Care Associated Infections (Brown, Crawford et al., 2008), and (Velusamy, Arshak et al., 2010).

Attitude and practices regarding Infection Prevention and Control guidelines among Health Care Providers were still low, revealed by Ajay, after conducting a study on hand hygiene among Health Care Providers. His conclusion was that there was need to address understanding and attitude to Infection Prevention and Control guidelines (Ajay K. et al., 2012).

Inadequate finance was among factors affecting compliance to Infection Prevention and Control. This is in agreement with Robinson who stated that Africa carried 25% of the world's disease burden, yet had only 3% of the world's Health Care Providers and 1% which was
close to nothing of the world's economic resources to meet Infection Prevention and Control challenge (Robinson M, 2008).

**Recommendation from participants, on how best to improve compliance to Infection Prevention and Control guidelines**

The following were among participants’ responses on how best to improve Infection Prevention and Control compliance:

- More supplies of material and equipment 72% participants,
- Training in Infection prevention and Control 65% participants,
- Increase number of staff 62% participants,
- Encourage more Infection Prevention and Control departmental meetings,
- Avoid overcrowding of patients 55% participants,
- Intensify supervision 52% participants.

Almost all participants’ suggestions, were answering to the problems at hand (the factors affecting compliance to Infection Prevention and Control guidelines).

**Study limitations**

Study participants were only nurses; excluded other professionals and support staff. This could result in missing other key informant’s rich information on Infection Prevention and Control, from those working at St. Dominic’s Mission Hospital.

Due to running out of time during data collection period, some missing responses in the questionnaire could not be followed up; hence important information could have been missed, to make the report richer with information.

**Conclusion and recommendations**

**Conclusion**

Based on the findings, the following were drawn: Most participants had adequate knowledge on Infection Prevention and Control, and on factors affecting compliance, among them were: inadequate material and equipment, workload, shortage of staff and overcrowding of patients. Other factors included by participants: laxed supervision and inadequate departmental meetings on Infection Prevention and Control.

**Recommendations**

Recommendations were based on findings from the research, and analyzed data.

To healthcare providers (Nurses) at St. Dominic’s Mission Hospital

Nurses are commended for the majority’s adequate knowledge on Infection Prevention and Control issues. However, the following are some recommendations and suggestions that need to be implemented by nurses:

- Should comply with hand washing every time they arrive for work and before leaving work, as the practice at this time is low.
- Should continue working on improving positive attitude more and more, so that the percentage of negative attitude keeps reducing. Positive aids self motivation, despite workload.
- Need to read more on Infection Prevention and Control guidelines in order to differentiate properly different disposal methods, and be able to dispose wastes using appropriate containers.
- Should avail themselves for departmental meetings when called upon, so that they continue enriching one another on Infection Prevention and Control deliberations, to improve quality services.

To St. Dominic’s mission hospital management

The hospital is commended for having Infection Prevention and Control guidelines in place, and being used in various departments. The following were suggestions and
recommendations, so as to help nurses and other healthcare providers improve on Infection Prevention and Control compliance:

- Need to supply adequate materials and equipment for Infection Prevention and Control guidelines implementation.
- Should encourage capacity building in Infection Prevention and Control through workshops for most nurses; the pictures showed a large number never attended any workshop, except when they were at training school.
- Should continue to lobby for more nurses from the Ministry of Health, in order to ease workload and be able to offer quality care to the patients.
- Intensify on supervision in different departments focusing on Infection Prevention and Control compliance, and be able to help nurses fill in missing gaps for Infection Prevention and Control compliance.

To the ministry of health

The Ministry of Health is congratulated for continuous efforts being made on measures to improve health services to the society, and recognize more and more the needs of healthcare providers.

However, the ministry should support and fund more research on Infection Prevention and Control, to see whether other health facilities in Zambia have similar drawbacks, also that researchers would be able to explore more factors that affect Infection Prevention and Control, and be part of the solution, by providing evidence based information.

A map showing Ndola, in Ndola district, Copperbelt Province, Zambia where the research was conducted.
### Table 1. Participants’ responses on when hand hygiene should be done.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree (%)</th>
<th>Agree (%)</th>
<th>Disagree (%)</th>
<th>Strongly disagree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>When you arrive and before leaving work</td>
<td>(50.0%)</td>
<td>(50.0%)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Before any invasive surgical procedure</td>
<td>(94.5%)</td>
<td>(5.5%)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Before any procedure</td>
<td>(84.4%)</td>
<td>(15.6%)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Immediately after removal of gloves</td>
<td>(68.1%)</td>
<td>(31.9%)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Before direct contact with next patient</td>
<td>(75.0%)</td>
<td>(23.9%)</td>
<td>(1.1%)</td>
<td>-</td>
</tr>
<tr>
<td>Only when you see them physically dirty</td>
<td>(4.3%)</td>
<td>(12.8%)</td>
<td>(35.1%)</td>
<td>(47.9%)</td>
</tr>
<tr>
<td>Only when there is soap to use</td>
<td>(1.1%)</td>
<td>(8.7%)</td>
<td>(28.3%)</td>
<td>562.0%</td>
</tr>
</tbody>
</table>

### Table 2. Factors affecting compliance to infection prevention and control.

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortage of staff</td>
<td>38.3%</td>
</tr>
<tr>
<td>Work load</td>
<td>47.9%</td>
</tr>
<tr>
<td>Inadequate finances</td>
<td>16.0%</td>
</tr>
<tr>
<td>Inadequate materials and equipment</td>
<td>76.6%</td>
</tr>
<tr>
<td>Inadequate knowledge</td>
<td>17.2%</td>
</tr>
<tr>
<td>Negative attitude of health care providers</td>
<td>38.3%</td>
</tr>
<tr>
<td>Overcrowding of patients and limited space</td>
<td>33.0%</td>
</tr>
</tbody>
</table>

**Figure 1.** Health care associated infections (HCAIs) at St. Dominic’s Mission Hospital, year 2012
Figure 2. Recommendation from participants, on how best to improve compliance to IPC guidelines

Figure 3. Factors affecting infection prevention and control compliance

References


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A Nursing Research to Investigate the “Perception of Women at MPOBI Town on Criminal Abortion and its Effect”

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Abstract

Criminal abortion is common among women despite its effects; physical, psychological and physiological. This research was conducted at Mpobi community of Aboaso in the Afigya Kwabre District in the Ashanti region of Ghana. The aim of the research was to determine the perception of women at Mpobi community on criminal abortion and its effects. A simple random technique was used to select the area from other localities. By this method each area had an equal chance of being selected. After selecting the area, an accidental method was used to select thirty women from their various homes. With this method, a data was taken from the women who were available and meet the research criteria. The target population was on women from age of 13 and above. A designed questionnaire was administered on the sample. Analysis of data was by transforming the raw data into statistical forms such as figures, tables and percentages. The findings indicated that the issue of criminal abortion was high among adolescents and married women who have too many children; however knowledge on criminal abortion among the women were adequate.

The main factors accounted for the high incidence of criminal abortion in the community were, having too many children, what perception is and how does person channel it appropriately and contraceptive failure.

Base on the findings some recommendations were made which included;

- The government should develop solid policies to restrict criminal abortions, expand and provide well equipped laboratories in most remote clinics and hospitals in communities for easy access to be checked for which family planning method is suitable for each person.
- The affluent, private thriving businesses and NGO’s should come cooperatively to aid and make family planning methods, screening and medications free or at least cost a penny for to aid prevent criminal abortion.
- There is a need for proper education about the harmfulness of criminal abortion and the after effects of abortion. Proper education, awareness, training session and guidance should also be given to the people who are involved in criminal abortion about the after effects of the abortion.
- Family planning methods should be taught to the adolescent by their immediate parents, guardian and any other respected people in the community.
- The church and various Religious faith should be endowed with knowledgeable personnels who can help assimilate to the adolescent the righteous acts of not ending the life of a growing foetus on the account of unexpected results from gratifying the fleshly unsuccummable strong desire for sex.
- The adolescent should be raised well with proper standards to bring in consciousness that what one perception starts from the heart through the sensual gates of the body especially the eyes, so as to gain requisite knowledge, self-help and channelling the perceived thoughts with the appropriate approach.
- Illegal abortion cases should also be restricted by paying attention to the lifestyle of our growing female wards. The government, persons and personnel and the matured should each play his role in this regard.
Background to the study

According to Cooper and Fraser (2009), in UK, abortion is defined as the termination of pregnancy by before the fetus viable that is before 24 weeks gestation.

Criminal abortion is a type of abortion which is not done according to the existing laws of the land. According to Wikipedia, 4th May (2013), Abortion can also be done by the pregnant woman outside the recognized medical system. And this includes abortion induced through illegal means. However an unsuccessful attempt to cause such an abortion can cause lasting damage to both the pregnant woman and to the child.

According to Ahiadeke (2001), another unpublished thesis proved this finding not uncommon, among 1663 young women interviewed; almost 70% responded that they had an abortion. Another multi-year maternal mortality review conducted at a teaching hospital in Addis Ababa proved the grave outcomes among young women, 14% of the maternal deaths in that study were women under twenty.

A study concluded in 1968 proved that, over 1.2million illegal abortions were performed in the United States of America. A number of which were performed by women acting alone. The study suggested that women dying as a result of criminal abortion exceed those performed by legal means. In Countries such as Ghana were the laws restrict elective induce abortion, data to quantify the incidence of abortion are scare (Ahiadeke, 2001)

A multistage random sampling design was used to identify 18,301 women aged 15-49 from the 10 regions of Ghana between January and March 1997. Of the Identified women 1689 were pregnant. From March 1997 to March 1998, field work living in the pregnant women’s communities monitored their health and pregnancy outcomes, including self-induced abortion.

Results: During the study period, the rate of abortion in the study areas was 17 induced abortions per 1000 women of child bearing age. There were 19 abortion per 100 pregnancies or 27 abortions per 100 live births. The majority (600) of women who had an abortion was younger than 30, and 36% were nulliparous. 45% had obtained their abortions before the 7th week of gestation and 90% had done so before the 10th week. Only 205 of the women said they had obtained their abortion from a Physician (Ahiadeke, 2001).

Women who live in urban areas, who were educated or who had four or more children had increasing odds of obtaining an abortion.

Although few Ghanaians would deny the widespread of the use of induced abortion in their countries, the clandestine nature of the practice severely hampers attempts to estimate the incidence of abortion at the national level. Until 1985, when criminal code was amended.

Ghanaian low prohibited induced abortion except when life was endangered by her pregnancy. The law now indicates that abortion is not an offense if it is caused by a medical practitioner specializing in gynecology or registered practitioner. In the government hospital registered private hospitals or clinic when the pregnancy is as a result of rape, “a female idiot” or incest. Pregnancy would involve risk to the life of the pregnant woman or the injury to her physical and mental health or where there is substantial risk that if the pregnancy were to carry to term the infant will suffer from or later develop into a serious physical abnormality or disease (Ahiadeke, 2001).

Despite the relaxation of abortion restrictions, the availability of abortion health in Ghana has not changed much. Ghanaian women have long turned to mix of traditional practitioners, quack doctors, physician and other sources such as qualified nurses to obtain an abortion, even though the unhygienic methods used in some cases (often involving insertion of foreign bodies into the uterus), can lead to life threatening complication. An investigation conducted at the outpatient department of Ankaase hospital revealed that many women have been reporting to the hospital with self-induced abortion, also recently there have been many reported cases at the emergency unit of the Methodist Faith Healing hospital (Ankaase) on the high incidence of abortions cases. This has compelled us as a team to investigate into the perception of women at Mpobi on criminal abortion and its effects.
The study, therefore aimed at finding the “perception of women at Mpobi community” on criminal abortion and its effects.

**Statement of the problem**

A report given at the emergency unit of Ankaase hospital in the Afigya-Kwabre District in the Ashanti Region indicates that many young women report with the issue of criminal abortion that necessitates the intervention of medical practitioners to prevent major complications. This has compelled us as a team to investigate into the perception of women at Mpobi Community on criminal abortion and its effect.

**PURPOSE OF THE STUDY**

The purpose of the study was to find out the perception of women in Mpobi community on criminal abortion and its effect.

**Significance of the study**

This research work was intended to investigate into the perception of women in Mpobi community on criminal abortion and its effect. It also served as a means for the government of Ghana, through the ministry of health and also the nurses and midwives council to make advertisement educating people on the effects of criminal abortion in the country and beyond.

**Delimitation**

This present research will focus on the assessment of the perception of woman on Mpobi community on criminal abortion and its effects.

**Limitation**

These were some difficulties encountered during the research which included Unwillingness of some respondents to answer the questions to their satisfaction because they thought their information may not be kept confidential. The findings could not generalize because smaller population was used. The instrument use in data collection was interviewing questionnaire, some of the responses from the respondents may be bias and may not be true reflection of the reality of this situation

**Objectives of the study**

The main objective of the study was to investigate the perception of women in Mpobi community on criminal abortion and its effects

**Specific objectives**

The specific objectives were to;

- Identify the perception of women on criminal abortion at Mpobi community
- Determine the reasons for the practice of criminal abortion
- Determine the methods used in performing criminal abortion
- Determine the effects of criminal abortion

**Research questions**

1. What is the perception of women on criminal abortion at Mpobi community?
2. What are the reasons for engaging in criminal abortion?
3. What method do women at Mpobi use to perform criminal abortion?
4. What are the effects of criminal abortion?

**Literature review**

**Introduction**

This review brings out some views on criminal abortion by various individuals and groups in previous existing literature.
Perception

Criminal abortion is an abortion performed outside recognized medical system. Abortion is defined as ‘termination of pregnancy (TOP) by any means before the fetus is viable. Viability is now considered to be reached at 23–24 weeks of gestation. Second trimester, or mid-trimester, is a period ranging from 13 to 28 weeks of gestation, which again is subdivided into an early period between 13 and 20 weeks and a late period between 20 and 28 weeks. In this review, we have limited late abortions up to 24 weeks gestation.

TOP by induced abortion is practiced worldwide. Induced abortion, either elective or therapeutic termination of a viable pregnancy, is one of the most ancient procedures. Of the 210 million pregnancies that occur each year, more than 46 million (22%) end in induced abortions (Guttmacher A. Institute 1999). A Majority (90%) of the terminations take place in the first trimester. Worldwide, mid-trimester abortion constitutes 10–15% of all induced abortions but is responsible for two-thirds of all major complications WHO (1997). Although the majority of abortions are performed in the first trimester, there is still a gradual increase in second-trimester abortion because of the wide scale introduction of prenatal screening programs detecting women whose pregnancies are complicated by serious fetal abnormalities such as cardiovascular and skeletal malformation.

Grossman (2012), an obstetrician with Ibis Reproduction Health, said many women attempt criminal abortion because they prefer to have a more private experience with their abortion which is certainly understandable. Grossman added that friends and family members often recommend these alternatives pregnancy termination methods which some women feel are “easier” then seeking abortion in clinics and hospitals. Mark Rousing, an obstetrician at St Barnabus hospital said taking abortificients “turns abortion into a nature process and make it look like a miscarriage”. He added, for people who do not have access to abortion for social reasons, financial reasons or immigration reasons, it does not seem like this is horrible thing. Criminal abortion is a health problem of global concern. In many developing countries, women know little about and have limited access to effective contraceptive methods, and as a result may experience unwanted pregnancies.

Furthermore, because of abortion's illegal status and the social stigma that accompanies it in Nigeria, precise information about it is difficult to obtain. Clearly, however, abortion is a major public health problem. Nigeria's maternal mortality rate is estimated to be 800 deaths per 100,000 live births and in West Africa overall, an estimated 14% of maternal deaths are attributed to abortion. Data on the number of complications and deaths related to abortions indicate that the consequences for women's health are serious, and the cost of treating women for complications places an additional burden on an already troubled health care system. Hospital-based studies reveal that induced abortions represent a substantial proportion of all gynecologic admissions (olukera 2010

Reasons why people commit criminal abortion

The problems related to abortion may be particularly severe for adolescent women. As increasing numbers of rural families migrate to urban areas, parental control and supervision are weakened, and young people are exposed to modern influences that encourage sexual activity in relationships that may not lead to marriage. Because contraceptive knowledge is low in Nigeria and access to services is poor, unplanned pregnancies among young unmarried women are increasingly common. Among adolescents, reasons for having an abortion include the desire to remain in school, financial concerns and fear of social reprisal because of wedlock pregnancy (olukrayondera, 2000).

Adolescents face unique barriers to obtaining a safe abortion. When they become pregnant, they are slower to recognize and accept the pregnancy; they are less likely than older, more experienced women to know where to seek advice and help; they may use ineffective methods to attempt to induce an abortion; and they may be unable to afford a physician's fee. All of these factors may cause delays, and the later an adolescent seeks an abortion, the more likely she is to suffer complications that may lead to hospitalization. Two hospital-based
studies found that of the women who said they had had an induced abortion, or whose symptoms indicated that they had had an induced abortion; about 70% were adolescents (Utah, 2002).

Induced abortion seems to be fairly common among married women of high parity, advanced age, and low educational status.

Adult Nigerian women's fertility preferences are also likely to be affected by increased urbanization and modernization, and increasingly, older women may want smaller families and greater control over the timing of their births. They, too, will be at risk of having an unwanted pregnancy if their family planning needs are not met. In a recent community study, 42% of abortions occurred after the first birth, and most of these were among married women. A common reason given by women for these abortions was poor timing of the pregnancy or the need to space births better. The use of abortion by married women to space births not only is a likely response to social change in recent decades, but is a traditional practice in northern Nigeria (Varkey & Fonn 1999).

Abortion remains largely illegal in countries such as Nigeria resulting in abortions being performed by an unqualified people. According to Utah, (2002) high morbidity and mortality rate from unsafe abortions suggest that unskilled people in unhygienic environment might be performing these procedures, implying that a more effective strategy had to be developed by family planning providers to reduce the use of unsafe contraceptive practices, including TOPs in Nigeria and other developing countries. According to Varkey and Fonn (1999), in many developing countries, safe abortion services are not available to the full extent permitted by law.

The predominant reasons for abortion were "too many children" (64.4%), contraceptive failure (20.3%), premarital affairs (8.6%), medical reasons (5.4%), and extramarital affairs (1.3%).

Methods used in performing criminal abortion

(Khokhar & Gulati, 2008), report that women in underdeveloped areas of India successfully perform abortions through the following methods;

Lifting of heavy weights, Consumption of mutton marrow, Consumption of dried henna powder Consumption of carrot seed soup, abdominal massage. Receiving punching kicks or other blows to the abdominal area. Belly flopping unto a hard surface.

Attempted removal of the fetus with a coat hanger or similar device inserted into the uterus through the cervix (the historical use of this method has led to the use of coat hangers as a symbol of the abortion rights movement, which associates dangerous methods of criminal abortion with the illegality of the abortion).

Attempted piercing of the fetus with a knitting needle or similar device inserted into the uterus through the cervix.

Ingesting high quantities of vitamin c, Pennyroyal or other substances believed to induce miscarriage.

Douching with substances believed to cause miscarriage (beginning in the 1960s, many women use coca-cola for this purpose, although its utility is at best dubious)

Vaginal pessaries, Yoga, Acupuncture, Hypothermia.

Trying to break the amniotic sac inside the womb with a sharp object or wire (for example an unbent wire, clothing’s hanger or knitting needle). This method can result in infection, and injury to internal organs (for example perforating the intestines), resulting in death.

Pumping toxic mixtures such as chili peppers and chemicals like alum, permanganate or plant poison into the body of the woman.

Inducing an abortion without medical supervision by self-administering abortifients drugs obtained illegally or by using drugs not indicated for abortions but not known to result in miscarriage or uterine contraction.
According to the New York Times, many women take the prescriptive drug misoprotol-FDA approved to reduce gastric ulcer to terminate their pregnancies. The drug sold under the brand name cytotec, is approved to induce abortion when taken with mifepristone or RU-486.

According to the New York Times women surveyed reported a wide variety of methods for using the drug including inserting pills into the vagina or letting them dissolve under the tongue.

Determining factors of criminal abortion, according to the New York Times report, many Hispanic women use medication or home-made concoctions in an attempt to end their pregnancy experienced despite the availability of safe legal method of abortion (Jeremy, 2010)

**Effects of criminal abortion**

There is a wide variety of symptoms of abortion's aftermath, ranging from mild grief to profound reactions which may include Post-Traumatic Stress Disorder.

It is the people working in the field of bereavement who have written about the need to resolve abortion losses and recognize that this disenfranchised loss surfaces during subsequent losses. The society, our churches, and our families do not recognize abortion as a legitimate loss.

In fact, the societal message says that this experience solves a problem and that it is a non-experience. With other surgical procedures, there is an acknowledgement of the need to recover and to process the experience.

Kolstad (1997), made an intensive investigation of 712 cases after abortion in Norway. Not one death resulted from operation. Although 10.35 showed some post-operative complications, only 2.7% could be considered serious. It was concluded that the frequency and degree of all complications were no more than those after childbirth. Menstrual disorders and frigidity, for example, appear in less than 1% of women. "Induced abortion is a comparatively harmless operation during the first 12 weeks of pregnancy and Lindahl followed 1,013 cases with complete medical checkups over a period of one to five years after abortion. Only one death could be associated with the operation. Immediate serious complications were found in only 3.6% of all cases. Indiana University's Institute of Sex Research did a qualitative study on complications of abortion. Although their sample was small-about 440 cases the results were strikingly similar to those in Scandinavia. Only 6.6% had severe, 6.8% moderate and 3.2% mild complications.

Huntington (1998) found out during 30 days study, 19% Patients were admitted for the treatment of Induced Abortion and estimated Induced Abortion rate in Egypt of 14.75 per 100 pregnancy.

In order to distinguish induced abortion from forensic medical point of view vaginal cytology was studied in 300 women, 100 of which had a clinical diagnosis of abortion. Result: (a) a cytological diagnosis is possible in the cycle, in pregnancy, and before and after abortion; (b) non-septic spontaneous abortion is characterized by an increasing and, after the abortion, high number of basophilic cells and of mucous, and a low number of eosinophils, increasing at first after 8 days. These results were confirmed by experiments with rats. Conclusion: cytology can give an evidence but not proof in distinguishing between spontaneous and induced.

Because of restrictive abortion laws and poor access to safe methods of pregnancy termination, many women resort to obtaining abortions under unsafe conditions. Worldwide, an estimated 20 million unsafe abortions and 70,000 maternal deaths due to unsafe abortions occur each year, and most of these events take place in developing countries. In Africa alone, an estimated 3.7 million unsafe abortions are performed annually, and approximately 23,000 deaths result from these procedures.

Under Nigerian law, performing an abortion is a criminal offense unless the pregnancy threatens the woman's life, and penalties for the offense are severe. Because of these legal restrictions and because of religious and social norms opposing abortion, the practice of
abortion is shrouded in secrecy; abortions are typically performed clandestinely, often by unskilled providers under unsanitary and dangerous conditions (Huntington 1998).

Abortion and estimated Induced Abortion rate in Egypt of 14.75 per 100 pregnancies. (Kamala 1997), found that 1271 women admitted for management of Abortion and its complications, 18 died. All these deaths were among those with Induced Abortion. In this group 16.66% cases had no evidence of infection and in them death was due to traumatic shock.

Akhbar (1998) found that a total of 1301 abortion cases were admitted during 1 year in all the 8 facilities selected for the studies of these, interviews and clinical exports could be completed for 1271 cases only. A total of 852 women (65.5%) had had Induced Abortion and other 419 women (34.5%) had had Spontaneous Abortion.

Begum (1991) found that Maternal Mortality was undesirable high in Bangladesh, the rates range between 4.8 and 7.8 per 1000 life birth and many of these deaths were caused by abortion related complications. In one survey of 15-24 year-olds in Addis Ababa, half of the 976 young women interviewed reported having been pregnant and 76% of these women told interviewers that they had a spontaneous (2%) or an induced abortion (74%).

Teenagers, who account for about 30% of all abortions, are also at much higher risk of suffering many abortion related complications. This is true of both immediate complications and of long-term reproductive damage.

Women under 17 have been found to face twice the normal risk of suffering cervical damage due to the fact that their cervix are still “green” and developing.

Many of the symptoms discussed are symptoms common to complicated mourning and to trauma reactions.

The effects of criminal abortions are grouped as follows:
Immediate Effects
Excessive bleeding (Hemorrhage)
Puncture and tearing of the womb (Uterus)
Infection from mild to fatal (sometimes parts of the baby are left inside the womb)
Cervical laceration in 5% of women
Pain, Shock, Vomiting
Psychological Effects
Grief, Low self-esteem, Depression, Guilt
A sense of alienation from self, friends and others
Shame
Isolation, self-imposed actions to avoid sharing the abortion experience with others
Anger, though this is often buried deeply. Depression and anger are flip sides of the same experience

Difficulty concentrating

Nightmares/"baby dreams":- These may take the form of some menacing creature attacking children, or of, as a woman described them, "dead dolls, dismembered babies, or babies in distress that can't be reached."

Auditory hallucinations of a baby crying

Flashbacks of the abortion experience that are triggered by such things as vacuum cleaners, which are reminders of the suction equipment; music on Muzak that was playing during the procedure; elevators which lead up to the clinic; or cookies served after the procedure.

Sleep disorders

Suicidal thoughts :- In a study done in Ohio by Suicide Anonymous Hotline over a 36-month period, of the 4000 women who called, 1800 had previously had abortions.

Inability to bond properly with subsequent children: Women will describe great difficulty in breastfeeding, bottle feeding, diaper changing and any activity that requires intimate
contact with the baby. The bond that does develop is characterized by overly protective behavior and emotional distancing.

- Phantom pregnancy: going to physicians' offices, crisis pregnancy centers, and emergency rooms believing she is pregnant.
- Spiritual wound: for many women, this may be the first experience of "serious sin." Some women fear that God will punish them, especially when it comes to future childbearing experiences.

**Social effects**

- Drug and alcohol abuse: In a California study of 12,000 pregnant women, it was found that among those with two or more prior abortions, virtually all consumed alcohol up to three ounces per day during the entire time of their pregnancy. A Boston City Hospital study found that among inner city women enrolled in pre-natal care, those who reported cocaine use were more than twice as likely to report two abortions and were three times as likely to report three abortions compared to the non-cocaine using control group.
- Relationship problems: 70% of romantic relationships end after an abortion. Some women also distance themselves from their nuclear family and from their closest friends.
- Intimacy problems: women often shy away from intimate relationships with males for fear of having to reveal things about her, including her abortion.
- Increased bitterness toward men--this manifests itself in terms of being able to really trust men in the future.
- Child abuse: women may have inappropriate coping mechanisms for dealing with frustration until the grief issue is resolved. The abuse may be emotional in terms of distancing or actual physical striking out against a subsequent child. Women sometimes share that their "perfect child" was the one they aborted, and now they are left with this one.

**Physical Effects**

- Physical pain: women may describe pain such as abdominal pain, menstrual pain, or back pain.
- Physical numbness
- Hyper alertness
- Difficulties in subsequent pregnancies: This may include high anxiety during pregnancy, being fearful of another pregnancy loss such as a miscarriage, still birth, or ectopic pregnancy as well as infertility. It is possible that women will incur a pregnancy complication due to some damage that might have happened during or immediately following the abortion procedure, such as cervical damage, uterine scarring or fallopian tube scarring caused by low-grade infection.
- Difficulties in subsequent labor and delivery, such as labors that starts and stops or that fails to progress resulting in Cesareans.

**Methodology**

It involves the research design, settings used by the researchers, population and sampling use and also the rational for using such methods. It also talks about data collection procedure, tools and methods of data collection, validity and reliability of the study.

**The research design**

The research design used in this study was quantitative and descriptive design. Quantitative design is formal, systematic, objective process in which numerical data are utilized to obtain information from the world. Therefore this will help us to obtain information about criminal abortion and its effects on women in Mpobi community. It describes a situation, people or activities by systematic collection of information. Descriptive research was used because it generates room for a particular research.
The research settings

The research was conducted at Mpobi community in the Afigya-Kwabre District of the Ashanti Region. The town Mpobi and close villages covers an area of about 220 kilometer squares and have a population of about twenty thousand, Two hundred and thirty seven (20,237) people as estimated from the 2012 population census. The town close to this community is blessed with a well-structured hospital which has specialized in conditions of the infant diseases and general medical practice obstetrics and gynecological unit as well as surgery. The inhabitants of Mpobi are mainly Akan with few Ewes, Northerners and Fulani’s. There are Christians, Moslems, Traditionalists and other religion within the town. The main occupation in the town is both large and small scale farming, trading and government workers. The vegetation of Mpobi is tropical rainforest and the major crops produced by the farmers are tomatoes, plantain and cassava. The literacy rate in the town is average with most couple having their children in educational institutions. The town has suburbs such as Hemang, Ankaase, Aboaso, Edwiratea, and others and among these suburbs Mpobi was chosen as the study unit. Mpobi shares boundaries with Ankaase, Edwiratea and is part of Mpobi; the main work of the people of Mpobi is farming and some small scale enterprises including hairdressing. The Mpobi Township was to be used in the research but to the large nature of the population, one of the localities within the township was randomly selected to the study area.

Population

Mpobi is a small community with about thousand one hundred (1100) people with about three hundred (300) males and seven hundred (700) females. Above all, 60/o is youth, 20/o is children and 20/o is aged. This means that, the youth dominate more in that area. The population for the study was targeted on women between the ages of thirteen (13) years to women forty years and above who are residing at Mpobi in the Afigya-Kwabre Municipality.

Sample technique and sample size

A sample is a representation of the population. In all, thirty women were selected from Mpobi for the research. A simple random technique was used to select the area from other localities in Mpobi Township.

By this method each area has an equal chance of being selected. After selecting the area, an accidental method was used to select thirty women from their various homes. With this method, a data was taken from the women who were available and meet the research criteria.

Tools and methods of data collection

Research tool is the means by which data is collected. The researcher makes use of questionnaires which consist of thirty items including both closed and open ended questions. The questions were self-designed; it was constructed to find out the perception of women on criminal abortion and its effects. Questionnaires were developed to obtain data for the research which were in line with the research questions and objectives. The open ended questions are those questions that would make the respondent express their views freely. The closed ended questions are those questions that would give the respondent an option to select an answer from the list of items given without giving reasons.

Pilot study

A pilot study was conducted to correct any ambiguity in the questionnaire. The questionnaires were given to 15 respondents at Ankaase, a community in Afigya-Kwabre. The area was selected because it has a comparable feature with the main study area. It was conducted to a clear incent about the problem in the questionnaires. Permission was sought from the Assemblyman and the chief of the area before this exercise was undertaking. After the problem has been identified there was redrafting of the questionnaire for the respondents.
Ethical considerations

Consent was obtained from individual respondent. The purpose of the research was explained to the respondents and confidentiality was ensured. Their culture, values, traditions and their ideas were respected.

Validity and reliability

The tools which were used actually measured what was supposed to measure, In order to prove the reliability, a pilot study was conducted at Ankaase, one of the localities with comparable characteristics to the area under study to eliminate any biases from it and to have a clear view about the problem in order to select appropriate item for the questionnaire. It was given to resource personnel to help edit out any mistakes and with this, the content for the questionnaires were proven reliable.

Data collection

Data collected from 30 respondents were analyzed using statistical data in which the results were presented by pie charts, bar chart, tables and statements.

Analysis of data

This chapter deals with analysis of results and presentation of the data collected. The analysis was done in phases. The data sorted in measuring usable categories manually, analyzed and presented using frequency or bar chart or pie chart.

Section A

Demographic data

This describes the characteristics of the respondents. It includes their Age, Marital status, Religion, Occupational background, Ethnicity, Educational level.

Table 1. Age Distribution

<table>
<thead>
<tr>
<th>AGE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-19</td>
<td>12</td>
<td>40</td>
</tr>
<tr>
<td>20-30</td>
<td>8</td>
<td>27</td>
</tr>
<tr>
<td>31-40</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Above 40</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>TOTAL</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

Most respondent were between the ages of 13-19 years making up 12 (40%) of the total, followed 20-30years making up 8 (27%), then 31-40years making up 6 (20%). Finally the least ages were above 40 years making up 4 (13%)
The most respondent, without children were 12 representing (40%) of the total, those having one child were 3, representing (10%), then those having two children were 5 representing (17%), those with three children were 8 representing (26%). Finally those with above three children were 2 representing (7%).

From the figure 2, it indicates that out of 30 respondents 12 (40%) were single, 10 (33%) were married and 8 (27%) were divorced.

<table>
<thead>
<tr>
<th>Educational Background</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>11</td>
<td>37</td>
</tr>
<tr>
<td>J.H.S</td>
<td>10</td>
<td>33</td>
</tr>
</tbody>
</table>

**Figure 1.** Number of children of respondents

**Figure 2.** Marital status of respondent
Table 2, shows that 11(37%) fell between Primary education, JHS making up 10 (33%), SHS making 5 (17%), Non- formal education making up 3 (10%) and tertiary making up 1 (3%).

Table 3. Occupational distribution of respondents

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Salary worker</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Student</td>
<td>8</td>
<td>27</td>
</tr>
<tr>
<td>Unemployed</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>Self employed</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 3 show that, 10 (33%) of the respondents were unemployed, 8 (27%) were Students, 5(17%) were salary workers, 4 (13%) were farmers and 3 (10%) were self employed.

Table: 4 Distribution on religion of respondents

<table>
<thead>
<tr>
<th>RELIGION</th>
<th>FREQUENCY</th>
<th>PERCENTATION (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christians</td>
<td>20</td>
<td>67</td>
</tr>
<tr>
<td>Muslims</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>Traditionalist</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

From Table 4, it indicated that out of 30 respondents, 20 (67%) where Christians representing the most populated followed by 10 (33%) being Muslims.

Figure 3. Distribution on ethnicity of respondent

From figure 3 the bar chart shows 15 (50%) represented Akan’s which is the most dominated ethnic group, followed by others (Northerners) making up 8 (26.67%).

Section B

Table 5. Distribution on perception on women’s perception of criminal abortion

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Number of Respondents</th>
<th>Percentages (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 5, out of the 30 respondents, all of them 30 (100%) said they have heard of criminal abortion before.

![Figure 4](image)

**Figure 4.** Distribution of perception on source of information on criminal abortion

From the figure 4, the bar chart above shows that majority are from friends representing 14 (47%), followed by health center representing 10 (33%) and the least mass media representing 6 (20%).

![Figure 5](image)

**Figure 5.** Distribution of perception on incidence of criminal abortion
From figure 5, the bar chart shows the highest incidence was among adolescent, comprising 25 (83%) followed by 5 (17%) married and none chose widow.

**Table 6.** Distribution of perception on countries where abortion is perform most.

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>FREQUENCY</th>
<th>PERCENTAGE %</th>
</tr>
</thead>
<tbody>
<tr>
<td>In countries where abortion is legal</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Countries where abortion is illegal</td>
<td>8</td>
<td>27</td>
</tr>
<tr>
<td>In developed countries</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Developing countries</td>
<td>16</td>
<td>53</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 6, the most prevalent country with criminal abortion cases are developing countries 16 (53%), followed by countries where abortion is illegal 8 (27%), then in developed countries 4 (13%) and the least is in countries where abortion is legal 2 (7%).

**Section C:**

Reasons for performing criminal abortion

**Table 7.** Reasons for women performance of criminal abortion

<table>
<thead>
<tr>
<th>REASONS</th>
<th>FREQUENCY</th>
<th>PERCENTAGE %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contraceptive failure</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>Too many children</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>Pre-marital affairs</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Others specify (Peer influence, financial problem, social stigma etc)</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 7, out of 30 sampled population on the reasons for criminal abortion 15(50%) said too many children, 10 (33%) said contraceptive failure, 3 (10%) said pre-marital affairs and the least populated 2 (7%) said others.

**Table 8.** The main reasons why adolescence perform criminal abortion

<table>
<thead>
<tr>
<th>REASONS</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The desire to remain in school</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>Financial concern</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Fear of social reprisals</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>Others specify</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

From table 8, out of 30 respondents 15 (50%) said the desire to remain in school being the highest, follow by 10 (33%) said, fear of social reprisal and the least being 5 (17%) said financial concern.

**Section D**

Methods used in performing criminal abortion
Figure 6. A pie chart showing distribution on methods used in criminal abortion on insertion of pills

From figure 6, out of 30 sampled population on the method of insertion of pills, 18 (60%) said they insert pills and 12 (40%) said they do not.

Table 9. Distribution on methods use in performing criminal abortion

<table>
<thead>
<tr>
<th>METHOD</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of high quantity vitamin C</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>Alcohol intake</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Homemade concoction</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>Others specify</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 9, out of 30 respondents 15 (50%) said homemade concoction being the highest, follow by 10 (33%) said, consumption of high vitamin C and the least being 5 (17%) said alcohol intake.

Table 10. Distribution on the most drug use to perform criminal abortion

<table>
<thead>
<tr>
<th>DRUGS</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cytotec</td>
<td>23</td>
<td>76.67</td>
</tr>
<tr>
<td>Pennyroyal</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Others (Use of broken bottles Drinking concentrated sugar solution, Taking high dose of Quinine)</td>
<td>2</td>
<td>6.67</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 10, out of 30 respondents 23 (76.67%) said cytotec which is the highest drug in use, follow by pennyroyal 5 (17%) and others 2 (6.67%) being the least.

Section E

Effects of criminal abortion
From figure 7, out of 30 sampled population on the effects of criminal abortion on maternal mortality, 26 (87%) said, it can lead to maternal mortality and 4 (13%) said it cannot.

Table 8 shows distribution on effects of criminal abortion on relationship

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE %</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>21</td>
<td>70</td>
</tr>
<tr>
<td>NO</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 8, out of 30 sampled population on the effects on relationship breakup, 21(70%) said it can lead to breakup in relationship and 9 (30%) said it cannot.

Some of the respondents also gave as some of the effects of criminal abortion such as;

Infertility
Anemia
Excessive bleeding
Infection

Discussion and conclusion

The study was intended to investigate into the perception of women at Mpobi on criminal abortion and its effects. Criminal abortions have been predominant in recent studies. This research will provide knowledge to the public on reasons, methods and effects of criminal abortion.

Demographic data

The study from table 1, indicated that, majority of the respondents ages fell between 13-19years, making up 12 (40%), followed by 20-30years making up 8 (27%), 31-40years making up 6 (20%) and then the least was above 40 making up 4 (13%). This directly indicates that adolescents between the ages of 13-19 years were those who were captured most in our study. From figure 1, the most respondents without children were 12 representing (40%), those having one child were 3 representing (10%), those having 3 children were 5 representing (17%), those with 3 children were 8 representing (26%), and those with above 3 children were 2 representing (7%).
From the data analyzed, women who were not married were captured most in our study. They make up 12 (40%), followed by married women making up 10 (33%) and divorced women being the least number of respondents making up 8 (27%).

From table 2, these women 11 (37%) and 10 (33%) fell under J.H.S educational background respectively and one person at the tertiary level (1%), S.H.S were 5 (17%) and those with none formal education, 3 making 3% this indicated that primary level leavers were those who answered most of our questions.

From table 3, the dominated women were those unemployed making up 10 (33%) followed by students making up 8 (27%), salary workers making up 5 (17%), farmers making up 4 (13%), and finally self-employed 3 (10%), this shows that, majority of the respondent were unemployed.

From table 4, most of the respondents 10 (67%) were Christians making the most dominant religious group, followed by 5 (17%) being Muslims. The research did not capture traditional and other religious groups. This is because the community is dominated by Christians. From figure 3, it indicated that the dominated ethnic group 25 (83%) were Akan, followed by 5 (17%) representing others (Hausa) meaning most of the inhabitants are Akan.

Perception /Knowledge

All the respondents knew about criminal abortion. From table 5 above, out of 30 respondents, 30 (100%) all said they had heard of criminal abortion. All have knowledge about it. From the 30 respondents who had knowledge about criminal abortion, 20 (73%) said it was abortion performed outside the recognized medical system, while 8 (27%) said abortion performed by a doctor. Most of the respondents who had heard about criminal abortion, had friends as their main source of information, others heard it from the health center and the rest from the media.

From figure 4, out of the number of 30 respondents 14 (47%) represents friends, the most populated represented friends followed by 10 (33%) represent health center and the least 6 (20%) represented media. According to this data it signifies that friends are the best sources of information on criminal abortion and its effects, this shows that, the study contradict with the study done in the Goma community in Kenya which stated (66.2%) of adolescents being the most populated respondents obtain information on criminal abortion from the radio (GUABRE, 2010).

The perception on incidence of criminal abortion was also conducted among the 30 respondents. 83% said it was high among the adolescence while 17.1% said it was high in married women and the rest did not answer. The 83% agreed with and explained why the studies conducted in two hospitals in Nigeria found that of the women who said they had had criminal abortion or whose symptoms indicated that they had had criminal abortion, about 70% were adolescent, and the main reasons giving were; the desire to remain in school being the highest population 15 (50%) follow by fear of social reprisals 10 (33%) and the least being financial concern 5 (17%). The study went further to inquire from the respondents’ perception in countries where criminal abortion activities were prevalent. Out of 30 respondents 16 (33%) said developing country being highest countries, followed by 8 (27%) that is countries where abortion is illegal then developed countries 4 (13%) and the least being 2 (7%), countries where abortion is legal. According to this data it signifies that most of the criminal activities occurs in the developing countries which confirms the study by Grossman (2012), an obstetrician with Ibis reproductive health which states that worldwide, an estimated 20 million criminal abortions and 70 000 maternal deaths, due to criminal abortion occurs each year and most of these events take place in developing countries. The reasons why some women perform criminal abortion was also conducted, among the 30 respondents from the data analysis made in table 4, it was stated that, 15 (50%) said too many children, followed by 10 (33%) contraceptive failure then 3 (10%) said premarital affairs and the least 2 (7%). Other said peer influence. The 15 (50%) which is too many children agrees with WHO (1997) which said that criminal abortion is a global problem and the predominant
reasons for criminal abortion were “too many children” (64.4%) then contraceptive failure (20.3%) from chapter 4 section D a study was conducted on the method used in performing criminal abortion on the use of insertion of pills, out of the 30 respondents, 18 (60%) being the most populated respondents said they use the pills and insect into the vagina to cause criminal abortion. This confirms what the New York times reported that many women surveyed, reported a wide variety of women reported inserting pills into the vagina to cause abortion. Some of the respondents also gave some method as; consumption of homemade concoction, high vitamin c intake and alcohol intake. This confirm what re (Khokhar and Gulati, 2008), reported that women in underdeveloped area of India successfully perform abortion through the follow methods; consumption of homemade concoction, high vitamin c intake and alcohol intake.

From the finding in chapter 4 section E, it reveals that out of the 30 respondents interviewed 26 (87%) of population being the highest said criminal abortion can lead to maternal death this confirms with Begum (1991), who confirmed that maternal mortality was undesirably high in Bangladesh. the rates range from, between 4.8 and 7.8 per 100 live births and many of this death was caused by criminal abortion related complications. Also further studies were made on its effect on the relationship and not the 30 respondents interviewed. Twenty one (70%) being the highest population said it can lead to relationship breakup, this agrees with a Boston city hospital study which found that among inner city women enrolled in pre-natal care, those 6 who reported on relationship breakup after criminal abortion were 70%.

Summary

The research was conducted using women from the ages of 13 and above in Mpobi in the Afigya-Kwabre District of the Ashanti Region.

The research was conducted to ascertain the perception of women on criminal abortion and its effects. In all 30 women were selected using a simple random method for the study.

Questionnaires were used to collect the views of women in Mpobi on the perception, reasons, methods and effects of criminal abortion. The quantitative and descriptive approach was used for the study.

It was identified in the research that most women have knowledge about criminal abortion. Most or all the respondents knew that criminal abortion is an abortion performed outside the recognized medical system.

Conclusion

Based on the findings of the study, the following conclusions were made: Most women knew of criminal abortion and gave some reasons, methods and effects of performing criminal abortion. Most of them gave some of the reasons as too many children and contraceptive failure. Some of the methods given were insertion of pills, use of cytotec and homemade concoction. They also mentioned some of the effects as maternal mortality and relationship problems.

Recommendations

Special and free adult education should also be given to the families especially targeting on the primary and JHS leavers since they were mostly engaged in illegal abortion.

The government should develop solid policies to restrict criminal abortions, expand and provide well equipped laboratories in most remote clinics and hospitals in communities for easy access to be checked for which family planning method is suitable for each person.

The affluent, private thriving businesses and NGO's should come cooperatively to aid and make family planning methods, screening and medications free or at least cost a penny for to aid prevent criminal abortion.

There is a need for proper education about the harmfulness of criminal abortion and the after effects of abortion. Proper education, awareness, training session and guidance should
also be given to the people who are involved in criminal abortion about the after effects of the abortion.

Family planning methods should be taught to the adolescent by their immediate parents, guardian and any other respected people in the community.

The church and various Religious faith should be endowed with knowledgeable personnel who can help assimilate to the adolescent the righteous acts of not ending the life of a growing foetus on the account of unexpected results from gratifying the fleshly unsuccumuable strong desire for sex.

The adolescent should be raised well with proper standards to bring in consciousness that what one perception starts from the heart through the sensual gates of the body especially the eyes, so as to gain requisite knowledge, self-help and channelling the perceived thoughts with the appropriate approach.

Illegal abortion cases should also be restricted by paying attention to the lifestyle of our growing female wards. The government, persons and personals and the matured should each play his role in this regard.

There should be more education on family planning methods such as the use of condoms.

Drawing attention to the unmet demand for family planning methods among all groups is essential in preventing unwanted pregnancy and decrease abortion.

Further studies that examine partner involvement in the decision making process, access to health facilities unmet needs for contraception and contraceptives failure may enlighten us as to why married women, who might seem to have other options, make the decision to induce abortion.

Studies addressing the legal aspect of sexuality and reproduction right women and needed for urgently.

Implication for nursing practice

The findings have majority implications for nursing services, education and administration. The finding that most women perform criminal abortion due to contraceptive failure calls for nursing attention. In the same regard the finding that most adolescence are engaged in criminal abortion calls for attention for nurses to go to senior high school, tertiary and the community to give education on criminal abortion and its effect on the individual and the society as a whole.

Acknowledgement

I take this opportunity to express mine profound gratitude to the God Almighty, for his care, strength and guidance throughout this research.

Furthermore, I am greatly indebted to the people of Mpobi Community for their cooperation and support.

I would also like to express mine immeasurable gratitude to my student coordinator and management of Texila American University for been there for me anytime that I needed them. I can never forget the immeasurable contribution of various authors whose book and thesis, I used in mine literature review.

Dedication

This work is dedicated to the Almighty God for granting me the gift of wisdom, knowledge and understanding. I also dedicate the work to mine parent and all those who in diverse way contributed in making this research a successful one.

References

Acceptance and Uptake of Voluntary HIV Testing and Counselling among Nurses in Lautech Teaching Hospital Osogbo, Osun State, Nigeria

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Abstract
Nurses are at the front line of HIV/AIDS management, thus they have the danger of being occupationally exposed to blood borne pathogenic microbes through needle stick harm, body liquid sprinkles and so on over the span of their daily work.
Numerous studies have examined acceptance and uptake of HIV screening among health workers, yet few studies are specifically on nurses’ acceptance and uptake of HIV testing and counselling. This study is aimed at examining nurses’ level of acceptance and uptake of HIV testing and counselling in LAUTECH Teaching Hospital, Osogbo, Osun state, Nigeria.
The study is a descriptive design which was used to examine the acceptance and uptake of voluntary HIV testing and counselling among nurses in the institution. The target population were nurses at different areas of practice in the institution. One hundred copies of a structured questionnaire were administered to participants from the target group through accidental sampling technique, they were completed, collected, processed, analysed and interpreted.
Result shows that majority of the nurses in the institution had high level of knowledge about HIV/AIDS. 95% of the respondents were aware of HIV testing and counselling facilities around them and majority (94%) accepted and made themselves available for the test. 51%, a little above half of the 94%, have routine HIV test. Academic qualification was found to be a significant factor in the uptake of the test

Keywords: Acceptance, Uptake, Voluntary HIV testing, Counselling, Nurses, Confidential

Introduction
The HIV/AIDS pandemic is a standout amongst the most genuine world wellbeing emergencies.(3) As indicated by WHO and UNAID 2007, AIDS and AIDS-related diseases had murdered more than 25 million individuals and an expected 39.5 million individuals were living with HIV before the end of 2006.(2) Sub-Saharan Africa has kept on being incredibly influenced by the weight of the HIV/AIDS pandemic, with around 63% of the aggregate number of individuals living with HIV, 65% of the 4.3 million of aggregate new contaminations and 72% of the 2.9 million passings in 2006.(3) The Joint United Nations Program on HIV/AIDS (UNAIDS) gauges that in Nigeria, around 3.1% of grown-ups between ages 15-49 were living with HIV/AIDS before the end of 2007. (2)
HIV screening is deliberate and secret, it helps clients to settle on informed choice identified with HIV status and danger decrease. HIV screening is presently distinguished as a genuine and key access point to HIV/AIDS counteractive action, treatment, care and bolster mediations.(1)
Nurses assume a significant part in the administration of HIV/AIDS, as indicated by universal Nurses' Forum, 2006 nurses are said to be at the front line of HIV/AIDS (4) thus they have the danger of being occupationally exposed to blood borne pathogenic microbes through needle stick harm, body liquid sprinkles and so on over the span of their every day work. Numerous studies have been done universally on HIV/AIDS, acknowledgment of HIV testing by wellbeing specialists yet few studies have been completed on nurses’ acknowledgment and uptake of HIV testing and counselling. This study is aimed at
examining nurses’ level of acceptance and uptake of HIV testing and counselling in Lautech Teaching Hospital, Osogbo, Nigeria. Specifically, the study was designed to answer the following questions: (a) What do Lautech nurses know about HIV in terms of meaning, its cause and mode of transmission in relation to their profession? (b) Awareness of the nurses about HIV testing and counselling services available for their use. (c) Do they make themselves available for the test? (d) What are the possible hindrances to utilizing the screening and counselling services?

Research hypothesis

Four null hypotheses were set to be analysed and they are:

There is no significant relationship between the nurses’ knowledge about HIV/AIDS and their acceptance and uptake of HIV counselling testing.

There is no significant relationship between nurses’ year of experience and their uptake of HIV counselling and testing.

There is no significant relationship between accidental exposure to blood-borne pathogens and HIV counselling and testing.

There is no significant relationship between nurses’ academic qualification and their uptake of HIV counselling and testing.

Limitation of the Study

The study was limited to LAUTECH Teaching Hospital nurses as a result of financial constraint and limited time with which the study was carried out. As a result the study may not be generalizable to to nurses in the entire nation considering the relatively small sample used in the study. Moreover, the data must be interpreted with the limitations that they are collected through non-probability convenience sampling method.

Methods

Research setting

The study was carried out in Osogbo, Osun state among nurses working in Lautech Teaching Hospital.

Osogbo is a city in south west Nigeria, the capital of Osun State and comprises two Local Government Areas. The Local Government Areas have an area of 47 km² and a population of 156,694 at the 2006 census; the postal code of the area is 230. Osogbo is believed to have been founded around four hundred years ago. It is part of the wider Yoruba community.

Ladoke Akintola University of Technology Teaching Hospital currently has a total of 320 beds with total of 300 nurses from different specialties. As of the present, the Hospital has an Out-patient Department (O.P.D) comprising of the general clinics and all special clinics. The Surgery Outpatient Department serves all the specialities of surgery i.e. General surgery, Orthopaedic surgery, Plastic, Urology, Paediatric Surgery and Neurosurgery. The hospital has a theatre complex and four main theatre suits, a recovery room and an intensive care unit. It also has an Accident and Emergency theatre which takes care of emergency cases. There is also another theatre for labour room. The Accident and Emergency Unit has been recently expanded to include two consulting rooms, one room for Records, four couches to admit and resuscitate patients and Nurses station There is a ward for male surgical patients which admits in General Surgery, Plastics, Urology and Neurosurgery, a female surgical ward for admission of patients from all surgical specialities, a male Orthopaedic ward for Orthopaedic and trauma male patients as well as a Paediatrics Surgical ward and a Burn unit. There are also wards for male medical patients and for female medical patients.

Research design

A non-experimental, descriptive design was adopted for this study, nurses in the teaching hospital were used. The sample comprised of one hundred questionnaires, same was administered through accidental or convenience sampling technique to nurses on duty in various clinics and wards at the period of data collection until the number was completed.
Instruments

A twenty-six item self designed questionnaire was used. The questionnaire was structured in English and consisted of closed ended questions. The self designed questionnaire comprises of two sections namely: section A, which consisted of personal data, while section B dealt with the evaluation of nurses acceptance and uptake of HIV testing and counselling.

Reliability is the ability of the instrument to give the same or similar result with repeated use. To ensure the reliability of the questionnaire, the instrument was administered to ten respondents (nurses) as a pilot study at Osun state hospital, Asubiaro, Osogbo (outside the research setting), same was analysed and the correlation coefficient was determined to be 0.88. Two weeks after this, the questionnaires were administered to nurses at LAUTECH Teaching Hospital Osogbo - the research setting. To determine the acceptance and uptake of voluntary HIV testing and counselling among nurses in LAUTECH teaching hospital Osogbo, Osun State. This design was used because it would allow for responses and would help in describing and interpreting the condition that exist in the study in systematic order. The data obtained from the study was analysed using SPSS version 17 with statistical techniques such as frequency tables and percentage. Hypotheses were tested using chi square method of analysis at 0.05 level of significance.

Ethical consideration

In carrying out the study, ethical principles of autonomy, non maleficence, beneficence, justice and fidelity were the guiding principles. Informed consent was obtained in the process of administering the questionnaires. Nurses had the right to participate in the study or decline. Anonymity was maintained throughout the study; no intrusion on individual privacy, information from the study was kept confidential and used solely for the purpose of the study.

Result

Description of study sample

One hundred questionnaires were distributed to participants and the same was returned. Table one showed the demographic data of respondents. The following are the results: 19% of the respondents were between ages 20-29 years, 41% were between ages 30-39, 32% were between ages 40-49 and 8% were ages 50-59. 12% of the respondents were male while 88% were female. 75% of the respondents were married, 10% were single, 9% were divorced and 6% were widowers. 15% of the respondents were Muslims, 84% were Christians while 1% was traditional worshiper. Moreover, 70% of respondents had diploma nursing and midwifery as their highest educational qualification, 25% were degree holder while 3% of the respondents were master holder. In addition, 16% of the respondents had between 0-5 years of experience, 28% had between 6-10 years of experience, 29% had between 11-15 years of experience 22% had 16- 20years of experience and 5% had 20 and above year of experience. Also from the table, 21% of the respondents were nursing officers 1, 18% were nursing officers 11, 25% were senior nursing officers, 8% were principal nursing officers while 25% of the respondents were chief nursing officers.

Nurses’ knowledge about HIV/AIDS

From figure 1, 5% of the respondent believed HIV means human infection virus, 89% believed it was human immune deficiency disease, while the remaining 6% believed it was human infectious virus. Also from table 2, 92% of the respondents knew AIDS to be Acquired immune deficiency syndrome while the remaining 8% perceived it to be Acute immune deficiency syndrome. Moreover in figure 2, 4% of the respondents believed that unprotected sex was the mode of transmission that poses an occupational hazard to health workers, 3% believed it was mother to child transmission, 1% believed it was transfusion of unscreened blood, 23% opined that it was sharing of sharp object while the remaining 69% of the respondents opined that needle prick injury poses an occupational hazard to health workers.
Awareness of nurses about HIV testing and counselling services available for their use

From table 3, 19% of respondents defined HIV testing and counselling as the process in which an individual is counselled not to get tested for HIV, 3% defined it as a forceful and mandatory process of testing people for HIV while 78% of respondents defined it as a process in which an individual is counselled in order to make an informed choice about being tested for HIV/AIDS. Also in figure 3, 94% of respondents agreed to it that as a nurse they need to go for HIV testing and counselling, 5% responded “no”, while 1% of the respondents were not sure. From table 4, 95% of the respondents knew at least one HIV testing and counselling centre while 5% did not know any. Figure 4 showed that 6% of the respondents were of the opinion that service(s) rendered at HTC centres was counselling only, 48% responded that it was counselling and testing, while 46% of the respondents were of the opinion that it was all of the above.

Utilisation of HTC services by nurses

From table 6, 94% of the nurses have ever tested for HIV, while 6% have never been tested for HIV. Moreover, table 6 showed the respondents’ reasons for their HIV test: 12% of the respondents got tested after a needle prick injury, 31% did it as part of antenatal test, 51% did the test just to know their HIV status, while 6% did the test for other reasons not included.

Possible hindrances to utilizing HIV testing and counselling services

Figure 5 showed that 3% of the respondents did not do the test for fear of result, 3% did not do the test for fear of stigma, while 5% of the respondents were of the opinion that they did not need the test.

Hypotheses

Table 7 showed testing of hypothesis 1 which states that there is no significant relationship between the nurses’ knowledge about HIV/AIDS and their acceptance and uptake of HIV counselling and testing. The correlation coefficient is negative (-0.008) at 0.05 level of significant

Table 8 showed testing of hypothesis 2 which states that there is no significant relationship between the nurses’ years of experience and their uptake of HIV counselling and testing. The correlation coefficient is negative (-0.053) at 0.05 level of significant

Table 9 showed testing of hypothesis 3 which states that there is no significant relationship between accidental exposure to blood borne pathogen and HIV counselling and testing. The correlation coefficient is positive (0.202) at 0.05 level of significance

Table 10 showed testing of hypothesis 4 which states that there is no significant relationship between accidental exposure to blood borne pathogen and HIV counselling and testing. The correlation coefficient is positive (0.151) at 0.05 level of significance

Discussion

In answering research question 1 from the result, 89% of the respondents knew the correct meaning of HIV, 92% of them knew the meaning of AIDS and 69% of them knew the mode of transmission that poses occupational hazard to health workers. This shows that Lautech nurses have a good knowledge about HIV in relation to them and their profession

Furthermore, from the data analysed 95% of nurses in Lautech teaching hospital knew at least one HIV testing and counselling centre and could even name it. Majority of the respondents also knew the services rendered at HTC centres, this implies that nurse are aware of the HTC centres around them and it answers the second research question. The corroborates the work of Zungu & BA Sanni (2011) on acceptance and uptake of voluntary HIV testing among health workers in South Africa which showed high levels of acceptance (87.0%) and uptake (90.7%) of HIV counselling and testing among healthcare workers in the designated public hospital. (5)

Moreover, 94% of the respondents have had HIV testing and counselling at one time or the other and routine testing was found to be the highest reason for the test. This shows that nurses utilize HTC services available for their use and it answers the third research question
and it is also in accordance with Zungu & BA Sanni (2011).(5) Furthermore, among the few that have never been tested for HIV, the common reasons were fear of result and fear of stigma. This also answers the fourth research question.

In testing hypothesis one, on relationship between the nurses’ knowledge about HIV/AIDS and their acceptance and uptake of HIV counselling and testing. The correlation coefficient is negative (-0.008) at 0.05 level of significant, it implies that the null hypothesis is not significant and hence it is accepted. This is contradictory to Federal Ministry of Health (FMH) 2006 declaration that some studies had linked HIV counselling and testing with people’s knowledge of HIV transmission and prevention. (6) On relationship between the nurses’ years of experience and their uptake of HIV counselling and testing, the correlation coefficient is negative (-0.053) at 0.05 level of significance, it implies that there is no significant relationship between the nurses’ years of experience and their uptake of HIV counselling and testing. Therefore the null hypothesis is not significant and hence accepted.

This was in contrast to a previous study carried out in Enugu on “Voluntary Counselling and Willingness to Screen among Long Distance Drivers” in which the educational status was a significant determinant in willingness to undergo screening. (7)

Concerning the relationship between accidental exposure to blood borne pathogen and HIV counselling and testing (hypothesis 3), the correlation coefficient is positive (0.202) at 0.05 level of significant, it implies that there is significant relationship between accidental exposure to blood borne pathogen and HIV counseling and testing. Therefore the null hypothesis is significant and hence hypothesis 3 is rejected.

The fourth hypothesis is on relationship between nurses’ academic qualification and their uptake of HIV testing and counseling. The correlation coefficient is positive (0.151) at 0.05 level of significant, it implies that there is significant relationship between nurses’ academic qualification and their uptake of HIV testing and counseling. Therefore the null hypothesis is significant and hence rejected. This corroborated Muoghalu, (2013) in whose work it was documented that there was a significant relationship between educational status of respondents and their knowledge about HIV/AIDS (8).

Recommendations

Since the project was done on a relatively smaller population of LAUTECH Teaching Hospital nurses, the idea should be expanded to encompass other nurses and other health professional in other institutions in the state. There is also a need for continuous education on the current dynamics on HIV and AIDS for nurses and other health professionals and there should be follow-ups and refresher courses on the people educated to equip them with the latest knowledge.

Research is also needed to explore additional barriers to HTC uptake which include the possible stigmatization associated with post-HTC period in the event that a health professional has been tested HIV positive. In addition, some ground has to be covered to ensure that people have confidence in the counsellors.

Conclusion

The result of the study reveals that majority of the nurses in LAUTECH Teaching Hospital had high level of knowledge about HIV/AIDS as expected by the virtue of their profession. They are aware of HIV testing and counselling facilities around them and majority of the respondents (94%) accepted and made themselves available for the test. Out of those who have ever been tested for HIV, more than half of them did the test just to know their HIV status (routine test). This does not have any relationship with year of experience but academic qualification with exposure to blood borne pathogen were found to be significant factors in the uptake of the test.
**Table 1.** showing the demographic data of the respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
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<td>Others specify</td>
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<td>6-10years</td>
<td>28</td>
<td>28.0</td>
</tr>
<tr>
<td>11-15years</td>
<td>29</td>
<td>29.0</td>
</tr>
<tr>
<td>16-20years</td>
<td>22</td>
<td>22.0</td>
</tr>
<tr>
<td>20years and above</td>
<td>5</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Rank</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO I</td>
<td>21</td>
<td>21.0</td>
</tr>
<tr>
<td>NO II</td>
<td>18</td>
<td>18.0</td>
</tr>
<tr>
<td>SNO</td>
<td>25</td>
<td>25.0</td>
</tr>
<tr>
<td>PNO</td>
<td>8</td>
<td>8.0</td>
</tr>
<tr>
<td>CNO</td>
<td>24</td>
<td>24.0</td>
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<tr>
<td>ADNS and above</td>
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<td>4.0</td>
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<tr>
<td><strong>Total</strong></td>
<td>100</td>
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</table>
### Table 2. showing the respondents’ opinion on meaning of AIDS

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquired immune Deficiency syndrome</td>
<td>92</td>
<td>92.0</td>
<td>92.0</td>
<td>92.0</td>
</tr>
<tr>
<td>Acute immune Deficiency syndrome</td>
<td>8</td>
<td>8.0</td>
<td>8.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.0</td>
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</table>

### Table 3. what is HIV testing and counselling?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A process in which an individual is counselled not to get tested for HIV/AIDS</td>
<td>19</td>
<td>19.0</td>
<td>19.0</td>
<td>19.0</td>
</tr>
<tr>
<td>Mandatory and forceful process of testing people for HIV/AIDS</td>
<td>3</td>
<td>3.0</td>
<td>3.0</td>
<td>22.0</td>
</tr>
<tr>
<td>A process in which an individual is counselled for him to make an informed choice about being tested for HIV/AIDS</td>
<td>78</td>
<td>78.0</td>
<td>78.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

### Table 4. Do you know any centre for HIV testing and counselling?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
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<td>95.0</td>
<td>95.0</td>
<td>95.0</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>5.0</td>
<td>5.0</td>
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</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

### Table 5. Have you ever tested for HIV/AIDS?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>94</td>
<td>94.0</td>
<td>94.0</td>
<td>94.0</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
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<td>6.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 6. What was your reason for the test?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>After a needle prick injury</td>
<td>12</td>
<td>12.0</td>
<td>12.0</td>
<td>12.0</td>
</tr>
<tr>
<td>As part of antenatal test</td>
<td>31</td>
<td>31.0</td>
<td>31.0</td>
<td>43.0</td>
</tr>
<tr>
<td>I just want to know my HIV status</td>
<td>51</td>
<td>51.0</td>
<td>51.0</td>
<td>94.0</td>
</tr>
<tr>
<td>Other reasons not included</td>
<td>6</td>
<td>6.0</td>
<td>6.0</td>
<td>100.0</td>
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<tr>
<td>Total</td>
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<td>100.0</td>
<td>100.0</td>
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</tbody>
</table>

Table 7. Hypothesis 1 Testing Showing relationship between the nurses’ knowledge about HIV/AIDS and their acceptance and uptake of HIV counselling and testing

<table>
<thead>
<tr>
<th></th>
<th>What is the full meaning of HIV?</th>
<th>Have you ever tested for HIV/AIDS?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman's rho</td>
<td>1.000</td>
<td>-.008</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>.937</td>
</tr>
<tr>
<td>N</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Have you ever tested for HIV/AIDS?</td>
<td>-.008</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.937</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 8. Hypothesis 2 Testing Showing relationship between the nurses’ years of experience and their uptake of HIV counselling and testing

<table>
<thead>
<tr>
<th></th>
<th>Year of experience</th>
<th>As a nurse there is need for me to go for HIV counselling and testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman's rho</td>
<td>1.000</td>
<td>-.053</td>
</tr>
<tr>
<td>Year of experience</td>
<td></td>
<td>.599</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>.599</td>
</tr>
<tr>
<td>N</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>As a nurse there is need for me to go for HIV counselling and testing</td>
<td>-.053</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.599</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
**Table 9.** Hypothesis 3 Testing Showing relationship between accidental exposure to blood borne pathogen and HIV counseling and testing

<table>
<thead>
<tr>
<th>Correlations</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman's rho</td>
<td>Have you ever had accidental exposure to blood borne pathogen?</td>
<td>Correlation Coefficient Sig. (2-tailed)</td>
<td>1.000 .202* .044 .044</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>100 100 100 100</td>
</tr>
<tr>
<td>What are the types of services given at HTC centre?</td>
<td>Correlation Coefficient Sig. (2-tailed)</td>
<td>.202* 1.000 1.000 .044</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>100 100 100 100</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).

**Table 10.** Hypothesis 4 Testing Showing relationship between nurses’ academic qualification and their uptake of HIV testing and counselling

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Educational status</th>
<th>If yes, when last did you have the test?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman's rho</td>
<td>Educational status</td>
<td>Correlation Coefficient Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.000 .151 .133</td>
</tr>
<tr>
<td></td>
<td></td>
<td>. 100 100</td>
</tr>
<tr>
<td>If yes, when last did you have the test?</td>
<td>Correlation Coefficient Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.151 1.000 .133</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 100 .</td>
</tr>
</tbody>
</table>

**Figure 1**
Figure 2

Which of the following modes of transmission poses an occupational hazard?

- Unprotected sex
- Mother to child transmission
- Transfusion of unscreened blood
- Sharing of sharp instruments
- Needle prick injury

Figure 3

As a nurse there is need for me to go for HIV counselling and testing

- Yes
- No
- Not sure

Figure 4

What are the types of services given at HTC centre?

- Counselling only
- Counselling and testing
- Both
References


Is Knowledge and Uptake of Hepatitis B Post Exposure Management Among Health Care Personnel Influenced by the Cadre of Work Place?

Abstract

Hepatitis B virus is recognized as important occupational risk to health care personnel. This descriptive cross-sectional study was conducted among health care personnel (HCP) in different health care facilities in Osogbo, Osun State, Nigeria to determine coverage of HBV vaccination and determine if coverage and taking of post exposure treatment was dependent on category of work place. Mean knowledge of transmission, vaccination schedules and post exposure management was good (55.8%), HCP working at teaching hospital tend to have better knowledge followed by those in primary health centre than those working in general and private hospitals. About half of the HCP (48.7%) who participated in this study felt they were at risk of exposure to HBV by virtue of their job description. Workers in primary care centers followed by those in teaching hospitals are likely to receive booster HB vaccine following exposure than workers in other health facility setting.

Keywords: Hepatitis B virus, Vaccination, Immunization, Post-exposure

Abbreviations: Health Care Personnel–HCP, Hepatitis B-HB, Hepatitis B Virus- HBV, World Health Organization- WHO, Health care workers- HCWs

Introduction

Hepatitis B is one of the causative agents of viral hepatitis and recognized to be an important occupational risk to health care personnel (HCP) worldwide making incidence of hepatitis B infection to be higher among HCP compared to the general population (GP). It was ten times commoner in USA and two times commoner in Nigeria when HCP was compared to GP. The World Health Organization (WHO) estimates that about two million health care workers (HCWs) face occupational exposure to HBV each year and that 90% of the infections that result from these exposures are in low-income countries, especially those in sub-Saharan Africa.

Incidence of hepatitis B (HB) transmission is declining gradually with the advent of Hepatitis B vaccine especially in countries where coverage of vaccination at birth with catch-up adolescence vaccination is very high. Despite this decline the HCP face persistent risk of exposure to hepatitis B from chronic hepatitis B carriers defined as persons in which hepatitis B surface antigen is persistently found in the blood for six months or more. Acute and chronic HBV infections are rare among HCP who respond to HB vaccination, but HCP who do not respond to vaccination are thought to remain susceptible thus the need to perform test for antibody against hepatitis B surface antigen (anti-HBs) two months after completing the three HB vaccination schedule or at point of recruitment or matriculation of health care personnel. Anyone with anti-HBs level below 10mIU/ml is said to be non-responders or to be unprotected against HB infection.

The case in Nigeria is different when compared to countries with low prevalence of HB infection among general population. Nigeria falls into the high endemic region (HBSAG prevalence ≥8%) with prevalence ranging from 9% to 39%, compared to USA with
prevalence of 0.003%, the percentage coverage for HB vaccination is also said to be low ranging from 20% to 50% among selected health care workers in the country. It is therefore important to determine periodically knowledge of hepatitis B transmission and protection among groups of Nigerian which are at higher susceptibility to HB transmission and to also determine if category of work place influence uptake of vaccination and or post exposure treatment.

**Research methodology**

**Research design:** A descriptive cross-sectional study conducted between November 10, 2015 to December 11, 2015.

**Research population:** Health care personnel (HCP) working in blood related units of various hospitals in Osogbo, Osun State, Nigeria. HCPs are defined as all paid and unpaid persons providing health care, or working or training in health-care settings, who have reasonably anticipated risks for exposure to infectious materials, including blood or body fluids, contaminated medical supplies and equipment, or contaminated environmental surfaces. HCP might include but are not limited to physicians, nurses, nursing assistants, nurse practitioners, physician assistants, therapists, technicians, emergency medical services personnel, dental personnel, pharmacists, laboratory personnel, autopsy personnel, health-care students and trainees, contractual staff not employed by the health-care facility, and persons not directly involved in patient care but with potential exposure to infectious agents that can be transmitted between patients and HCP (e.g., housekeeping, laundry, security, maintenance, and volunteers.

**Research settings:** 1. Department of community medicine, Ladoke Akintola University (LAUTECH) anchoring professional masters in Public health program where health care practitioners from different categories of hospital set up converged. 2. Selected private hospitals in Osogbo. 3. Jaleymei Catholic hospital, Osogbo. 4. Selected primary health care centres in Olorunda Local government of Osogbo. In this study five level of hospital categories are identified namely: (i) Teaching Hospitals/ Federal medical Centres/ National Specialist hospitals. (ii) General hospitals. (iii) Primarycare/Comprehensive health centres. (iv) Private hospitals. (v) Mission hospitals.

**Research sampling and sampling technique:** Two hundred and fifty questionnaires were distributed among HCP participating in the professional masters program at LAUTECH, five randomly selected private hospitals, five randomly selected primary health centres and one mission hospital all in Osogbo, Osun state, Nigeria.

**Method of data collection:** Data were collected using pre-tested self administered questionnaires.

**Method of data analysis:** The Statistical Package for Social Sciences (SPSS-20) was used for data processing. Simple descriptive statistics were used (mean ± standard deviation for quantitative variables and frequency with percentage distribution for categorized variables. Multivariate analysis done by cross-tabulating knowledge, vaccination schedules & transmission of Hepatitis B & uptake of post exposure manangement against cadre of workplace and HCP categories. Twelve stems of True/False questions were asked to determine knowledge of HB transmission, vaccination & post exposure management. A score of 5 is allotted to correct answer while zero to wrong answer bringing total obtainable score to sixty. Score of or above 45 is taken in this study as excellent knowledge, while score ranging between 30 to 44 is taken as good knowledge, score of 19 to 29 as having fair knowledge, while score of 18 or less is taken as having poor knowledge.

**Ethical consideration:** Names were not written on the questionnaire given to the respondent for confidentiality and verbal consent was taken.

**Result**

A total of two hundred &fifty questionnaires were distributed, two hundred and thirty were returned giving 92% retrieval rate. Majority (65.2) of participants were in their third & fourth
decades, three quarters of participants were females while 82.6% of the health care professionals were married as the time of the study. Over 95% of the HCP had tertiary level of education, over 60% of them were nurses followed by community health officers and medical doctors. (Table 1) One third of the participants had spent over ten years in hospital setting while another third have spent between 1 to 3 years. (Table 2). About half of the participants were from teaching/specialist federal medical centres

Overall knowledge of transmission of HB is adjudged good (54.5%), knowledge about vaccination using HB vaccine was fair (42.4) while knowledge of post exposure management of HB was excellent (70.5%), with overall mean knowledge of HCP calculated as 55.8% (good). Questions mostly missed under vaccination had to with schedule interval of vaccination, safety of HB vaccine in pregnancy & meaning of vaccine responders (Table 4). Multivariate analysis of the questions mostly missed by the general participants with regard to workplace category showed that HCP working in teaching hospitals followed by those working in primary care centre are less likely to miss the question compared to those working in general & private hospitals (Table 5), the difference is statistically significant.

Over three-quarter (76.5%) of participants affirmed that their employer did not request for evidence of HBV vaccination either pre or post appointment as health care personnel. Sixty percent of participating HCP reported that there work place do not have written or unwritten policy on mode of reporting exposure to HBV blood/body fluids. About seventy percent of participants reported that patients that come to their health facility are not screened for HBV status routinely.

Eighty-six percent of participants have taken HBV vaccination in the past with over 70% completing the three vaccine schedules. However, about half of the responders reported that the vaccination was taken at childhood with 29.6% and 11.3% of them taking the vaccination before and after present employment respectively.

Multivariate analysis showed that HCP working at teaching hospitals followed by those working at primary care centres are more likely to be vaccinated against HBV compared to those working at general hospitals. Those working in private hospitals have the least chance of getting vaccinated against HBV. The difference was statistically significant. (Table 5). It further showed that HCP working at primary care centre are more likely to receive treatment in form of booster HB vaccine following exposure to HBV source blood/body fluids, followed by those working in teaching hospitals. The difference observed is also significant. (Table 5)

Close to half of the HCP (48.7%) who participated in this study felt they were at risk of exposure to HBV by virtue of their job description. Those working at teaching hospital expressed highest fear of risk of exposure (42%) compared to only 0.9% of those working at general hospitals (figure 2).

Discussion

Overall mean knowledge of healthcare practitioners in this study is judged to be good (55.8%) this is agreement with findings of Samuel et al & Habiba et al (2009) Knowledge about post exposure treatment followed by knowledge of transmission of HBV appeared better understood than knowledge about vaccination. Majority of participants though knew that complete vaccination involved three doses confused timing of the doses, a good proportion also were of the opinion that the vaccine was not safe in pregnancy. This is not unexpected as the common sense rule is that many medications & vaccine are contraindicated in pregnancy. The risk that a developing fetus will be adversely affected by vaccinating the mother during pregnancy is primarily theoretical, indeed, there is no evidence of risk from vaccinating pregnant women with inactivated virus or bacterial vaccines or toxoids. The live vaccines for which there have been rare but documented cases of congenital infection after administration are smallpox, yellow fever, and rubella. The available HBV vaccines contain hepatitis B surface antigen (HBSAG) produced in yeast from recombinant DNA technology and do not contain the whole virus. Therefore, there is no risk of fetal transmission and
pregnancy is not a contraindication to vaccination. In fact, susceptible pregnant women who are at risk for HBV infection should be specifically targeted for vaccination.

Eighty six percent of the participants have been vaccinated against HBV infections this is similar to 70.2% of Samuel et al in South west of Nigeria and 74.7% of Habiba in Kuwait. This appears to be good though almost 50% of the participants banked on childhood immunization and no testing is usually done after completion of schedules to detect if they actually responded to the vaccines. Assumption that once one is vaccinated correlates to being protected will lead to 8-16 % of people susceptible to HBV infection and who could become chronic carriers. Multivariate analysis showed that HCP at teaching hospitals followed by those working at primary care centres were more likely to be vaccinated and receive post exposure treatment than those working at general & private hospitals. The difference was statistically significant. The teaching hospitals are better equipped understandably but it was surprising that HCP at primary care levels have higher chance of being vaccinated compared to those in general hospitals. It may be because vaccinations are mainly administered to the local community by the staff of primary care centres and secondly because HCP working at secondary care hospitals were poorly represented in this study. It is important that efforts are made at all levels of work place especially private hospitals to ensure that workers are protected. Written policy on reporting of exposure & management of at risk staff should be clearly documented.

**Recommendation**

Ministry of health to bring out guidelines for HCP protection against HBV and ensure that health facilities comply

**Conclusion**

Although knowledge of HBV infection, transmission and post exposure is good among health care personnel in health facilities of Osogbo, most of the health facilities do not request for HBV vaccination before employment neither are there clear policy on reporting of exposure to at risk blood or body fluids. The risk of poor protection appears worst among HCP working in private and general hospital. Urgent need to engage ministry of health to bring out guidelines for HCP protection against HBV and ensure that health facilities comply

**Tables and figures**

![Figure 1. Cadre of Health care facility of participants](image)
**Figure 2.** Perception of risk of exposure to hepatitis b infection by HCP working at different cadres of health facility

**Table 1.** Sociodemographic data

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGE(YEARS)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 – 29</td>
<td>34</td>
<td>14.8</td>
</tr>
<tr>
<td>30 – 39</td>
<td>98</td>
<td>42.6</td>
</tr>
<tr>
<td>40 – 49</td>
<td>52</td>
<td>22.6</td>
</tr>
<tr>
<td>≥ 50</td>
<td>41</td>
<td>17.8</td>
</tr>
<tr>
<td>Missing</td>
<td>5</td>
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<th>PROFESSIONAL STATUS</th>
<th>FREQUENCY</th>
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<td>NURSES</td>
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</tr>
<tr>
<td>DOCTORS</td>
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<td>LABORATORY STAFF</td>
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<td>WARD ORDERLIES</td>
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<td>MICROBIOLOGISTS</td>
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<td>0.9</td>
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<td>PHARMACISTS</td>
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<td>ADMIN OFFICERS</td>
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<td>6.95</td>
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<th>PERCENTAGE (%)</th>
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<tr>
<td>FEMALE</td>
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<tr>
<td>MALE</td>
<td>59</td>
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<td>0.4</td>
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<tr>
<td><strong>TOTAL</strong></td>
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<td>SINGLE</td>
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<td>LEVEL OF EDUCATION</td>
<td>NUMBER</td>
<td>PERCENTAGE</td>
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<tr>
<td>---------------------------</td>
<td>--------</td>
<td>------------</td>
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<tr>
<td>SECONDARY LEVEL</td>
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<td>96.1</td>
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<tr>
<td>MISSING VALUE</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>230</td>
<td>100</td>
</tr>
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</table>

**Table 2** Time spent at present work place

<table>
<thead>
<tr>
<th>DURATION IN MONTHS (YEARS)</th>
<th>NUMBER</th>
<th>PERCENTAGE</th>
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<tr>
<td>1 – 12 (˂ 1)</td>
<td>7</td>
<td>3.0</td>
</tr>
<tr>
<td>13 – 36 (1-3)</td>
<td>81</td>
<td>35.2</td>
</tr>
<tr>
<td>37- 60 (3 – 5)</td>
<td>30</td>
<td>13.0</td>
</tr>
<tr>
<td>61 – 120 (5 – 10)</td>
<td>31</td>
<td>13.5</td>
</tr>
<tr>
<td>≥ 121 (˃ 10)</td>
<td>81</td>
<td>35.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>230</td>
<td>100</td>
</tr>
</tbody>
</table>

**Table 3** Knowledge of health care personnel

<table>
<thead>
<tr>
<th>HEPATITIS B KNOWLEDGE</th>
<th>SCORE (TOTAL OBTAINABLE 4600)</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSMISSION</td>
<td>2505</td>
<td>54.5</td>
</tr>
<tr>
<td>VACCINATION</td>
<td>1940</td>
<td>42.2</td>
</tr>
<tr>
<td>POST EXPOSURE MANAGEMENT</td>
<td>3245</td>
<td>70.5</td>
</tr>
<tr>
<td>AVERAGE SCORE &amp; PERCENTAGE</td>
<td>7690</td>
<td><strong>55.8</strong></td>
</tr>
</tbody>
</table>
Table 4 Relationship of work place category to knowledge, attitude & practice (multivariate analysis)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>TEACHING HOSPITAL</th>
<th>GENERAL HOSPITAL</th>
<th>PRIMARY CARE CENTRE</th>
<th>PRIVATE HOSPITAL</th>
<th>CHI-SQUARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of transmission of HBV lower if source is positive for both HBs &amp; HBe antigen (FALSE)</td>
<td>69.8% CORRECT RESPONSE</td>
<td>4.7% CORRECT RESPONSE</td>
<td>11.6% CORRECT RESPONSE</td>
<td>2.3% CORRECT RESPONSE</td>
<td>$\chi^2 = 64.547$ $P = 0.0000$</td>
</tr>
<tr>
<td>Vaccination schedules for HBV are 3 doses given at 0,3 &amp; 6months (FALSE)</td>
<td>48.3% CORRECT RESPONSE</td>
<td>0% CORRECT RESPONSE</td>
<td>24.1% CORRECT RESPONSE</td>
<td>10.3% CORRECT RESPONSE</td>
<td>$\chi^2 = 12.910$ $P = 0.115$</td>
</tr>
<tr>
<td>HBV vaccine is safe in pregnancy (TRUE)</td>
<td>18.3% CORRECT RESPONSE</td>
<td>0.8% CORRECT RESPONSE</td>
<td>27.5% CORRECT RESPONSE</td>
<td>7.6% CORRECT RESPONSE</td>
<td>$\chi^2 = 26.373$ $P = 0.001$</td>
</tr>
<tr>
<td>HBV vaccination received</td>
<td>23.1% VACCINATED</td>
<td>2.0% VACCINATED</td>
<td>21.1% VACCINATED</td>
<td>7.0% VACCINATED</td>
<td>$\chi^2 = 45.651$ $P = 0.000$</td>
</tr>
<tr>
<td>Do you think you at risk of HBV by virtue of your job description?</td>
<td>42.0% YES TO AT RISK</td>
<td>0.9% YES TO AT RISK</td>
<td>18.8% YES TO AT RISK</td>
<td>12.5% YES TO AT RISK</td>
<td>$\chi^2 = 68.744$ $P = 0.000$</td>
</tr>
<tr>
<td>Did you receive treatment following exposure to HBV?</td>
<td>28.6% RECEIVED POST EXPOSURE TREATMENT</td>
<td>0% RECEIVED POST EXPOSURE TREATMENT</td>
<td>47.6% RECEIVED POST EXPOSURE TREATMENT</td>
<td>4.8% RECEIVED POST EXPOSURE TREATMENT</td>
<td>$\chi^2 = 95.337$ $P = 0.000$</td>
</tr>
</tbody>
</table>
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Factors Associated with Maternal Regular Attendance and Default at Antenatal Clinic in Ile-Ife, Osun State

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Abstract

Background: Every year, more than 200 million women become pregnant. Pregnancy is a normal physiological process and most pregnancies end with the birth of a live baby. Pregnancy is not a disease and pregnancy-related mortality and morbidity are preventable with attainable simple and cost-effective interventions. However, all pregnancies involve some risk to the mother or infant and it is important to prevent, detect, and manage complications early before they become life-threatening emergencies and that is what Antenatal care offers. Antenatal care is considered the foundation for the normal development, adequate growth, and good health of the mother and fetus. Antenatal care is the care given to a woman during pregnancy. It is a systematic plan of preventive and therapeutic care implemented through a schedule of visits between clients and members of the health care team to enable the client (pregnant woman), the fetus and family go through the intrapartum period maximally using all resources to get the best possible outcome of pregnancy. Therefore, Antenatal care is widely used for the prevention, early diagnosis, and treatment of general medical and pregnancy-related complications.

Purpose: The purpose of the study was to assess the factors associated with attendance and default/non-attendance at Antenatal clinic by pregnant women in Ile-Ife.

Methodology: A descriptive research design was employed. Purposive random sampling was used to select 80 pregnant women attending the Health facilities selected for the study. A 29-item questionnaire was used to elicit information from the women. Data collected was analyzed using descriptive statistics such as frequency table and percentage.

Results: Findings revealed that all the 80 (100%) respondents had heard about Antenatal care. 33 (41.3%) were defaulters and 47 (58.7%) attended their clinic regularly and up to date. Factors associated with non-attendance were lack of finance/money (21.2%), occupation/busy work schedule (30.3%), the absence of illness/healthy status (27.3%), and distance (21.2%). The main factor associated with regular attendance of antenatal clinic was good knowledge of the benefit of antenatal care. The recommendation given was that defaulters should be followed up and visited at their respective homes and education on the importance of regular attendance at ANC stressed to them.

Discussion: The findings of this study highlighted the factors associated with regular maternal attendance and default at Antenatal clinic by pregnant women. All the respondents had heard about Antenatal care and were aware of it. About 79% of the respondents got information about antenatal care from neighbours, friends, and relatives who had attended antenatal clinic before. Only 21% of the respondents heard through a nurse. This implies that nurses, midwives, and the health team members need to put up strategies that will assist in reaching a large proportion of pregnant women. From the study, 41.3% of the respondents were defaulters. Some of them default because of their occupation. Those that are traders travel to buy goods or go to the market to sell when the clinic days fall on major market days. Those that are government workers default when they are not granted permission in the workplace. The farmers among them go to farm at times to get farm products for the family. Some default because of lack of money for transportation, the lack of money to buy needed materials and items/pay for services at the clinic. Some said there was no need to attend Antenatal clinic as far as they are healthy. It was also discovered that majority of those who attend ANC regularly were Primigravidae while the multigravidae and grand multigravidae
were the major defaulters. *The multigravidae and grand multigravidae based their reason on the fact that they have attended ANC during previous pregnancies and are healthy.*

**Keywords:** Factors, Maternal, Regular attendance, Default, Ante Natal Clinic, Ante Natal Care.

**Introduction**

Every year, more than 200 million women become pregnant. Pregnancy is a normal physiological process and most pregnancies end with the birth of a live baby. Pregnancy is not a disease and pregnancy-related mortality and morbidity are preventable and attainable with simple and cost-effective interventions. Most pregnancy-related complications could be effectively prevented or managed without recourse to sophisticated and expensive technologies and drugs (Adamu, 2011). However, all pregnancies involve some risk to the mother or infant and it is important to prevent, detect, and manage complications early before they become life threatening emergencies. For some, childbirth is not the joyous event it should be but a time of pain, suffering, and even death. Many of the annual totals of 500,000 maternal deaths estimated by World Health Organization (WHO) are from problems associated with pregnancy and delivery and many of the survivors suffer long term or life-long ill health and disabilities. Because of these difficulties associated with human birth, women often need care in order that they can be helped to bear healthy children and to do so with as little detriment as possible to their own health and the baby and this is through the antenatal care (Stevens-Simon, Beach & McGregor, 2002).

Antenatal care (ANC) is considered the foundation for the normal development, adequate growth, and good health of the mother and fetus. Antenatal care is the care given to a woman during pregnancy. It is a systematic plan of preventive and therapeutic care implemented through a schedule of visits between clients and members of the health care team to enable the client (pregnant woman), the fetus and the family go through the intra-partum period maximally using all resources to get the best possible outcome of pregnancy. Antenatal care therefore, is one of the key strategies for reducing maternal and neonatal morbidity and mortality directly through detection and treatment of pregnancy-related illness, or indirectly through detection of women at risk of complications of delivery and ensuring that they deliver in a suitably equipped facility (Anh, Trinh & Tuyet, 2002). A number of studies have demonstrated the association between antenatal care attendance and reduction of premature birth, low birth weight, congenital malformations, congenital infections, neonatal tetanus, pre-eclampsia, and anaemia (Orvos et al, 2002). The importance of antenatal care is embedded in four main elements, which are assessment of the risk of pregnancy, education, preventive measures, and monitoring of pregnancy. Deriving maximum benefit from the current pattern of antenatal care is dependent on the regular attendance on clinic days. The utilization of ANC has been shown to predict several birth outcomes and a number of postpartum practices (Barnhart, Casanova, Sammel, Timbers, Chung & Kulp, 2008). The new World Health Organization (WHO) ANC model states that every pregnant woman is at risk of complications and recommends early ANC visit. Low ANC coverage, few visits, and late attendance at the antenatal clinic are common problems throughout sub-Saharan Africa posing difficulty in accomplishing the WHO recommended ANC schedule (Delva, Yard, Luchters, Chersich, Muigai, Oyier et al. 2010). According to the Ethiopian Demographic and Health Survey (EDHS) 2011 report, only 11.2% of mothers made their first ANC visit within the first four months of gestation (CSA, ICF International, 2010). A study in Addis Ababa showed that even though 40% of mothers booked in the first trimester, the timing ranges from the first to the ninth month of gestation (Tariku, Melkamu & Zewuditu, 2010). Reports from 2008 Nigerian National Survey revealed that only 58% of women aged 15-41 received antenatal care from a skilled provider (doctor, nurse/midwife) during their last pregnancy. Thirty percent of women received ANC services from a Nurse or midwife, while 23 percent received ANC services from a doctor. Three percent of women received ANC services from traditional birth attendants (TBA) and 39% did not receive ANC services at all (NPC, 2008).
Pregnant women who default from regular clinic attendance are thus deprived of enjoying the maximum benefit that regular antenatal care attendance are expected to give. This study is thus directed at investigating the factors that are associated with regular clinic attendance and default by pregnant women in Ile-Ife.

Statement of problem

Despite all efforts to improve maternal and child health indices and attain the millennium development goals (MDGs) 4 and 5, utilization of ANC services is still low in some parts of the country. Low utilization of maternal and child health services is a big problem in the developing countries. The high level of maternal mortality in developing countries has been attributed partly to the non-availability of services and poor utilization of services when they are available.

Pregnancy is a crucial time to promote healthy behaviours and parenting skills. Good ANC links the woman and her family with the formal health system, increases the chance of using a skilled attendant at birth, and contributes to good health through the life cycle. Inadequate care during this time breaks a critical link in the continuum of care, and affects both women and babies. It has been estimated that 25 percent of maternal deaths occur during pregnancy, with variability between countries depending on the prevalence of unsafe abortion, violence, and disease in the area. Between a third and a half of maternal deaths are due to causes such as hypertension (pre-eclampsia and eclampsia) and antepartum haemorrhage, which are directly related to inadequate care during pregnancy [WHO, 2012].

ANC indirectly saves the lives of mothers and babies by promoting and establishing good health before childbirth and the early postnatal period. ANC often presents the first contact opportunity for a woman to connect with health services, thus offering an entry point for integrated care, promoting healthy home practices, influencing care-seeking behaviours, and linking women with pregnancy complications to a referral system.

The present pattern of antenatal care in which a pregnant woman books and is routinely screened and monitored from conception to the time of delivery has been in existence since the inception of the National Health Service in 1948. There is no doubt that this method of service provision has done a great deal of good, but it is disappointingly true that it has not maximally had the beneficial effect on the maternal and fetal mortality rates of the country as expected. It is known that some pregnant women do not attend antenatal clinic at all for care. Some start attending at first and default after along the way while others only appear towards the time of delivery. Many are questioning the benefits of routine attendance at the antenatal clinic. From observation, the numbers of pregnant women who attend antenatal clinic right from inception to the time of delivery are few compared to those who do not attend at all and those who default.

This study therefore endeavoured to answer the following questions.
1. What are the factors associated with regular attendance at the antenatal clinic by some pregnant women?
2. What are the factors associated with the default/non attendance at antenatal clinic by pregnant women?

Objectives of the study

1. To identify the factors associated with the regular attendance at antenatal clinic by pregnant women in Ile-Ife.
2. To identify the factors associated with the default/non-attendance at antenatal clinic by pregnant women in Ile-Ife.

Significance of the study

Antenatal care is part of maternal care which has its objective as the complete supervision of the pregnant woman in order to preserve the happiness, health, and life of the mother and child. This care starts from the time of conception to the time of delivery. During this period,
difficulties and complications that can be detrimental to the mother and child can be determined, detected, prevented, or managed before delivery. Since individuals react differently to pregnancy, this care is of the utmost importance in detecting these reactions. This study therefore will help find out the factors that are associated with the regular attendance and default/non attendance at antenatal clinic. The study will assist nurses, midwives, government, and various stakeholders to plan and put up strategies that will help prevent/reduce default/non attendance at the antenatal clinic. The study is of utmost importance as mitigating the factors associated with default/non-attendance will reduce maternal and child mortality.

Literature review

Maternal and neonatal morbidity and mortality have continued to be a major problem in developing countries despite efforts to reverse the trend. Globally, more than 500,000 mothers die each year from pregnancy related conditions, and neonatal mortality accounts for almost 40% of the estimated 9.7 million children under-five deaths (UNICEF, 2009). All these can be prevented by antenatal care. Antenatal care is the care given to a pregnant woman from conception to delivery. It involves constant and complete supervision of the pregnant woman. Maximum benefit from antenatal care is dependent on the regular attendance on clinic days. However, only 19% of women attend antenatal care by their fourth month of pregnancy, as recommended by World Health Organization (ZDHS, 2007).

Many neonatal deaths are a direct consequence of poorly managed pregnancies and deliveries. For half a million of women each year, the complications of pregnancy are fatal. The causes of these deaths are essentially the same around the world. It is estimated that 127,000 women (25%) die due to haemorrhage, 76,000 (15%) due to sepsis, 65,000 (12%) due to hypertensive disorders of pregnancy, 38,000 (18%) due to obstructed labour, and almost 70,000 (13%) due to abortion. Around 20% of women die as a result of a disease which is aggravated by pregnancy, such as malaria, iron deficiency anaemia, hepatitis, tuberculosis, or heart disease complications and they nonetheless suffer acute or chronic ill-health and debilitating conditions such as reproductive tract infections.

Pregnancy related deaths and disabilities result not only in human suffering but also in losses to social and economic developments. The women who die are in the prime of life, and responsible for the health and well being of their families. They generate income, grow and prepare food, educate the young, care for the children, the elderly and sick. Their deaths represent a drain on all development efforts.

Concept of antenatal care

Antenatal care (ANC) is the care a pregnant woman receives during her pregnancy through a series of consultations with trained health care workers such as midwives, nurses, and sometimes a doctor who specializes in pregnancy and birth.

An analytical review of the recent World Health Statistics showed that ANC coverage, between 2006 and 2013, was indirectly correlated with maternal mortality ratio (MMR) worldwide. This indicates that countries with low ANC coverage are the countries with very high MMR. For instance, ANC coverage in United Arab Emirates was 100% with MMR of 8 per 100,000 and Ukraine had 99% ANC coverage and MMR of 23. By comparison, in sub-Saharan Africa, Ghana had ANC coverage of 96% and MMR of 380/100000, Chad had 43% ANC coverage and a MMR of 980/100,000, and Nigeria had ANC coverage of 61% and MMR of over 560. Nigeria’s MMR is clearly above the African and global average of 500 and 210 respectively [Doctor, Bairagi, Findley, 2011]. The poor maternal health outcome in Nigeria could be a result of poor ANC utilization, [Ajayi, Osakinle, 2013] although ANC coverage may not provide information on the quality of care provided.
Importance/Benefits of ante natal care

The importance of ANC services in the outcomes for pregnant women has been well documented [Osungbade, Oginni, Olumide, 2008]. ANC enhances early identification and management of conditions that could be threatening to the mother and her unborn child. ANC by trained skilled providers screen for infections, treats malaria, reduces the incidence of perinatal illness and death, provides birth preparedness, identifies signs of danger in pregnancy and plans to handle possible delivery complications through timely treatment and referrals [Lincetto, Mothebesoane-anoh, Gomez, Munjanja, 2010]. It also reduces medical problems in pregnancy such as anaemia, hypertension, ectopic pregnancy, obstructed labour, eclampsia, excessive bleeding and premature labour and delivery [Asmaw, Alemu, Alemu, Unakal, 2013]. In particular, a clinical audit of antenatal services in Nigeria found better maternal outcomes among women who had completed ANC than those who had not though it may not directly reduce the risk of death.

Two nationally representative surveys were conducted recently in Nigeria: Nigeria Demographic and Health Survey (NDHS) in 2013 and National AIDS and Reproductive household survey (NARHS) in 2012. The two surveys showed that the proportion of pregnant women who had not attended any ANC services in Nigeria was 33.9% and 34.9% respectively. According to the 2013 NDHS, only 60.9% among women of child bearing age (15–49 years) who had a live birth in the five years preceding the survey received ANC from a trained skilled ANC provider (i.e., a doctor, nurse or midwife, or auxiliary nurse or midwife). Only half (51.0%) reported making four or more ANC visits during the pregnancy. About one third (36%) of births were delivered in a health facility while 38% of all deliveries within the five years were assisted by a skilled birth assistant (SBA). The attendance of ANC and delivery in a facility by a trained birth assistant are far lower than most other Africa countries. In sub-Saharan Africa, overall 75% had at least one ANC attendance, 48% had 4 or more ANC visits and 48% of deliveries were supported by skilled birth attendants [Gupta, Engelman, Levy, Luchsinger, Merrick, James, 2014].

In comparison with ANC coverage in Nigeria, a neighboring developing country, Mali, had 57% of pregnant women having at least one prenatal contact with a skilled ANC provider within five years preceding the DHS in 2001. In another developing country, Indonesia, about 95% of pregnant women attended at least one ANC visit and 66% of women had four ANC visits within five years before the 2007 DHS. This implies that Nigeria has not attained maternal health care success achieved over a decade ago in Mali and over 5 years ago in Indonesia. The questions are why are pregnant women not attending ANC in Nigeria? What are the limiting factors? What are the barriers?

Studies have documented the socio-demographic and other factors affecting ANC use. Inability to pay for ANC services or prescribed treatment was identified as an important barrier to utilization of ANC [Onuzulike, 2009], a finding supported by other studies [Arthur, 2012]. In situations where ANC uptake requires travel and long waiting hours, pregnant women and their families experience huge opportunity costs, such as the loss of income in order to attend services [Onuzulike, 2009]. Long distances to health facilities as well as insufficient number of ANC providers at various ANC clinics negatively affect ANC utilization. Several studies have identified rural–urban differentials in use of ANC in Nigeria and elsewhere. The higher ANC coverage in urban areas than in rural areas worldwide has been ascribed to inequities in the number of accessible health facilities. In Nigeria, urban bias in public health expenditure, inadequate financing coupled with difficulties in attracting health workers to and retaining them in rural areas have limited government’s ability to create an accessible community-based health care system which could reduce inequities in rural–urban health facilities. This scenario also occurs in other developing countries.

Antenatal care has been shown to improve certain outcomes of pregnancy complications such as eclampsia, anemia and syphilis through early detection, management and timely referral of high risk pregnancies, though such care has not been shown to reduce the rates of
maternal mortality. To fully benefit from the above actions and to improve on maternal and neonate outcome, it is advised that women begin attending ANC early in pregnancy.

WHO recommends that ANC should be started in the first trimester of pregnancy or early in the second trimester. If the pregnant woman has no serious health problem and does not need special attention, only four ANC visits suffice a decrease from 12 ANC visits, as had been previously recommended, as it is less costly and does not result to an increase in adverse maternal nor perinatal events [Carroli, Villar, Piaggio, 2001].

The recommendations by the Ministry of Health are that in a normal pregnancy, four visits suffice but on women with problems, extra visits are welcome. The four visits are 1st by 16 weeks, 2nd at 24-48 weeks, 3rd at 32 weeks and 4th at 36 weeks; this is referred to as Focused antenatal care.

It is evident that timely antenatal care is an opportunity to prevent the direct causes of maternal mortality and reduction of fetal and neonatal deaths related to obstetric complications. Essex and Everett 1977 cited by McDonagh, 1996 stated that 81% of risk factors in pregnancy can be identified in the antenatal period. Coria-Soto et al, 1996, found that inadequate number of ANC visits was associated with 73% risk of having intra uterine growth retardation.

It has been argued that some of the poor pregnancy outcomes and complications of high-risk women are as a result of lack of antenatal care. [Carroli, Villar, Piaggio, 2001]. Llewellyn-Jones, 1974 asserts that lack of antenatal care, rather than biological inefficiency may be responsible for complications such as pre-eclampsia, anemia and low birth weight among teenage and unmarried mothers. However, there is no doubt that pregnancies of very young or older mothers have increased risks for both the mother and the baby.

A range of factors have been attributed to the low utilization of ANC services. They range from socio-economic, cultural, demographic, service availability and accessibility characteristics. In another study of the determinants of maternal health care in India, the important role played by socio-economic factors on the use of maternal health services was confirmed where higher maternal education, income and higher personal hygiene were observed to be associated with significantly higher probability of routine antenatal check-up. Demographic factors were also observed to play an important role as mothers aged below 18 years were less likely to have routine antenatal check-up.

Other factors that deter one from attending ANC are educational status of women, living in rural area, marital status, and being in poorest wealth index and obstetric factors such as parity, outcome of previous pregnancy and whether the pregnancy is planned or not, characteristics of the women and her family, characteristics of illness as well as characteristics of the health care system, including accessibility, acceptability, cost and quality of care provided.

The desirability of a pregnancy is an important determinant of the use of maternal health services. Pregnancies which are mistimed or not wanted are associated with irregular and late antenatal care visits than pregnancies which are conceived at the time that a woman wanted the pregnancy.

The Government of Kenya’s March 2009 National Road Map for Accelerating the Attainment of the MDGs Related to Maternal and Newborn Health in Kenya and the Child Survival and Development Strategy 2008 identified several barriers to utilization of maternal services ranging from socio-cultural to demographic factors including: lack of recognition of danger signs in pregnancy; poor accessibility and low utilization of skilled attendance during pregnancy, child birth and postpartum period; limited access to essential and emergency obstetric care due to limited health provider competence and inadequate staffing, equipment and supplies; socio-cultural barriers leading to delays in seeking care; and limited national commitment of resources for maternal and newborn health [Health Policy Paper, 2012].

Skilled attendance at all births is considered to be the most critical intervention for ensuring safe motherhood; it hastens the timely delivery of emergency obstetric and newborn care when life-threatening complications arise. Skilled attendance denotes not only the
presence of midwives and others with midwifery skills (MOWMS) but also the enabling environment they need in order to perform capably. It also implies access to a more comprehensive level of obstetric care in case of complications requiring surgery or blood transfusions [UNFPA, 2012].

Up to 15 per cent of all births are complicated by a potentially fatal condition. Many of these complications are unpredictable, almost all are treatable. Skilled attendants are trained to recognize problems early, when the situation can still be controlled, to intervene and manage the complication, or to stabilize the condition and refer the patient to a higher level of care, if needed. Skilled attendance is also vital in protecting the health of newborns: the majority of perinatal deaths occur during labour and delivery or within the first 48 hours after delivery. [Magidi, 2012].

Evidence from many countries, most notably China, Cuba, Egypt, Jordan, Malaysia, Sri Lanka, Thailand and Tunisia, indicate that skilled midwives functioning in or very close to the community can have a drastic impact on reduction of maternal and neonatal mortality. This is why the proportion of births attended by a skilled health provider is one of the indicators for measuring progress toward the fifth Millennium Development Goal.

In developing countries, the majority of births occur without the help of a skilled assistant at home or in other non-hospital settings [WHO, 2012]. In Kenya, 43% of deliveries occur in a health facility and 44% are assisted by a skilled attendant, this doesn’t reflect the true picture of the whole country as Nyanza, western and coast province still have low figures of births attended to in hospital. Instead majority of births do occur at home under the care of traditional birth attendants.

Home deliveries in the absence of skilled professional attendants have been associated with adverse infant and maternal outcome. The place of delivery, if adequate facilities are provided effectively, has consistently been found to be associated with reduced maternal and neonatal mortality. An Effective delivery facility should meet the following conditions: first, delivery should be assisted by trained health workers who are able to identify the signs of complications and act appropriately when a problem occurs. Second, Referral facilities should be available to deal with obstetric emergencies once they have been identified, and on arrival at the referral facility patients should be observed promptly and appropriate decisions made to avoid further complications or even death, there needs to be a transport system to get women to the facility quickly in order for the service to be effective [Thaddeus’s, Maine 1994].

Despite evidence showing that an effective delivery service leads to a reduction in maternal mortality we as a country haven’t made strides towards achieving this goal. The above problem may be due to different reasons, including long distances or difficult access to a birth facility, costs of services and perceived lack of quality of care in a health facility [Hodgkin, 2012].

In developing countries, Traditional birth attendants (TBAs) continue to have a significant role in assisting in deliveries. In rural settings in Kenya, especially, Nyanza and western province there is a similar trend as shown from the KDHS, 2008 findings where 45% of women are delivered by TBAs as opposed to 25.8% who use skilled professionals. There hasn’t been much change of the above trend in the last 5 years.

A vital contribution towards reducing maternal morbidity and mortality could be made if attendance at an antenatal clinic influenced women to select a trained birth attendant, thus the need for proper health education to women visiting ANC as almost 92% of pregnant women at least have one antenatal visits but only 25.8% are delivered by a skilled attendant [KDHS, 2008].

The importance/benefits of antenatal care are embedded in these Four (4) main elements.

i. Assessment of the risk of pregnancy – This begins with the first contact with the pregnant at the antenatal clinic. It takes the form of observation, physical examination and history taking. Personal data is collected to identify the client. Gynaecological and obstetric history is important for management of the client and also for anticipatory complications that can occur. A well taken history is the foundation stone of effective
ante natal care. Establishing and recording key facts regarding a woman’s general health and obstetric past assist in the rapid identification of problems and provide criteria for appropriate decisions about care and services to be rendered (Myles, 1996). Women at risk of pregnancy that can result to complications include poor obstetric history, strikingly short stature, very young maternal age (15 years), nulliparity and grande multiparity, previous childlessness and malnutrition. Such women should be kept under review throughout pregnancy.

ii. Education – Ante natal care is an opportunity to promote dialogue with the client and nurture confidence as well as to reinforce maternal health messages on nutritional advice such as specific foods and taboos, rest, discomforts of pregnancy, personal hygiene, safer sex, family planning and child spacing. The clinic provides valuable opportunity for education on all these areas. She also learns the normal changes which occur during pregnancy and any deviation from this makes her to seek for help early.

iii. Preventive measures – “Prevention is better than cure” goes a saying. Pregnant women are susceptible to certain infections and diseases and preventive measures need to be taken to help the woman. These include active immunization of tetanus toxoid, which is highly effective against neonatal tetanus, routine provision of supplementary iron tablets and folic acid to reduce incidence of anaemia and chemoprophylaxis in the case of malaria. All these are done to improve the general health of the woman.

iv. Monitoring – Ideally, every pregnant woman should have a laboratory assessment and routine testing in every ante natal clinic attended so as to detect deviation from normal at an early stage before complications occur. Simple indications used include measurement of body weight, height, examination or testing of urine for sugar and protein, PCV and haemoglobin check, measurement of temperature and blood pressure and physical examination including specific obstetric observation (Myles, 1996).

From the above therefore, the aims of ante natal care is to prepare the woman for labour, lactation, and subsequent care of her child from the physical, psychological, social and educational point of view so as to ensure the delivery of a mature, live and healthy infant.

Factors associated with attendance and default/non-attendance at ante natal clinic

Multiple barriers to participation and non attendance at antenatal clinic from related literatures include limited access health care due to economic constraints or lack of transportation, lack of knowledge with regards to risk factors and screening procedures. Cultural insensitivity wherein relevant socio-cultural factors or elements of diverse beliefs and practices are omitted from health programme operations, language barriers, socio-cultural values concerning health and sexuality as well as a lack of trust in health care were other factors (Olsen and Frank-Stromberg, 1993). Value-laden beliefs become obstacles when they predispose women to undermine health care services. Various studies have reported factors associated with non-attendance, default and late entry to ANC, which include place of residence, age, education, employment status, parity, economic status, travel time, and health insurance (Trinh & Rubin, 2006; Adekanle & Isawumi, 2008). Findings revealed that health practices, self care treatments such as herbal remedies are valued. They may prefer traditional practices with which they are familiar and which they feel were good enough for their parents and grandparents and so should be good enough for them. Ignorance is the most complex reason for not attending ante natal clinic. Some don’t know the type of care they would receive. Some feel it is not necessary as long as they are healthy, bodily fit and not sick. Others feel there is nothing to gain in attending the clinic while others feel it is burdensome visiting the antenatal clinic at appointed dates. Shame on the part of an unmarried expectant mother may prevent her from booking in the clinic because she feels she will reveal her secret by doing so. On the other hand, an older married expectant mother who sees herself unexpectedly pregnant when her children are already grown up finds it uneasy to come to the antenatal clinic because of shame. Some others are too busy with their occupation, care of
their families or suffer subordination from the husband and family members. Fear of the unknown and tragic outcomes of hospital delivery makes some to avoid antenatal clinic. These reasons or factors to the defaulters or to those who did not book at the antenatal clinic may be reasonable and good, however, there is not just only one life at risk but two – the mother and expected child. So, the proportion of women who are obtaining the recommended minimum visits is too low (WHO, 2003). In addition, the first consultation is often made late in pregnancy, whereas maximum benefit requires early initiation of antenatal care.

On the other hand, those who book and attend ante natal clinic regularly are those who feel they will benefit from the ante natal clinic and receive the care that will keep them healthy and deliver safely or are surrounded by favourable conditions like support from husband and relatives, access to money and transportation, proximity to clinic and so on.

The challenge, which now confronts decision makers, health care planners and managers, and health care providers, is to ensure that every pregnant woman has access to high quality essential care. In order to ensure that as many pregnant women as possible have access to the essentials of care, a balance will have to be achieved between what is absolutely critical for all women and what would be ideal if circumstances permit. Important messages related to the health of women need to be conveyed to the community through a variety of media (radio, newspaper, television, plays) as well as through health care providers. It is crucial that consistent messages be conveyed to women, their families and the community through all channels. Financially handicapped ones can be helped to solve this problem through the medical social worker.

Factors that determine antenatal care service utilization

- **Cultural influences**
  Cultural influences including local understandings of disease etiology and externally-focused loci of control play complex but important roles in understanding decision-making on location of delivery. Care-seeking may be delayed in situations where certain health problems are viewed as spiritual in nature rather than physical, such as eclamptic seizures. Despite the role of tradition in delivery practices, several respondents referred to home birth as “old time” and desired the modernity of facility-based delivery [Moyer, Adongo, Aborigo, Hodgson, Engmann, Devries, 2013].

- **Medicalization of childbirth**
  Both women and men described the birthing process as a “normal” or “routine” event and believed that childbirth was a woman’s “natural rite of passage” [Gebrehiwot, Goicolea, Edin, Sebastian, 2012]. Therefore, there was no rationale for delivering at a facility, and paying to do so was considered illogical and superfluous. Many women attempted home delivery first and considered facility birth only if complications arose.

  When faced with the prospect of facility birth, some women feared undesirable birth practices, such as unfamiliar birthing positions. They preferred delivering at home with TBAs to retain control over their birth position. Medicalization of childbirth can leave women with the feeling that they are no longer active participants or decision-makers in the birthing process. Hospital providers were perceived as conducting unnecessary vaginal examinations, which women found uncomfortable and dehumanizing. Women viewed childbirth as an unpredictable event, which made creating a birth plan difficult. [Magoma, Requejo, Campbell, Cousens, Filippi, 2010]. This lack of planning in advance for childbirth, including decisions regarding delivery location, transportation, and availability of cash, prevent many women from accessing facility delivery. Many women felt more in control of maintaining their privacy when delivering at home. Privacy is greatly valued by parturient women, yet it may be difficult to achieve in a facility due to cultural insensitivity, or a lack of private labor wards. The lack of supportive attendance during facility-based delivery was a major concern. Women commonly referred to their families and TBAs as providing supportive care during home births. The “fear of cutting” (episiotomy or caesarean section) during delivery is an
important barrier to facility-based delivery. Since many women believe that “a woman is born
to deliver vaginally,” caesarean sections are seen as an unnatural intervention. Caesarean
sections are also believed to be used indiscriminately without thorough consideration
regarding individual cases. Similarly, women viewed episiotomy as an unnecessary
intervention with complex social impacts.

• **Perception of antenatal care**

Women may believe that attending ANC will diminish the likelihood of a complicated
delivery, and use ANC in a preventive manner as a means to ensure a normal pregnancy and
home-birth [Izugbara, Kabiru, Zulu, 2009]. This may explain why in some contexts ANC
coverage is near universal while facility delivery rates remain low. In settings where ANC
attendance was nearly universal, those few women who did not seek ANC felt uncomfortable
seeking facility-based delivery due to their unfamiliarity with the health system and fear of
mistreatment for not possessing an ANC attendance card. ANC providers may not be
adequately advising women of the importance of facility-based delivery, due to a heavy
workload and limited time to discuss complex issues with their patients. Some providers
hesitate to encourage all women to deliver at a facility because of the scarcity of space or
equipment.

• **Previous birth experiences**

Women determine their level of risk for complicated deliveries in part based on their prior
delivery experiences and birth outcomes, which informs their future delivery location. A
woman may be more likely to deliver at a facility during her first birth or if she had a previous
obstetric complication. However, if a woman delivered her first child without complications,
utilizing a facility for subsequent births is often viewed as unnecessary [Sorensen, Nielsen,
Rasch, Elsass, 2011].

• **Influence of others on delivery location**

A parturient woman may not be in control of the decision to seek facility-based delivery,
instead relying on decisions made by elder women, husbands, other family members, and
neighbors. While the influence of some actors may facilitate accessing skilled care, the
involvement of too many actors often results in the delay or prevention of facility-based births
[Seljeskog, Sundby, Chimango, 2006].

Elder women hold the greatest influence and decision-making power regarding delivery
location across Asia and sub-Saharan Africa. Some women believed that they should choose
the same delivery location as their mothers and grandmothers to maintain intergenerational
continuity, and elder women may pressure younger women to deliver at home. Husbands play
various roles in facilitating or preventing their wives from accessing facility-based deliveries,
ranging from: (a) persuading their wives to visit a facility and mobilizing the necessary
transportation and funds to (b) prohibiting a facility visit to (c) playing a more neutral role.
Husbands do not always hold the final authority – the husband’s decision-making power
ranked below elder females across multiple contexts [Otis, Brett, 2008].

Families with social connections to skilled providers may be more accepting of the
biomedical approach to maternity care and thus more willing to seek a facility-based delivery.
More importantly, a relative or friend working at a nearby facility can often arrange quicker
admission or quality treatment of a parturient woman.

Home births are logistically easier than facility births and meet women’s desires to be
surrounded by their belongings and the possibility of maintaining domestic responsibilities.
Although women may receive support in their domestic responsibilities from their
neighbours, co-wives, or husbands, women were concerned that domestic chores would be
neglected if they attended a health facility for delivery.
• **Effect of policies**

Access to facility deliveries is influenced at a community or national level, social welfare programs, population beyond the control of individual women. Several studies addressed the effects of government policies and programs on a woman’s delivery location, including national health insurance schemes policies limiting the number of children allowed per couple, and national programs designed to increase facility-based deliveries [Wild, Barclay, Kelly, Martins, 2010].

• **Resource availability and access**

**Transportation**

Geographical distance and considerable travel times to health facilities are influential factors affecting women’s delivery locations. In contrast to the perceived inaccessibility of facilities, the accessibility of traditional practitioners may validate a woman’s decision to deliver at home. Likewise, limited availability of transportation options played a crucial role in whether or not a facility could be reached in a timely manner. In the absence of a reliable private car or ambulance, women used arduous modes of transportation including motorcycles or public transportation. In some areas, local public transportation was the only means available, but services were often intermittent in rural areas and the cost of transportation was prohibitively expensive. Travel at night or on weekends is especially difficult as there are fewer options and higher costs. Furthermore, health facilities may be closed or lack appropriate staffing to manage a delivery or complications at night. Lack of access to transportation, good roads, adequate funds, and communication systems also make organizing referrals for obstetric complications a time-consuming process [Afsana, 2004].

• **Cost of childbirth**

Direct costs associated with childbirth were prohibitively high for many women who viewed themselves as too poor to deliver in a facility. Low-resource households may have trouble acquiring funds to pay for facility-based care at the time-of-service, particularly those families who rely on seasonal labor. Collecting necessary funds were a difficult task as few moneylenders lent to the poor, and if they did, exorbitant interest rates could make the principle escalate rapidly. Family members were often sent around the community to collect money from their neighbor.

Women viewed costs outside of the direct cost for a delivery as “hidden” and said they were difficult to prepare for. Even in settings where direct delivery costs were subsidized, families were expected to pay for transportation to the facility, and other costs related to treatment at the facility [Otis, Brett, 2008].

• **Perceived quality of care from TBAs**

Women emphasized the close bond they felt with TBAs, due to their status in the community and their trustworthiness. Some women believed that they received high quality care from TBAs and believed that TBAs played a supportive role. However, women who believed TBAs provided low-quality care and did not trust their ability to handle complications were more inclined to seek facility-based care, observing traditional practices did not preclude women from utilizing modern medical care. In medically pluralistic communities, many women moved freely between traditional and biomedical care models.

• **Perceived quality of care at facilities**

Facilities are viewed as the safest and most respectable location for a delivery, and that facilities were able to ensure positive outcomes. Furthermore, the competence of formal health workers is respected and viewed as “well-trained, competent, and compassionate” “experts” who provided “effective management of emergencies”

However, women reporting negative interactions at facilities and lacking confidence in the health workers’ abilities, who they considered undertrained, incompetent, and inexperienced,
were less inclined to desire facility deliveries. Some Women described providers as verbally and physically abusive, rude, bossy, disrespectful, insulting and easily angered, having poor attitudes, and lacking compassion. Physical abuse included slapping, hitting, or forcefully holding women down. Negative interactions with providers were exacerbated for women of low socioeconomic status [Pitchforth, Van Teijlingen, Graham, Dixon-Woods, Chowdhury, 2006].

Many Women experience neglect and long delays in receiving facility-based care. Health workers were slow to respond to patients’ needs and women reported feeling alone during delivery as health workers had poor communication skills and did not provide updates on labor progression [Gao, Barclay, Kildea, Hao, Belton, 2010].

Inadequate facility infrastructure and staffing contributes to overall perception of low quality of care and there has been complaints of overcrowded wards without dedicated labor and delivery areas. The lack of adequate staff also led to overburdened lower-level providers.

• **Stigma**

Women feared compulsory HIV-testing or HIV-testing without consent during facility-based delivery due to the fear of discrimination associated with a positive test. Some felt the only way to avoid HIV-testing was to deliver at home. The fear of unwanted HIV-status disclosure may prevent women from accessing facility delivery, as the lack of privacy in maternity wards impedes confidentiality. Lastly, many communities view pregnancy and childbirth as the outcome of a marital relationship, thereby potentially stigmatizing and disempowering unwed women seeking facility delivery. Delivering at home was a desirable choice for unwed women or adolescents to avoid embarrassment or discrimination at a facility, particularly because these women were often lacking emotional and financial support from their partner or parent.

Several years ago, Thaddeus and Maine presented a framework identifying three phases of delay to accessing quality obstetric care: (a) delays in seeking care; (b) delays in reaching care; and (c) delays in receiving care. Although the three-delay model is still valid, it may be too simplistic to explain why women still experience delays in accessing skilled delivery care. This review expands upon the three-delay model to illustrate how perceived quality of care by both traditional providers and facility-based providers influence the decision to seek care, as well as the impact of disrespect and abuse on delivery care-seeking behaviors. Public health programs to date have focused primarily on addressing resource availability and access issues to increase facility-based delivery rates. However, improving the quality of facility-based intrapartum care has the potential to further reduce the barriers to the utilization of facility-based delivery services.

**Methodology**

**Design and Location of study:** Descriptive design was adopted for the study. The study was conducted at three health facilities located within Ile-Ife, Osun State, South West, Nigeria. The facilities are Obafemi Awolowo University Teaching Hospital, Eleyele Comprehensive Health centre and Enuwa Primary Health Care Centre. Ile-Ife town is a Yoruba speaking town located 80km East of Ibadan, 32km South of Ilesha, and 64km North-east of Ondo town. There are many government workers as well as majority of the indigenes who engage in petty trading, farming, driving, etc. The health facilities selected for this study take care of the health needs of the citizens residing in Ile-Ife and its environs.

**Sample size and Sampling procedure:** Purposive sampling technique was used and all registered pregnant women at the antenatal clinics as at the time of the study constituted the sample for the study. 80 pregnant women within 18 years and above who attend antenatal clinic at the three centres used made up the sample of the study. The distribution according to the centres include 35 pregnant women at Obafemi Awolowo University Teaching Hospital, Ile-Ife, 25 pregnant women at Eleyele Comprehensive Health centre, and 20 at Enuwa Primary Health Care centre.
Method of Data collection: Questionnaire which doubled as an interview guide but translated to Yoruba for subjects who could not read in English was used to collect information from the participants. The questionnaire had 29-item which comprised of both closed-ended and open-ended questions. The exercise was conducted with their cooperation and all the questionnaires were retrieved by the researcher.

Technique of Data analysis: The data was analyzed using descriptive statistical tools like frequency table and percentages. Before this exercise, all data was edited, coded and fed into the computer. This was facilitated by the use of the Statistical Package for Social Sciences version 18.0.

Ethical consideration: The values, belief, privacy of the respondents were duly observed. Ethical clearance was sought from the research coordinator to the authority concerned at the catchment area. Participants were assured of anonymity and confidentiality throughout the study. The informed consent was sought from the study participants prior to their participation in the study.

Analysis of data and interpretation

This chapter gives information on data generated. The data in summary tables using frequency counts and percentages is as presented.

| Table 1. Showing the socio-demographic characteristics of the respondents (n=80) |
|---------------------------------|------------------|------------------|
| Variables                       | No of respondents | %                |
| Age range (Years)               |                  |                  |
| 15-19                           | 7                | 8.7              |
| 20-24                           | 24               | 30.0             |
| 25-29                           | 13               | 16.3             |
| 30-34                           | 17               | 21.2             |
| 35-39                           | 10               | 12.5             |
| 40 & above                      | 9                | 11.3             |
| Total                           | 80               | 100.0            |
| Educational status              |                  |                  |
| No schooling                    | 15               | 18.7             |
| Primary                         | 21               | 26.3             |
| Secondary                       | 28               | 35.0             |
| Higher education                | 16               | 20.0             |
| Total                           | 80               | 100.0            |
| Tribe                           |                  |                  |
| Yoruba                          | 50               | 62.5             |
| Igbo                            | 18               | 22.5             |
| Hausa                           | 9                | 11.3             |
| Others                          | 3                | 3.7              |
| Total                           | 80               | 100.0            |
| Marital status                  |                  |                  |
| Single                          | 10               | 12.5             |
| Married                         | 70               | 87.5             |
| Separated                       | 0                | 0                |
| Divorced                        | 0                | 0                |
| Total                           | 80               | 100.0            |
| Occupation                      |                  |                  |
| Civil servant                   | 30               | 37.50            |
| Trading                         | 35               | 43.75            |
| Farming                         | 15               | 18.75            |
| Total                           | 80               | 100.0            |
Table 1 shows a summary of the socio-demographic characteristics of the pregnant women who participated in the study. A total of 80 women attending antenatal clinic were included in the study with distribution between 3 health facilities in Ile-Ife. The majority of the participants were in the age range of 20-24 years. Most of the women were married. 71.3% of the women were Christians. All the women were engaged in one occupation or the other. Majority of the women had some education ranging from primary to higher education which means that they were not illiterates.

**Table 2 Assessment of respondents’ sources of information**

<table>
<thead>
<tr>
<th>Source of information</th>
<th>No of respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighbour/friend</td>
<td>37</td>
<td>46.25</td>
</tr>
<tr>
<td>Nurse/health worker</td>
<td>17</td>
<td>21.25</td>
</tr>
<tr>
<td>Mum/relative</td>
<td>14</td>
<td>17.50</td>
</tr>
<tr>
<td>Radio/television</td>
<td>12</td>
<td>15.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The above table gives a summary of the respondents’ sources of information about antenatal clinic/antenatal care. Majority of the pregnant women heard about antenatal clinic/care from neighbours and friends.

**Table 3 Obstetric characteristics of the participants**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No of respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parity (number of children)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparous</td>
<td>28</td>
<td>35.0</td>
</tr>
<tr>
<td>1 or more children</td>
<td>52</td>
<td>65.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td><strong>Gravidity (number of previous pregnancies)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primigravida</td>
<td>28</td>
<td>35.0</td>
</tr>
<tr>
<td>Multigravida</td>
<td>25</td>
<td>31.3</td>
</tr>
<tr>
<td>Grand multigravida</td>
<td>27</td>
<td>33.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td><strong>Age of last child (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 2</td>
<td>15</td>
<td>28.8</td>
</tr>
<tr>
<td>2 – 5</td>
<td>15</td>
<td>28.8</td>
</tr>
<tr>
<td>&gt;5</td>
<td>22</td>
<td>42.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>52</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td><strong>Antenatal care entry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early</td>
<td>25</td>
<td>31.2</td>
</tr>
<tr>
<td>Late</td>
<td>55</td>
<td>68.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The table above shows the obstetrics characteristics of women who participated in the study. 65% of the women had 1 or more children before while 35% have not had any child before. Most of the women (65%) had 3 or more previous pregnancies. Information on initiation of ANC revealed that 68.8% booked for ANC late.
Table 4 Respondents’ pattern of attendance of antenatal clinic

<table>
<thead>
<tr>
<th>Pattern of attendance</th>
<th>No of respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-regular (Defaulters)</td>
<td>33</td>
<td>41.3</td>
</tr>
<tr>
<td>Regular (Non-defaulters)</td>
<td>47</td>
<td>58.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

From the above table, 33 (41.3%) were defaulters and 47 (58.7%) were those who were always present at the clinic at the appointment day. A woman who starts attending clinic as from the 12\textsuperscript{th} week of gestation will attend not less than 12 times before birth. Others come later than 12\textsuperscript{th} week of gestation and therefore the number of times of antenatal clinic attendance will be less than 12 times. Any pregnant woman who failed to attend antenatal clinic for about two times or more consecutively is termed a defaulter and needs to be followed up.

Table 5. Defaulters by the number of times of non-attendance at the antenatal clinic

<table>
<thead>
<tr>
<th>Time of registration</th>
<th>No of respondents (N=33)</th>
<th>No of attendance expected</th>
<th>No of times defaulted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration at 12 weeks</td>
<td>2</td>
<td>12 times</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>12 times</td>
<td>2</td>
</tr>
<tr>
<td>Registration at 13 weeks</td>
<td>1</td>
<td>11 times</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>11 times</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>11 times</td>
<td>2</td>
</tr>
<tr>
<td>Registration at 16 weeks</td>
<td>2</td>
<td>11 times</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>11 times</td>
<td>2</td>
</tr>
<tr>
<td>Registration at 20 weeks</td>
<td>1</td>
<td>10 times</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 times</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 times</td>
<td>3</td>
</tr>
<tr>
<td>Registration at 22 weeks</td>
<td>1</td>
<td>9 times</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>9 times</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>9 times</td>
<td>4</td>
</tr>
<tr>
<td>Registration at 24 weeks</td>
<td>1</td>
<td>9 times</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>9 times</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>9 times</td>
<td>2</td>
</tr>
<tr>
<td>Registration at 26 weeks</td>
<td>1</td>
<td>8 times</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>8 times</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>8 times</td>
<td>2</td>
</tr>
</tbody>
</table>

The table above shows the summary of the attendance of defaulters for antenatal care and the number of times each defaulted.

Table 6. Respondents by the factors associated with defaulting at the antenatal clinic

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. of respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of money/finance</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td>Occupation/busy schedule</td>
<td>10</td>
<td>30.3</td>
</tr>
<tr>
<td>Absence of illness</td>
<td>9</td>
<td>27.3</td>
</tr>
<tr>
<td>Distance</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The table above gives a summary of the factors the defaulters gave as reasons for defaulting at antenatal clinic. 10 (30.3%) defaulted because of their occupation/busy schedule, 9 (27.3%) defaulted because of absence of illness/healthy status.
Table 7 Factors associated with regular attendance at the antenatal clinic

<table>
<thead>
<tr>
<th>Variables</th>
<th>No of respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneficial to me and my baby</td>
<td>17</td>
<td>36.2</td>
</tr>
<tr>
<td>To know my health status and that of my baby</td>
<td>20</td>
<td>42.5</td>
</tr>
<tr>
<td>For good care before delivery</td>
<td>10</td>
<td>21.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>47</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 7 gives a summary of the factors associated with the attendance at antenatal clinic by the non-defaulters. The pregnant women who never defaulted did so because of adequate knowledge on the benefits of ANC to them and their babies.

**Discussion**

Improving maternal health care, particularly providing antenatal and delivery care, are important mechanisms identified to reduce maternal mortality and as such facilitate the attainment of the Millennium Development Goals on maternal health (WHO/UNICEF, 2003). Information gathered in this study revealed that 41.3% of the participants were defaulters and 68.8% registered late for ANC. Even those who registered still defaulted along the way. This result is slightly lower than what was reported in another Nigerian study where the prevalence rate of defaulters and late ANC attendance was 81% and higher than 41% established in an Australian study (Adekanle & Isawumi, 2008; Trinh & Rubin, 2006).

**Factors associated with maternal default and attendance at ANC**

Results from the study revealed that maternal default at ANC was due to reasons ranging from lack of money for transportation, purchase of necessary materials or undergoing some tests in the clinic. Some missed their clinic days because of their occupation/busy schedule. The women reported that sometimes they are not given permission in their workplace while some go to market to sell their goods especially when the clinic day falls on a major market day so that they can fend for their family as well as earn money to spend. This study established that there was a tendency of default and late registration for ANC among women of high parity and gravidity. It is possible that these women feel more confident after previous experience and feel that attending clinic at every appointment day is not necessary. It could also be as a result of negative perceptions about previous pregnancy experiences or limited family resources or support. Others default because they are healthy and do not have any serious health challenge and hence stay away until the time of delivery. Another reason given by some of the pregnant women was distance as they live far away in rural areas far from the selected health facilities which are disproportionately distributed in favour of urban areas in most developing countries making them more accessible and available to urban women. A study conducted in Haiti revealed that longer travelling time and greater distances to health facilities in rural areas constituted the greatest barriers to antenatal care utilization (Alexandre et al, 2005).

Regarding regular attendance at ANC, the study revealed that women with adequate knowledge about ANC, attended regularly. It was established that women with adequate knowledge were likely to initiate ANC early and attend regularly compared to those without adequate knowledge. This finding is similar to what Tariku and others found out in their study that women who were well informed about ANC were more likely to book for ANC within recommended time (Tariku et al, 2010). Furthermore, this study was able to establish that pregnant women who had the perception of no benefits tend to start ANC late or default. Therefore, it could be concluded that health education could be important in the improvement of timing of ANC attendance and attending regularly.
Limitations of the study

Considering that the study was conducted at health facilities (institution based), there is possibility that factors related to attitude of health workers could have been avoided. Also the study may suffer from lack of generalizability as the study involved only three government owned health facilities in Ile-Ife town.

Conclusion

Non-attendance or default at ante natal clinic as well as late registration for ANC was discovered among the participants. A number of factors were found to contribute to this problem. Therefore, strategies and approaches that involve all stakeholders should be used to address the matter at hand. Resources could be effectively and efficiently harnessed to improve ANC attendance and increase early ANC attendance.

Recommendations

1. The government and the Ministry of Health should create more awareness about ante natal care in every nooks and cranny of the country, town, cities and villages through the media and community sensitization meetings.
2. Nurses and midwives should follow up the mothers that default and educate them on the importance of regular attendance at ANC.
3. Government through the Ministry of Health should build health facilities not too far away from where people live for accessibility, availability and utilization. This will prevent the problem of long distance.
4. The government should ensure that Traditional Birth Attendants and people who take care of pregnant women in mission homes undergo training on the need for ante natal care. Through this, they will help to stress to pregnant women who patronize them.

Acknowledgements

I would like to thank all that have contributed immensely to the completion and success of this study. I am grateful to all the authorities of the facilities use for allowing me to conduct this study in their facilities. My sincere gratitude goes to the pregnant women who provided valuable information that led to the realization of this study.

References


A Descriptive Research on the Causes and Effect of Nursing Shortage on Some Hospitals in Enugu State, Nigeria

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Email: queenoge24@gmail.com

Introduction

The healthcare has been on the forefront of the news and the mind of many people, therefore, the fact that we have a nursing shortage has everyone uncertain about the future of healthcare. This shortage is especially alarming as we’re faced with baby boomers who are living longer, as well as the Affordable Healthcare Act which increases the number of uninsured individuals, which leads more people in need of getting their health checked. Most importantly, patient safety is at risk resulting in medical errors that otherwise would never have happened. Nurses are also feeling dissatisfaction within their careers and many nurses across the country do not think positively about their field. It is important to control the nurses’ shortage before the negative impacts of the deficiency are too great in damage. Together, hospitals, nursing programs, and the government must all work as a team in order to overcome the nursing shortage. The shortage of qualified health sciences professionals is most often associated with the demand for nursing staff. Indeed, nurses represent hospitals’ largest labor expense, comprising the single greatest component of hospital staff. They are the primary providers of hospital patient care. “Birth and death, and all the various forms of care in between, are attended to by nurses.” There are very few other professions which allow individuals to make such a positive contribution to society. Despite the fact that nursing is meaningful work, the country is facing a nursing shortage that grows more pressing with each passing year. Given their importance in health care delivery, hospitals and other health services facilities must address the reasons behind the growing shortage of nurses.

This study was restricted to only 10 hospitals in Enugu state due to time and finances but there are several hospitals suffering from the same problem in the state.

This study have helped in getting the views of nurses in the state on the causes of nursing shortage and how this shortage have affected their practice.

Keywords: nursing shortage, baby boomers, nursing, nurse- patient ratio, healthcare system and patient.

Statement of the problem

Nurses are over burdened with the stress of nursing care. Nursing care is meant to be done happily and cheerfully but due to the workload on nurses they are no longer rendering this care in love and due to this we find that nurses and patients are most times dissatisfied.

Nurses who are known as the bedrock of the healthcare system constitute the largest percentage of the healthcare force and patient’s care suffer whenever there is a shortage of this nurses.

Nursing shortage is not a recent problem in the healthcare system, it have been on for decades but only recently have the rate become alarming. This alarming rate of nursing shortage result from the increase in population growth, aging workforce, declining number of applicants to nursing schools, and baby boom generation which calls for the increase in healthcare services.

Nursing shortage can be defined as a situation where the demand for nursing professionals i.e. registered Nurses (RNs), exceeds the supply for nurses both locally, nationally and globally. Nursing shortage can be measured by a deficiency in nurse to patient ratio, nurse to
population ratio or when the number of job openings exceed the number of nurses needed for the job. This situation is observed in developed and developing nations around the world.

Nursing shortage is not necessarily due to a lack of supply of trained nurses. In some cases, this shortages occur due to increased admission rates of students into nursing schools. Potential factors include lack of adequate staffing ratios in hospitals and other health care facilities, lack of placement programs for newly trained nurses, and inadequate worker retention incentives.

Globally, the World Health Organization (WHO) estimates a shortage of almost 4.3 million nurses, physicians and other health human resources worldwide—reported to be the result of decades of underinvestment in health worker education, training, wages, working environment and management.

Causes of nursing shortage

Professional alternatives in 2011 study found that more than 20 percent of nurses who provide direct patient care expressed job dissatisfaction, compared to 13 percent of nurses in non-institutional settings.

Nursing is meant to be a long term carrier and it have been so over decades of years but recently there is a decline of which most nurses are changing to other profession. This changes in their career results from dissatisfaction and some literatures were reviewed to find out some causes of this dissatisfaction. In a study completed by sociologist Bryan Turner, the study found that the most common nursing complaints were: Subordination to the medical profession on all matters, even over standardized regulations and difficult working condition.

A report from the Commonwealth of Australia identified a few other matters that led to nurse dissatisfaction: constant schedule changes, work overloads due to high number of patients and paperwork, shift work, lack of appreciation by superiors, lack of provided childcare, and inadequate pay.

Another study found that nurse dissatisfaction stemmed from: conflicting expectations from nurses and managers due to regulation of cost, inability to provide comprehensive nursing care due to work and Loss of confidence in the health care system.

Declining Enrollment and Educators New admissions into nursing schools have dropped dramatically and consistently for the past six years. Additionally, nursing colleges and universities denied 32,617 qualified applicants in 2005 due to the shortage of nursing educators. Faculty age continues to climb; higher compensation can be found elsewhere luring potential educators away from teaching. The Health Resources and Services Administration stated in a 2006 report that, "to meet the projected growth in demand for RN services, the United States must graduate 90 percent more nurses."

One main reason: There are not enough faculty to teach incoming nursing students. Either faculty are leaving due to retirement -- like their counterparts in health-care settings, they too are aging – or they’re gaining higher salaries elsewhere in practice settings other than teaching.

According to the American Association of Colleges of Nursing, two-thirds of nursing schools admit faculty shortages were a main reason for turning away qualified applicants.

Nursing school enrollment is not growing fast enough to meet the projected demand for RN and APRN services. Though AAC reported a 2.6% enrollment increase in entry-level baccalaureate programs in nursing in 2013, this increase is not sufficient to meet the projected demand for nursing services. With the passage of the Patient Protection and Affordable Care Act in 2010, more than 32 million Americans will soon gain access to healthcare services, including those provided by RNs and Advanced Practice Registered Nurses (APRNs).

Age

The lack of younger people entering nursing has raised the average age of nurses. In Maryland, the average practicing RN is 46 years old, nationally the average working RN is over 43 years old. About half of the RN workforce will reach retirement age in the next 15
years. On top of this, the average age of new RN graduates is 31. Nurses are entering the profession at an older age and offer fewer years of work.

Nurses are known for their long hours, low pay, and very stressful jobs. As a result of this, enrollment in nursing schools has declined for the fourth straight year. With a declining amount of nurses, and a hospital industry that is constantly expanding, the need for nurses is rapidly growing. Also with less and less nurses going to school the older nurses are just getting older.

Approximately one third of the nursing workforce is over 50 years of age and the average age of full time nursing faculty is 49 years. A study published in the July, 2000, issue of JAMA predicts that 40% of nurses by 2010 will be 50 years old or older (Buerhaus, 2000a). According to a 2013 survey conducted by the National Council of State Boards of Nursing and The Forum of State Nursing Workforce Centers, 55% of the RN workforce is age 50 or older.

Increase in population of baby boomers

America's demand for nursing care is expected to balloon over the next 20 years. The future demand for nurses is expected to increase dramatically when the baby boomers reach their 60s and beyond. The population aged 65 years and older will double from 2000 to 2030. Furthermore, the population aged 85 and older is the fastest growing age group in the U.S. The Bureau of Labor Statistics ranks the occupation of nursing as having the seventh highest projected job growth in the United States. The real issue is that during this time of increased demand for health care, the overall number of nurses per capita will begin to decline. By 2020 the number of nurses will fall nearly 20 percent below requirements. Nursing is bracing for what’s being called a “silver tsunami” — a graying Baby Boomer workforce entering retirement. On top of that, many other nurses are leaving the field out of frustration as they don’t feel they’re making enough of a difference for their patients.

Poor salary scale

One major cause of nursing shortage is poor salary scale of nurses. Nurses are leaving their present job place, state, country and as they leave this gap is hardly replaced causing shortage. Nursing is a challenging profession and it is perceived that the salary scale is not commensurate to the work load, hence if they are opportune to find a better paying state or country they migrate. This poor salary is the main reason behind nurse migration. For example, to accommodate perceived nursing shortage in the United States, American hospital recruit nurses from overseas, especially the Philippines and Africa. This, in turn, can lead to greater nursing shortages in their home countries.

The study published in the Open Journal of Nursing 2014, said increment in salary and allowances rated the best influence on recruitment and retention of nurses in Lagos State. The study published in the Open Journal of Nursing 2014, said increment in salary and allowances rated the best influence on recruitment and retention of nurses in Lagos State. The study identified lack of nursing leadership; sense of job security and work environment as major factors influencing recruitment and retention of nurses in Lagos health institutions.

In Philippine there is overabundance of RNs and a lack of open employment positions. The unemployment rate in the Philippines exceeds 10%. Additionally, health care budgets set up Filipino nurses for low wages and poor benefit packages. There are fewer jobs available, thereby increasing the workload and pressure on RNs. Filipinos often pursue international employment to avoid the economic instability and poor labor conditions in their native country.

Nurse patient ratio

The WHO recommends a nurse to a population ratio of 700, but according to the Open Journal of Nursing, 2014, Nigeria has less than 150,000 registered nurses to cater for an
estimated 160 million population, giving an average nurse population ratio of 1 to 1,066 people.

Modupe O. Oyetunde of the Department of Nursing, College of Medicine, University of Ibadan, and Olabisi O. Ayeni of the Lagos State School of Nursing, Lagos, in their study entitled “Exploring Factors Influencing Recruitment and Retention of Nurses in Lagos State, Nigeria within Year 2008 and 2012”, found that the turnover rate of nurses in Lagos State Health institutions is higher than obtains in Federal health institutions in the country and also higher than the national average.

A registered staff nurse at the Lagos State University Teaching Hospital, LASUTH, who simply identified herself as Esther, noted that, ordinarily, the recommendation for maximum number of patients that a nurse can see safely within an eight-hour shift period ranges from 25-30.

Effect of nursing shortage on the healthcare system

Nursing shortage have affected the healthcare system over the years and if nothing is done about this suffer the healthcare system will continue to suffer.

In the March-April 2005 issue of nursing economics, Dr. Peter Bureaus and colleagues found that more than 75% of RNs believe the nursing shortage presents a major problem for the quality of their work life, the quality of patient care, and the amount of time nurses can spend with patients. Looking forward, almost all surveyed nurses see the shortage in the future as a catalyst for increasing stress on nurses (98%), lowering patient care quality (93%) and causing nurses to leave the profession (93%).

According to a study in the October 2002 Journal of the American Medical Association, nurses reported greater job dissatisfaction and emotional exhaustion when they were responsible for more patients than they can safely care for. Researcher Dr. Linda Aiken concluded that "failure to retain nurses contributes to avoidable patient deaths."

Shortage of registered nurses, in combination with an increased workload, poses a potential threat to the quality of care. In settings with inadequate staffing, patient safety was compromised.

Nursing shortage which invariably leads to increased rate of medication error and increased length of stay of patient due to infection results in extra cost for the hospital. The fact that nurses are not satisfied with the over burden placed on them due to this shortage results in them quitting their jobs and this results in recruiting of new staffs and this results in extra cost for the healthcare system. Due to this workload also the health of most nurses are affected and this results in more sick offs and to cover the shifts other nurses will be called to work over time for which the hospital will be responsible for their benefits.

Methods

Research design

A non-experimental design was used. A survey was used, it is a descriptive research based on the instrument like questionnaire ad interviews used in making data collection. For this purpose, the researcher is interested in finding out the causes and effect of nursing shortage in healthcare system in Enugu state, Nigeria.

Settings

The study was conducted amongst 10 healthcare facilities in Enugu state, Nigeria. Enugu state is located in the south eastern part of Nigeria. It has a population of approximately 3.2 million people in 2009. It is an Igbo speaking state.

Target population

The target population constitute sixty nurses from about 10 healthcare facilities in Enugu state which include private hospitals, maternity homes and primary healthcare facilities.
**Sampling technic**

Random sampling technic was used to select the 60 nurses from the 10 healthcare facilities. They were picked irrespective of their years of working experience, qualification or sex.

**Instrument for data collection**

Structured interview in the form of a questionnaire was used for data collection as all involved are nurses. The same questions were presented to various respondents in the same order and responses were collected thereafter.

**Method of data collection**

The researcher went to different hospitals in the state and distributed the questionnaires in person and retrieved the filled questionnaire. The questionnaires were distributed randomly to the nurses she met in those hospitals she visited.

**Method of data analysis**

The responses of the questionnaire collected will be arranged and analyzed in simple percentage table, pie chart and bar chart.

**Ethical considerations**

The research was carried out in a caring attitude, the consent of the target population was considered, they were made to know what the research was about, and its benefit and topic was clearly explained to them. The lives of the target population was not endangered and the confidentiality of the target population was also maintained.

**Validity and reliability of the instrument**

The validity of the instrument was obtained by contact validity. The questionnaire was given to my supervisor in my place of work to look into the content for necessary correction and the corrections made were used in improving the questionnaires.

Reliability of the questionnaire was obtained by test and retest method in which 5 of the questionnaire were given to 5 of my colleagues to fill and this same 5 colleagues were given some questionnaire within one week so as to obtain the coefficient of reliability.

**Results**

This segment deals with the analysis of data collected from the respondents. The researcher is mainly interested in the causes and effect of nursing shortage and possible ways of reducing nursing shortage. A total of 60 questionnaires were printed and distributed to different nurses of different hospitals to get their opinions and all were answered. The data collected was analyzed using simple percentages, pie chart and bar chart.

<table>
<thead>
<tr>
<th>Sex of respondents</th>
<th>Respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>5</td>
<td>8.3%</td>
</tr>
<tr>
<td>female</td>
<td>55</td>
<td>91.7%</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

According to table 1, 8.3% of the respondents are male, while 91.7% of the respondents are female.
Table 2. Age of the respondents

<table>
<thead>
<tr>
<th>Age of respondents</th>
<th>Respondents</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>10</td>
<td>16.7%</td>
</tr>
<tr>
<td>30-35</td>
<td>15</td>
<td>25%</td>
</tr>
<tr>
<td>35-40</td>
<td>25</td>
<td>41.7%</td>
</tr>
<tr>
<td>40 and above</td>
<td>10</td>
<td>16.7%</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100%</td>
</tr>
</tbody>
</table>

According to table 2, the highest age range of the respondents is 40 years and above which is 41.7%, 35-40 years makes up 25% of the respondents age, while 20-30 years and 30-35 years makes up 16.7% and 16.7% respectively.

Table 3. qualification of the respondent

<table>
<thead>
<tr>
<th>Qualification of respondents</th>
<th>Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>other specialties</td>
<td>10</td>
<td>16.7%</td>
</tr>
<tr>
<td>RN</td>
<td>30</td>
<td>50%</td>
</tr>
<tr>
<td>BSN</td>
<td>5</td>
<td>8.3%</td>
</tr>
<tr>
<td>RNM</td>
<td>15</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 3 shows that 50% of the respondents have diploma in nursing certificate(RN), 25% of the respondents are registered nurse midwife(RNM), 16.7% of them have other specialties added to their diploma in nursing like burns and plastic nursing, orthopedic nursing, cardiothoracic nursing and 8.3% of them are BSN holders.

Table 4. years of working experience

<table>
<thead>
<tr>
<th>Years of working experience</th>
<th>Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10 years</td>
<td>5</td>
<td>8.3%</td>
</tr>
<tr>
<td>10-20 years</td>
<td>15</td>
<td>25%</td>
</tr>
<tr>
<td>20-30 years</td>
<td>30</td>
<td>50%</td>
</tr>
<tr>
<td>30 years and above</td>
<td>10</td>
<td>16.7%</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100%</td>
</tr>
</tbody>
</table>

From table 4, the study shows that 50% of the respondents have a working experience of 20-30 years, 25% of the respondents have worked for 10-20 years, and 16.7% of the respondents have worked for 30 years and above and 8.3% of the respondents have working experience of only 1-10 years.

Table 5. is your facility experiencing nursing shortage?

<table>
<thead>
<tr>
<th>Is your facility experiencing nursing shortage</th>
<th>Respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>55</td>
<td>91.7%</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>8.3%</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100%</td>
</tr>
</tbody>
</table>

From table 5, 91.7% of the respondents said there is nursing shortage in their facilities and only 8.3% said they are not experiencing nursing shortage.
Table 6. causes of nursing shortage

<table>
<thead>
<tr>
<th>Possible causes of nursing shortage</th>
<th>Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>poor salary scale</td>
<td>30</td>
<td>50%</td>
</tr>
<tr>
<td>increased baby bloom population</td>
<td>12</td>
<td>20%</td>
</tr>
<tr>
<td>poor nurse patient ratio</td>
<td>15</td>
<td>25%</td>
</tr>
<tr>
<td>other reasons</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>total</td>
<td>60</td>
<td>100%</td>
</tr>
</tbody>
</table>

From table 6, 50% of the respondents feel that poor salary scale is the reason for nursing shortage, 25% think it results from poor staffing ratio, 20% feel it is due to increase in population of baby bloom, and 5% gave other reasons like reduced admissions into nursing schools, aging number of staff nurses.

Table 7. Effect of nursing shortage

<table>
<thead>
<tr>
<th>Effect of nursing shortage</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>increased workload on nurses</td>
<td>21</td>
<td>35%</td>
</tr>
<tr>
<td>increased medication error</td>
<td>12</td>
<td>20%</td>
</tr>
<tr>
<td>reduced patient care</td>
<td>12</td>
<td>20%</td>
</tr>
<tr>
<td>unhappy and frustrated nurses</td>
<td>15</td>
<td>25%</td>
</tr>
<tr>
<td>total</td>
<td>60</td>
<td>100%</td>
</tr>
</tbody>
</table>

From table 7, 35% of the respondents say nursing shortage results in increased workload on nurses, 25% says it results in having frustrated and unhappy nurses, while 20% and 20% respectively say it result in increased medication error and reduced patient care.

Table 8. are you satisfied with your profession as a nurse?

<table>
<thead>
<tr>
<th>Are you satisfied with your profession as a nurse?</th>
<th>Respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>33</td>
<td>55%</td>
</tr>
<tr>
<td>No</td>
<td>27</td>
<td>45%</td>
</tr>
<tr>
<td>total</td>
<td>60</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 8 shows that 55% of the respondents are satisfied as nurses while 45% are not satisfied with nursing as a profession.
Table 9. If no what are your reasons for dissatisfaction

<table>
<thead>
<tr>
<th>Reason for dissatisfaction</th>
<th>Respondents</th>
<th>Percentage%</th>
</tr>
</thead>
<tbody>
<tr>
<td>lack of appreciation by superiors</td>
<td>10</td>
<td>16.67%</td>
</tr>
<tr>
<td>attitude of doctors to nurses</td>
<td>5</td>
<td>8.33%</td>
</tr>
<tr>
<td>too much workload</td>
<td>7</td>
<td>11.67%</td>
</tr>
<tr>
<td>poor salaries</td>
<td>5</td>
<td>8.33%</td>
</tr>
<tr>
<td>total</td>
<td>27</td>
<td>45%</td>
</tr>
</tbody>
</table>

Table 9 shows that 16.67% are not satisfied with the profession because of lack of appreciation from their superiors, 11.67% are not satisfied because of the workload, 8.33% of the respondents say the attitude of doctors towards nurses and another 8.33% says it’s due to poor salaries.

Table 10. any intension in the future of quitting nursing?

<table>
<thead>
<tr>
<th>Any intension of quitting the profession in the future</th>
<th>Respondents</th>
<th>Percentage%</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>15</td>
<td>25%</td>
</tr>
<tr>
<td>No</td>
<td>45</td>
<td>75%</td>
</tr>
<tr>
<td>total</td>
<td>60</td>
<td>100%</td>
</tr>
</tbody>
</table>

From table 10, 75% of the respondents says they have no intension of quitting the profession, while 25% says there is very high tendency of them leaving the profession when the opportunity arises.

Table 11. if yes, what is your reason for quitting?

<table>
<thead>
<tr>
<th>Reason for quitting the profession</th>
<th>Respondents</th>
<th>Percentage%</th>
</tr>
</thead>
<tbody>
<tr>
<td>rivalry between doctors and nurses</td>
<td>5</td>
<td>8.33%</td>
</tr>
<tr>
<td>work over load</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>lack appreciation of superiors</td>
<td>4</td>
<td>6.67%</td>
</tr>
<tr>
<td>poor salary</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>total</td>
<td>15</td>
<td>25%</td>
</tr>
</tbody>
</table>

From table 11, 8.33% gave rivalry between doctors and nurses as reason for quitting, 6.67% of them said it is due to lack of appreciation from superiors, 5% said its due to work overload and the other 5% said its due to poor salary.
Table 12. What do you think are the possible ways of reducing nursing shortage?

<table>
<thead>
<tr>
<th>ways of reducing nursing shortage</th>
<th>respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>increasing salary scale</td>
<td>30</td>
<td>50%</td>
</tr>
<tr>
<td>adjusting nurse patient ratio</td>
<td>15</td>
<td>25%</td>
</tr>
<tr>
<td>employing younger nurses</td>
<td>12</td>
<td>20%</td>
</tr>
<tr>
<td>other solutions</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100%</td>
</tr>
</tbody>
</table>

From table 12, 50% of the respondents said nursing shortage can be reduced by increasing the salary of nurses, 25% said by adjusting nurse patient ratio, 20% said by employing younger nurses into the healthcare system and 5% gave other reasons like supports from superiors, better work environment, policies to upgrade the nursing profession.

Discussion

Based on the data analyzed, the following are what was found from the respondents.

Table 5 clearly shows that 91.7% of the respondents are experiencing nursing shortage in the facility where they work and only 8.3% of them say that that their facility is not having crisis of nursing shortage. This is in line with the study which is signifying the rate of nursing shortage in Enugu state, Nigeria.

Table 2 also shows that 41.7% of the respondents are between the ages of 40 years and above, 25% of the respondents are between ages 35-40, 16.7% are 20-30 years and 16.7% also fall between ages 30-35 years. This findings explain the fact that greater percentage of the population of nurses are nearing retirement age and this accounts for some of the causes of nursing shortage and if nothing is done to replace this one’s retiring the healthcare system will suffer more damages of nursing shortage.

Table 4 shows that 50% of the respondents have a working experience of 30-40 years, 25% has experience of 20-30 years, and 8.3% has experience of 40 years and above and the remaining 16.7% of the respondents have only a working experience of 1-10 years. This results shows that maturity of nurses are nearing retirement age and this will create a big vacuum in the health system if plans are not made to employ younger nurses who can spend more years in service before retiring.

Table 6 shows the causes of nursing shortage. 50% of the respondents feel that poor salary scale is the reason for nursing shortage, 25% think it results from poor staffing ratio, 20% feel it is due to increase in population of baby bloom, and 5% gave other reasons like reduced admissions into nursing schools, aging number of staff nurses. This study shows that in Enugu state the main reason for nursing shortage is poor salary. Some of the nurses were questioned to find out the amount they are paid and some are paid as fifteen thousand naira which is so poor compared to the services they render. There are so many nurses who are not working because of the amount of salaries been paid, they will prefer to relax at home or venture into other businesses than to be paid such amount.

From table 7, 35% of the respondents say nursing shortage results in increased workload on nurses, 25% says it results in having frustrated and unhappy nurses, while 20% and 20% respectively say it result in increased medication error and reduced patient care. This data explains the damage which the shortage of nursing does to the healthcare system. Nurses are over burdened with caring for excess patients and this puts strain on most of the nurses. They have to go out of their way to ensure that they cater for the whole patients under their care though this makes them unable to give patient complete attention.

In table 8, 55% of the respondents said they are satisfied with the nursing profession while 45% of the respondents are not satisfied with the nursing profession. This statistics reminds us...
of nursing dissatisfaction with the profession. This table is closely related to table 9 where the reasons for the dissatisfaction were given. 16.67% are not satisfied with the profession because of lack of appreciation from their superiors. They feel that their efforts are not appreciated and that they will prefer to be where they will be appreciated. 11.67% are not satisfied because of the workload. Most of the hospitals visited in the course of this research had 2 to 4 nurses on duty with a 20-25 bedded ward. With this I even observed the way the nurses were rushing around to attend to this patients. 8.33% of the respondents say the attitude of doctors towards nurses’ result in the dissatisfaction. The rivalry going on between doctors and nurses is one which have been on for years and nurses feel that they cannot be second to the doctors. During the study some nurses disclosed that they want a profession that is independent where they will be an authority. The other 8.33% says it’s due to poor salaries. Nurses during the study said that the amount they are paid is nothing compared to the services they render. They said that if salaries will be increased they will be more encouraged to carry out their nursing care effectively.

From table 10, 75% of the respondents says they have no intension of quitting the profession, this group see nursing as a calling and feel that though there are challenges but if proper measures are taken to correct things people won’t even think of quitting the profession. 25% says there is very high tendency of them leaving the profession when the opportunity arises. This finding explain professional alternatives as possible causes of nursing shortage. This group are fed up with all what is going on in the profession and wish to switch to another profession where their impact will be felt.

From table 11, 8.33% gave rivalry between doctors and nurses as reason for quitting, 6.67% of them said it is due to lack of appreciation from superiors, said that despite all their hard work their superiors never seem to be satisfied with it. 5% said it’s due to work overload and the other 5% said it’s due to poor salary.

From table 12, 50% of the respondents said nursing shortage can be reduced by increasing the salary of nurses, 25% said by adjusting nurse patient ratio, 20% said by employing younger nurses into the healthcare system and 5% gave other reasons like supports from superiors, better work environment, policies to upgrade the nursing profession.

Conclusion

In conclusion, nursing shortage in Nigeria have remained on the high side especially in the eastern part of the nation of which Enugu state is one. The main causes of nursing shortage include poor salary scale, poor nurse- patient ratio, increase in population of baby boomers, increase in aging population of nurses and professional alternatives.

To reduce the rate of nursing shortage, nurses complain need to be heard. The salaries of nurses should be increased to measure with their workload. There should be incentives to help encourage and entice more nurses into the profession like bonuses, leave allowances, and flexible work shifts. There should be strict policies on nurse patient ratio and this should be adopted by all healthcare facilities. There should be in-service training of nurses and there shifts should be made flexible to allow them study.

Acknowledgement

My sincere gratitude goes to my student coordinator Ms. Cinthana for her constant support and to my spouse for always been there.

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The Socio-Cultural Factors Affecting Client Participation in Health Education Programs in Umarusandandayako General Hospital Bida

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Abstract

This study was set to examine the socio-cultural factors affecting client participating in health education programs in Umaru Sandandayako general hospital Bida. The objectives of this research were to ascertain the level of participation of client in health education, to find out socio-culture factors affecting client participation in health education programs and to find out ways to improve client participating in health education in umarusan dayako general hospital Bida. The design of the research was descriptive and a sample of 50 health workers was used for the study. Simple random method was adopted in the distribution of the questionnaires which were filled and retrieved. The data collected were analyzed and preserved in simple frequency tables. Finding from the analyzed data revealed that most of the respondents were aware and knowledgeable about health education (80% strongly agreed and 20% agreed, non-disagreed or strongly disagreed) and the need for participation in health education activities. The respondents also strongly agreed (28%) and agreed (40%) that they don’t participate because they don’t understand the concepts, others said they don’t attend because illness comes from god and man made efforts are futile (36% strongly agreed and 44% agreed; only 14% disagreed and 6% disagreed). They also strongly agreed (60%) and agreed (24%) that considering their religious beliefs and giving health packets (70% strongly agreed and 16% agreed) or using interesting methods (50% strongly agreed and 30% agreed) can encourage their participation in health education. This research study can help clients participate in health education in order to better the life of the people by health prevention rather than by health curing.

Introduction

This chapter discusses the background of the study, statement of the problem, objectives of the problem, objectives of the study, research significance, research questions, scope and delimitation of the study, limitation of the study and operational definition of items.

Background of the study

The culture of a group of community or society is an indispensable requisite in the acceptance of certain health practices by that community. In fact the culture of people makes the concept of health highly subjective term and how people conceptualize health may be rooted in their culture’s perception of health. Culture is that whole which includes knowledge, belief, art, morals, law, custom and any other capabilities and habits acquired by man as a member of the society (John, 2011) it is culture that makes an individual eat certain food, wear certain cloth observe certain festivals and engage in practices that may either be detrimental or beneficial and exists in a specific human behavior such as language behavior such as language, social practices such as kinship, gender, and marriage expressive forms such as art, music, dance, rituals religion and technologies such as cooking, shelter, clothing. Are said to be cultural universals found in human society (Michael, 2010)

The concept materials culture covers the physical expressions of culture such as technologies, architecture such and arts whereas the immaterial aspect of culture such as the principles of social organizations (including practices), my theology, philosophy, literature (both written and oral) and science made up of intangible culture heritage of a society. In humanities, one’s sense of culture is an attribute of the individual has been the degree to
which they have cultivated a particular level of sophistication in arts, science, education, manners or health. The level of cultural sophistication has also sometimes been seen to distinguish civilization from less complex societies (John. 2011)

Culture is internally affected by both forces encouraging change or resisting change. This force are related to both social structures and natural events and are involved in the perpetuation of culture ideas and practices within current structures which themselves are subject to change. In the same vein, culture can enhance or bring to mud certain health practices which are of benefits to a group of people including education on about themselves, attitude and belief toward health. (Emmanuel 2011)

Health education is the process of passing relevant health information efficiently and effectively by which the receiver is moved to make use of the information for the promotion, protection, maintenance or restoration of an individual, family or community’s health. Health education is given to widen people’s knowledge about and unknown health needs, hazards, responsibilities and international actions to make in improving the standard of health of the family and the community. Health education assists citizens to get knowledge and skills about health issues, take decision about their health needs, get people’s support for programs, for information on improvement about technology and discoveries (Hubley, 2010)

Community participation in health education is very important as it makes health education programs very effective and successful and triggers the particular required behavioral change. Health educations programs are not worth holding if members of the education program are organized for are not ready to participate (Ayele and kaba 2010)

The social culture activities people believe and engage in can make people resist or easily accept change that is brought about by education. Health education of course may promote certain cultural activities discourage some or eliminate some completely the behavioral changes that may accompany this education maybe resisted or accepted by some either consciously or unconsciously and may be due to the socio- culture perception of an individual, group or community about that health phenomenon (Dharma Lingam 2011)

Statement of the problem

The modern health perception has been changed from curative to preventive, but developing countries Nigeria inclusive are still battling with ignorance that is not merely related to absence of awareness campaign, enlightenment programs or health education but the resistance and lack of interest and participation in such programs by individuals, groups or communities. This lack of participation maybe related to religious and socio-cultural practices embedded in a particular race or community (Hubley, 2010)

This prompted the researcher to seek and find out socio- cultural factors affecting client participation in health education programs in umarusandandayako general hospital Bida.

Research objectives

i. To ascertain the level of participation of clients in health education in umarusandandayako general hospital Bida.
ii. To find out socio- cultural factors affecting client participation in health education programs in umarusandandayako general hospital Bida.
iii. To find out ways to improve client participation in education in umarusandandayako general hospital Bida.

Significance of the study

• This study will look into and provide adequate information about health education in the area of study.
• It may help discourage cultural beliefs that make the effort of health educationists futile.
• This study may reveal the level of client participation in health education.
• It may uncover the problems hindering client participation in health education.
• It may help educationist to device means to improve health teaching.
• It may help the researcher acquire more knowledge about health education.

Scope and limitation of the study

This study is limited to ‘socio-cultural factors affecting client participation in health education programs in umarusanandayako general hospital Bida’. It was conducted among the patients who were on admission and those who attend clinic.

Literature review

Introduction

This chapter discusses relevant literatures from authors and researchers related to the study as well as conceptual frame work.

The concept of health education

Before discussing about health education: it is imperative to briefly conceptualize what health itself means. Health is a highly subjective concept. Good health means different things to different people and its meaning varies according to individual and community expectation culture and context. Many people consider themselves healthy if they are free of disease or disability may also see themselves as been in good health if they are also to manage their condition so that it does not impact greatly in them of life. However world health organization (WHO, 2010) defined health as a state of complete physical, mental, and social wellbeing and not mere absence of diseases or infirmity.

Physical health- refers to anatomical integrity and physiological functioning of the body. A person is physically health if:
• All parts of the body should be there
• All of them are in their natural place and position.
• None of them has pathology.
• All of them are doing their physiological function properly.
• And they work with each other harmoniously (WHO, 2010)

Mental health- refers to ability to learn and think clearly. A person with good mental health is able to handle day to day events and obstacles, work towards important goals and function effectively in society (WHO, 2010).

Social health- is the ability make and maintains acceptable interaction with other people. E.g. to feel sad when somebody close to you passes away (WHO, 2010)

The disease, illness and sickness, which usually means the something through social scientists give them different meaning to each.

Historical development of health education

While the History of health education as on emerging profession is only a little over hundred years old, the dawn of humans. It does not stretch the imagination too far to begin to see how health education first took place during pre-historic era. Someone may have eaten a particular plant or herb and became ill. That person will then warn (education) others against eating the same substance. Conversely, someone may have ingested a plant or herb that produced a desired effect. That person would then encourage (educate) others to use this substance (Newman, 2012).

At the time of Alma at al declaration of primary healthcare in 1978, health education was pal as one of the components of primary health care and it was organized as a fundamental tool to the attainment of health for all. Adopting this declaration, World health organization utilizes and recommends health education as a primary means of prevention of diseases and promotion of health.

Health education has been defined in many ways by different authors and experts Lawrence (2009) defined it as combination of learning experiences designed to facilitate
voluntary actions conductive to health. The term combinations designed facilitate, and voluntary actions have significant implication in this definition. Combination emphasizes the importance of matching the multiple determinants of behaviors with multiple learning experiences or education from incidental learning experiences as systematically planned activity facilitate means create favorable condition for action – voluntary action means behavioral measures that are undertaken by an individual groups community to achieve an intended health effect without the use of force i.e. with full understanding and acceptance of purposes.

Aims and principles of health education

The Aim of Health Education is to motivate people to adopt health-promoting behaviors by providing appropriate knowledge and helping to develop positive attitude. It is aimed at helping people to make decision about health and acquire the necessary confidence and skills to put their decision to practice (Lawrence 2009)

Basic principles of health education

The following are basic principles of health education as outlined by (WHO, 2010)

- All health education should be need oriented, therefore involving any individual, group or community in health education with a purpose or for program also specific and relevant to the problems and available solutions.
- Health education aims at change of behavior therefore multidisciplinary approach is necessary for understanding of human behavior as well as effective teaching process.
- It is necessary to have a free flow of communication. The two way communication is particularly of importance in health education to help in getting proper feedback and get doubt cleared.
- The health education has to adjust his talk and action to suit the group for whom the health education his talk and action to suit the group for whom the health educator has to give health education e.g. when the health educator has to deal with illiterates and poor people, he has to get down to their level of conversation and human relationships so as to reduce any social change.
- Health education should provide an opportunity for the clients to go through the stages of identification of problems, planning, implementation and evaluation. This is of special importance in the health education of the community where the identification of problems and planning, implementing and evaluating are to be done with full involvement of the community to make it the community’s own program.
- Health education is based on scientific findings and current knowledge. Therefore a health educator should have recent scientific knowledge to provide health education. They should realize that they are enablers and not teachers. They have to win the confidence of client.
- Health educators should not only have correct information with them on all matters that they have to discuss, but also should practice what they profess otherwise, they will not enjoy credibility.
- It must be remembered that people are not absolutely without any information or ideas. Health education should not be merely passing information but opportunity should be given to the client to analyze fresh ideas with the old ideas, compare with past experience and take decision that are found favorable and beneficial.
- To avoid the grave danger of damaging the learning process information should be presented bit by bit not bulk of information in or exposure or the enthusiasm of the client might maybe dampened.
- Highly scientific jargon should be avoided, the health educator should use terms that will immediately be understood.
- Health education should start from known to unknown the existing indigenous knowledge and efforts should be considered. People will learn step by step and not
everything together. For every change of behaviors, a personal trial in required and therefore the health education should promote opportunities for trying out changed practices.

**Approaches to health education**

Mustapha (2009) outlined two approaches to health education;
- The persuasion approach: deliberate attempt to influence the other persons to do what we want to do also call directive approach.
- The informed decision making approach; giving people information, problems solving and decision making skills to make decision but leaving the actual choice to the people e.g. family planning methods.

Many health educators fell that instead of using persuasion. It is better to work with communities to develop their problem solving skills and provide information to help them make informed choices. However, in situations where there is serious threat such as epidemic, and the actions needed are clear cut. It might be considered justified to persuade people to adopt specific behaviors changes.

**Targets of health education**

Targets of health education outlined by Mustapha (2007) are;
- Individuals such as clients that come for services, patient, healthy individuals.
- Groups e.g. group of student, youth club, market woman etc.,
- Community e.g. people living in a village.
- Individual with special condition such as HIV/AIDS or hepatitis B.

**Health education settings**

Health education takes place in locations such as
- Communities.
- Health care facilities
- Work Sites
- Industries
- Schools
- Prisons
- Refugee camps
- Occupational group e.g. drivers, mechanics, welders etc., (Mustapha 2009) etc.,

**Method of health education**

Different methods are used to health educate client according to their level of understanding and in order to achieve the aim of education WHO (2010) classified health education methods as follows.
- Individual health education method; is a person to person contact in which one person is educated by another and to find solution to problems. This service can be given to patients at the health center, to pupils in school, to families during home visit casual visit to community (e.g. water well)

Home visit is important in this because people feel happier in their homes and maybe more willing to talk than when in clinic. It also gives opportunities to see how the environment and the family situation might affect a person’s health, this making observations and any necessary suggestions for change right there health workers should visit homes in their community regularly group health education methods: a group is defined as a gathering of two or more people with a common interest. E.g. of groups includes family, health committee, people working in a factory, business or agency, a class of school children or a farmers’ cooperative, youth club, in a bus or patient in a clinic group health education is carried out using:
• Group discussion: discussion in a group is informal and allows people to say what is in their minds. They can talk about their problems, share ideas, support and encourage each other to solve problems and change their behavior.
• Meeting: is more formal and organized and allows for sharing ideas, making decisions and plans to solve problems. It is led by a leader and may use some visual aid to clarify things. Consensus based decision may also be reached.
• Clubs: people belong to different organizations, involving children, women and men. They provide an opportunity for a systematic way of teaching over an extended period of time.
• Demonstration: involves theoretical teaching and practical work. It is used to show people how to do something. The main purpose is helping people in learning new skills. It is particularly useful when combined with a home visit. This allows people to work with familiar materials available in the locality.
• Village criers: they spread information in the past eras but maybe find today in remote areas where modern mass media are scarce. They are ordered by village leaders, and may use bell or drum to attract attention. Drum beats and other sound can be special code or signal that people understand. The significance about these people is that villagers know who is the real village crier and may only respect information coming from him or her. Warning about dirty water maybe give during cholera outbreak, sanitation campaign, or a reminder to mothers about immunization.
• Songs: people sing to express ideas and feelings, such as love and sadness, to tell story of a famous person, commemorate religious days etc., in addition to expression of feelings, songs can be used to give ideas about health and topics can be synthesized for dissemination. Songs like the village without safe water, the malnourished child who got well when given proper food and how to prevent house flies and mosquitoes.
• Stories: story telling is highly effective. It can be developed in any situation or culture and requires no money or equipment. Stories can be used to encourage people about their health.
• Role playing: role playing is acting out a real life situation and problems. It can be used to describe the possible consequence of an action. It can discover how attitudes and values encourage cooperation during a health program and how attitude and values create problems during a health program.
• Health talks: in groups health talk is very important and can be done individually or in a family. Health talk remains the most common way to share health knowledge and facts. Health talk can be made more effective by combining them with visual aids such as posters, slides. Demonstrations and video shows. It is important to have up to date information and have a single topic of discussion, visual object and health education can be effective if visual aids are combined with interaction sessions. They provide a clear mental picture of a message and can stimulate active thinking. Leaflets, posters, photographs, projected aids and newspapers also important tools that can be utilized to make health talk or health teaching effective.

Role of health educators

Mustapha (2009), discussed that health education is the duty of everyone engage in health and community development activities. Doctors, nurses, pharmacists and community health extension workers who are primarily responsible in working with the families and community at the grass root level to promote health and prevent disease through practicing health education in their daily work, they are not doing their job correctly. When treating someone with skin infection or malaria, a health worker should also educate the patient about the cause of the illness and teach preventive skills.

Drug alone will not solve the problems. Without health education the patient may fall sick again from the same disease. Health workers must also realize that their own personal examples serve to educate others. Some of the roles of the health educator include:
• Talking to people and listening to their problems.
• Thinking of the behavior or action that could cause, cure and prevent these problems.
• Finding reasons for people’s behaviors.
• Helping people see the reason for their actions and health problems or benefits.
• Asking people to give their own ideas for solving the problems.
• Helping people to look at their ideas so that they could see which is most useful and simplest to put to practice.
• Encouraging people to choose the idea best suited to their circumstances.

The concept of culture

Culture is the complex whole of knowledge, attitude norms, beliefs, values, habits traditions and any other capabilities and skills acquired by man as a member of the society. It involves tradition (behaviors that have been carried out for a long time and handed over from parents to children), customs (it represents the group behavior, a pattern of action shared by some or all members of a society) lifestyle (collection to behavior that make up a person’s way of life including diet, clothing, family life, housing and work. Culture also consists of belief, attitude and values (Michael 2010)

• Beliefs are a conviction that a phenomenon or object is true or real. Beliefs deal with people understand of themselves and their environment. People usually do not know whether what they believe is true or false. They are usually derived from our parents, grandparents and other people we respect. Beliefs may be helpful, harmful or neutral if it is not certain that a belief is harmful, it is better to leave it alone. For example a certain society may have the following beliefs.
  • Diarrhea may cause or end up with death (helpful)
  • Measles cannot be prevented by immunization (harmful)

• Attitude: relatively constant feelings, predisposition or set of belief directed towards an object, person or situation they are evaluative feelings and reflect our likes and dislikes they often come from our experience or from those of people close to us. They attract us to do things or not to them. For instance a patient has fever and visited the nearby health center. The staff on duty that day was busy and shouted at him/her. ‘‘do you want us to waste our time for a mild fever? Comeback when we are less busy’’. He/she did not like being shouted at, this had attitude could discourage her from attending the health center next time he/she is sick.

• Values: are broad ideas and widely held assumptions regarding what are desirable, correct and good that most members of the society share. Values are so general and abstract that they do not explicitly specify which behaviors are acceptable and which are not, instead, values provide us with criteria and conceptions by which we evaluate people, object and wants as their relative worth merit beauty or morality e.g. being married and having many children is highly valued in African communities.

Norms are social rules that specify appropriate and inappropriate behaviors in given situations. They tell us what we should and must do as well as what we should not and must not do. For example people often regard greeting as a social norm to be confronted among members who know each other people therefore should greet each other. Murder, theft and rape often bring strong disapproval, therefore one must not kill.

Characteristics of culture

The following are some characteristics of culture as discussed by (Williams 2008) Culture is symbolic: it is an abstract way of referring to and understanding ideas, objects feeling or behavior. It has the ability to communicate with symbols using language to convey new idea people may invent single words to represent different ideas, feelings or values.

• Culture is shared: people in the same society share common behavior patterns and ways of thinking through culture. For example people living in as society share the same
language dress in similar style. Eat much of the same food, observe the same festivals and celebrate many of the same holidays.

- Culture is learned: a person must learn culture from other people in a society. For instance, people must learn to speak and understand a language and abide by the rules of the society.
- Culture is adaptive: people use culture to adjust flexibly and quickly to change in the worlds around them. For instance a person can adjust his diet when he changes an area of residence.

**Socio-cultural factors in health education**

Mustapha (2009) discussed some socio cultural factors in health education.

- **Family:** in a society, many difference in the ways in which families are organized. Families vary in their composition and in their descent, residence and authority patterns. An understanding of the family structure, the status of various members of the family and who is involve in the decision making process within the family on all major decisions as well as those related to health is valuable to work with community. Without this knowledge you may direct your educational activities towards the wrong member of the family.
- **The political structure of a community:** the basis of leadership and power within the community should be explored. The cooperation or disapproval of leaders can either enhance or discourage health education.
- **General activities:** know about businesses, industries agricultural conditions, unemployment family debts and how land is distributed this information will increase your knowledge of what is important to the people and what resources are available to them.
- **Religion:** religion may have great influence on the life style of the community including the health practice and belief of individuals. A mother may believe that her child is sick because it is God’s desire. It is important therefore to know.
  - The major religions group in the community their leaders and roles of the religion in community life.
  - Whether there are any conflicts between them.
  - The attitude of government and the community towards religious affiliated programs.
- **Health beliefs and practice:** observe and record the practices in the community whether or not to encourage or discourage them observe for the following health practices and beliefs:
  - How people define good health and disease.
  - Some may harbor the belief that prevention of illness is impossible or every difficult.
  - What methods are used to maintain their health?
  - What are people’s attitudes towards such services as vaccination, family planning, insecticide sprays etc.,
  - Local attitudes and practices regarding personal hygiene.
  - Existence of special beliefs concerning food generally or when child is ill or when a woman is pregnant.
  - Breast feeding and weaning practices for infants.
  - Where woman given birth and who assist in delivery, method of cutting umbilical cord.
  - Source of water, excreta disposal and level of awareness about face or oral route.
  - Preference of traditional/herbal over orthodox.

**The concept of community participation**

The health of the community will improve only if the people themselves come involved in planning and implementing and having a say about their own health and health care. Nevertheless involvement will not just happen without enlightenment or education. It has only been emphasized that development issues including health education and health
promotion can become a success through community participation. In health education, one should be concerned about how people actually feel not how one think they should feel. Interest should be developed in how people look at their own problems not only in the problems seen by the educator, community participation encompasses the process which individuals and families assume responsibility for their own health and families assume responsibility for their own health and welfare communities should be active not passive recipients of health education (Mitike 2011)

Benefits of community participation

- It can lead to success in health educating developmental programs.
- Shifts the emphasis of health education off from individual to community
- Since communities have detailed knowledge about their surroundings through participation in health education. It makes health program relevant to local situation.
- Improve trust and partnership between community and health work.

Conceptual/theoretical framework

Nora J. Pender developed the health promotion model of health promoting behavior for use in research and practice. She is a professor Emeritus in the school of nursing at the University of Michigan and an advocate of health promotion. I committed myself to the practice stance of health promotion and disease prevent with the conviction that it is much better to experience exuberant wellbeing and prevent disease than let disease happen when it is avoidable and then try to cope with. Health promotion and disease prevention should be the primary focus in health care and when health promotion and prevention fail to prevent more problems and the care in illness becomes the next priority.
Nola’s Health Promotion Theory

She described this theory in two forms which include health promotion theory and health protection or illness prevention theory.

- She defined health promotion as behavior motivated by the desire to increase wellbeing and actualized human health potential. It is an approach to wellbeing.
- Health protection or illness prevention is described as behavior motivated desire to actively avoid illness, detect it early or maintain functioning within the constraints of illness.

This model is moving towards understanding multifaceted nature of persons correlating with their interpersonal and physical environment as they trail towards health. Because of this model nurse have already advanced their health approaches addressing not only the curative side but as well as prevention of disease and promotion of wellbeing.

Application of the nola model

Nora’s model is centered on health promotion and health protection/illness prevention. Her perception is that individual can improve their health and wellbeing only if they show great interest. This interest will make them seek health behavior that makes them lead a healthy life. Health education is an aspect of health promotion and prevention. Because when people are educated they

I. They are taught the importance of eating good, nutritive diet and how to combine different food to make up adequate DIET.
II. Accept immunization practice which could affect their health
III. Taught on how to maintain personal and environmental hygiene
IV. To avoid cultural taboo which could affect health
V. Encouraged on family planning in order to adequately space their children.
VI. Encourage women to attend ante-natal visit to prepare them towards their birth and rule out any complications.

Research methodology

Research design
The researcher adopted a descriptive design to examine the socio-cultural factors affecting client participation in health education programs in UmaruSandaNdayako General Hospital, Bida.

Target population
The study population consist of men and women seeking health services in UmaruSanda General Hospital, Bida. The researcher stayed at the outpatient Department for easy access of Respondents.

Sample size and sampling technique
The researcher employed simple random sampling technique. It is a research technique in which every member of the target population has a chance of been selected. A total number of 50 respondents were used as the sample size.

Instrument for data collection
Structured questionnaire was used to obtain data from respondents. The questionnaires were in concord with the research objectives and questions.

Method of data collection
Questionnaire was administered by the researcher which was later retrieved with 100% return.

Method of data presentation and analysis
The data was analyzed and presented using descriptive statistic of frequency distribution table and percentages.

Introduction
This chapter deals with data presentation and analysis.

Table 4.1. Personal data of the respondents

<table>
<thead>
<tr>
<th>Age Range (yrs)</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-20</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>21-25</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>26-30</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>31-35</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Single</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Widowed</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
From table 4.1, the age range 15-20 was represented by 6 followed by age group of 21-25 (14%) then 26-30 (50%) and lastly 31-35 (30%), most of the respondents were married (60%) followed by single (30%) the remaining. Few were either divorced (6%) or widow (4%).

The table also revealed that 52% of the respondents were males while the remaining 48% were females for the tribe Nupe. Was represented by 48% others 10% the remaining tribe (Gbagi, Igbo or Yoruba) had a tie of 12%.

From the table the data relating to occupation revealed that majority of the respondents were farmers (32%) closely following by Business (30%) and civil servant (25%). The least group represented were students with (10%)

**Table 4.2. Level of participation of client in health education**

<table>
<thead>
<tr>
<th>6th statement: health education means teaching people about their health and how to live healthy lives</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agreed</td>
<td>40</td>
<td>80</td>
</tr>
<tr>
<td>Agreed</td>
<td>10s</td>
<td>20</td>
</tr>
<tr>
<td>Disagreed</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7th statement: I attend health education programs in this hospital whenever one is Organized</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agreed</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Agreed</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>Disagreed</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8th statement: there is no need to attend health education programs so even if am informed, I won’t attend</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
</table>

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 Texila International Journal of Nursing  
 Volume 2, Issue 2, Dec 2016
From Table 4.2, majority of the respondents strongly agreed (80%) and agreed (20%) that health education meant teaching people about their health and how to live healthy lives. None strongly disagreed or disagreed. Also 30% and 36% of the respondents. Strongly agreed and agreed that they attend health education programs whenever one is organized while 14% disagreed and 20% strongly disagreed.

In response to the 8th statement, 48% strongly disagreed 46% disagreed that there is no need to attend health education programs, so will not attend even if informed, only 2% and 4% strongly agreed and agreed with the statement. The table also revealed that 4% and 2% strongly agreed and agreed with the 9th statement that hospital is only for the sick not for education, but will prefer another setting, while a tie of 20% disagreed and strongly disagreed respectively.

Most of the respondents strongly agreed (50%) and (30%) that they would like to be part of health education programmed if given the opportunity while a tie of 10% disagreed and strongly disagreed respectively.

Table 4.3. Factors affecting client participation in health education

<table>
<thead>
<tr>
<th>Options</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agreed</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Agreed</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Disagreed</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

10th statement: I would like to be part of health education if given the opportunity like sharing of pastors or passing information

<table>
<thead>
<tr>
<th>Options</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agreed</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Agreed</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Disagreed</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Disagreed</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

13th statement: I don’t participate because my religious leaders are not informed or because I was not informed by my religious leaders

<table>
<thead>
<tr>
<th>Option</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agreed</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Agreed</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Disagreed</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

14th statement: my belief is that illness comes from God, so any man effort (such as health education) is futile

<table>
<thead>
<tr>
<th>Option</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agreed</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>Agreed</td>
<td>22</td>
<td>44</td>
</tr>
<tr>
<td>Disagreed</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

15th statement: proper channel is not formed in passing information e.g. posters, radio, leaders (both religious and titled man) to encourage attendance

<table>
<thead>
<tr>
<th>Option</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agreed</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Agreed</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Disagreed</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 4.8, in response to the 111th statement. The respondent 20% strongly agreed and 24% agreed that whenever they attend health education programs, the teaching does not consider their belief while 24% and 32% disagreed and strongly disagreed. To the 12th statement some of the respondents strongly agreed 28% and agreed 40% that they don’t participate in health education programs because they don’t understand the concepts and the teaching are beyond community actualization while 20% and 12% disagreed and strongly disagreed respectively.

In response to the 13th statement a tie 30% both strongly agreed and agreed that they don’t participate because their religious leaders were not informed, while a tie of 20% disagreed and strongly disagreed respectively.

As to 14th statement that illness come from God and so any man and effort such as health education is futile, 36% strongly agreed and 44% agreed while 14% disagreed and 6% strongly disagreed. In regards to the 15th statement that proper channel is not followed in passing information about health education 40% strongly agreed and 30% agreed while 20% disagreed and 10% strongly disagreed respectively.

Table 4.4. Ways to improve client participation in health education

| 16th statement: considering my religious belief can encourage me to attend health education programs |
|---|---|---|
| Option | Frequency | Percentage % |
| Strongly agreed | 30 | 60 |
| Agreed | 12 | 24 |
From table 4.4, the respondents strongly agreed 60% and agreed 24% that considering their religious belief can encourage them to attend health education programs while 10% disagreed and 6% strongly disagreed. Also 70% strongly agreed and 16% agreed that giving health packets (such as close up, medicated soap) can encourage them to attend health education programs while only 12% disagreed and 4% strongly disagreed.

The analyzed data also showed that 40% strongly agreed and 52% agreed that proper passing of information can increase participation in health education while the remaining 6% and 2% disagreed and strongly disagreed respectively. Also 36% strongly agreed and 44% agreed that using other venue such as school, mosques or churches can induce more participation while 14% and 6% disagreed and strongly disagreed respectively. And lastly 50% and 30% strongly agreed and agreed respectively that using interesting methods such as drama, role play can improve participation while 20% disagreed, none of the respondents strongly disagreed.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>17th statement: giving health packets (such as close up, medicated soap)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agreed</td>
<td>35</td>
<td>70</td>
</tr>
<tr>
<td>Agreed</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Disagreed</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>18th statement: proper passing of information can increase anticipation in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agreed</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Agreed</td>
<td>26</td>
<td>52</td>
</tr>
<tr>
<td>Disagreed</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>19th statement: using another venue such as school, mosques or churches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agreed</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>Agreed</td>
<td>22</td>
<td>44</td>
</tr>
<tr>
<td>Disagreed</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>20th statement: using interesting methods such as drama and role plays</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agreed</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Agreed</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Disagreed</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Strongly disagreed</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Discussion of the research findings

This research work was conducted to find out the socio-cultural factors affecting client participation in health education in UmaruSandaNdakako General Hospital Bida. Findings in relation to the demographical data revealed that most of the respondents were aged 26-30 (50%), followed by age 31-35 (30%), only few were within the age of 21-25 (14%) and 15-20 (6%). Most of them were Nupe (48%) followed by other (16%) the remaining (Gbajyi, Igbo or Yoruba) had a tie of 10% each. In relation to the occupation followed by business (30%) and civil servants (28%) of the least from the results was student. (10%)

From the table majority of the respondents strongly agreed (80%) and agreed (20%) that health education meant teaching people about their health and how to live healthy lives. None strongly disagreed or disagreed. Also 30% and 36% of the respondents strongly agreed and agreed that they attend health education programs whenever ones organized while 14% disagreed that 20% strongly disagreed. The result showed that% strongly disagreed and 46% disagreed that there is no need to attend health education programs, so will not attend even if well informed, only 2% and 4% strongly agreed and agreed that hospital is only for the sick not for education, but will prefer another setting, while a tie of 20% disagreed and strongly disagreed respectively. Most of the respondents strongly agreed (50%) and agreed (30%) that they would like to be part of health education programs if given the opportunity while a tie of 10% disagreed and strongly disagreed respectively. Test findings are in line with that of Mitike (2011) who discovered that people willing to participate health education/antenatal care if will informed.

From the analysis, most of the respondents disagreed (24%) and strongly disagreed (32%) that health education dose not consider their belief while the rest 20% strongly agreed and 24% agreed. Also 28% agreed and 40% strongly agreed that they participate in health education is crippled by elephant concepts beyond their actualization while 20% and 12% disagreed and strongly disagreed respectively. This means that the notion that the belief of people is not considered during health education is false and may not be a hindering factor, rather it may be actualized. Lawrence (2009) stressed clearly that the belief of the people is usually considered and so might not be a problem. But a move encouraging factor that can ignite participation is using terms and breaking down large task into the communities’ level of maximal achieved.

From the findings a tie of 30% agreed and strongly agreed that they don’t participate because their religious leaders were not informed while a tie of 20% disagreed and strongly disagreed respectively. It also showed 36% strongly agree and 44% agreed that illness comes from God and so any man made effort such as health education is futile while 14% disagreed and 6% strongly disagreed. Majority also strongly agreed (40%) and agreed (30%) that proper channel is not following in passing information about health education, while 20% disagreed 10% strongly disagreed respectively. The religious belief of the people and reverence to their leaders according to Mitike (2011) as a socio-cultural factor that either makes health education a success (if properly consider) or a failure (if not considered). The finding above support this statement as most of the respondents said they don’t attend because their leader were informed, illness comes from God and that information is passed wrongly.

From the results, most agree (60%) and agrees (24%) that considering their religious belief can encourage them to attend health education programs while 10% disagreed and 6% strongly disagreed. Also most of the respondents. 70% strongly agreed and 16% agreed that giving health packets (such as close up, medicated soap) can encourage them to attend health education programs while only 12% agreed and 52% agreed that proper passing of information can increase participation in health education while the remaining 6% and 2% disagreed and strongly disagrees respectively. Also 36% strongly agreed and 4% disagreed that using either venue such as schools, mosques or churches can induce more participation while 14% and 6% disagreed and strongly disagreed respectively. And lastly 50% and 30%
strongly agreed and agreed respectively that using interesting method such as drama and role play can improve participation while 20% disagrees, none of the respondents strongly disagreed. This found out that considering religious beliefs, giving health packets, and using interesting methods can increase participation in health education.

**Implication of the finding to nursing profession**

The findings has significance to the nursing profession in the following ways:

I. Nurses as health professional should consider themselves integrally paramount in the dissemination of health information.

II. Nurse should accordance with the findings be abreast of the fact those who don’t participate in health education only need more enlightenment and so should not be treated with hostility.

III. The findings revealed that nurses should consider people’s belief religion and context while holding health education programs.

IV. Nurse need to conduct more studies in a bid to uncover factors that can promote participation in health education

**Summary and conclusion**

This study consists of five chapters: chapter one contained the introductory aspect of the study, the statement of problems. Significance, scope and delimitation, and objective of the study. It also contained research questions of the study. It also contained research questions and operational definition of terms.

Chapter two contains the literature review while chapter three discussed the research design, target population, sampling techniques, instrument used for data collection, method of data collection and analysis, validity and ethical consideration.

Chapter four dealt with the interpretation and analysis of data while chapter five discussed the findings of the research, implications to nursing, summary, conclusion and recommendations.

This study was conducted to assess the socio-cultural factors affecting client participation in health education. The study showed that client are aware of health education and are willing to participation in health education if proper channel is followed.

**References**


[16]. Yusuf L. Health Promotion Foundations for Practice. London: Clear Concept Publisher.
Incidence and Management of Low Back Pain among Nurses in Obafemi Awolowo University Teaching Hospitals Complex, Ile Ife and Ilesa

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Abstract

This study presents the incidence and management of low back pain among Nurses in Obafemi Awolowo University teaching Hospitals complex, Ile-Ife. (OAUTHC). The study identified the percentage of nurses with low back pain in OAUTHC. The study also identified causative factors associated with low back pain among nurses in OAUTHC. It also explored the management modalities of low back pain adopted by nurses in OAUTHC.

Design/Methods: A descriptive design was adopted for this study. 258 respondents were sampled using a simple random sampling technique. However 255 respondents filled the self-administered questionnaires given to them. Data was analysed using descriptive and inferential statistics and results presented in tables using frequency and percentages.

Results/Findings: Findings from the study showed that 71.4% of the respondents had low back pain, among which 68.7% had a low intense pain. The study also showed that 54.1% of the respondents with low back pain got their pain from their work. The study also revealed that nursing procedures requiring lifting and bending were highly associated with low back pain. 85.5% of the respondents associated low back pain with wound dressing and bed making. The study also revealed that respondents who had pain manage their pain with, rest, massage, physical therapy and painkillers.

Conclusion: The study concludes that a larger percentage of nurses have low back pain and that procedures such as wound dressing and bed making are highly associated with low back pain which makes nurses working on wards requiring these two procedures to be more prone to developing low back pain and they manage low back pain with massage, rest, physical therapy and analgesics with proven effects.

Keywords

Low back pain: subjective experience of discomfort around the 12th rib to the gluteal folds.
Back care ergonomics: special form of care directed to the spine and muscles of the back.
Nursing procedures: nursing jobs in the hospital aimed at caring for the patient/client.
Pain Management: measures used to control pain either medically, conservatively or alternatively.
Nurses: professionals who are registered and licensed to practice nursing and are employed by OAUTHC to work as a nurse.
Incidence: rate of occurrence or frequency of a case.

Introduction

Pain is an unpleasant emotional state felt in the mind but identifiable as arising in a part of the body. In other words, it is a subjective sensation. (Malcom, 2009) Pain is a defense mechanism designed to make the subject protect an injured part from further damage (Malcom, 2009) Low back pain occurs below the 12th rib and above the gluteal folds (Waheed, 2003). It is a common cause of morbidity among health workers. Nurses are among the occupational groups within the health service that are vulnerable to low back pain (Cunningham et al, 2006)

Low back pain (LBP) is the second most common diagnosis after upper respiratory diseases (Karahan & Bayrakar, 2004). The impact of low back pain for nurses include time
off work, increased risk of fatigue, as well as associated personal and economic cost. (Mitchell et al, 2008) Nurses are ranked third on the prevalent rate of low back pain among the employed people. (Yip, 2001)

According to Cesena et al, (2008), mechanical hazards in the hospital include low back pain from manual lifting (patients in particular) which makes nursing one of the occupations mostly affected by low back pain and this describes the extent of musculoskeletal injury in nurses. (Triolo, 2008).

The European Foundations for the improvements of living and working conditions in its European Occupational Diseases Statistics. (EOSD, 2007) stated that the most significant health problems faced today by the workforce are musculoskeletal disorders, with a percentage of 35%, stress with a percentage of 28% and general exhaustion with a percentage of 23%.

Cunningham, (2006) states that low back pain is the most common cause of early retirement on grounds of ill health, sickness absence, job changes and a fall in the work speed among the working population. The yearly low back pain prevalence which has been informed up to now is 73% to 76% among the German nurses. (Maul et al, 2003) 86% among the Italian nurses (Corona et al, 2005) and 80.9% among the nurses in Hong Kong. The result of a survey conducted in Hong Kong disclosed that 16.2% of nurse sick leave is because of low back pain. (Yip, 2001)

In Hong Kong, 68.7% of nurse activities have been limited because of their low back pain and 7.9% of the nurses have been shifted to another nursing responsibility. (French et al, 2007). Heavy physical activities play a role in nurses low back pain (Yip, 2001). Activities like displacing and lifting are the most important factors causing low back pain in nurses. (Yip, 2001; French et al, 2007) but most of the researchers believe that the physical factors justify only a portion of the prevalent cause of upper part of low back pain and the relationship between the social mental activities and low back pain has been mentioned as an important finding in most recent essays. Most of the researchers have concluded that there is a connection between the psychosocial activities and low back pain. (Yip, 2001) This study looked at the incidence and management of low back pain among nurses in Obafemi Awolowo University Teaching Hospitals Complex Ile Ife and Ilesa, Osun State.

**Statement of problem**

The European Foundations for the improvements of living and working conditions in its European Occupational Diseases Statistics. (EOSD, 2007), stated that, about 35% of health workforce are faced with musculoskeletal disorders, among whom low back pain is the most significant health problem. During the researchers working experience as a staff nurse in Obafemi Awolowo University Teaching Hospitals Complex, Ile Ife, the researcher observed that almost all nurses complained of low back pain, and he became curious about what could be responsible for the high occurrence of low back pain among nurses. Today, Intensification of work, changes in scheduling and organization of workplace, arising demands on employees as well as new technologies lead to situations characterized by additional pressure and stress. As a result, more and more occupational or work-related diseases have appeared, one of which is low back pain. Low back pain is a well recognized cause of morbidity in the industrialized world, where several studies have reported the occurrence of low back pain in general population and occupational settings

Low back pain is a common cause of morbidity among health workers and it is not uncommon among Nigerian nurses. Faronbi, (2008) submitted that in view of the recalcitrant nature of pain, victims are often exposed to gamut of diagnostic and treatment procedures without corresponding improvement, hence resulting in frustration, anger and poor quality of life.

This study therefore looked at the incidence and management of low back pain among Nurses in Obafemi Awolowo University Teaching Hospitals Complex Ile Ife and Ilesa, Osun State.
Research questions

This study therefore seeks to answer the following questions:

1) How many nurses have low back pain in Obafemi Awolowo University Teaching Hospitals Complex?
2) What are the causative factors associated with low back pain among nurses in Obafemi Awolowo University Teaching Hospitals Complex?
3) Which nursing procedure(s) is/are associated with low back pain among nurses in Obafemi Awolowo University Teaching Hospitals Complex?
4) What method of management do nurses of Obafemi Awolowo University Teaching Hospitals Complex adopt for their low back pain?

Objectives of the study

The objectives of this research are:

• To determine the number of nurses with low back pain.
• To ascertain which nursing procedure(s) is/are associated with low back pain.
• To identify predisposing and causative factors of low back pain among nurses in Obafemi Awolowo University Teaching Hospitals Complex.
• To determine the methods of managing low back pain adopted by nurses in Obafemi Awolowo University Teaching Hospitals Complex.

Significance of the study

Low back pain, a musculoskeletal disorder is the most significant health problem faced today by the workforce. (EOSD, 2007) and it is a common cause of morbidity among health workers including Nigerian nurses.

Therefore, the finding of this study provided basic knowledge on factors associated with low back pain among nurses in Obafemi Awolowo University Teaching Hospitals Complex Ile Ife and Ilesa, as well as assessment and management. This would subsequently help in planning accurate intervention upon which specific educational program would be designed for nurses and other health professionals and this would ensure quality pain management.

Delimitation

This study is delimited to nurses in Obafemi Awolowo University Teaching Hospitals Complex, Ile Ife, and Wesley Guild Hospital, Ilesa, Osun State.

Limitation

The study was affected by factors such as subjective phenomenon of pain, limited time, financial constraints and bias on the part of respondents in filling and submitting the questionnaires.

Research methods

The study employed a descriptive design to assess the incidence and management of low back pain among nurses in Obafemi Awolowo University Teaching Hospitals Complex, Ile Ife.

Research setting

The study was conducted in Obafemi Awolowo University Teaching Hospitals Complex Ile Ife and Ilesa. Obafemi Awolowo University Teaching Hospitals Complex is a first generation teaching hospital established by the federal government to provide qualitative health care to its people. The institution is a referral centre, located along Ife –Ilesa express road in Ife central local government area of Ile Ife. This institution has 6 units; Ife Hospital Unit, Ile-Ife, Wesley Guild Hospital, Ilesa, Dental Hospital OAU, Ile-Ife, Urban Comprehensive Health Centre, Eleyele, Ile-Ife, Rural comprehensive health centre, Imesi-Ile, and Multi-purpose Maternal and Child Health Centre, Ilesa.
Wesley Guild Hospital (W.G.H.), which was initially a missionary hospital, was founded in the year 1913 by the Methodist Church of Nigeria, with powerful assistance from foreign partners. But it was later taken over in the year 1975, by the Federal government of Nigeria to be part of the teaching hospitals complex for the then new medical school in Ile-Ife, twenty miles away. The original name was retained; partly to distinguish it from the three other hospitals in the complex, the Ife State Hospital Unit, Comprehensive health centre, Eleiyele, Ile-Ife and the Rural Comprehensive Health Centre at Imesi-Ile.

Target population

The population of the study were nurses working in Obafemi Awolowo University Teaching Hospital Complex, Ife Hospital Unit and Wesley Guild Hospital, Ilesa.

Sample and sampling technique

The sample for this study was selected among nurses working in the Ife Hospital Units, Ile-Ife and Wesley Guild Hospital, Ilesa, Osun State. A simple random sampling technique was used in selecting the sample and the wards where respondents were working served as the sample frame.

The sample for this study was determined using Yamane’s formula.

\[ n = \frac{N}{1 + N \times e^2} \]

Where \( n \) = sample size

\( N \) = population size

\( e \) = level of precision which is 0.05

Population of nurses in Ife Hospital Unit =510, Population of nurses in Wesley Guild Hospital Ilesa =228

Total population = 738

\[ n = \frac{738}{1 + 738 \times 0.05^2} = \frac{738}{1 + 738 \times 0.0025} = \frac{738}{2.85} = 258 \]

Ratio of IHU: WGH 510: 228: 1

Sample from IHU = 172, Sample from WGH = 86

Development of research instrument

The instrument that was employed for data collection was a Questionnaire. It was adapted from the Aberdeen low back pain scale and the Faces pain scale and modified in line with the culture and setting of the study. The questionnaire consists of four sections; sections A, B, C and D. Section A consists socio-demographic variable, section B consists of questions on occurrence of low back pain, has 9 items and is closed ended, section C consists questions on causes of low back pain, has various items known to possibly cause or associated with low back pain and these items ranged from agree (3) and undecided (1). Section D consists questions on management of low back pain.

The questionnaire was developed with input from my supervisor. Authors of the Aberdeen low back pain scale found the instrument to be valid and reliable. It was compared to the Oswestry Waddell and Greenough indices. It correlated with the SF-36 as a general measure of health status; it showed good internal consistency and test-retest reliability. To test for the face validity, the extent to which the statement would convey was determined taking cues from the literature, Aberdeen low back pain and the faces pain scale. Content validity was ensured by comparing the contents of the questionnaire to the literature review on the topic and validates the fact that it accurately represents the literature review. A pilot study was conducted using 20 nurses in Ladoke Akintola University Teaching Hospital, Osogbo, two questions were reframed and the assessment scale for pain intensity modified.
Method of data collection and analysis

Permission was firstly sought from the authority of OAUTHC and the Ethics and Research Committee in Institute of Obafemi Awolowo University Teaching Hospitals Complex, Ile Ife. Respondents were adequately informed before giving them questionnaire to fill. Participation of respondents in the study was voluntary. A total of 258 questionnaires were distributed. Data collected was analysed using statistical package for social sciences (version 17). Descriptive and inferential procedures was used for analysis and results were presented using tables and percentages.

The researcher sought permission from the Ethics and Research Committee of Obafemi Awolowo University Teaching Hospitals Complex, Ile Ife, permission was also gotten from the ward leaders of the respective wards in OAUTHC Ile Ife and Ilesa. Besides, explanation on the purpose of the study was provided and respondents were informed that the information received would be held strictly confidential.

Results

Low back pain is a common cause of morbidity among health workers and it is not uncommon among Nigerian nurses. This study looked at the incidence and management of low back pain among nurses in Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife and Ilesa. The target population were nurses employed and working with the institution. A descriptive design was used for the study and a simple random sampling technique was used to select 255 nurses in Ife hospital unit and Wesley Guild Hospital Units. The instrument used to collect data was a self-administered questionnaire and analysis was done using descriptive and inferential statistics. Findings from the study revealed that 71.4% of the respondents had low back pain among which 68.7% had low intense back pain, while 27.5% had moderate intense low back pain and only 3.8% had high intense low back pain. Nursing procedures requiring lifting and bending were found to be associated with low back pain. The study also revealed that wound dressing and bed making were the most important nursing jobs identified to be associated with low back pain and that those who had low back pain, majority were work related. The study also revealed that nurses had been using rest, massage and pain killers to manage their pain.

As to the first research hypothesis, the significant value of the F test in the ANOVA table is lesser than 0.05. Thus, we reject the null hypothesis and conclude by accepting the alternative hypothesis that there is a significant difference between stress and low back pain intensity. With the F (3, 103) = 4.682, sig. (0.004) < 0.05, we reject the null hypothesis and conclude by accepting the alternative hypothesis that there is a significant difference between stress and low back pain intensity. The Pearson chi-square was used to test the hypothesis that there is no significant relationship between ward and low back pain intensity. The Pearson chi-square derived a value of 4.861, degree of freedom (df) of 7, and a significant value of 0.677. The sig. value is greater

Discussion

Altogether, 255 nurses participated in the study, out of which female nurses accounted for 78.6%, this corresponds to the fact that female nurses are more than male nurses. Male nurses accounted for 21.6%.

Findings from this study revealed that 71.4% of nurses in Obafemi Awolowo University Teaching Hospitals Complex, Ile Ife have low back pain. This statistics seems to be an alarming one indeed, this agrees with Maul et al, (2003) who submitted that yearly low back pain prevalence among German nurses had gone to 76%, Corona et al, (2005) also posited that the prevalence rate of low back pain among Italian nurses had been 86% and among nurses in Hong Kong had been 80.9%. The incidence rate of low back pain among nurses in OAUTHC is thereby not far-fetched from her global counterparts.

Furthermore, the study also revealed that the low back pain nurses in OAUTHC had is work related, the study revealed that 54.1% of nurses with low back pain had their pain began
due to work hazards. This agreed with the submission of the European Foundations for Its Improvements of living and working conditions in its European Occupational Diseases Statistics (EOSD, 2007) which stated that the most significant health problems faced today by the workforce are musculoskeletal disorders; one of which is low back pain. Irishealth (2009) also submitted that the majority of lower back pain stems from benign musculoskeletal problems and are referred to as non-specific low back pain; this type may be due to muscle or soft tissue sprain or strain particularly in instances where pain arose suddenly during physical loading of the back.

The study also revealed that over activity is related with low back pain, this agreed with the submissions of Iris health (2009) who posited that over activity results is muscle soreness. Over activity causes muscles and ligaments to overstretch or injure.

Also, the study revealed that nurses who carry out wound dressing, bed making, lifting and other heavy physical activities could have low back pain, this also agreed with the submissions of Cesena et al, (2008) who opined that mechanical hazards in the hospital include low back pain from manual lifting (patients in particular) which makes nursing one of the occupations mostly affectedly by low back pain. Yip, 2001 and French et al, (2007) also submitted that heavy physical activities play a role in nurses low back pain, activities like displacing and lifting are the most important factors causing low back pain. However, this study revealed that wound dressing and bed making are the most important nursing procedures associated with low back pain in OAUTHC.

Furthermore, the study revealed that low back pain had made some nurses miss work before. The study revealed that 11.4% of nurses had missed work because of low back pain; this supported the result of a survey conducted by Yip, (2001) in Hong Kong. The result of the survey disclosed that 16.2% of nurses’ sick leave was because of low back pain.

The study also showed that stress causes low back pain among nurses, this agreed with the submissions of Dennis, (2010) who posited that under stress the body secretes stress hormone (cortisol) that has a fights or flight function – cortisol leaches calcium from the bones causing osteoporosis. Under stress, it is the adrenal glands that must first respond if they are over stimulated they become exhausted. When the adrenals are fatigued, there are direct consequences to the musculoskeletal system. The exhausted adrenal glands lead to improper or inadequate response on the part of the Sartorius muscle. The demand on the muscle exceeded its threshold to handle it resulting in an injury. The direct connection to the low back pain from stress is that the Sartorius imbalance in front of the thigh has an impact on the sacroiliac joint integrity on the posterior side of the pelvis, this result in injury to the back.

Findings from the study also showed that obesity is associated with low back pain. According to Haslam, (2005) the number of overweight or obesity is dramatically increasing. Mirtz, (2005) opined that the association between obesity and low back pain remains controversial. A study conducted by Hershkovich (2000) indicated that male who were obese had a 16% risk of getting lower back pain and females who were obese had 21% risk of getting lower back pain. Furthermore, a study conducted by Zettel-Watson et al, (2000) on typology of chronic pain among overweight Mexican Americans revealed that most participants had widespread pain; 60% were suffering severe pain (including back, knee and shoulder pain); the most common pain location was headache (80%), followed by knee and upper back (75-76%) shoulder (73%) and lower back (73%). Greater obesity was associated with some negative pain outcomes.

The study also revealed that larger percentage of respondents with low back pain were in surgical and medicals wards, this could be because nurses working on such wards are exposed to heavy physical activities such as lifting as submitted by Cesana et al, (2008). Findings from this study also showed that majority of the nurses with low back pain had it for between one and five years. The study also showed that low back pain had limited some activities of the nurses who had low back pain, this agreed with Roupa et al, (2006) who submitted that injuries to the lumbar spine are painful, chronic and in most cases non reversible conditions.
and the individual suffering from them are unable to attend to their social, occupational and other activities.

The study also revealed that majority of the nurses who had low back pain felt a dull ache sensation. The study further showed that nurses make use of rest, massage, physical therapy and analgesics (most especially paracetamol and tramadol) to manage their pain, this agreed with the submissions of Malmivaara et al, (2005) who opined that bed rest may be recommended for the first few days for patients with severe pain – Recommended medications include non-steroidal anti-inflammatory drugs such as ibuprofen or aspirin. They stated that Narcotic analgesia should be avoided in general but it can be prescribed in cases of severe acute pain. A study by Cherkin, (1998) found that physical therapy maneuvers and chiropractic spinal manipulation for the treatment of acute low back pain provide small short term benefits and improve patient satisfaction.

The study also revealed that nurses knew what back care ergonomics was and they agreed that back care ergonomics when practiced would reduce the incidence of low back pain, this agrees with John et al (2006) who opined that there are certain basic ergonomic guidelines that many help an employee avoid back pain or back injury.

**Conclusion**

This study has demonstrated that low back pain is a major problem to nurses globally and most especially Nigerian nurses. The study concludes that a larger percentage of nurses have low back pain and that procedures such as wound dressing and bed making are highly associated with low back pain which makes nurses working on wards requiring these two procedures to be more prone to developing low back pain and they manage low back pain with massage, rest, physical therapy and analgesics with proven effects.

The health status of a care giver is directly linked to the quality of care delivered. Low back pain affects the quality of care delivered. It is however important that attention be given to factors related to low back pain and measures to reduce it.

Based on the findings of this study, it is important that nurses become knowledgeable about the causative factors of low back pain. It is also very important that nurses know how to take good care of their back (Back care ergonomics). It is evident that back care ergonomics will help nurses avoid back injury.

It is equally important that relevant stakeholders design appropriate program aimed at stressing effective back hygiene and that measures or programs be implemented which are aimed at training nurses doing wound dressing. It is also imperative that nurses should be encouraged to desist from lifting alone, instead call for assistance and that lifting devices should be provided and made functional.

**Figures and tables**

<table>
<thead>
<tr>
<th>Table 1. Socio-Demographic characteristics of the respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEX</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
<tr>
<td>AGE</td>
</tr>
<tr>
<td>20-30 years</td>
</tr>
<tr>
<td>31-40 years</td>
</tr>
<tr>
<td>41-50 years</td>
</tr>
<tr>
<td>51-60 years</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
<tr>
<td>MARITAL STATUS</td>
</tr>
<tr>
<td>Married</td>
</tr>
<tr>
<td>Single</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Divorced</td>
</tr>
<tr>
<td>Widow</td>
</tr>
<tr>
<td>Widower</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

### CADRE

| NO 11/NO 1 | 151 | 59.2 |
| SNO/PNO | 48 | 18.8 |
| CNO/ADNS | 56 | 22.0 |
| **TOTAL** | **100** | **100** |

### ACADEMIC QUALIFICATION

| RN | 92 | 36.1 |
| RM | 114 | 44.7 |
| RPHN | 4 | 1.5 |
| BNSC | 41 | 16.1 |
| MASTERS | 3 | 1.2 |
| PHD | 1 | 0.4 |
| **TOTAL** | **255** | **100** |

### ETHNICITY

| Yoruba | 238 | 93.3 |
| Hausa | 2 | 0.8 |
| Igbo | 15 | 5.9 |
| **TOTAL** | **255** | **100** |

### Working Experience

| 1-10 years | 167 | 62.7 |
| 11-20 years | 61 | 23.9 |
| 21-30 years | 26 | 10.2 |
| Above 30 years | 8 | 3.1 |

### Wards

| Surgical | 63 | 24.7 |
| Medical | 55 | 21.6 |
| Specialty | 68 | 26.7 |
| Children ward | 21 | 8.2 |
| Mental ward | 27 | 10.6 |
| Clinics | 21 | 5.5 |
| Community | 7 | 2.7 |
| **Total** | **255** | **100** |

**Table 2.** Respondents with low back pain, duration and family history

<table>
<thead>
<tr>
<th>Do you have low back pain</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>182</td>
<td>71.4</td>
</tr>
<tr>
<td>No</td>
<td>73</td>
<td>28.6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>255</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

### Duration

| 1-5 years | 141 | 55.3 |
| 6-10 years | 27 | 10.6 |
| 11-20 years | 5 | 2.0 |
| Above 20 years | 9 | 3.5 |
| No Pain | 73 | 28.6 |
Table 3. Respondent’s characteristics of low back pain

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dull ache</td>
<td>113</td>
<td>44.3</td>
</tr>
<tr>
<td>Shooting</td>
<td>10</td>
<td>3.9</td>
</tr>
<tr>
<td>Burning</td>
<td>14</td>
<td>5.5</td>
</tr>
<tr>
<td>Sharp</td>
<td>45</td>
<td>17.6</td>
</tr>
<tr>
<td>No pain</td>
<td>73</td>
<td>28.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>225</td>
<td>100</td>
</tr>
<tr>
<td>INTENSITY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Intense</td>
<td>125</td>
<td>68.7</td>
</tr>
<tr>
<td>Moderate Intense</td>
<td>50</td>
<td>27.5</td>
</tr>
<tr>
<td>High Intense</td>
<td>7</td>
<td>3.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>182</td>
<td>100</td>
</tr>
<tr>
<td>How low back pain began</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accidents at home</td>
<td>6</td>
<td>2.4</td>
</tr>
<tr>
<td>Work related</td>
<td>138</td>
<td>54.1</td>
</tr>
<tr>
<td>Motor accident</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>After surgery</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>After an illness</td>
<td>4</td>
<td>1.6</td>
</tr>
<tr>
<td>Just began</td>
<td>16</td>
<td>6.2</td>
</tr>
<tr>
<td>Came on gradually</td>
<td>13</td>
<td>5.1</td>
</tr>
<tr>
<td>No pain</td>
<td>73</td>
<td>28.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>255</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4. Low back pain experience and activities limitations

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents with activities limitations</td>
<td>77</td>
<td>30.2</td>
</tr>
<tr>
<td>No activity limitation</td>
<td>178</td>
<td>69.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>255</td>
<td>100</td>
</tr>
<tr>
<td>Low back pain experiences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No pain</td>
<td>73</td>
<td>28.6</td>
</tr>
<tr>
<td>Pain is present but does not limit activities</td>
<td>79</td>
<td>30.9</td>
</tr>
<tr>
<td>Mild annoying pain</td>
<td>53</td>
<td>20.8</td>
</tr>
<tr>
<td>Can do more activity with rest</td>
<td>19</td>
<td>7.5</td>
</tr>
<tr>
<td>Nagging pain uncomfortable/troublesome</td>
<td>21</td>
<td>8.2</td>
</tr>
<tr>
<td>Unable to do some activities because of pain</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>Miserable distressing</td>
<td>6</td>
<td>2.4</td>
</tr>
<tr>
<td>Intense, dreadful/terrible</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Worst possible/unbearable</td>
<td>1</td>
<td>0.4</td>
</tr>
</tbody>
</table>
### Table 5. Respondent’s presenting features of low back pain

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weakness in hands /feet</td>
<td>23(9.0%)</td>
<td>232(91.0)</td>
<td>100</td>
</tr>
<tr>
<td>Pain radiating to arm/forearm/hands</td>
<td>33(12.9%)</td>
<td>222(87.1)</td>
<td>100</td>
</tr>
<tr>
<td>Pain radiating to thighs/buttocks/legs/feet</td>
<td>116(45.5%)</td>
<td>139(54.5)</td>
<td>100</td>
</tr>
<tr>
<td>Dragging the feet while walking</td>
<td>39(15.3%)</td>
<td>216(84.7)</td>
<td>100</td>
</tr>
<tr>
<td>Difficulty holding bladder or bowel</td>
<td>6(2.3%)</td>
<td>249(97.7)</td>
<td>100</td>
</tr>
<tr>
<td>Trouble falling asleep</td>
<td>43(16.9%)</td>
<td>212(83.4)</td>
<td>100</td>
</tr>
</tbody>
</table>

### Table 6. Impact of low back pain on work

<table>
<thead>
<tr>
<th>Have low back pain made you miss work before?</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>11.8</td>
</tr>
<tr>
<td>No</td>
<td>152</td>
<td>59.6</td>
</tr>
<tr>
<td>No Pain</td>
<td>3</td>
<td>28.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>255</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No of Days Absent</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-7</td>
<td>24</td>
<td>9.4</td>
</tr>
<tr>
<td>8-14</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>15-21</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Above 29</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>None</td>
<td>226</td>
<td>88.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>255</td>
<td>100</td>
</tr>
</tbody>
</table>

### Table 7. Nursing tasks associated with low back pain

<table>
<thead>
<tr>
<th>Procedures</th>
<th>Associated with low back pain N (%)</th>
<th>Not associated with low back pain N (%)</th>
<th>Undecided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby Bathing</td>
<td>126(49.4%)</td>
<td>89(34.9%)</td>
<td>40(15.7)</td>
</tr>
<tr>
<td>Bed bathing</td>
<td>218(85.5)</td>
<td>25(9.8)</td>
<td>12(4.7)</td>
</tr>
<tr>
<td>Wound dressing</td>
<td>218(85.5)</td>
<td>28(10.9)</td>
<td>9(3.5)</td>
</tr>
<tr>
<td>Feeding (oral)</td>
<td>83(32.5)</td>
<td>150(58.8)</td>
<td>22(8.6)</td>
</tr>
<tr>
<td>Nasogastric Feeding</td>
<td>76(29.8)</td>
<td>147(57.6)</td>
<td>32(12.5)</td>
</tr>
<tr>
<td>Bed making</td>
<td>163(63.9)</td>
<td>70(27.5)</td>
<td>22(8.6)</td>
</tr>
<tr>
<td>Vital/signs</td>
<td>74(29.0)</td>
<td>155(60.8)</td>
<td>26(10.2)</td>
</tr>
<tr>
<td>Teaching rounds</td>
<td>145(56.9)</td>
<td>79(30.9)</td>
<td>31(12.20)</td>
</tr>
<tr>
<td>Assessment of patients</td>
<td>48(18.8)</td>
<td>172(67.5)</td>
<td>35(13.7)</td>
</tr>
<tr>
<td>Admitting patients</td>
<td>25(9.8)</td>
<td>194(76.1)</td>
<td>36(14.1)</td>
</tr>
</tbody>
</table>
Medication rounds | 68(26.7) | 142(55.7) | 45(17.6)
Pressure area treatment | 125(49.0) | 97(38.1) | 33(12.9)

Table 8 Factors associated with low back pain among respondents

<table>
<thead>
<tr>
<th>Pathologies</th>
<th>Agree</th>
<th>Disagree</th>
<th>Undecided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinal stenosis</td>
<td>201(78.8)</td>
<td>21(8.2)</td>
<td>33(12.9)</td>
</tr>
<tr>
<td>Spondylolysis</td>
<td>218(85.5)</td>
<td>14(5.5)</td>
<td>23(9.0)</td>
</tr>
<tr>
<td>Herniated disc</td>
<td>210(82.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degenerative Disc</td>
<td>221(86.7)</td>
<td>14(5.5)</td>
<td>20(7.8)</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>206(80.8)</td>
<td>16(6.3)</td>
<td>33(13.0)</td>
</tr>
<tr>
<td>Osteomyelitis</td>
<td>190(74.5)</td>
<td>34(13.3)</td>
<td>31(12.2)</td>
</tr>
<tr>
<td>Scoliosis</td>
<td>200(78.4)</td>
<td>16(6.3)</td>
<td>39(15.3)</td>
</tr>
</tbody>
</table>

Other factors

| Lifting              | 244(95.7) | 4(1.6) | 7(2.7)  |
| Stress               | 195(76.5) | 40(15.7) | 20(7.8) |
| Prolonged standing   | 232(90.9) | 11(4.3) | 12(4.7) |
| Improper sitting     | 214(83.9) | 26(10.2) | 15(5.9) |
| Obesity              | 185(72.5) | 42(16.5) | 28(10.9) |
| Over activity        | 205 (80.4) | 24(9.4) | 26(10.2) |
| Prolonged sitting    | 193(75.7) | 35(13.7) | 27(10.6) |
| Sleeping with sagged mattress | 240(94.1) | 6(2.4) | 9(3.5) |
| Sleeping with firm mattress | 31(12.2) | 165(64.7) | 59(23.1) |

Table 9. Management of low back pain among respondents, and respondents’ use of analgesics

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analgesics</td>
<td>84</td>
<td>32.9</td>
</tr>
<tr>
<td>Massage</td>
<td>40</td>
<td>15.7</td>
</tr>
<tr>
<td>Rest</td>
<td>55</td>
<td>21.6</td>
</tr>
<tr>
<td>Other physical support</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>Surgery</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No pain</td>
<td>73</td>
<td>28.6</td>
</tr>
<tr>
<td>Total</td>
<td>255</td>
<td>100</td>
</tr>
<tr>
<td>Analgesics:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paracetamol</td>
<td>100</td>
<td>39.2</td>
</tr>
<tr>
<td>Ibuprofen/Diclofenac</td>
<td>20</td>
<td>7.8</td>
</tr>
<tr>
<td>Tramadol</td>
<td>62</td>
<td>24.3</td>
</tr>
<tr>
<td>None</td>
<td>73</td>
<td>28.6</td>
</tr>
</tbody>
</table>

Table 10. Effectiveness of management modalities on low back pain

<table>
<thead>
<tr>
<th>Modalities</th>
<th>Better</th>
<th>Worse</th>
<th>No pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modalities</td>
<td>N(%)</td>
<td>N (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td>Massaging/rubbing</td>
<td>168 (65.9)</td>
<td>14 (5.5)</td>
<td>73 (28.6)</td>
</tr>
<tr>
<td>Physical therapy</td>
<td>154 (60.4)</td>
<td>28 (11.0)</td>
<td>73 (28.6)</td>
</tr>
<tr>
<td>Pain killers</td>
<td>166 (65.1)</td>
<td>16 (2.3)</td>
<td>73 (28.6)</td>
</tr>
<tr>
<td>Cold compress</td>
<td>164 (64.3)</td>
<td>18 (7.1)</td>
<td>73 (28.6)</td>
</tr>
<tr>
<td>Heat therapy</td>
<td>164 (64.3)</td>
<td>18 (7.1)</td>
<td>73 (28.6)</td>
</tr>
</tbody>
</table>
Table 11. Respondents’ perception that back care ergonomic reduces low back pain

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>158</td>
<td>62.0</td>
</tr>
<tr>
<td>No</td>
<td>97</td>
<td>38.0</td>
</tr>
<tr>
<td>Total</td>
<td>255</td>
<td>100</td>
</tr>
</tbody>
</table>

Hypothesis testing

Analysis of variance (ANOVA)

Research Hypothesis one: There is no significant difference between stress and low back pain intensity.

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>29.265</td>
<td>3</td>
<td>9.755</td>
<td>4.682</td>
<td>0.004 (&lt;0.05)</td>
</tr>
<tr>
<td>Within</td>
<td>214.623</td>
<td>103</td>
<td>2.084</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>243.888</td>
<td>106</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi square

Research Hypothesis Two: There is no significant relationship between ward of respondents and low back pain intensity

<table>
<thead>
<tr>
<th>Low back pain intensity</th>
<th>Pearson Chi²</th>
<th>df</th>
<th>Sig. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low intense</td>
<td>4.861</td>
<td>7</td>
<td>0.677 (&gt;0.05)</td>
</tr>
<tr>
<td>Moderate intense</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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The Opinion of Nurses on Work Related Stress and Strategies Adopted to Cope with it at Wesley Guild Hospital Ilesa

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Abstract

Stress has become a more recognized term over the past decade and is a major cause of concern for many nurses at work. The aim of this study is to assess the opinion on stress experienced by registered nurses working in a hospital, to identify coping strategies used, to assess the relationship between stress, coping mechanism of registered nurses and work experience, and identify decision making process towards stressful situations and possible health outcome.

A descriptive correlation study was used to identify sources of stress experienced by registered nurses, stress and coping, and decision making process. Simple random sampling technique was used to select fifty (50) registered nurses, using Yemane sample size. Standardized questionnaire was distributed to them. Data generated from the study were analyzed using both descriptive (percentages, mean and standard deviation) and inferential statistics (ANOVA) at 0.05 level of significance.

The findings of the study revealed that 64% of the respondents were female, while 60% working experience is between 1 -5 years. The greatest perceived source of stress appears to be workload followed by emotional related issues. Registered nurses seem to be resorting to positive appraisal, and seeking social support as a coping strategies and decision making process. The most frequently reported health outcome as a result of stressful situations appears to be psychological heath implications.

Keywords: opinion, work related stress, adopted strategies, coping.

Introduction

Background of the study

Stress has become a more recognized term over the past decade and is a major cause of concern for many nurses at work.

Stress first coined in the 1930s, has in more recent decades become a commonplace of popular parlance.

Stress could be defined simply as the rate of wear and tear on the body systems caused by life (Stanks J.W, 2005). It occurs when a person has difficulty in dealing with life situations, problems and goals, stress has physical, emotional and cognitive effects. Although everybody has the capacity to adapt to stress, not everyone responds to similar stressors exactly the same (Timby B.K, 2008).

Also, the Health and Safety Executive (HSE) defines stress as the adverse reaction people have to excessive pressure or other types of demand placed on them. It is important to understand the impact on nursing staff because the psychological and mental harm caused by stress can adversely affect the delivery of patient care; it can cause a great deal of distress to the employee concerned and affect the employee’s health.

As a nurse, by tradition and training, you are good at spending a great deal of mental, emotional and physical energy on caring for others. Taking time to think about caring for yourself can be daunting and difficult.

There is no doubt from research and anecdotal evidence that nursing is a stressful profession. It is a job that requires expenditure of energy on many levels. Physically, the job can be demanding with high levels of muscular-skeletal stress, culminating in many aches and
pains. Mentally, you are required to be ‘on the ball’, making calculations for medication and responding to important questions from patients and relatives. It often feels like many balls are being juggled in the air at the same time. Emotionally, the impact is felt when you empathise and help people, and from the toll of working in an environment where there is pain and sadness.

Previous research conducted by Foxall et al (2001) has shown stress compromise the quality of care. Nurses who are less stressed, who feel supported by their managers and who feel that they have job security, could save patients’ lives and their employers’ money. Looking at the current situation in Nigeria, with the increasing demands for provision of nursing care and the severe shortage of nurses, there is a need to investigate stress and coping strategies amongst registered nurses in Nigeria.

Statement of problem

Stress is recognized as an inherent feature of the work life of nurses, and growing evidence suggest that it may be increasing in severity. Work-related stress has been implicated as a major contributing factor to growing job dissatisfaction, rapid turnover, and high attrition rates among nurses. It was found that job stress impacts not only on nurses’ health but also their abilities to cope with job demands. This will seriously impair the provision of quality care and the efficacy of health service delivery (Lee 2003:86).

A survey of the literature on nurses reveals that although a great deal of research has been carried out relating to stress and coping in nurses internationally, little has been written about nurses in Nigeria. Given that the international hospital settings and provision of health services are different to those in Nigeria, it would not be appropriate to use the results of previous international studies to explain stress and coping amongst Nigerian nurses.

This investigation is aimed to identify causes and frequency of stress, coping strategies used, and support systems amongst registered nurses. Thus knowledge obtained would be useful in the formulation of recommendation to address stress amongst nurses in the target population and Nigeria at large.

Objectives of the study

Generally, the study aims at determine nurses cope with stressful events (apply positive methods or negative response) and to find out relationship(s) between job coping and health outcomes in the nurses.

Specifically, the study is to:

- Assess the possible causes and frequency of stress experienced by registered nurses working in Wesley Guild Hospital in Ilesa Osun state.
- Identify the coping strategies used
- Assess the relationship between frequency of reported stress and coping strategies of registered nurses in Wesley Guild Hospital.
- Compare frequency of reported stress and adopted coping strategies among the registered nurses in Wesley Guild Hospital in different units/wards
- Make recommendations to address the occurrence of stress amongst nurses in Wesley Guild Hospital.

Significance of the study

This study will seek to extend previous international nursing research by measuring a coping strategy that might be used by Nigerian (Wesley Guild Hospital) nurses in dealing with their work stress.

Research questions

This study is designed to answer the following four research questions:

1. What situations contribute to stress in today’s nurse managers?
2. What coping strategies do nurse managers utilize to deal with stressful situations in their nurse manager role?
3. Is there any relationship between work experience and coping strategies?
4. What health outcomes do nurse managers’ report as a result of frequent exposure to stressful situations in their nurse manager role?
5. What decision-making processes do nurse managers utilize to address stressful situations in their nurse manager role?

Hypothesis

1. There is no relationship between work experience and coping strategies used by nurses in Wesley Guild Hospital, Ilesa.
2. There is no relationship between health outcome and coping strategies adopted by the nurses.

Scope of study

This research project covered the strategies adopted by nurses in Wesley Guild hospital Ilesa, Osun state in coping with stress.

Operational definition of terms

a. Coping: Coping is conceptualized as attempts used by nurses in Wesley Guild Hospital to reduce or eliminate the negative effects of stress on well-being.

b. Coping strategies: managing stress successfully; ways and/or skills nurses use to deal with stress, the positive steps that can be taken to minimize or remedy the harmful effects of stress.

c. Registered nurse: applied to persons registered under section 16 of Act 50 of 1978 and denotes the following:

- a registered general nurse.
- a registered psychiatric nurse
- a registered midwife
- a registered community nurse
- a registered preoperative nurse.

All trained in terms of the regulations published under decree 1978 of Nursing and Midwifery Council of Nigeria Act, working at Wesley Guild Hospital, Ilesa.

d. Stress: Stress is an untoward demand made by the internal or the external environment on the well being of nurses that upsets homeostasis.

Literature review

The purpose of this work is to provide a qualitative description of stress and coping as perceived by today’s nurse manager incumbents. Of particular interest is the need for insight regarding situations that contribute to nurse manager work-related stress, the coping strategies nurse managers utilize, and the health outcomes and decision making processes they report.

The literature was reviewed to explore view points in the field of study. The aim of the study seek to extend previous international nursing stress studies by measuring a wide variety of coping strategies that might be used by Nigerian nurses in dealing with their work stress. Both conceptual and research literature was used. Sources of information were books, journals, thesis and dissertation, and on line journals.

The concept of stress

Stress is a term that is difficult to define and yet, we can all identify with the physical, mental, emotional and behavioural responses that signal to us that we are stressed. The word itself is from a Latin root meaning hardships.
The term stress is an umbrella term for an increasingly wide variety of conditions, responses, and experiences. A fundamental problem for any writer or researcher concerned with stress and its effect on behaviour is to attempt to find a definition (Fisher 1986:7)

**Model of stress**

There have been a number of attempts to provide a definition of stress; each has its own problems and is inadequate in some respect.

**Response and stimulus based models of stress**

The original view of the physiological response to stress was developed by Seale (2001) and this marked the beginning of a response-based approach to the study of stress.

Kushnir (2002) defines stress as an adaptive response that is a consequence of any external action, situation or event that places special physical and or psychological demands upon a person.

Laposa et al (2003) reiterates that stress is a psychobiological reaction of the body to physical or psychological demands that threaten or challenge the organism’s well being.

Michelson (2005) argues that subsequent thinking around stress acknowledges that psychosocial stimuli are able to produce a stress response.

The stimulus-based approach views stress as an external factor or force, which is disturbing or disruptive to the person (Dohrenwend 2008). The dominant criticism of this model pertains to its exclusive focus on the properties of the stimulus, hence its inability to account for cognitive and other variables (i.e. coping process) that might mediate the relationship between psychosocial stressors and disorders.

**Pearson and environmental based model of stress**


While this author is saying stressors or environmental demands can range from major catastrophes, life events such as death of loved ones or divorce, to daily hassles which encompass those often small but irritating problems that people deal on daily basis such as arguments and working responsibilities. According to this perspective stress is only experienced when situations are appraised as exceeding one’s resources, thus being given extra responsibilities at work might be viewed as threatening to one person while another person may appraise the situation as a challenge.

Cox (2001) viewed stress as a psychological state which is the internal representation of a particular and problematic transaction between the person and the environment.

Antonovosky (2004) defined stress as a “demand made by the internal or the external environment on an organism (such as you or me), that upsets its homeostasis (or equilibrium), restoration of which depends on a non-automatic and not readily available energy-expending action”.

**Additional conceptualizations of stress**

Callaghan et al (2000:1520) defined stress operationally as respondents’ physical and psychological symptoms and health related and social behaviours attributed to their work experiences.

These models contend that conventional conceptualizations of stress limit the boundaries of stress research to the exclusive study of individuals as isolated units.

**The concept of coping**

How individuals perceive or appraise any specific problem will determine what coping strategies they use. Coping can include attempts at “managing or altering the problem (problem focused coping) or regulating the emotional response to the problem (emotion focused coping) (Lazarus & Folkman 2004). Problem focused coping includes problem
solving activities and seeking information, while emotion-focused coping may include
behaviours (seeking others company), and also cognitive activities such as denial of facts to
distort reality, or looking on the bright side of things (Payne 2001).

According to Lazarus & Folkman (2004) coping is viewed as a process, determined by
cognitive appraisal and is context dependent. According to the transactional perspective,
coping is viewed as a ‘process’, determined by cognitive appraisal and is context dependent.
Traditional models, however, emphasize traits or styles that operate as stable dispositions to
cope in particular ways irrespective of the situations. Yet studies of life stressors by Folkman
& Lazarus and organizational stressors by Parkes (2008) have found that coping varies the
type of stressors and the situation.

**Coping strategies**

Edwards’ cybernetic theory of stress, coping, and well-being views stress as a discrepancy
between the individual’s perceived state and desired, provided the presence of this
discrepancy is considered important by the individual. Coping is conceptualized as attempts
to reduce or eliminate the negative effects of stress on well-being. Five forms of coping are
identified, including attempts to bring the situation into conjunction with desires, adjust
desires to meet the situation (i.e. accommodation), reduce the importance associated with the
discrepancy (i.e. devaluation), improve well-being directly (i.e. symptom reduction), and
direct attention away from the situation (i.e. avoidance). Hence, stress and coping are viewed
as critical components of a negative feedback loop, in which stress damages wellbeing and
activates coping which may improve well-being directly and indirectly, through the perceived
and desired states comprising the discrepancy, the level of importance associated with the
discrepancy, and the amount of attention directed towards the discrepancy. (Edwards &
Banglion 2003).

A number of researchers make a distinction between problem-focused and emotion focused
strategies (Callahan 2003). According to this author problem-focused strategies, in terms of
dealing with organizational change, involve efforts to modify or eliminate the source of stress
by dealing with the situation. In their organization, individual employees can seek
information by talking to superiors, co workers or subordinates, by making plans of action, or
through bargaining or reaching a compromise to seek a possible solution. Work-related
stressors are likely to elicit problem-focused coping because the situation is often appraised as
changeable. However, a period of large scale organizational change can make some people
feel out of control and powerless, so that it would not be usual for some degree of emotion-
focused coping by employees. Emotion-focused coping could help people maintain their
effective equilibrium as they regulate their feelings about the changes occurring around them.

Callahan (2003) states that the coping strategy chosen by individuals is often influenced by
their coping resources. According to this author personality variables are internal coping
resources, in that various aspects of the self provides workers with resources that can help
them handle adverse environmental events.

Thompson et al (2004) suggested that the effects of stress upon people will be governed
not only by the level of pressure experienced, but also by the coping strategies people
subsequently utilize in an attempt to deal with it. Similarly, in order to prevent stress every
person develops a repertoire of coping strategies. Coping according to these authors can be
seen to occur at four levels by: removing the stressors from their lives, not allowing ‘neutral’
events to become stressors, developing a proficiency in dealing with situations we do not wish
to avoid and seeking diversion from the pressure(s) or by relaxation. These authors also
suggested five commonly used coping strategies in their research namely: planning and goal-
setting, assertiveness, exercise and diet, stress inoculation and re-evaluation.
Stressors in workplace

Several researchers have categorized types of job stressors. For example, Cartwright and Cooper (2007) suggested six (6) major sources of pressure at work: stress in the job itself, role based stress, relationships, career development factors, organizational structure and climate, and the work-family interface. Five categories were suggested by Ivancevich and Matteson (2001), three of which focused on social psychological stressors in the workplace. They employed the frequently used organizational psychology categorization by level of thought and inquiry; individual level, group level, and organizational level. While these approaches have taken a fairly broad view, trying to develop categories into which many specific stressors could be placed, Thomson, Murphy and Stradling (2004) have settled for a much narrower set of categories: role overload, role insufficiency, role ambiguity, role boundary (role conflict) and responsibility.

Stress, coping and health outcomes in nurse managers

A synthesis of the existing nurse manager stress, coping, and health outcomes empirical literature covering the time period from 1980 to 2006 suggests that the evidence may be divided into three broad categories: pre, intra, and post re-engineering of the mid 1990’s. Literature from 1980 to 1991 addressed the pre-engineering period and predominantly focused on the “old” head nurse role. The head nurse role prior to re-engineering typically directed the activities of a single unit and had a primary clinical focus with limited oversight of the unit budget and financial performance.

Literature published starting in 1992 (intra re-engineering period) through today (post re-engineering period) reflects a transition of the head nurse role from that of the single unit supervisor to that of the multi-unit department manager with a primary managerial focus and accountability for the department’s financial and operational performance. The literature exists within the backdrop of two major nursing shortages of the 1980’s and late 1990’s that continue today. Although much of the nurse manager stress and coping literature prior to 1992 was based on studies conducted outside Nigeria, the majority of the studies since 1992 have been conducted in Canada and Europe.

Despite the excellent nursing research that is being generated outside the U.S., cultural, professional, practice, and health care system differences limit the generalizability of these studies the current nursing shortage, however, has brought the crucial role of the nurse manager back to the forefront.

Studies on nurse manager stress conducted from 1980 to 1991, primarily associated stress in the head nurse role with physician causes (Leatt & Schneck, 1980), task and time allocation challenges (Leatt & Schneck, 1980), lack of available resources (Frisch, Dembeck & Shannon, 1991), excessive workload (Frisch et al., 1991), powerlessness (Frisch et al., 1991), role conflict/ambiguity (Skorga & Taunton, 1989), and patient-related stress (Leatt & Schneck, 1980).

Literature from 1992 to 1999, focused mostly on examining the transition from the traditional head nurse role to the nurse manager role of the 1990’s (Nicklin, 1995; Oroviogoicoechea, 1996; Hall & Donner, 1997). The literature during this time period attempted to summarize the new skill set needed for success in the more complex and evolving nurse manager role (Mark, 1994). Lack of role clarity was referenced as a source of conflict and stress for nurse managers (Oroviogoicoechea, 1996) as was the demand to be visible (Everson-Bates, 1992), the resurfacing of repetitive problems, and the feeling of work never being done (Jezierski, 1993). One Nigerian study using nurse managers (n=91) as subjects identified lack of empowerment structures available to first line managers (Goddard & Salami, 1997). This lack of empowerment contributed to the perception that individuals in front line managerial positions, while having increasing responsibility, were still lacking in power and opportunity.

A second Swedish study of nurse managers (n=33) identified survival as the central coping strategy of the times (Persson & Thylefors, 1999). The Swedish nurse managers described
themselves as being overworked and labelled their role within the category of a “career with no return.” A similar label of “magician” was used to describe the abilities needed to deal with conflicting demands of the nurse manager role (Rudan, 2002).

The nurse manager stress literature from 2000 to today focuses on the increasingly complex and stressful nature of the nurse manager role and its related health care work environment.

Staffing shortages, workforce performance management issues, and balancing competing priorities seem to overwhelm nurse managers in their roles (Schroeder & Worrall-Carter, 2002).

Research has demonstrated that nurse managers who adapted to work stress with high job satisfaction were more inclined to adopt problem-focused coping (Judkins, 2001). Stress tolerant nurse managers with high hardness levels reported 35% fewer sick hours than their low hardness counterparts (Judkins, Masse & Huff, 2006). Stress tolerant nurse managers have demonstrated less frequent use of avoidance and defensive coping strategies and typically reported the perception of high levels of family support.

The importance of social support in the workplace is also evident in the literature and has been found to relate to increased empowerment, increased motivation, and decreased job strain (Shirey, 2004).

To enhance the personal and professional outcomes of the role, nurse managers have specifically identified the need for more support from senior administration in dealing with role changes and challenges (Thorpe & Loo, 2003), more power and respect consistent with increasing nurse manager responsibilities (Suominen et al., 2005), and further educational preparation and training opportunities to help them better cope with their continually evolving roles (Suominen et al., 2005). One Finnish study (n=279) noted, however, that the high work demands associated with the nurse manager role may have become so great that ordinary supportive efforts may no longer be adequate to address stress in the role (Suominen et al., 2005).

It is apparent from today’s frenetic health care work environment that the increasing demands for greater efficiency and productivity have not only adversely affected patient safety (IOM, 2004), but also have negatively impacted the coping strategies and self-reported health outcomes of nurse managers (Lindholm et al., 2003). There is clearly a need for a “kinder, gentler” health care work environment and this healthier work environment is needed for nurse managers and staff nurses alike. Change and complexity are part of a reality that likely will continue. Eliminating personal stress appraisals (particularly perception of threat), however, is dependent upon a combination of an individual’s personal strengths, the environment, organizational structure, and/or the coping abilities of nurse managers. Nurse Managers have the potential to favourably affect the stress appraisals in their lives and the lives of their employees. Development of tailored interventions to affect stress appraisals and related coping, however, requires a better understanding of nurse manager work and related stress. Employer-generated organizational responsibility for support in recognizing and addressing occupational stress is warranted (Rodham & Bell, 2002) and cannot be underestimated (Maslach & Leiter, 1998; Judkins, 2001).

Cognitive decision-making amidst stress and complexity

The literature suggests that under conditions of stress, changes in the adequacy of cognitive functioning and skilled performance may ensue (Lazarus, 1966; Lazarus & Folkman, 1984). Dating back to the 1950’s, research has shown that the negative effects of stress on cognition include changes in perceptions, thoughts, judgment, problem solving, perceptual and motor skills, and social adaptation (Lazarus, 1966). More recently, chronic stress from long work hours and employer demands for greater productivity has been reported to produce sleeplessness in working adults (National Sleep Foundation, 2008). Sleep deprivation in turn has been shown to impair alertness, reaction time, attention, and vigilance necessary for quality decision-making (Kilgore, Balkin & Wesensten, 2006). Individuals working in today’s
health care work environments frequently experience the dynamics of escalating stress and complexity that at times borders on chaos. Accordingly, it is important to understand these dynamics and know how they interact with each other so that targeted interventions may be developed to enhance individuals and the systems in which they work.

Recent patient safety research has established a link between complexity in the health care work environment and the cognitive work of nurses (Ebright, Patterson, Chalko & Render, 2003; Potter et al., 2004; Potter et al, 2005; Hedberg & Larsson, 2004). This research suggests that the nurse’s clinical decision-making in the acute care hospital setting is influenced by the nurse’s knowing and attention to focus as well as by factors within the workplace such as obstacles, multiple goals, missing data, and behaviours surrounding care situations (Ebright et al., 2003). Increasing demands, complexity, and disruption of the nurse’s cognitive work predisposes to errors or omissions that threaten the integrity of patient care systems (Potter et al., 2005).

**Stress and nurses**

Work-related stress is estimated to affect at least a third of the workforce in any one year. It costs organizations billions of pounds a year in lost productivity and accounts for over half the working days lost through sickness absence. Stress has been linked to a wide variety of diseases and the European Foundation estimates that lifestyle and stress-related illness accounts for at least half of all premature deaths (Williams and Cooper 2002).

Stress is recognized as an inherent feature of the work life of nurses, and growing evidence suggest that it may be increasing in severity. Numerous studies have indicated that job stress is significant in nursing. Nurse’s high job stress is well documented. In particular, the job stress of nurses working on acute and specialized care units has been widely studied. Heavy workload, poor staffing, dealing with death and dying, inter-staff conflict, strain of shift work, careers, and lack of resources and organizational support have been identified as the major sources of job stress according to Lee (2003).

It has also been found that different nurses experienced job stress differently. Some studies reported that senior registered nurses and charge nurses experienced a higher degree of stress than other ranks of nurses. However, other studies found that stress level was significantly higher in junior nurses than in senior nurses. There are also studies reporting that the longer the nurses had worked in their units the more likely they were to experience stress, regardless of their seniority (Lee 2003).

Nursing is, by its very nature, an occupation subject to a high degree of stress. Every day the nurse confronts stark suffering, grief, and death as few other people do. Many tasks are mundane and unrewarding. Many are, by normal standards, distasteful, even disgusting, others are often degrading, some are simply frightening (Hingley 2004).

With regard to the sources of stress, the study conducted by Lee (2003:89) reveals that ‘workload’, ‘inadequate preparation’ and lack of support’ are the most common stressors among nurses who are working in primary care settings in Hong Kong. These stressors were similar to those identified in previous studies with the exception that ‘dealing with death and dying’ is obviously a stressor of which primary care nurses have little experience.

Hartrick and Adebayo (1993) interviewed 28 nurses to determine their perception of stressors in the workplace and found that workload and interpersonal relations with other members of the health care team ranked high as stressors. In this study it was noted that stressors and support needs may be unique for each staff nurse (Hartrick et al 2003).

**Empirical literature review on stress and coping strategies amongst nigerian nurses**

Very little has been documented in Nigeria regarding the stress and coping strategies amongst registered nurses. It may for example, be assumed that because stress and coping has been studied extensively internationally, those findings could not be relevant to nurses in Nigeria. Given the fact that the international hospital settings and provision of health services
are different to those in Nigeria, it might not be appropriate to use the results of previous international studies to explain stress and coping amongst Nigerian nurses.

Matlakala (2002) explored and described the personal and clinical experience of 110 nurses in Nigeria and other countries like Malawi and Lesotho who registered for and those who completed the Diploma in Critical Care Nursing since 1998. The researcher indicated that post basic critical care students, although they are registered nurses, experienced a variety of problems such as stress and shock during their placement. Positive experiences included rotation to different hospitals, exposure to different ways of managing patients, exposure to different types of equipment to provide nursing care and being able to correlate theory with practice.

The negative experiences as stated by this author included shortage of staff which led to misuse of the learning objectives, exhaustion from work and travelling, exploitation by permanent staff, shortage of equipment and supplies in some hospitals, poor accompaniment due to lack of preceptors or preceptors allocated to patients and not able to attend to students, and staff’s negative attitudes towards students.

Onvawah (2005) investigated the role of perceived sources of stress, perception of work environment, type of hospital ward and nurse rank in occupational distress, coping and burnout among practicing nurses at University College Hospital (UCH) Ibadan. Stress response in her study was measured specifically in terms of clinical distress and burnout. The second major perceived source of stress was emotional issues related to death and dying. This was higher in casualty, a trauma unit. The theatre unit subjects, with frequently low death and short contact with patients and their families perceived emotional issues related to death and dying to be a minor stressor source. Surgical ward nurses experienced high levels of distress and burnout as compared to medical ward nurses.

She stated that comparative studies between hospital units did not confirm that one type of unit is more stressful than another.

However, these findings suggest that one should identify the frequency of different types of stressors across wards/units so as to make recommendations to address stress amongst nurses in Nigeria and decrease turnover.

Theoretical framework/conceptual framework

This study is based on the Health Promotion Model of Nola J. Pender. She developed this model through her research, presentations and writings.

Central to the health promotion model is the social learning theory of Albert Bandura which postulated the importance of cognitive process in the changing of behaviour. Social learning theory, now titled social cognitive theory, include the following self-beliefs: self attribution, self-evaluation, and self-efficacy. Self-efficacy is a central construct of the health promotion model (HPM).

The following are the factors of HPM that expands to encompass behaviours for enhancing health.

- Situational factor.
- Behavioural factor.
- Biological factor.
- Interpersonal influences.
- Her major assumptions are:
  - Persons seek to create conditions for being through which they can express their unique health potential.
  - Self-initiated re-configuration of person-enviroment interactive pattern to behavioural change.
  - Persons have the capacity for reflective self awareness, including assessment of their own competencies.
  - Health personnels constitute a part of the interpersonal environment which excerts influence on persons throughout their life span.
The following are the theoretical assertion derived from the model:

- Prior behaviour and inherited and acquired characteristics influence beliefs, affect, and enactment of health-promotion behaviour.
- Persons commit to engaging in behaviours from which they anticipate personality valued benefit.
- Perceived competence or self-efficacy to execute a given behaviour increases the likelihood of commitment of action and actual performance of behaviour.
- Positive affect towards a behaviour results in greater perceived self-efficacy, which can, in turn, result in positive effect.

The strategies adopted by nurses in coping with stress at work place is an important aspect of health promotion model which enhances effective coping mechanism to life stressors, thus, promoting timely medical/health advice and to ascertain the exact effect on individuals health.

**Research methodology**

In the chapter, the methodology include research design, research setting, target population, sampling technique and sample, instrument for data collection, validity and reliabiliability of instrument, method of data collection, method of data analysis, ethical consideration.

**Research design**

A descriptive correlation survey was used. The aim of the study seeks to extend previous studies by measuring the opinion of nurses on work related stress and strategies adopted to cope with it at Wesley Guild Hospital Ilesa.

A research design is a blueprint for conducting the study that maximizes control over factors that could interfere with the validity of the findings (Burns & Grove 2001). This author states that research design guides the researcher in planning and implementing the study in a way that is most likely to achieve the intended goal.

**Research setting**

This study was carried out in Wesley Guild Hospital, Ilesa, situated in Ilesa west local government area of Osun-state. Wesley Guild Hospital is one of the units of Obafemi Awolowo University Teaching Hospitals Complex. It is equipped with human resources including professional and non-professional health workers.

**Target population**

The target population is all elements (individuals, objects, or substances) that meet certain criteria for inclusion in a given universe (Burns and Grove 2001). This is supported by Polit and Hungler (2005), who states that the target population included all the members who are under study that conforms to a designated set of specifications.

In this study, the population consisted of the registered nurses in any of the following units/wards: medical, surgical, accident and emergency, maternity and theatre at Wesley Guild Hospital Ilesa.

**Sampling techniques and sample**

A simple random sampling method was used to select the sampled nursing units within the hospital under study. Uys and Basson (2001) define the sample as the number of units of the population under study and should represent the characteristics of the population being studied. Polit and Hungler (2005) stated that sampling is the process of selecting a portion of the population to represent the entire population and no probability sampling is the selection of subjects from a population using random procedures.
The population from which the subject sample was taken were registered nurses from five units/wards already mentioned. The sample consisted fifty (50) registered nurses working in the nursing unit selected for the study.

**Instrument for data collection**

The instrument used for this research project was a self designed questionnaire, which was divided into five (5) sections; section. A deals with demographic data, section B-E cover the opinion of work related stress and strategies adopted to cope with it. Most questions were close ended while few were open ended question.

**Validity/Reliability of instrument**

The content validity of the instrument was tested for; those items that are ambiguous were restated as suggested.

The face validity was also done before administration of questionnaires. For reliability of the instrument a pilot study was conducted, by administering 5 examples of the questionnaire to 5 respondents in another setting to ensure that the question was clear, unambiguous and comprehended. The respondents answered the questions with little or no difficulty and necessary correction were made for the reliability of their responses.

**Method of data collection**

Questionnaires were administered to fifty (50) registered nurses at Wesley Guild Hospital Ilesa, in five units/wards (already mentioned). The questionnaires were distributed at the beginning of the shift and collected at the end of the same nursing shift. This was done for alternate days and on different of nursing shift until the desired sample was reached. Phone calls were made during the shift to remind the subject to return the completed questionnaires.

**Method of data analysis**

Data from this study will be analyzed using the Statistical Package for Social Scientists (SPSS). The first level of analysis will involve the use of one variable such as the frequency and percentage distribution as well as graphical illustration of responses. The second level of analysis refers to analysis involving two variables such as those aimed at establishing relationships between variables.

**Ethical consideration**

Permission to conduct the study was requested. Letter clearly stating the purpose of the study were written to the hospital’s unit administrator (nursing service) requesting permission to conduct the study.

However, the permission was granted. Registered nurses were invited to participate voluntarily in this study by verbal consent. Return of the completed questionnaires implied that the respondents consented for the study. Participants were assured not to feel obliged to complete the questionnaire and that they might withdraw from the study at any point in time if they so wished.

Confidentiality and anonymity were safeguarded through use of a system of participant coding. Participants were instructed that if they did not wish to participate to place the blank uncompleted questionnaire in an envelope and return to the researcher.

**Analysis of data**

This is based on the responses by the respondents. The analysis is reported by percentage since it is a descriptive and inference will be drawn based on the outcome. The percentage is calculated using the formula below:

\[ Q (%) = \frac{X}{N} \times 100 \]

Where \( Q \) = Percentage outcome

\( X \) = Number of responses

\( N \) = Total number of respondents.
Bio data

Table 1. Sex distribution of respondents

<table>
<thead>
<tr>
<th>SEX</th>
<th>NUMBER OF RESPONDENTS</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>FEMALE</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td>TOTAL</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 1 shows that majority of the respondents 32(64%) are female while 18 (36%) are male.

Table 2. Age distribution of the respondents

<table>
<thead>
<tr>
<th>AGE RANGE IN YEARS</th>
<th>NUMBER OF RESPONDENTS</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>26-30</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>31-40</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>40 and above</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>TOTAL</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2. The above data shows that 17 (34%) of the respondents were between 18-25 age range, 16 (32%) were writhing 26-30 age range, 9 (18%) were within 31-40 while 8(16%) were within 40 and above. This show that majority of the respondents are young adult.

Table 3. Distribution of the respondents by marital status

<table>
<thead>
<tr>
<th>MARITAL STATUS</th>
<th>NUMBER OF RESPONDENTS</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE</td>
<td>26</td>
<td>52</td>
</tr>
<tr>
<td>MARRIED</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>DIVORCE</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>WIDOW</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 3 reveals that 26 (52%) of the respondents were single 18(36%) were married, 1(2%) was a divorcee and 5(10%) were widow.

Table 4. Distribution by religion

<table>
<thead>
<tr>
<th>RELIGION</th>
<th>NUMBER OF RESPONDENTS</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHRISTIANITY</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>ISLAM</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>OTHERS</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4 indicate that 30(60%), majority of the respondents were Christians, 17(34%) were Muslims, other religion accounted for 3(6%).
Table 5 Distribution of respondents by years of experience

<table>
<thead>
<tr>
<th>YEARS OF EXPERIENCE</th>
<th>NUMBER OF RESPONDENTS</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>6-10</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>11-25</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>26 YEARS AND ABOVE</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

The result above showed that most of the respondents 60% had just given maximum of five (5) years to the profession, 6-10 years were just 10%, 11-25 years were just 20%, with the remaining 10% giving twenty six (26) and above to the profession.

Sources of stress

The above bar chart shows that the most frequently reported source of stress appears to be inadequate staffing 43 (86%). Followed by nature/type of the unit or ward most especially working in traumatic/emergency unit (68%). The least frequently reported source of stress is listening/talking to a patient about his/her approaching death which accounted for 13 (26%).
Coping strategy and decision making process

The above bar chart (fig 2) shows that registered nurses seems to be resorting more to ‘’I went on as if nothing has happened’’ with highest number of respondents 40 (80%). Followed by ‘’I made a plan of action and followed it’’ with 29 (58%). Followed by ‘’I let my feelings out sometimes’’ with 25 (50%), 23 (46%) accounted for ‘’I got professional help from work’’. ‘’Tried to forget the whole thing’’ as a coping strategy and decision making process seems to be employed the least with 19 (38%) of the total respondents.

Reported health outcomes
The above pie chart shows that 43 (199) reported psychological health outcome among the respondents, 25 (115) reported physiological health outcome with the least outcome as neglecting personal duties which accounted 10 (46) out of the total respondent.

**Discussion of findings**

The aim of this study was to ascertain the opinion of nurses on work related stress and strategies adopted to cope with it. In addition, it sets out to assess the relationship between work experience and coping strategies. Having asked five (5) research questions on the basis of available literature, this study has accumulated and analysed data relevant to a sample of registered nurses working in a tertiary hospital. The data that were analysed was in this work provide answers to some of the question that were raised and these will form the basis of the discussion.

From the data collected it was discovered that 80% of the total respondent reported inadequate staffing (workload) as the most frequent source of stress. Followed by nature/type of the unit/ward most especially working in a traumatic or emergency unit which accounted for 68% of the same total respondents. The least frequently reported source of stress was listening/talking to a patient about his/her approaching death which accounted for about 26% out of the total respondents.

The most important findings of this study were that frequencies of reported stress by registered nurses were high enough to be considered serious. These findings were supported by a number of studies (e.g. Tyson and Pungreughant 2004; Lee 2003; Dewe 1987; Grag-Toft and Anderson 1981).

Lambert et al (2001) suggest that, regardless of culture and country specific professional role, nurses identify inadequate staffing and the nature of the unit or ward and its employers’ job prescription to be overwhelming.

With regard to comparison of perceived stressor in other Nigerian studies, Adebayo (2005), in his study points out the greatest perceived source of stress as inadequate staffing also. However it is interesting though, that the most frequently mentioned job areas which the nurses found particularly stressful in the work conducted by Nelson (2005) was traumatic/emergency unit. Therefore one can opined that inadequate staffing is a major source of stress.

Secondly, the findings in this study reveal that registered nurses resorted more to “I went on as if nothing has happened” (positive appraisal) which accounted for 80% of the total respondents. 58% out of the total respondents still resorted to “I made a plan of action and followed it”. “Tried to forget the whole thing” (escape avoidance) as a coping strategy appeared to be the least employed with 38% of the total respondents.

Dewe (2001) suggested that the reported high level of work load as a stressor in many studies could be because it is something most nurses believe can and should be dealt with. Because little is done to resolve the workload, nurses find this difficult to accept with the result that such situations by their nature become tense and exhausting. Therefore these nurses are probably resorting to positive appraisal and escape avoidance.

Cox (2001), contends that indications from the existing literature seem to suggest that if a time basis analysis is made then avoidance strategies should be more beneficial in the initial strategies than the later stages. He further argues that no one coping function is seen as more adaptive as any other. Rather a stressful outcome is engineered by the individual fitting the right strategy to the situation. Hence, one can suggest that positive appraisal is a major coping strategy.

Moreover, from the data collected, it was discovered that there is no relationship between work experience and coping strategies as the range 1-5 years of service accounted for the largest number of respondents with 60% out of the total respondents cope well with stress at work. This agrees with Adinma et al (2003) which revealed that less number of years spent in service, the greater and more better of coping with work related stress.
Therefore one can infer that there is no relationship between work experience and coping strategy.

Furthermore, it was inferred from the research study that psychological health outcome such as anxiety, personality changes, irritability, loss of confidence and emotional exhaustion was the frequent exposure to stressful situation in their nurse manager role as accounted for 86% of the total respondents.

Also, 80% of the respondents resorted to “I went on as if nothing has happened” (positive appraisal) as a decision making process to address stressful situation, while 58% among the same respondent made a plan of action and followed it.

The above findings were supported by Matlakala’s (2003) study which revealed that stress is a fundamental process. It affects all organisms from the simple to the complex. He also states further that in single-celled organisms and in the individual cell of our bodies, molecules have evolved which provide a series of emergency system that protect key challenges and their internal consequences. This accounts for great psychological health outcome and consequent positive appraisal as a decision making process to address stressful situations.

Conclusively, one can opine that positive appraisal and psychological health outcome are the decision making process and health outcome respectively as a result of stressful situation.

Nursing implication

The findings of this study indicate that nurses use adaptive coping strategies in dealing with their work stress as displayed by their plan full-solving. It would appear that organizational interventions at reducing the impact of stressors such as work load (i.e. providing more staff to adequately cover unit might be more appropriate and may benefit some staff more that stress management).

Employing more registered nurses is an obvious potential remedy for reducing workload, however as noted in the introduction there are many open post in the public sector which have not been filled, suggesting that more nurses may not be available.

Summary, conclusion and recommendation

Summary

The research work was on the opinion of nurses on work related stress and strategies adopted to cope with it at work place in Wesley Guild Hospital and were divided into four (4) chapters. All registered nurses in Wesley Guild Hospital constituted the target population. Never the less, only 50 respondents were utilized.

The instrument of measure was a structured questionnaire constructed by the researcher with the assistance of the supervisor. All findings were analyzed with the use of frequency table, percentages, bar chart, pie chart and opinion of nurses on work related stress and strategies adopted to cope with it were identified.

Conclusion

In conclusion, it can be deduced from the study that the most important finding of the study was that the frequency of the reported stressor among registered nurses was high enough to considered serious.

Inadequate staffing was the most frequently reported as a source of stress and positive appraisal as the major coping strategy and decision making towards stressful situation.

Recommendations

The following recommendations were made based on the findings

1. Employing more registered nurses as a remedy for reducing workload and clerical staff to reduce non-nursing task.
2. Provision of support and improving work conditions and counselling services after stressful event and stress management training by the employer or the agency concerned.

3. Policies that reduce stress from shift work should be developed. These could include reducing the number of hours of the night shift, increasing rest time between shifts, and providing affair distribution of weekend and annual leave.

4. Continuing education and staff development should be promoted

5. Further research works should be carried out directed at the intensity dimension using physiological measures of stress preferably or multi sectorally with a view to compare results and ways of intensifying health education.

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Promoting Health Literacy on Pre-marital Genetic Counseling and Testing of Sickle Cell Disease among Child-Bearing Age Women in Nigeria

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Abstract

Promoting health literacy on pre-marital genetic counseling and testing of sickle cell disease among child bearing age in Nigeria has been a topic of dialogue among academics and public administration.

This study showed that majority of the respondent were aware of genetic counseling and testing as well as genotype and marital genotype while some know their genotype.

It was concluded that the general level of awareness of sickle cell disease and pre-genetic counseling and testing is very good although a few misconception and challenges still exist; most especially lack of enough health facilities and personnel’s to conduct the pre genetic counseling and testing activities. Therefore, it is highly recommended that the government and all authorities concerned should help curtail this problem. Further awareness and success towards pre-genetic counseling and testing will occur if there is improvement in national health sector as well as entrusting dedicated centers to carry out an adequate services for pre-genetic counseling and testing all over Nigeria and beyond.

Keywords: literacy, pre-marital, testing, counseling, genotype, child-bearing.

Introduction

A genetic disorder is a disease that is caused by an abnormality in an individual’s deoxyribonucleic acid (DNA). Abnormality can range from a small mutation in a single gene to the addition or subtraction of an entire chromosome or set of chromosomes. The issue of genetic disease is a topical issue of growing concern in Nigeria. Genetics has traditionally been viewed through the window of relatively rear single gene disease (Fauci, Touchett, and Folker, 2005). These disorders account for approximately 10 percent of pediatric admission and childhood mortality according to the World Health Organization (WHO 2005). It is apparent that almost all medical condition with the exception of single trauma has a genetic component as it is often evident from a patient’s family history. Disease such as hypertension, heart diseases, asthma, diabetes mellitus, hemophilia, sickle cell disease, cancer, albinism as well as mental illness are significantly influenced by the genetic background as stated by the National Human Genome Research (NHGR12002).

The prevalence of genetic diseases combined with their severity and chronic nature imposes a great financial, social and emotional burden on the society (WHO 2002). Most of the genetic diseases affecting individuals or families are ascribed to the improper information and lack of literacy on premarital genetic and testing as many diseases can be diagnosed using cytogenetic and various biochemical analysis, National Centre for Biotechnology Information, (NCBI,2002). Recent advances in deoxyribonucleic acid (DNA) diagnostics have extended the field of genetics to include virtually all medical specialties. Genetics have historically focused on chromosomes and genetic reflecting the long standing availability of techniques to diagnose these conditioned for example, conditions such as Trisomy 21 (Down’s syndrome) or monosomy X (eumeris syndrome) can be diagnosed using cytogenetic. Sickle cell disease can be diagnosed through genotyping premaritally. Recent advances in deoxyribonucleic acid (DNA) diagnostic have extended the field of genetics to include virtually all medical specialties (Emery and Remoin 2006).
Genetic disorder is a disease condition that occurs as a result of mutations which could be fatal and causing various changes in gene structure and causes degrees of harm (Taylor, Kemeny, Reed, Bower and Gruenewald, 2004). The genes that are lost are known as mutant genes, gene mutation can cause loss, addition duplication, insertion, deletion, inversion or substitution of bases (Olumidale 2005). Examples of diseases that occur as result of substitution include sickle cell anemia, cystic fibrosis, phenylketonuria and hemophilia. This study will limit itself to the Promoting health literacy on pre-marital genetic counseling and testing of sickle cell disease among child bearing age in Zaria metropolis Nigeria. Sickle cell disease is a common genetic disorder that affects hemoglobin, inheritance of mutant hemoglobin genes from both parents’ results to Hemoglobin sickle cell. It occurs at a frequency of 1 out of 1600 among blacks (Olundale, 2005).

Another variant is Hemoglobin C disease which is a milder sickling disorder, it presents in 1 of 1100 African American, and symptoms are similar to sickle cell disease, but less frequent and severe. Sickle cell thalassemia is also less frequent and severe. Sickle cell trait is heterozygous carrier state hemoglobin AS, these individuals are generally healthy as non-carriers. The prevalence varies from one country to another. Sickle cell trait occurs in about 8 percent African Americans and 20-30 percent in Nigeria (Reid and Famodu 2003) and 20-40 percent in Africa (Flemin and Leshman 2009).

Sickle cell anemia contributes to an equivalent of 5 percent under 5 deaths on Africa continent and more than 90 percent of such deaths in West Africa and up to 16 percent of fewer than 5 deaths in individual were African countries (WHO 2005).

Sickle cell disease as well as other genetic diseases can be properly understood and tackled through integration and interpretation of family and medical history to assess the chance of disease occurrence and reoccurrence, education about inheritance of the disease, testing, management, prevention research and counseling promotes informed choices and adaptation to the risks or conditions (Resta, 2006).

Problem

It has been observed that genetic diseases are on the increase over the years and awareness on genetic practice of premarital counseling and testing is not a common practice in Nigeria. Diagnosis is usually made when an individual presents with a severe complication. It is also expected that the population of children with genetically inherited disease will continue to rise if premarital genetic counseling and testing is not effectively instituted, this will consequently lead to more demands from the government in terms of health facilities and expenditures as the genetically acquired diseases continue to rise more death will be expected, increase number of handicaps and problems on future prospective of the child, discrimination, as well as problems before marriage. Sickle cell disease in Nigeria with a frequency of 3 percent is a major health problem with no specific treatment and unfortunately, most Nigerians do not even know they have or carry the trait until they find themselves in situations where they either want to donate blood, when pregnant or when a woman give birth to sickle child, and to compound the problems most Nigerians are not curious about the disease, (Adeyemo, Oyenike, Omidiji, Olusesan, Shabi.

In view of the above problems, the researcher wants to find out how to promote health literacy on pre-marital genetic counseling and testing of sickle cell disease among child bearing age in Nigeria.

Research objectives

- To assess the literacy of childbearing age women on premarital genetic counseling and testing of sickle cell disease.
- To identify attitudes of childbearing age women towards premarital genetic counseling and testing of sickle cell disease.
- To assess the practice of premarital genetic counseling and testing of sickle cell disease in women of childbearing age.
Hypothesis
- Good knowledge on practical genetic counseling and testing among women of childbearing age in Zaria metropolis will lead to decrease in incidence of sickle cell disease.
- Good attitude towards practical genetic counseling and testing among women of childbearing age in Zaria metropolis will lead to decrease in incidence of sickle cell disease.
- Practice of genetic counseling and testing among women of childbearing age will lead to decrease in incidence of sickle cell disease.

Significance of the study
- This research will provide information on the knowledge attitude, practice as well as level of acceptance of women of childbearing age towards premarital genetic counseling and testing of sickle cell disease.
- This study will also serve as a tool to reinforce the importance and benefits of premarital genetic counseling and testing of sickle cell disease among women of childbearing age.
- It will help the government and other private organizations in planning strategies of mobilizing and enhancing the practice of premarital genetic counseling and testing.
- This research will also pave way for further research by other health professionals.
- The research will hopefully add to existing knowledge about genetic counseling and testing of sickle cell disease as well as other genetically acquired disease.

Limitations
- There was no means of verifying some of the data provided by the respondents.
- The researcher was limited to the scope of this study because some of the women approached expressed skepticism and thus reluctant to answer the questions.
- The level of awareness about genetic counseling and testing of sickle cell disease was carried out using a small sample size, hence cannot be generalized to the whole population.
- Time was also a limitation to the study as the researcher had a time frame to collate the data and analyze them.

Method
Description of the site
- The site is Zaria metropolis which comprises of Sabo gari and Zaria local government area respectively. Zaria being one of the ancient cities in northern Nigeria, it is also regarded as one in the Hausa Kingdom. Zaria is one of the original seven Hausa states (Hausa Bakwai). It was established by Gunguma, the son of Bawo and the grandson of Bayajidda, the great legend warrior of daira sons who established the seven Hausa states.
- Zaria took its name after one of the youngest daughter (Zariya) of the ruler in the city which was founded in 6th century. It has a population of about 408,198 according to 2006 census. It is located between longitude 90 &80 north east. The major occupations are farming, blacksmithing, hand crafting, sewing, embroideries. The city is surrounded by walls called (Ganuwa) which was built by the emirate leaders. It has gate known as kofa, these include Kofandoka, kibau, jatau, kuyanbana, kona and galadima.
- Zaria local government is also divided into seven districts namely, Zaria, wajetudunwada), Tukur-Tukur, Dutsen Abba and Gyallesu, their major ethnic group is Hausa & Fulani and other smaller groups. Sabongari local government area of Kaduna state is a unique home of business men and women, center of academic excellence and one of the food baskets of the state. It has its headquarters at Dogarawa, a growing village located at the center of the local government area.
- Sabongari local government area came into being through several transformation of sabongari town which literally means ‘New town’ and its surrounding villages. Sabongari from which the local
government derived is name was established as a result of the establishment development of communication, commerce and military into sabongari town to give a unique cosmopolitan nature.

The local government area has a population of about 286,871 people according to 2006 census, with a land area of approximately 600sq km. it has boundaries with KudanSamaru and Basawa districts which were all created in April 2001. The major occupation of the people being an urban are mostly civil mostly servants, traders with a larger population in the areas involved in large scale farming producing a large yield of cash and food crops.

Sabongari local government area is also a center of industrial trade and commercial activities, it has established factories and industries situated around cikaji industrial estate. The majority of the people are Muslims while there is a considerable number of Christians in the area. The culture is a mixed values and norms. It has traditional values by the complexity of the ethnic groups that form the society and population of the local government area.

There are many educational institutions such as Ahmadu Bello University Zaria, Nigerian institute of transport technology, Nigerian college of Aviation, college of leather research, Nigerian institute of chemical research etc.

**Instruments for data collection**

Data was collected by questionnaire, it was collected using closed ended questionnaire that were structured and focused on the perception, attitude and knowledge of childbearing age women towards premartial genetic counseling and testing of sickle cell disease. It was interpreted for the women who could neither read nor write at the level and language they understand. A total of 389 questionnaires were distributed and 351 returned. The response rate was 91percent.

The study was analyzed using description statistic (frequency distribution tables and percentages).

The sampling technique employed in this study is multistage sampling which was divided into various stages as follows:

- Stage 1 Stratified sampling of Zaria metropolis into local government areas.
- Stage 2 SabonGari districts and Zaria local government areas.
- Stage 3 Simple random sampling of the district.
- Stage 4 stratified sampling of each local government area to districts.
- Stage 5 Simple random sampling of households.

**Diagnosis**

Sickle cell syndromes are suspected on the basis of hemolytic anemia, red blood morphology and intermittent episodes of ischemic pain. Diagnosis is confirmed by hemoglobin electrophoresis and sickling test as well as the issued below, genotyping of family members and potential partners is critical for genetic counseling. The diagnostic procedures include the following.

Electrophoresis: it is used for routine clinical purposes. Electrophoresis at potential hydrogen of 8.6 on cellulose acetate membranes is especially simple inexpensive and reliable for initial screening. Agar gel electrophoresis at potential hydrogen 6.6 in citrate buffer is often used as a complementary method. Comparison of the results obtained in each system usually allows for unambiguous diagnosis but some important variant are electrophoretically silent. This mutant hemoglobin can usually be characterized by more specialized technique such as electric focusing and high pressure liquid chromatography.

Hemoglobin Assays: quantization of hemoglobin and functional assays, solubility or oxygen affinity is also performed. The best sickling assay involve measurement of the degree to which the hemoglobin samples becomes insoluble, or gelated as it is deoxygenated (that is sickle solubility tests). Unstable hemoglobin is detected, or by its precipitation in isopropanol or after heating to 50° C. high oxygen at which the hemoglobin sample becomes 50 percent saturated with oxygen. Direct tests for the percent carboxyhaemoglobin and methemoglobin, employing spectrophotometric technique can readily be obtained from most clinical laboratories on urgent basis.
Polymerase Chain Reaction: allele specific oligonucleotide hybridization and autosomal deoxyribonucleic acid sequencing allow identification of globin gene mutation in few days.

Complete characterization including amino acid sequencing or gene cloning and sequencing is available from several investigational laboratories around the world.

Laboratory evaluation remains an adjunct rather than the primary diagnostic acid. Diagnosis is best established by the recognition of a characterization history, physical finding peripheral blood smear morphology and abnormalities of the complete blood count (Embury et al 2002).

Theoretical framework

The theory of planned behavior was prearranged by Icek Ajzen in 1985 in his article from intentions to actions the theory was established from the theory of reasoned action, which was prearranged by Martin Fishbein composed with Icek Ajzen in 1975. The theory of reasoned action was in turn grounded in many theories of attitude such as learning theories, expectancy-value theories, consistency theories, and attribute theory. According to the theory of reasoned action, if people assess the recommended behavior as optimistic and if they think the important of others want them to achieve the behavior (subjective norm), this consequences in a higher aim (motivation) and they are more probable to do so. A high correlation attitudes and subjective norms to behavior purpose, and then to behavior, have been established in several studies. A counter-argument against the high relationship among behavioral intention and actual behavior has also been planned, as the results of certain studies demonstrated that, because of incidental limitations, behavioral intention does not continuously lead to actual behavior, since behavior intention cannot be the exclusive cause of behavior where person’s control over the behavior is imperfect, Ajzen presented the theory of planned behavior by adding a new constituent, “apparent behavioral power.” By this, he lengthens the theory of reasoned action, to protection-volitional behaviors, for forecasting behavioral intention and actual behavior. According to the theory, human behavior is directed by three kinds of thoughts: beliefs, about the likely consequences of the behavior and the assessment of these consequences (behavior beliefs), beliefs about the normative anticipations of others and incentives to comply with these prospects (normative beliefs), and beliefs concerning the presence of factor that may ease or obstruct presentation of the behavior and the apparent power of these factors (control beliefs). In their own aggregates, behavioral beliefs create a promising or disapproving attitude toward the behavior, normative beliefs result in perceived social burden or personal standard; and control beliefs increased to apparent behavioral control. In combination, attitude toward the behavior, subjective norm, and insight of behavioral control result to the creation of a behavioral intention. As a overall rule, the more promising the attitude and subjective norm, and the better the apparent control, the stronger should be the person’s intention to achieve the behavior in question. Finally, given a adequate degree of actual control over the behavior, people are predictable to carry out their intentions when opportunity arises. Intention is thus expected to be the instant precursor of behavior. However, because many behaviors pose problems of implementation that may bind volitional control, it is valuable to reflect perceived behavioral control in addition to intention. To the range that perceived behavioral power is veridical, it can serve as a substitution for real control and give to the forecast of the behavior in question, (Ajzen, 2006).

Ethical consideration

Permission was obtained from the authorities of the districts studied they include Mai Angua and the family heads to carrying out the project.

Data analysis interpretation, presentation and discussion

The data were analyzed using various statistical procedures such as descriptive statistics for frequency and percentage. The results of this analysis are presented according in the preceding tables and subtopics. The results of the research questions and research hypothesis are also presented.
This shows the analysis of respondents with respect to their socio-demographic characteristics. It reveals that most of the respondents are within the age of 15 - 24 years with the highest percentage of 52.1%. It was followed by those in the 25 - 44 years category (46.7%) while the least was those in the 45 and above category. It also shows that most of the respondents were single (80.6%) followed by those that are married (18.2%) while the divorced are 1.1% respectively. More than half of the respondents were Hausa/ Fulani which accounted for the highest percentage of the respondents with 55.0%, which was followed by those from other ethnic groups with 17.9% while the Yoruba were 14.5% and the least was Igbo with 12.5%. The educational level of over half of the respondents fell within the tertiary institution category 88.6%, followed by secondary school education with 5.1% while informal and primary categories with 88.6%, followed by secondary school education with 5.1% while informal and primary categories are 3.4% and 2.3% respectively. This reveals that most of the respondents have knowledge of Premarital Genetic Counseling and Testing with (80.9%) and most of them got their information from hospital (39.6%) closely followed by those who got their information from textbooks (30.8%). Followed by mass media (18.5%) and the least were able to get information through other sources.

Concerning the respondents knowledge on genetic diseases, most of the women are aware of genetic diseases (86.6%) while those that have no knowledge on genetics disease constitute about 13.4%. Furthermore, 93.7% of the respondents have knowledge of Sickle Cell Disease while 6.3% have no knowledge of Sickle Cell Disease. Also, those that know the causes of Sickle Cell Disease constitute 92.6% of the respondents while those that don’t know are 7.4%. Additionally, 80.6% of the respondents have knowledge on the prevention of Sickle Cell Disease while 19.4% do not have such knowledge. Finally, 84.0% of the respondents said they do not have sickle cell patients in their family while 16.0% said they have sickle cell patients in their family.
The table 1 below shows Women Attitude towards Premarital Genetic Counseling and Testing of Sickle Cell Disease.

<table>
<thead>
<tr>
<th>1. Women are not aware of premarital genetic counseling and testing service</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>137</td>
<td>39.0</td>
</tr>
<tr>
<td>Disagree</td>
<td>145</td>
<td>41.3</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>43</td>
<td>12.3</td>
</tr>
<tr>
<td>No response</td>
<td>26</td>
<td>7.4</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Premarital genetic counseling and testing of sickle cell disease is not necessary prior to marriage</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>46</td>
<td>13.1</td>
</tr>
<tr>
<td>Disagree</td>
<td>91</td>
<td>25.9</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>211</td>
<td>60.1</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Genetic counseling and testing should be made compulsory to all women prior marriage</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>310</td>
<td>88.3</td>
</tr>
<tr>
<td>Disagree</td>
<td>26</td>
<td>7.4</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>12</td>
<td>3.4</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Premarital genetic counseling and testing can reduce the incidence of Sickle Cell Disease and other genetically acquired diseases</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>337</td>
<td>96.0</td>
</tr>
<tr>
<td>Disagree</td>
<td>10</td>
<td>2.8</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>4</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. There are no enough health facilities to conduct premarital genetic counseling and testing</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly agree</td>
<td>139</td>
<td>39.6</td>
</tr>
<tr>
<td>Disagree</td>
<td>127</td>
<td>36.2</td>
</tr>
<tr>
<td>strongly disagree</td>
<td>53</td>
<td>15.1</td>
</tr>
<tr>
<td>no response</td>
<td>32</td>
<td>9.1</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Above table indicates that the level of awareness of women towards Premarital Genetic Counseling and Testing shows that most women are aware prenatal genetic counseling and testing (41.3%) while those that disagree are about 39.0% and 7.4% of the respondents did not respond. 60.1% of the respondents strongly disagree to the fact that it is not necessary of Premarital Genetic Counseling and Testing before marriage while 25.9% stated that it was not necessary. Furthermore, 88.3% of the respondents state Premarital Genetic Counseling and Testing should be made compulsory while 10.8% stated that Premarital Genetic Counseling and Testing should not be made compulsory.
Practice of Premarital Genetic Counseling and Testing of Sickle Cell Disease among Women of Child Bearing Age

1. Do you patronize any genetic counseling and testing center for services prior marriage?

<table>
<thead>
<tr>
<th>Patrons</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>156</td>
<td>44.4</td>
</tr>
<tr>
<td>Yes</td>
<td>195</td>
<td>55.6</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100.0</td>
</tr>
</tbody>
</table>

2. Does your culture of religion present or forbid seeking genetic counseling and testing prior marriage?

<table>
<thead>
<tr>
<th>Status</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>318</td>
<td>90.6</td>
</tr>
<tr>
<td>Yes</td>
<td>33</td>
<td>9.4</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100.0</td>
</tr>
</tbody>
</table>

3. Is there any obstacle that hinders you from seeking genetic counseling and testing of Sickle Cell Disease?

<table>
<thead>
<tr>
<th>Obstacle</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>323</td>
<td>92.0</td>
</tr>
<tr>
<td>Yes</td>
<td>28</td>
<td>8.0</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100.0</td>
</tr>
</tbody>
</table>

4. List the obstacle that hinders you from seeking genetic counseling and testing of Sickle Cell Disease?

<table>
<thead>
<tr>
<th>Obstacle</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture</td>
<td>10</td>
<td>35.7</td>
</tr>
<tr>
<td>Religion</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td>Funds</td>
<td>11</td>
<td>39.3</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>100.0</td>
</tr>
</tbody>
</table>

5. Have you had any health education on the importance of genetic counseling and testing of Sickle Cell Disease by health personnel?

<table>
<thead>
<tr>
<th>Status</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>57</td>
<td>16.2</td>
</tr>
<tr>
<td>Yes</td>
<td>294</td>
<td>83.8</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The above table indicates that 55.6% of the respondent patronizes health facilities that conduct Genetic Counseling and Testing while 44.4% do not patronize these facilities. Furthermore, 90.6% of the respondents stated that culture do not influences Premarital Genetic Counseling Testing while 9.4% of are of the opinion that culture influences Premarital Genetic Counseling Testing. Additionally, 92.0% of the respondents there are no obstacles to Premarital Genetic Counseling and Testing on Sickle Cell Disease while 8.0% said there are obstacles to premarital Genetic Counseling and Testing on Sickle Cell Disease. Finally, 83.8% of the respondents claim to have had health education on Premarital Genetic Counseling Testing while 16.2% said they have not had health education on Premarital Genetic Counseling and Testing.
Do you have knowledge on genetic counseling and testing * premarital genetic counseling and testing cannot reduce the incidence of Sickle Cell Disease and other genetically acquired diseases

<table>
<thead>
<tr>
<th>Do you have knowledge on genetic counseling and testing</th>
<th>premarital genetic counseling and testing can reduce the incidence of Sickle Cell Disease and other genetically acquired diseases</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>strongly agree</td>
<td>Disagree</td>
</tr>
<tr>
<td>No</td>
<td>57</td>
<td>6</td>
</tr>
<tr>
<td>Yes</td>
<td>278</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>335</td>
<td>10</td>
</tr>
</tbody>
</table>

$X^2 = 28.824$, df = 2, P-value = 0.0001
Since the P-value (0.0001) is less than 0.05 we reject the Null hypothesis (Ho) at 5% level of significance and conclude that good knowledge on practical genetic counseling and testing among women of child bearing age in Zaria Metropolis will lead to decrease in incidence of sickle cell disease.

Do you have knowledge on genetic counseling and testing, genetic counseling and testing should be made compulsory to all women prior marriage

<table>
<thead>
<tr>
<th>Do you have knowledge on genetic counseling and testing</th>
<th>genetic counseling and testing should be made compulsory to all women prior marriage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>strongly agree</td>
<td>Disagree</td>
</tr>
<tr>
<td>No</td>
<td>53</td>
<td>11</td>
</tr>
<tr>
<td>Yes</td>
<td>257</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>310</td>
<td>23</td>
</tr>
</tbody>
</table>

$X^2 = 24.672$, df = 3, P-value = 0.0001
Since the P-value (0.0001) is less than 0.05, we reject the Null hypothesis (Ho) at 5% level of significance and then conclude that Good attitude towards practical genetic counseling and testing among women of child bearing age in Zaria metropolis will lead to decrease in incidence of sickle cell disease.

Do you have knowledge on genetic counseling and testing premarital genetic counseling and testing of sickle cell disease is not necessary prior to marriage

<table>
<thead>
<tr>
<th>Do you have knowledge on genetic counseling and testing</th>
<th>premarital genetic counseling and testing of sickle cell disease is not necessary prior to marriage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>strongly agree</td>
<td>Disagree</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>23</td>
</tr>
<tr>
<td>Yes</td>
<td>33</td>
<td>68</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>91</td>
</tr>
</tbody>
</table>
Since the P-value (0.0001) is less than 0.05, we reject the Null hypothesis (Ho) at 5% level of significance and conclude that Practice of genetic counseling and testing among women of child bearing age will lead to a decrease in incidence of sickle cell disease.

Discussion of findings

The findings of the study revealed that the socio-demographic data of the respondents across the various age, marital status ethnic and educational level, most of the respondents are within the age of 15 -24 years with the highest percentage of 52.1%. This is in line with the fact that Zaria is a city with several tertiary institutions, while the least was those in the 45 and above category. Majority of the respondents were single (80.6%) followed by those that are married (18.2%) while the divorced is 1.2%. The analysis along ethnic lines indicates that Hausa/ Fulani account for the highest percentage of the respondents with 55.0%, which was followed by other ethnic group with 17.6% and those from Yoruba was 14.5% while the least was Igbo with 14%. This is in cognizance with the fact that the town is situated in the Northern part of Nigeria. The educational level of over half of the respondents fell within the tertiary institution category with 88.6%, while the least was those under the primary category with 2.3%

The result of the study also shows that more than half of the respondents practice Premarital Genetic Counseling and Testing, while 156(44.4%) of the respondents said they do not practice Premarital Genetic Counseling and Testing. This indicates that more than half of the respondents practice Premarital Genetic Counseling and Testing, while 28(8%) of the respondents said some things hinder them from the practice of Premarital Genetic Counseling and Testing.
them from the practice of Premarital Genetic Counseling and Testing stated culture as the factor that causes the hindrance and 7(25%) said religion while 11(39.3%) stated lack of funds is the hindering factor.

Conclusion

The study revealed that the level of literacy and awareness of Premarital Genetic Counseling and Testing is also high. This is evident as 92.9% of the respondents know their genotype. Furthermore, with the results of the study, there is an increase in information on the role of Premarital Genetic Counseling and Testing in addressing the issue of Sickle Cell Disease among women of child bearing age. Some of the sources of information include, media, hospital, textbooks and other sources with the respondents having the highest form of information form hospital with about 39.6%.

Additionally, it was observed that the attitude of the respondents towards Premarital Genetic Counseling and Testing of Sickle Cell Disease is also excellent and encouraging because about 60.1% strongly agree to the need for Premarital Genetic Counseling and Testing to couple before marriage. Additionally, 88.3% opined that Premarital Genetic Counseling and Testing should be made compulsory. It should be noted that genetic counseling and testing is one of the fundamental means of eliminating Sickle Cell Disease in Nigeria and Africa at large. There is therefore the need for Government to organize a coordinated national program to eradicate Sickle Cell Disease or reduce it to the barest minimum by increasing the awareness across the Nation. The campaign amongst students of tertiary institution should be intensified to attain improve the data. Finally, there is need for the government to increase the number of health care facilities as well as trained competent health care workers to enhance patronize by women of child bearing age in Nigeria.

If sickle cell disease control strategies must yield any significant results, more education about Sickle Cell Disease, especially among students in tertiary institutions in Nigeria is recommended. The use of persons with Sickle Cell Disease as peer educators/counselors should be explored.

<table>
<thead>
<tr>
<th>Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know their genotype</td>
</tr>
<tr>
<td>Source of information (media, hospital, others)</td>
</tr>
<tr>
<td>Need to genotype before marriage</td>
</tr>
<tr>
<td>Genotype to be made compulsory</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know their genotype 92%</td>
</tr>
<tr>
<td>Source of information 39.6</td>
</tr>
<tr>
<td>Need to know genotype 60.1%</td>
</tr>
<tr>
<td>Genotype to be made compulsory 88.3%</td>
</tr>
</tbody>
</table>
References

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Risk Perception and Impact of Ebola Virus Disease on Work and Personal Lives of Nurses / Healthcare Workers in National Hospital Abuja

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Abstract

Since its importation into Nigeria through a visitor from Liberia, Ebola Virus Disease was officially documented in Nigeria. Its consequences cut across all human experiences at personal, family, institutions and national levels. The victim suffers the effects of the illness and its stigmatization. One can therefore conclude that health workers generally are at risk of contracting this disease, inferably this may affect their work and personal lives. The aim of the study is to assess the level of risk perception and impact of Ebola on the work and personal lives of health workers at the National Hospital Abuja. The study adopted use of primary and secondary data. The primary data were derived from the field of study through administration of questionnaire. The secondary data consist of facts and figures from articles and journals. Relevant descriptive and inferential statistical techniques were used in the data analysis. The research revealed that 99% of the respondents display general knowledge of Ebola virus disease and its mode of transmission. The results revealed that many of the health workers have a high risk perception on contacting Ebola due to the lack of adequate treatment and rapid spread of virus during an outbreak. The findings of the research also noticed a high impact on respondents’ work life where there is a lack of willing volunteers during outbreaks due to stigmatization. It was recommended that policies should be formulated to create quarantine centers in every state equipped to cater for prompt response during outbreak of communicable diseases.

Keywords: Risk, Impact, Ebola, Nurses, Hospital, Abuja

Introduction

The Ebola Virus Disease (EVD) epidemic in West Africa has ravaged the social fabric of three countries (Guinea, Liberia, and Sierra Leone) with a death toll of over 11,400 people and over 21,200 cases as of January 15, 2015. The disease was first noticed in Nigeria in 2014. In August 2014 the WHO declared it a Public Health Emergency of International Concern. Travel-associated cases have now been documented in five additional countries, and effects are being felt worldwide. By end of July 2014: a symptomatic case travelled by air to Lagos, Nigeria, where he infected several healthcare workers and airport contacts before his condition was recognised to be EVD.

Infections with Ebola viruses originating from Africa cause a severe disease in humans called Ebola virus disease. There are five species of the genus Ebolavirus (Filoviridae family): Zaire ebola virus, Sudan ebola virus, Reston ebola virus, Tai Forest ebola virus and Bundibugyoebola virus. The current outbreak in West Africa is caused by Zaire ebola virus. The viruses can survive in liquid or dried material for many days. They are inactivated by gamma irradiation, heating for 60 minutes at 60 °C or boiling for five minutes, and are sensitive to sodium hypochlorite (bleach) and other disinfectants. Freezing or refrigeration will not inactivate Ebola viruses. TheHuman-to-human transmission of the Ebola virus is primarily associated with direct or indirect contact with blood and body fluids. Transmission to health-care workers has been reported when appropriate infection control measures have not been observed.
The danger posed by emerging infectious diseases has resulted in significant stress and concerns amongst nursing personnel. Since nurses are one of the frontline health care providers, they are at risk during infectious disease outbreaks. Understanding their fears and anxieties may hold lessons for handling future outbreaks, including acts of bioterrorism.

Consequently, the researcher decided to study the risk perception and impact of Ebola disease on work and personal lives of nurses/healthcare workers in National Hospital a tertiary care hospital Abuja Nigeria.

Since December 2013, and as of 12 October 2014, 8,997 cases of EVD, including 4,493 deaths, have been reported by the World Health Organization (WHO) in seven reporting countries (Guinea, Liberia, Nigeria, Senegal, Sierra Leone, Spain and the USA). One additional case was reported by the USA on 14 October in a second healthcare worker in Dallas, Texas, who tested positive for Ebola virus after having cared for the first case in the USA.

The consequences and impact of the Ebola virus infection cut across all human experiences at personal, family, institutional community and national levels. The Ebola virus victim suffers not only effects of the illness, but also stigmatization. The disease was imported into the country through a visitor from Liberia EVD was officially documented in Lagos (Lagos State) and Port Harcourt (Rivers State in Nigeria).

The effective response to Ebola virus disease (EVD) crisis in National Hospital Abuja required unhindered interdepartmental movement of nurses/health workers. The National Hospital Authority is urging all departments to support and facilitate this and ensure that nurses/health workers that participate in the treatment of EVD patients are treated with respect and without discrimination.

Nurses/health workers are central to the effort of the hospital in containing and combating the disease. Stigmatization and discrimination against them with no scientific basis will inevitably lead to human resource crisis at a time when the hospital needs experienced and competent Nurses/health workers to join the fight against Ebola.

The main aim of the study is to assess the level of risk perception and impact of Ebola virus disease on the work and personal lives of nurses/health workers at the National Hospital Abuja.

The specific objectives were to:
1. Assess the risk/perception of contacting Ebola virus disease by Nurses/health workers
2. Determine the impact of perceived Ebola virus disease on their personal life
3. Determine the impact of perceived Ebola virus disease on their work life.
4. Determine the level of use of universal precaution measure to prevent EVD in National Hospital.
5. Make recommendations based on the findings of this study.

This study was limited by the following:
1. Limited literature review on the risk perception and impact of Ebola virus disease on the personal and work life of nurses and Health care workers in Nigeria.
2. Ebola virus disease was not actually recorded in Abuja.
3. Lack of time in the research process.

During epidemics, healthcare institutions have a duty to protect Nurses/HCWs and help them cope with their personal fears and the very stressful work situation. In view of the above the significance of this study are as follows:

i. Attract more funding for preparedness and prevention of emerging infectious diseases by the government and global partners.
ii. Training and retraining of nurses/health workers on proper handling of suspected Ebola virus disease.
iii. Enhance more participation of nurses/health care workers in the diagnosis, and treatment of confirm cases of EVD.
iv. For the research study to be accepted for participation.

**Methods**

The area of the study is National Hospital, Abuja located on Plot 132, Central Business District, PMB 425, Garki, Abuja. The hospital was established under Decree 36 of 1999 (now act 36 of 1999). The hospital was commissioned by the former Head of State, His Excellence, General Abdulsalam Abubakar and opened to public use on 11th October, 1999 when the first female baby was delivered. The hospital has two main clinical departments, Medicine and Surgery with about 25 units. She is a tertiary level hospital. The target population for this research is members of staff of the hospital with special reference to the clinical staff, doctors, nurses, radiologists and scientists.

Descriptive non-experimental design was used to examine the risk perception and impact of ebola disease on work and personal lives of nurses and health workers in National Hospital, Abuja. For the purpose of this study, the systematic probability sampling method was used. One hundred out of a thousand members of clinical staffs were selected randomly to participate in the research. A well-structured questionnaire was used to obtain information from the healthcare workers. The questionnaire included 25 items regarding socio-demographic characteristics (6 items), general knowledge of ebola disease and prevention (6 items), risk perception on ebola by nurses and other health workers (9 items) and the impact of ebola disease on working and personal lives of nurses and other health workers (4 items).

Data was entered into Microsoft Excel format after it has been checked for errors. The chi-square test was used to evaluate difference in the proportion of respondents according to job category (physicians, nurses and other, sex, age). Also, the data was analyzed using the statistical method of percentile method and presented on frequency distribution tables, pie chart and bar chart.

**Results and discussion of results**

The result shows that the respondents interviewed were aged 21 and 60 years. About 27% were below 30 years while 61% were between 31-60 years. Only 12% of the respondents were 51 years and above (see table 1). Single men and women constitute 37% of the respondents while 60% were married, 3% of the respondents were widower, divorced, and separated from spouses. Most of the respondents 72% were Clinical / Nursing Services while 25% were Laboratory / Radiology Services. Non-Clinical Services constitute only 3%.

The study was carried out to determine the risk perception and impact of ebola disease on work and personal lives of nurses and health care workers in national hospital Abuja, Nigeria. The results are discussed as follows:

**Research question 1**

**What is the risk perception of contacting ebola virus by nurses/ health workers?**

Risk perception is the subjective assessment of the probability of a specified type of accident happening and how concerned we are with the consequences. To perceive risk includes evaluations of the probability as well as the consequences of a negative outcome. It may also be argued that as affects related to the activity is an element of risk perception. Perception of risk goes beyond the individual, and it is a social and cultural construct reflecting values, symbols, history and ideology.

On the cause of ebola disease, about 99% of the respondents displays general knowledge of ebola virus disease being caused by a virus transmitted to people from wild animals and spreads in the human population through human to human transmission. The results presented in table 3 reveals that many of the nurses/healthcare workers have a high risk perception on contacting ebola due to the lack of adequate treatment and rapid spread of disease virus during an outbreak due to poor control measures and awareness 56% and 50% respectively, also coupled with their strong agreement to the fact that they have little control over getting infected with the virus.
There is increasing need for effective risk communication which may help save life. One way to build trust and reduce the risk perception as highlighted by Michele Bellone of Tell Me Experts is for organizations to establish a presence on the media especially on the social media long before the emergence of a crisis. Developing a two-way communication with the other stakeholders (i.e. media/health) because they are a mediating channel between health agencies and the public. This is evident as 47% of the respondents first learn of ebola disease through the media, 31% through literature, 17% learnt in the hospital while 5% learnt of it from friends/family. The finding shows the respondents risk perception on ebola disease where 56% of the respondents fear death due to lack of adequate treatment during the disease outbreak.

**Research question 2**

**What is the impact of perceived ebola virus on their personal life?**

The result presented in table 4 reveals that three quarter of the respondents were afraid of the impact of contacting the disease virus as there was no adequate care leading to an on timely death of the person, also the fear of spreading the virus to members of their family and ultimately the society at large.

About 85% strongly agrees to the fear of being stigmatized even by professional colleagues as related to Mr. Sidie, a laboratory technician from Sierra Leone who is a lucky survival of EVD but continues to face stigmatization, as such he lost many friends and relations.

**Research question 3**

**What is the impact of perceived ebola virus on their work life?**

The result from table 4 shows that the was a high impact on respondents work life where there is a lack of willing volunteers during disease outbreaks cause of the stigmatization associated with such disease, also reaction from the members of society. Fear of becoming infected by their own patients which led to some healthcare workers’ refusal to go to work and also fear of being stigmatized. Findings also reveal that it is high with 64% impact on lack of willing volunteers to work during the disease outbreak due to the risk perception though 36% is of the opinion of a low extent of impact to lack of willing volunteers.

Coincidentally, 79% of the respondents strongly agreed to be afraid of the contacting ebola virus, 15% disagree while 6% strong disagree to that.

**Research question 4**

**What is the level of use of universal precaution measures to prevent ebola virus disease in National hospital?**

The result in figure 2 shows that there is a high use of the universal precaution measure in national hospital by respondents in the various departments, showing a high awareness of the benefit of the measures for the safety from communicable diseases. Out of the respondents only 1 reported not to use the universal precaution measure.

The role of healthcare workers ensuring standard precautions when caring for patients, regardless of their presumed diagnosis, 98% of the respondents believes universal precaution measure is effective to prevent ebola transmission while 2% think otherwise. At National Hospital Abuja, hand washing, hand sanitizers, gloves, vaccination and protective garments are some of the universal precaution measures in use. 40% of the respondents make use of all the measures mentioned while 59% uses at least 3 of the measures in their departments, 1% believed to be in the non-clinical makes use of none.

**Suggestions for further study**

Factors influencing the utilization of universal precaution measures during an outbreak in National Hospital Abuja.
Conclusion

According to WHO, 815 healthcare workers who had been infected by the ebola virus since the onset of the epidemic, more than 50% were nurses and nurse aides. Two thirds of the health workers who had been infected were dead. Therefore, the need for safe working environment for nurses and others healthcare workers on the frontlines of healthcare. The devastating number of nurses who have lost their lives shows there is clearly an essential need for significant strengthening of safety polices and the provision of adequate precaution measures and the appropriate training for use.

The report by ICN indicates that ‘health workers are 21-32 times more likely to be infected with ebola’ than are adults in the general public, while nurses account for more than 50% of all health workers infected, doctors and medical students account for 12%, and laboratory workers account for 7% each.

Ebola infection among healthcare workers have had a devastating effects on health system, including closure of hospitals, depletion of the much need healthcare workforce and distrust in the health system. The WHO report further states that ebola ‘has exacerbated the preexisting shortage of the health workers, high rates of attrition, uneven distribution, poor employment conditions and gaps in occupational health and safety in three of the infected countries [Guinea, Liberia, and sierra Leone].

Figures

Figure 1. Pie Chart showing percentage distribution of respondents’ departments in NHA (n=100)
Figure 2. Bar Chart showing percentage distribution of precaution measures used by respondents

Table 1. Distribution of Socio-demographic characteristics of respondents (n-100)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30years</td>
<td>27</td>
<td>27%</td>
</tr>
<tr>
<td>31-40years</td>
<td>41</td>
<td>41%</td>
</tr>
<tr>
<td>41-50years</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>51-60years</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Igbo</td>
<td>35</td>
<td>35%</td>
</tr>
<tr>
<td>Yoruba</td>
<td>25</td>
<td>25%</td>
</tr>
<tr>
<td>Hausa</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>Others specify</td>
<td>31</td>
<td>31%</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>72</td>
<td>72%</td>
</tr>
<tr>
<td>Islam</td>
<td>28</td>
<td>28%</td>
</tr>
<tr>
<td>Traditionalist</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Others specify</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Academic Attainment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary education</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tertiary education</td>
<td>89</td>
<td>89%</td>
</tr>
<tr>
<td>Post-graduate</td>
<td>11</td>
<td>11%</td>
</tr>
<tr>
<td>education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>37</td>
<td>37%</td>
</tr>
<tr>
<td>Married</td>
<td>60</td>
<td>60%</td>
</tr>
<tr>
<td>Divorced</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Widower</td>
<td>3</td>
<td>3%</td>
</tr>
</tbody>
</table>
### Table 2. Distribution of Respondent’s General Knowledge of Ebola Disease and Preventive Measures (n=100)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ebola disease is caused by?</strong></td>
<td>Bacteria</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Fungi</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Protozoa</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Virus</td>
<td>99</td>
</tr>
<tr>
<td><strong>Where did you first learn of Ebola disease?</strong></td>
<td>Hospital</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Mass media</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Literature</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Friends/ Family</td>
<td>5</td>
</tr>
<tr>
<td><strong>Ebola is transmitted by direct or indirect contact with infected blood or body fluids?</strong></td>
<td>Yes</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>4</td>
</tr>
<tr>
<td><strong>Ebola disease can be treated with early detection of the virus?</strong></td>
<td>Yes</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>12</td>
</tr>
<tr>
<td><strong>Universal precaution measures is effective to prevent Ebola transmission?</strong></td>
<td>Yes</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td><strong>What universal precaution measures are used in national hospital, hand washing, hand sanitizer, gloves, vaccination and protective garments?</strong></td>
<td>All of the above</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>At least 3 of the measures</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>None</td>
<td>1</td>
</tr>
</tbody>
</table>

### Table 3. Distribution of Risk Perception of Respondents on Ebola Disease (n=100)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fear of death to lack of adequate treatment?</strong></td>
<td>Strongly agree</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Agree</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Strongly disagree</td>
<td>2</td>
</tr>
<tr>
<td><strong>Stigmatization by professional colleagues?</strong></td>
<td>Strongly agree</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Agree</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Strongly disagree</td>
<td>5</td>
</tr>
<tr>
<td><strong>Contact of the virus can lead to immediate termination of job</strong></td>
<td>Strongly agree</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Agree</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>46</td>
</tr>
</tbody>
</table>
appointment?
Strongly disagree 24 24%

There is a rapid spread of disease virus due to poor control measures and awareness?
Strongly agree 50 50%
Agree 34 34%
Disagree 15 15%
Strongly disagree 1 1%

Do you accept the risk of getting EVD as part of your job?
Strongly agree 17 17%
Agree 38 38%
Disagree 26 26%
Strongly disagree 19 19%

Do you have little control over getting infected with the virus?
Strongly agree 12 12%
Agree 46 46%
Disagree 32 32%
Strongly disagree 10 10%

Are you afraid of contacting Ebola virus?
Strongly agree 48 48%
Agree 31 31%
Disagree 15 15%
Strongly disagree 6 6%

Would you look for another job or consider resigning because of the risk in an outbreak?
Strongly agree 15 15%
Agree 21 21%
Disagree 45 45%
Strongly disagree 19 19%

Table 4. Distribution of impact of Ebola disease on respondents (n=100)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent is there a lack of willing volunteers for work during disease outbreak?</td>
<td>High 64</td>
<td>65%</td>
</tr>
<tr>
<td></td>
<td>Low 36</td>
<td>36%</td>
</tr>
<tr>
<td></td>
<td>High 78</td>
<td>78%</td>
</tr>
<tr>
<td></td>
<td>Low 22</td>
<td>22%</td>
</tr>
<tr>
<td>To what extent are you afraid the Ebola will spread to your family and friends?</td>
<td>High 67</td>
<td>67%</td>
</tr>
<tr>
<td></td>
<td>Low 33</td>
<td>33%</td>
</tr>
<tr>
<td>Society’s anxiety against contact with health care workers during outbreaks is?</td>
<td>High 95</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>Low 5</td>
<td>5%</td>
</tr>
</tbody>
</table>
Table 5. Statistical illustration of association between risk perception of the impact of Ebola virus on the personal and work lives of nurses/health workers in relationship to departments in national hospital

<table>
<thead>
<tr>
<th>Variables</th>
<th>Departments in National Hospital</th>
<th>Pearson chi-square $X^2$ (p-value)</th>
<th>Df</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clinical services</td>
<td>Nursing services</td>
<td>Radio/ lab service</td>
<td>other</td>
</tr>
<tr>
<td>To what extent is there a lack of willing volunteers for work during disease outbreak?</td>
<td>High</td>
<td>25</td>
<td>23</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>10</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>To what extent are you afraid of contacting EVD?</td>
<td>High</td>
<td>27</td>
<td>31</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>8</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>To what extent are you afraid the Ebola will spread to your family and friends?</td>
<td>High</td>
<td>24</td>
<td>27</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>11</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Society’s anxiety against contact with health care workers during outbreaks is?</td>
<td>High</td>
<td>33</td>
<td>37</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>2</td>
<td>-</td>
<td>3</td>
</tr>
</tbody>
</table>
Acknowledgement

Several people contributed to the success of this research work to whom I am sincerely grateful.

The respondents in this study, my colleagues and staff of National Hospital, Abuja, I am greatly indebted to my research assistants who carried out the collection of data.

Also, I say a big thank you to my mentor, Mr. Lawrence for being a great encourager during this project.

Above all, I am grateful to God, who is the source of my strength.

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Challenges Faced by e-Learners at Ndola School of Nursing; Basis for Evaluation of e-Learning Program in Zambia

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Introduction

The study aims at establishing challenges experienced by e-learning student nurses at Ndola school of nursing. e-Learning is a platform for learning which uses various electronic appliances which includes computers, internet facilities and other appliances for collection, processing, storage and dissemination of information world over. e-Learning is defined as technology supported learning and the delivery of content via all electric media (1). e-learning is the teaching and learning where students are not required to be physically present at a specific location during the term as the process of providing instructions when students and instructors are separated by physical distance, time or both, e mail and web are used for initiation of life-long learning in educational process lead to new forms of education and education programs (2).

In Kenya Amref Health Africa trained over 7,000 Kenyan nurses through e-learning in 2011, while in Tanzania Amref Health Africa intend to train 1000 nurses by the end of the program (3). In Zambia e-learning to train nurses was launched on 13th February 2014, in partnership with Child fund international to help accelerate their training in line with the 21st century technology. The first intake of trainee nurses’ e learners was enrolled in July 2014 in four schools namely; Ndola, Kitwe, Mufulira, and Livingstone and the programme is conducted in nursing colleges managed by ministry of health only. To ensure smooth implementation of this programme child fund in conjunction with general nursing council trained 16 principle tutors in curriculum adaptation, 30 tutors in development of content materials and 20 tutors in review of e content before training commenced. Child fund international also donated 80 computers to supplement on existing equipment in these training institutions. The aim of this project is to train 6,000 nurses in the next five years in 16 ministries of health training schools, with each registered nursing school training not less than 50 students initially and increase eventually as they gain experience (4). A blended approach of e-learning has been is a mix of the traditional and online methodologies where some of the learning that is required to achieve a learning objective is undertaken in the traditional classroom environment but the use of eLearning technologies and methods is also applied to the learning that is undertaken. This method of training nurses has a lot of advantages compared to the traditional method.

Advantages of e-learning include:

- Improved quality education process
- Improved the presentation of nursing problems
- Enhanced creativity, motivation and quality of work of students in nursing care.
- Enlarged the accessibility of educational contents regardless of time and place.
- Enhanced the student’s ability for analyzing, synthesis and critical thinking (8).

Despite these advantages, it has limitation which may range from challenges with technology and understanding the e-content. Review of records revealed that Ndola school of nursing recruited 50 students for e-learning, however, only 43 students reported and of these some dropped out, currently there are 39 students in training. On the other hand e-content was not accessed by students from their homes and had to come to school to access the content.
During face to face the traditional method of teaching was being used due to challenges with internet connectivity.

**Literature review**

This chapter reviews the literature related to e-learning in nursing. The literature review provides the leader with an overview of major academic works done by other academicians. An electronic search on key words published only in Journal articles and key informants were reviewed to compile the main body of literature.

**Challenges experienced by e-learning student nurses**

A study done by El Mansour on students’ experience revealed that online courses can result in a ‘feeling lost in cyberspace’ and feeling frustrated by technical problems and course management system (5). This means that at times, technical problems may result into delay or failure to meet deadlines, which is a barrier to effective learning. However, a study done on e-learning in Maribor and John Hopkins University on nurses revealed lack of knowledge as a major challenge accounting 58% at SON, lack of contact was 73.6% at UCNS, access to internet was 27.4% SON, while UCNS was 11.7% and fear of technology was 28.7%, while SON was 16.4% (6). A study conducted in South in Africa revealed that clinical supervision contributes positively to the academic, professional and personal development of students. The results also showed that some clinical supervisors where not adequately prepared for their roles and responsibilities (7).

According to a study done by Tiwari revealed that students clinical practice is affected to large extent on how they perceive the assessment tasks as learning is focused on passing there examinations, (rote learning), unlike learning. (4) A study done on effectiveness of online learning revealed that perceived effectiveness of online learning was relatively low, though numerous studies have found online learning effective in terms of learning outcomes (9). The major challenge in adopting the online learning mode is to enhance human interaction so as to provide a facilitative environment for establishing peer support, developing academic dialogue and socialization (8). Despite these challenges, AMREF reported that e learning has been tried and tested and proved to be a successful model for training health workers (3). A study done on perception of nurses towards e learning revealed that nurses have positive perception about online learning (x= 3.86; SD= 0.48) (6). Another study revealed that attitude of student nurses towards e-learning has been very positive and supportive towards online instructions (11). Students’ perspectives are important to study because their perspectives of e-learning environment are not always consistent with perspectives of course developers or instructors (12). Therefore the investigator would like to explore problems experienced by e learning student nurses at Ndola school of nursing.

**Statement of the problem**

The study aims at establishing challenges experienced by e-learning student nurses at Ndola school of nursing. In Kenya e-learning programme for nurses increased access to training by 1,400% by training more than 7000 nurses in five years. In Zambia e-learning training program was started in July 2014 and 39 students are currently in training doing their second year. The investigator would like to establish problems being experienced by e-learning student nurses and identify supportive measure to address their problems. Currently there are no studies that have been done in Zambia. Hence the research question; what problems do e-learning student nurses experience while in training? What supportive measures do the e-learning student nurses require to address their problems?

**Justification of the study**

The study finding will be able to highlight program needs, provide strategic direction for future programs by ensuring that best approaches are explored and used to refine the implementation process of e-learning in Zambia. Also the findings may be incorporated into
policy process to ensure that interventions that are effective are implemented. At the same time this study will generate first hand data based on lived local experiences and this will strengthen planning and implementation of e-learning program. It is believed that from this project, policy makers like GNC, service providers like lecturers and the student community at large will understand some of these problems and address them.

In view of the above the investigator would like to establish challenges experienced by e-learners at Ndola school of nursing, so that supportive measures can be implemented to enhance successful learning process.

**Research objectives**

**General objective**

To determine challenges experienced by e-learning student nurses with training?

**Specific objective**

1. To establish, factors influencing e learners’ training?
2. To identify solutions to e-learning problems experienced?

**Research question**

1. What problems do the e-learning student nurses experience while in training?
2. What supportive measures do the e-learning student nurses require to address their problems?

**Operational definitions**

2.4.1 e-Learning: refer to online learning
2.4.2 Challenge: refer to difficulties/problems experienced
2.4.3 E-Learning Student nurse is a trainee nurse who is still undergoing training using computers as a platform of learning.

**Methodology**

**Methods**

An exploratory study was conducted at Ndola school of nursing involving second year e-learning students. Ndola School of Nursing which is located in Copperbelt province in Zambia. Ndola school of nursing was purposively selected as it is one of the pilot training institutions offering E-learning Registered Nursing program for pre service in Zambia. The study was conducted from 14th to 18th July 2015. A population study was conducted comprising of all (39) e-learning second year student nurses at Ndola school of nursing who were currently in second year at Ndola school of nursing and this was a population study, however only 38 students were available during the study. The sample size was not calculated as it was a population study. Convenient sampling method was used as it involves the use of research subjects at the research site. Semi-Structured questionnaire modified from other research studies on e-learning to gather information on student nurses’ challenges on e-learning program.

**Inclusion criteria:** All second year e-learning student nurses at Ndola school of nursing.

**Exclusion criteria:** All second year e-learning student nurses who are not students at Ndola school of nursing.

**Validity**

This study will use a semi-structured interview schedule. To ensure validity of data collection tool, pre-testing of the instrument was done at Ndola school of nursing among second year general student nurses to ensure clarity, precision and consistency of questions and where necessary adjustments were made on content and sequencing of questions.
Reliability

The tool was modified from other research study questionnaires that had similar methodology. Reliability of the instrument was achieved by conducting a pre-test study in order to test the degree of accuracy with which the tools measured e-learning student nurses’ challenges with training. After the evaluations of the pilot test to assess the extent to which the original questionnaire would grant us reliability, the researcher had an opportunity to perfect the questionnaire to the research instrument and their willingness to answer the questions. Deficiencies in the tool were overcome by making necessary changes where there are gaps. Also use of open ended questions helped to bring out in-depth information so that all issues relating to challenges were discussed. The pilot testing also helped to determine how much time needed to administer the questionnaire and to analyse it. The lessons learnt from the pre-test, helped the researcher to develop a reliable and locally focused modified questionnaire.

Ethical consideration

Consent was obtained from respondents and Ndola school of nursing school management. Respondents were in a natural setting and hence were not exposed to emotional or physical harm. Confidentiality and anonymity was maintained to all questionnaires as their names did not appear on the questionnaires, instead the serial number were used. Privacy was maintained as all questionnaires were kept under lock and key after each review.

Data process and analysis

Introduction

A total of 38 respondents were interviewed and there was a 97% response rate. There were 39 e-learning student and only 38 were interviewed as one (1) did not report back to school after the holiday. Content analysis was used to analyze qualitative data and quantitative data was analyzed using a data master sheet on challenges experienced by e-learning student nurses towards e-learning. 95% confidence interval was set together with estimates. Cut off point for significance was set at 5%. Statistical significance achieved if P value is 0.05 or less, thereby rejecting the null hypothesis. The data was analyzed using content analysis, then by univariate analysis to make frequency tables, then bivariate analysis to make cross tabulations. The data was presented using tables for easy communication.

Section A: Demographic data

<table>
<thead>
<tr>
<th>Sex</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>10</td>
<td>26.3%</td>
</tr>
<tr>
<td>F</td>
<td>28</td>
<td>73.6%</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>100%</td>
</tr>
</tbody>
</table>

1. Table 1. Sex n=38
   - The table above shows that majority of the respondents 73% are female, while 26.3% were males.

<table>
<thead>
<tr>
<th>Year</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>2nd year</td>
<td>38 (100%)</td>
<td></td>
</tr>
<tr>
<td>3rd year</td>
<td>0 (0%)</td>
<td></td>
</tr>
</tbody>
</table>

2. Table 2: Level of training n=38
   - This table shows that all the respondents 100% are second years

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30 years</td>
<td>38 (100%)</td>
<td></td>
</tr>
<tr>
<td>31-40 years</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>41-50 years</td>
<td>0 (0%)</td>
<td></td>
</tr>
</tbody>
</table>

3. Table 3: Age range n= 38
   - Table 3 shows that all (100%) respondents were between the age range of 18 to 30 years.
Section B: Challenges with e-learning program.

<table>
<thead>
<tr>
<th>SEX</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>0 (0%)</td>
<td>10 (26.3%)</td>
</tr>
<tr>
<td>Female</td>
<td>5 (13.1%)</td>
<td>23 (60.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>4 (13.1%)</td>
<td>3 (86.8%)</td>
</tr>
</tbody>
</table>

4. Table 4: Problems with clinical practice? n= 38
   Table 4 shows that majority 86.8% of the respondents said that they have no problems with clinical practice, while 13.1% have problems.

<table>
<thead>
<tr>
<th>Recommended action to improve clinical practice</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualified staff to stop doing short cuts when doing sterile procedures on patients for risk of infections</td>
<td>2 (5.2%)</td>
</tr>
<tr>
<td>Attitude of qualified staff should improve</td>
<td>2 (5.2%)</td>
</tr>
<tr>
<td>Some nurses are not willing to help when asked, it’s like bothering them, need to talk to them</td>
<td>1 (2.6%)</td>
</tr>
</tbody>
</table>

5. Table 5: Suggested measures to improve clinical practice. n=38
   Table 5 shows varied responses given by respondents who said that qualified staff should stop doing short cuts when doing sterile procedures 5.2%, improve attitude 5.2% and need to be talked to 2.6%.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>4 (10.5%)</td>
<td>6 (15.7%)</td>
</tr>
<tr>
<td>Female</td>
<td>18 (47.3%)</td>
<td>10 (26.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>22 (57.8%)</td>
<td>16 (42.1%)</td>
</tr>
</tbody>
</table>

6. Table 6: Experienced problems in understanding e-content n= 38
   Table 6 shows that more than half 57% of the respondents have problems in understanding e-content, of which 47.3% were females, while 42.1% had no problems understanding e-content.

<table>
<thead>
<tr>
<th>Recommendations to improve e-content</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduce simulators in form of audio- visual aids to know how to pronounce certain words. Having practical video lectures on e-content.</td>
<td>7 (31.8%)</td>
</tr>
<tr>
<td>Content must be accessible when away from school</td>
<td>2 (9.0%)</td>
</tr>
<tr>
<td>Some content is too summarized and needs explanation</td>
<td>5 (22.7%)</td>
</tr>
<tr>
<td>Organizers need to be serious with e-content as this is just by word.</td>
<td>1 (4.5%)</td>
</tr>
<tr>
<td>Second year e-content need to be provided as it has never been provided</td>
<td>2 (9.0%)</td>
</tr>
<tr>
<td>Improve internet service</td>
<td>4 (18.1%)</td>
</tr>
<tr>
<td>Need to open computer room all day</td>
<td>3 (13.6%)</td>
</tr>
<tr>
<td>Improve accessibility to computer laboratory</td>
<td>3 (13.6%)</td>
</tr>
<tr>
<td>Introduce orientation workshop on e-content before lectures begin</td>
<td>1 (4.5%)</td>
</tr>
<tr>
<td>Tutors must go through all content during face to face</td>
<td>3 (13.6%)</td>
</tr>
</tbody>
</table>

7. Recommendations to improve e-content. n=38
   Table 7 shows varied reasons on improvement of e-content most significant being, Introduce simulators in form of audio- visual aids to know how to pronounce certain words. Having practical video lectures on e-content 31.8%; some content is too summarized and needs explanation 22.7%; Improve internet service 18.1%; Need to open computer room all day 13.6%; and tutors must go through all content during face to face 13.6%.
Table 8 shows that majority 86.8% have problems in accessing the computer laboratory and skills laboratory.

<table>
<thead>
<tr>
<th>Problems</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>33</td>
<td>86.8%</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>13.1%</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>100%</td>
</tr>
</tbody>
</table>

8. Problems with accessibility to computer lab & skills lab for practice. n= 38

Table 8 shows that majority 86.8% have problems in accessing the computer laboratory and skills laboratory.

<table>
<thead>
<tr>
<th>Suggested areas of improvement in computer and skills laboratory</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Computer laboratory need to be opened to improve accessibility as it is closed most of the time</td>
<td>17 (44.7%)</td>
</tr>
<tr>
<td>2. Skills lab to be opened to enable practice</td>
<td>5 (13.1%)</td>
</tr>
<tr>
<td>3. ICT man to stop asking for money if we need help</td>
<td>1 (2.6%)</td>
</tr>
<tr>
<td>4. Employ a qualified person to work in the computer laboratory who knows what to do.</td>
<td>1 (2.6%)</td>
</tr>
<tr>
<td>5. Many servers are needed to avoid congestion</td>
<td>2 (5.2%)</td>
</tr>
<tr>
<td>6. IT man not co-operative in computer laboratory, must be co-operative.</td>
<td>1 (2.6%)</td>
</tr>
<tr>
<td>7. Computer laboratory has been personalized by IT man; he should be welcoming and helpful when asked.</td>
<td>3 (7.8%)</td>
</tr>
<tr>
<td>8. Improve internet services and work on the network</td>
<td>11 (28.9%)</td>
</tr>
<tr>
<td>9. IT man should be available, computer lab to be opened and cleaned as it is too dust</td>
<td>8 (21.0%)</td>
</tr>
<tr>
<td>10. Need to put 2 people in charge of computer laboratory to improve availability and reduce on number of passwords for easy access.</td>
<td>3 (7.8%)</td>
</tr>
</tbody>
</table>

9. Recommendations to improve accessibility to computer laboratory and skills laboratory n= 38

The table above shows that respondents gave varied solutions on the areas of improvement on accessibility to computer laboratory. Almost half of the respondents (44.7%) indicated that areas needing improvement were Computer laboratory which need to be opened to improve accessibility as it is closed most of the time. While 28.9% said improve internet services and work on the network. IT man should be available, computer lab to be opened and cleaned as it is too dust 21%. The least suggested solution were the need for ICT man to stop asking for money if we need help 2.6%, to be co-operative 2.6% and need to employ a qualified person to work in the computer laboratory who knows what to do 2.6%.

<table>
<thead>
<tr>
<th>Perception</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>37</td>
<td>97.3%</td>
</tr>
<tr>
<td>Bad</td>
<td>1</td>
<td>2.6%</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>100%</td>
</tr>
</tbody>
</table>

10. Perception of e-learning n=38

Table 10; shows that majority 97.3% of the respondents said that they have good perception of e-learning, while 2.6% had bad perception.
## Areas of improvement in e-learning

<table>
<thead>
<tr>
<th>Areas of improvement in e-learning</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide lunch and accommodation during face to face</td>
<td>3 (7.8%)</td>
</tr>
<tr>
<td>Provide personal laptops/ tablets for easy studying</td>
<td>4 (10.5%)</td>
</tr>
<tr>
<td>Provide e-content on time to enable us study before face to face.</td>
<td>24 (63.1%)</td>
</tr>
<tr>
<td>Create a good learning platform and ensure everything is available</td>
<td>2 (5.2%)</td>
</tr>
<tr>
<td>Ensure availability of learning materials as you start academic year.</td>
<td>8 (21.0%)</td>
</tr>
<tr>
<td>Improve computer lab accessibility, which must be accessible at any time</td>
<td>12 (31.5%)</td>
</tr>
<tr>
<td>Improve internet connectivity and network system</td>
<td>4 (10.5%)</td>
</tr>
<tr>
<td>The IT person working in the lab need to be removed as he does not help us.</td>
<td>1 (2.6%)</td>
</tr>
<tr>
<td>Provide visual and audio tutorials on e-content with students, which can be used during self study.</td>
<td>2 (5.2%)</td>
</tr>
<tr>
<td>Create a good learning platform and ensure everything is available</td>
<td>2 (5.2%)</td>
</tr>
<tr>
<td>Face to face should be maintained at 3 weeks as extension disturbs our study.</td>
<td>1 (2.6%)</td>
</tr>
<tr>
<td>Build strong foundation and commitment from both tutors and students</td>
<td>1 (2.6%)</td>
</tr>
<tr>
<td>Improve methods of teaching</td>
<td>1 (2.6%)</td>
</tr>
</tbody>
</table>

11. Recommendations to improve e – learning. n=38

Table 11 shows various recommendations provided by respondents and the most significant was e-content should be provided on time to enable them study before face to face 63.1% and that computer lab accessibility should be improved 31.5%, provide personal laptops or tablets and improve internet connectivity 10.5% respectively.

### Discussion of findings and conclusion

#### Introduction

The main objective of the study was to determine challenges experienced by e – learning student nurses with training at Ndola School of nursing. This chapter discusses the findings in line with the research question. In this study themes that represent the key research questions have been used to discuss the findings and these are;

1. What problems do e – learners experience while in training?
2. What supportive measures do the e-learning student nurses require to address their problems?

#### Demographic characteristics of e-Learners

In this study majority of the respondents 73% were female, while 26.3% were males and that all the respondents 100% were second years. In terms of age range, all the respondents were between 18- 30 years. The age range is associated with modern technology and therefore could have little challenges in accessing e – content and browsing the internet.

#### Problems Experienced by e-Learners and Solutions to their problems

The findings revealed that majority 86.8% of the respondents said that they have no problems with clinical practice, while 13.1% said they have problems. This further compliments the findings by WHO 2015 who reported that of the studies that evaluated differences in skill acquisition, eight (62%) found significantly greater skill acquisition among students assigned to eLearning compared to those assigned to traditional learning (18). To address the problems associated with clinical practice, the respondents said that qualified staff should stop doing short cuts when doing sterile procedures and improve attitude 5.2%
and need to be talked to 2.6%. A study done in South Africa showed that some clinical supervisors were not adequately prepared for their roles and responsibilities (7). This could affect the e-learning students negatively, as they may learn wrong attitude towards nursing practice.

The findings further revealed that more than half 57% of the respondents had problems in understanding e-content, of these 47.3% were females, while 42.1% had no problems understanding e-content. To address the challenges with e-content respondents suggested varied reasons on improvement of e-content, most significant being, Introduction of simulators in form of audio- visual aids to know how to pronounce certain words. Having practical video lectures on e-content 31.8%. This complements findings done by John Hopkins University who said that major challenge in adopting the online learning mode is to enhance human interaction so as to provide a facilitative environment for establishing peer support, developing academic dialogue and socialization (8). However, some educational experts observed that online courses were more interactive in nature than the traditional ones (15, 16). The reason offered by these researchers was that online education made it easier for slow learners, who more response may need time to participate (17). The respondents also said that some content is too summarized and needs explanation 22.7%; the respondents further suggested that there was need to improve internet service 18.1%. This is in line with the study done in South Africa which revealed that access to technology has been identified as a major challenge for the implementation of technology enhanced teaching in developing countries (19); Computer room must be opened the whole day 13.6%; and tutors must go through all content during face to face 13.6%. This could imply that the e-learners experience difficulties understanding the e-content and may contribute to poor performance.

The study findings revealed that majority 86.8% of respondents have problems in accessing the computer laboratory and skills laboratory. This hinders their learning practice during self study. To address this problem, the e-learners suggest the following solutions to improve accessibility to the computer and skills laboratory. The findings revealed that almost half of the respondents 44.7% indicated that areas needing improvement was the Computer laboratory which need to be opened to improve accessibility as it is closed most of the time. While 28.9% said improve internet services and work on the network. Others said that the IT man should be available, computer lab to be cleaned as it is too dust 21%. The least suggested solution were the need for ICT man to stop asking for money if we need help 2.6%, to be co-operative 2.6% and need to employ a qualified person to work in the computer laboratory who knows what to do 2.6%.

The study findings also revealed that majority 97.3% of the respondents said that they have good perception of e-learning, while 2.6% said had bad perception. These findings are in line with the study done at Kansas University which revealed that attitude of student nurses towards e-learning has been very positive and supportive towards online instructions (11, 6). However, reasons given by the 2.6% should not be ignored, and must be addressed. In view of this, I can say that e-learning is the best platform of nursing education as the learner is in control of her studies and promotes critical thinking and decision making.

Support needed to address challenges faced by e-Learning student nurses

The study findings revealed various recommendations provided by respondents who said that e-content should be provided on time to enable them study before face to face 63.1% and that computer lab accessibility should be improved 31.5%. Ensure availability of learning materials as you start academic year 21%. Provide personal laptops/ tablets for easy studying 10.5%. Improve internet connectivity and network system 10.5%. Provide lunch and accommodation during face to face 7.8%. Create a good learning platform and ensure everything is available 5.2%. Provide visual and audio tutorials on e-content with students, which can be used during self study 5.2%; The IT person working in the lab need to be removed as he does not help us 2.6%; Face to face should be maintained at 3 weeks as extension disturbs our study period 2.6%; Build strong foundation and commitment from both
tutors and students 2.6%; and Improve methods of teaching 2.6%. In view of these findings, there is need to address these challenges in order to promote good learning environment.

**Limitation of the study**

Lack of adequate resources such, as funds and the time frame, in which the capstone project was to be completed, was the major limitation. Ndola school of nursing has been selected for convenience purposes.

**Strength of the study**

This was a population study and the characteristics of the respondents are similar to those in other registered nursing schools in Zambia conducting e-learning and are using the same curriculum, therefore the findings can be generalized. Also the findings will be used to strengthen e-learning program and for policy prescription to address challenges experienced by students.

**Dissemination of findings**

The study findings of this project will be disseminated to ministry of health in Zambia, the General nursing council of Zambia, 3rd international e-conference and Ndola school of nursing management.

**Conclusion**

e-Learning is very critical as information technology is now being widely adapted to local curricula and infrastructure to improve both health service delivery and the training of health professionals across the continent. In Zambia e-Learning is an emerging trend for training of nurses and is going through teething problems and these challenges can hinder successful implementation of the programme if not addressed promptly. Effective and efficient training of these trainees will help them acquire the necessary skills to become competent nurses upon graduation. Therefore innovative approaches must be implemented to bridge the gap between the traditional method of training nurses and online education. Despite the shortcomings of e-learners’ experience, they have a positive attitude towards e-learning, and therefore they need management support to address these challenges. Creating conducive learning environment is cardinal in the success of e-learning programme in nursing.

I acknowledge support rendered to me by Ndola School of Nursing to allow me conduct this study.

**References**


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Identifying Factors Leading to Poor Nursing Practices among Registered Nurses of Health Care Settings in Lahore Pakistan

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Abstract

Background: Theories of behavior change indicate that a careful analysis of different changing factors is helpful when trying to influence professional practice. There are many such factors faced by nurses, which lead to poor practices among nurses. The aim of this study was to identify the factors that lead to poor nursing practices among Registered Nurses in Health Care setting of Lahore Pakistan.

Method: A descriptive cross-sectional survey was used to identify the factors that lead to poor nursing practice. To carry out this survey, a convenient sample of n=30 Registered Nurses was selected from those Registered Nurses, who are studying at College of Nursing and at the same time they are practicing too. A self-administered questionnaire consisting of 14 declarative statements was administered to the participants for the purpose of data collection.

Results: A 100% response rate was achieved. The prominent factors identified, leading to poor nursing practices included shortage of staff, high work load, poor time management, poor task organization, unhealthy work environment, unavailability of proper equipment’s, lack of clinical experience, lack of professional knowledge and poor communication skills.

Conclusion: It was concluded that numerous factors that lead to poor nursing practices have been identified i.e. shortage of staff, high work load, poor time management etc., also these factors should have to reduce to enhance quality of nursing care and making nursing practice more better. This study has laid the foundation for further research in to implementation of good practice by nurses in hospitals by identifying factors that lead to poor practice.

Keywords: Factors Leading to Poor Nursing Practices among Registered, Different Approaches to Nursing practice, Significance of study, Ethical Consideration, Data analysis, Discussion, summary

List of abbreviations
1. ANA American Nurses Association
2. SSPSP Scope and Standards of Practice, scope of practice
3. NACNEP National Advisory Council on Nurse Education and Practice
4. SPN Society for Pediatric Nurses
5. NAPNAP Association of Pediatric Nurse Practitioners.
6. NPARR Nurse Practice Act, Rules & Regulations

Introduction

Nursing is a complex, ever-changing profession. One thing that doesn’t change is ANA’s dedication to nursing excellence through ethics, standards, and best practices. Whether you’re looking to improve your quality of care, become a leader in your chosen specialty, or create a healthier work environment, ANA offers resources and solutions to concerns that affect you every day. The practice of nursing requires specialized knowledge, skill, and independent decision making. Nursing careers take widely divergent paths - practice focus varies by setting, by type of client, by different disease,
therapeutic approach or level of rehabilitation. Moreover, nurses are mobile and sophisticated and work in a society that is changing and asymmetrical for consumers. The result is that the risk of harm is inherent in the provision of nursing care. Nurse Practice Act, Rules & Regulations

In the document, Nursing: Scope and Standards of Practice, scope of practice is defined by the “who,” “what,” “where,” “when,” “why,” and “how” of nursing practice, including advanced practice nursing.

In addition, there are other documents relevant to specialties. For example, Pediatric Nursing: Scope and Standards of Practice is a collaborative effort of the ANA, the Society for Pediatric Nurses (SPN), and the National Association of Pediatric Nurse Practitioners (NAPNAP). This resource and others like it are listed below.

Other organizations publish relevant documents as well. For example, The American Association of Nurse Anesthetists (AANA) publishes Scope and Standards for Nurse Anesthesia Practice. Resources from the AANA and other specialty organizations are also listed below.

The nursing profession, including professional and specialty organizations, is responsible to its members and to the public to define the scope of practice and standards of practice. This foundational work provides the basis for further description and refinement by other entities and is represented as the broadest level at the base of the pyramid.

**Annexure for a research project title**

Factors Leading to Poor Nursing Practices among Registered Nurses in Health Care setting Of Lahore Pakistan

**Aim of the Project:**
To identify factors leading to poor nursing practices among Registered Nurses in Health Care setting Of Lahore Pakistan

**Statement of the Problem:** Factors Leading to Poor Nursing Practices among Registered Nurses in Health Care setting Of Lahore Pakistan

**Overview of Literature:** Nursing is a profession, which focuses on the care of the individuals, families and communities, to help them in maintaining and recovery of the optimal health and a quality life. The foundation of professional nursing was laid by Florence Nightingale, over 150 years ago by Florence Nightingale, who conducted the first nursing outcome research. She was the first who document the unsanitary and unsafe conditions in hospitals. Basic measures for improving sanitation and hygiene were introduced by her. The effects on mortality rates were unforgettable because during the six months period, there was a dramatic decrease in death rates at the military hospital in Scutari, Turkey which fell from 43% to 2% only. She had a strong belief that highly trained nurses make the difference in creating a safe care environment that vastly improves patient outcomes.

**Conceptual Framework:** Nursing is a complex, ever-changing profession. One thing that doesn’t change is ANA’s dedication to nursing excellence through ethics, standards, and best practices. Whether you’re looking to improve your quality of care, become a leader in your chosen specialty, or create a healthier work environment, ANA offers resources and solutions to concerns that affect you every day. The practice of nursing requires specialized knowledge, skill, and independent decision making. Nursing careers take widely divergent paths - practice focus varies by setting, by type of client, by different disease, therapeutic approach or level of rehabilitation. The advancement of a profession depends on educational criteria that other never regrets the standards of quality care. Nursing as whole is fully groomed profession in which it absorbing all the necessities of advance world.

**Research questions or hypotheses**

What are the factors leading to poor nursing practices among Registered Nurses in Health Care setting Of Lahore Pakistan?
Research methodology

(a) Coverage: In this study a non-experimental quantitative design was used. The research was conducted by using the procedure of survey method. The design was Descriptive Cross-Sectional. Therefore data are collected with the help of questionnaire the type of questionnaires is closed ended.

(b) Data Collection: Sampling is a process of selecting a portion of the population to represent the entire population. Convenience sampling which is a type of Non-Probability sampling was used. Therefore data are collected with the help of questionnaire the type of questionnaires is closed ended.

(c) Data Analysis: Data analyzed by using SPSS and results will be displayed in percentage through frequency Tables, bar graph.

Implications: The proposal should state whether this research would bring forth any implications for policy making either for the region concerned or the country, any methodological innovations or contribute to theory building.

Summary

Factors Leading to Poor Nursing Practices among Registered Nurses in Health Care setting Of Lahore Pakistan

- Purposes of the Project:
  - Assess the effects of poor practice on patient care
  - Identify factors leading to poor nursing practices among Registered Nurses in Health Care setting Of Lahore Pakistan

Statement of the Problem: factors leading to poor nursing practices among Registered Nurses in Health Care setting Of Lahore Pakistan

Research Questions or Hypotheses:

What are the factors leading to poor nursing practices among Registered Nurses in Health Care setting Of Lahore Pakistan?

Research methodology

Coverage: Research design is an overall plan for addressing a research question, including specifications for enhancing the study’s integrity and it is blue print for conducting a study. In this study a non-experimental quantitative design was used. The research was conducted by using the procedure of survey method. The design was Descriptive Cross-Sectional. This design was used because the study was related to find out the prevalence of the factors that were faced by Registered Nurses during their practice, leading to poor quality nursing care, it also identifies cause and effect simultaneously and appropriate for describing the status of phenomena or for describing relationship among phenomena at a fixed point in time.

Sampling

Sampling is a process of selecting a portion of the population to represent the entire population. Convenience sampling which is a type of Non-Probability sampling was used. Therefore data are collected with the help of questionnaire the type of questionnaires is closed ended. Data Analysis: Data analyzed by using SPSS and results will be displayed in percentage through frequency Tables, bar graph.

Literature review

Nursing is a profession, which focuses on the care of the individuals, families and communities, to help them in maintaining and recovery of the optimal health and a quality life. 2 The foundation of professional nursing was laid by Florence Nightingale, over 150 years ago by Florence nightingale, who conducted the first nursing outcome research. She was the first who document the unsanitary and
unsafe conditions in hospitals. Basic measures for improving sanitation and hygiene were introduced by her. The effects on mortality rates were unforgettable because during the six months period, there was a dramatic decrease in death rates at the military hospital in Scutari, Turkey which fell from 43% to 2% only. She had a strong belief that highly trained nurses make the difference in creating a safe care environment that vastly improves patient outcomes. Currently, in almost all countries of the world, nursing practice is governed by a well-defined law and the performance of the profession is regulated at the national or state level. Nurses provide care to the people irrespective of their age, color, culture, and ethnicity, based on individual needs. Their services are not limited to the hospitals only rather they practice in wide range of settings, from hospitals to visiting people in their communities. Worldwide, nurses face many barriers during their practice due to which they are unable to achieve positive outcomes. We know that nursing outcomes are end results obtained after giving nursing care to an individual. According to Joel Adams 2007 outcome is a measure of result of an intervention or treatment. Nurses represent a large and diverse group with differing level of training and education. Nurses’ educational level is significantly associated with patient outcomes. Aiken LH, shows in her study that hospital based bedside nurses are burnout, emotionally exhausted and highly dissatisfied with their jobs. In England from 2699 nurses 1138 (42%) are regarded themselves to be burnout and 39% dissatisfied with their jobs. And 19% reported wards to have poor quality of care. In United States from 26717 nurses 57% not confident that hospital management would resolve patients’ problem. Hospitals with good work environment and better professional nurse staffing have more satisfied patients and nurses and evidence to better quality and safety of care.6 In England 4000 nurses in 30 hospital trusts found that nurses and patients in hospitals with the most favorable staffing levels had better outcomes compared to hospitals with less favorable setting. As the number of patients in the ward increased the nurse workload increased, so the mortality rate also increased. Nurses in hospitals with less favorable staffing levels were almost twice likely to show high level of burnout, higher job dissatisfaction and to report low deteriorating quality of care on their units. In a study designed to examine the hospital reengineering on patient outcomes and nursing staffing level in New Zealand, McCluskey and Diers established that patient care quality declined as nurses staffing level becomes inappropriate. Hospitals with low nurse staffing levels tend to have higher rates of poor outcomes and Shortage of RNs negatively affects patients’ outcomes and contributes to medical errors. Nurses in some health care facilities may be over burdened with up to 12 patients for care. Long work hours pose one of the most serious threats to patient safety, because fatigue slows reaction time, diminished attentions to details, and contributes to error. In united states, more than 43000 nurses in 700 hospitals in Canada, England, Scotland, Germany, surveyed at least 1 in 3 nurses were routinely performing non nursing task e.g. performing ancillary services. At the same time nursing task were not being attended to e.g. skin care, oral care and teaching patient etc. which lead toward poor outcome.5 So, there are many factors which contribute towards poor nursing care.

There is something quite impersonal, something cold and clinical in the way we talk about standards of nursing practice. No doubt the expectation already is that what is contained within this paper will provide a set of definitive statements describing how we go about setting and thence raising standards of clinical practice. Such statements will appear as prescriptions for good practice, outlines of key criteria, perhaps even as components of a quality assurance model. Effective practice may even be measured in the safe execution of procedures or protocols, meeting targets set by the system. But standard raising, I would suggest, has little to do with static protocols and rigid systems; rather it has more to do with stout hearts and gut reactions, with fostering a sense of the individual within a
system. Knowledge of what is best for another person must emanate from the meeting of two minds and two hearts — the helper and the helped and even then it will be incomplete and uncertain. It may be easy to describe techniques and procedures relating to the mode of treatment, but the search for what is best for a person in need is always more complex than such simple descriptions of standard helping procedures imply. The reason for this is quite simple — we are dealing with individuals and because the knowledge required to help and advice another person is never value free we must come clean and admit to ourselves where our ideas and notions come from. So looking for the practitioner with a stout heart rather than a cold flinty one has some merit; so too has the gut reaction which responds in a compassionate way rather than in a cold, unfeeling manner. But I hear you say we cannot run a health system on such notions as personal hunches and intuitions. Standards of clinical practice must be scientifically validated, authenticated by recognized methods which interpret our world for us. Indeed, is it not because nursing has relied far too long on intuition and experience
rather than embracing more accepted scientific methodologies that it is now facing so many difficulties? Clark & Hockey (1979) urge nurses to develop such a scientific approach to decision making whilst Kerrane (1975), Davies (1976) and Beland (1970) argue that standards of clinical practice and the status of nursing will only

**Research problem**

It is obvious from the literature that there are various factors which lead to poor nursing performance. We know that if nurses do not perform effectively and efficiently, it will lead to poor health care outcomes. Thus it becomes essential to assess these factors in detail to avoid the negative outcomes of nursing care provided by the nurses.

**Research significance**

As we know that identification of different barriers to nursing practices has become necessary, to have positive nursing outcomes. Moreover there was no research studies conducted on identification of causes of poor nursing performances. Therefore this study will help us to assess the barriers and once we get awareness about those barriers within our setting, we will be able to modify them.

**Research purpose**

Research Purpose is a Concise and clear statement of the specific goal or aim of the study. The purpose of this study was,

To identify factors leading to poor nursing practices among Registered Nurses in Health Care setting Of Lahore Pakistan

**Research question**

Research Question is a concise and interrogative statement developed to direct a study, focuses on describing variables; examining the relationship among variables and determining the difference between two or more groups. The Research question of this study was,

What are the factors leading to poor nursing practices among Registered Nurses in Health Care setting Of Lahore Pakistan.

**Research methodology**

**Research design**

Research design is an overall plan for addressing a research question, including specifications for enhancing the study’s integrity and it is blue print for conducting a study. In this study a non-experimental quantitative design was used. The research was conducted by using the procedure of survey method. The design was Descriptive Cross-Sectional. This design was used because the study was related to find out the prevalence of the factors that were faced by Registered Nurses during their practice, leading to poor quality nursing care, it also identifies cause and effect simultaneously and appropriate for describing the status of phenomena or for describing relationship among phenomena at a fixed point in time.

**Sampling**

Sampling is a process of selecting a portion of the population to represent the entire population. Convenience sampling which is a type of Non-Probability sampling was used as sampling method and it is defined as including subjects in study who happened to be in the right place at the right time, with addition of available subjects until the desired sample size is reached. It also referred to as accidental sampling. A Sample which is a subset of a population, selected to participate in a study of size n=30 part time RNs with various educational background was selected from target population which is a set of all the measurement of interest of the researcher. In this study all the Registered Nurses FMH
Hospital were population and there were approximately \((n=30)\) Registered Nurses were selected as study sample.

**Eligibility criteria (Inclusion criteria)**

Those sampling criteria or characteristics that the subject or element must possess to be consider part of the target population. All the registered nurses of program post RN BScN and post basic diploma were eligible for this research study (See appendix-III).

**Exclusion criteria**

Sampling criteria or characteristics that can cause a person to be excluded from target population. The criteria that specify characteristics that a population does not have. All Generic BScN, General Nursing Diploma students and non-Registered Nurses were not eligible for this research study. (See appendix-III).

**Site**

Site is overall location for the research. The overall location where a study was undertaken. The site for this research was College of nursing, Lahore.

**Setting**

Setting is the more specific places where the data collection occurs. The setting for our research was class rooms of post RN BScN and post basic diploma students.

**Data collection tool**

For the purpose of data collection a self-administered questionnaire was used as data collection tool. A questionnaire is defined as printed, self-report form designed to elicit information that can be obtained through written or verbal response of the subjects. A questionnaire of a five point rating scale was developed to collect the data about the factors that leads to poor nursing practice (see appendix III). Fourteen statements were carefully included in this rating scale which was describing the barriers/factors which leads to poor nursing practices. Participants were required to respond on a five point Likert scale. (Likert scale is defined as: Instrument designed to determine the opinion on or attitude toward a particular subject; contain a number of declarative statements with the scale after each statement). To analyze the data, students responses were converted into numerical scale according to the following description:

- Strongly Disagree 1,
- Disagree 2,
- Uncertain 3,
- agree 4,
- and Strongly agree 5. The data was analyzed in two steps. Firstly, the average score for each statement was calculated. As it was a five point scale, the maximum average score would be 5 and minimum possible score would be 1.

**Analysis**

Data were entered into, and analyzed by using frequency distribution tables and pie charts. Frequencies, Percentages and descriptive statistics were employed to describe the responses of participants/respondents. Every statement analyzed as firstly developing frequency tables and then making pie charts to show percentage of participants agreed, disagreed and uncertain with the given statements.

**Question no: 1**

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>20</td>
<td>66.66667%</td>
</tr>
<tr>
<td>Agree</td>
<td>7</td>
<td>23.333%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
Analysis

90% participants agreed with statement, High work load among nurses’ leads to poor practice.

Question no: 2

Poor time management leads to poor performance of nurses

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>9</td>
<td>30%</td>
</tr>
<tr>
<td>Agree</td>
<td>18</td>
<td>60%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
Analysis

90% participants agreed with the statement, Poor time management leads to poor performance of nurses.

Question no: 3

Lack of professional knowledge leads to poor nursing practice

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
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</thead>
<tbody>
<tr>
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<td>56.66667%</td>
</tr>
<tr>
<td>Agree</td>
<td>7</td>
<td>23.33333%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td>3.333333%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>2</td>
<td>6.666667%</td>
</tr>
</tbody>
</table>

Figure III

Analysis

80% RNs agreed with the statement, Lack of professional knowledge leads to poor nursing practice.

Question no: 4

Unavailability of proper equipment’s leads to poor nursing performances

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
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</thead>
<tbody>
<tr>
<td>Strongly agree</td>
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<td>53.333333%</td>
</tr>
<tr>
<td>Agree</td>
<td>10</td>
<td>33.333333%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>2</td>
<td>6.666667%</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
<td>6.666667%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
86% RNs agreed with the statement, Unavailability of proper equipment’s leads to poor nursing performances.

**Question no: 5**

Shortage of staff affects the quality of nursing care

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
</tr>
</thead>
<tbody>
<tr>
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<td>19</td>
<td>63.333333%</td>
</tr>
<tr>
<td>Agree</td>
<td>9</td>
<td>30%</td>
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<tr>
<td>Uncertain</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td>3.333333%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>1</td>
<td>3.333333%</td>
</tr>
</tbody>
</table>

**Analysis**

94% RNs agreed with the factor that the shortage of staff affects the quality of nursing care.
Question no: 6

Job dissatisfaction leads to poor nursing performance

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
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</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>10</td>
<td>33.33333%</td>
</tr>
<tr>
<td>Agree</td>
<td>11</td>
<td>36.66667%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Disagree</td>
<td>4</td>
<td>13.33333%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>5</td>
<td>16.66667%</td>
</tr>
</tbody>
</table>

Figure VI

Analysis

70% RNs agreed with the statement, Job dissatisfaction leads to poor nursing performance.

Question no: 7

Unhealthy work environment affects nursing practice

<table>
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<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
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</thead>
<tbody>
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<td>Agree</td>
<td>14</td>
<td>46.66667%</td>
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<tr>
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<td>10%</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>1</td>
<td>3.333333%</td>
</tr>
</tbody>
</table>
Analysis

87% participants agreed with the statement, Unhealthy work environment affects nursing practice.

Question no: 8

Lack of clinical experience increases errors in nursing implementations

<table>
<thead>
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<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
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</thead>
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<td>26.6667%</td>
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<td>Agree</td>
<td>17</td>
<td>56.6667%</td>
</tr>
<tr>
<td>Uncertain</td>
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<td>6.666667%</td>
</tr>
<tr>
<td>Disagree</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Analysis

83% participants agreed with the statement, Lack of clinical experience increases errors in nursing implementations.

Question no: 9

Cultural differences between nurse and the patient lead to impair nursing practice
Analysis

47% participants agreed with the statement, Cultural differences between nurse and the patient lead to impair nursing practice.

**Question no: 10**

Domestic problems of nurses causes defective nursing practice

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>1</td>
<td>3.333333%</td>
</tr>
<tr>
<td>Agree</td>
<td>10</td>
<td>33.333333%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>9</td>
<td>30%</td>
</tr>
<tr>
<td>Disagree</td>
<td>5</td>
<td>16.66667%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>5</td>
<td>16.66667%</td>
</tr>
</tbody>
</table>
36% participants agreed with the statement, "Domestic problems of nurses causes’ defective nursing practice."

**Question no: 11**

Low incentives of nurses lead to poor nurses’ practice

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
</tr>
</thead>
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<td>13.3333%</td>
</tr>
<tr>
<td>Agree</td>
<td>6</td>
<td>20%</td>
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<tr>
<td>Uncertain</td>
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<td>13.3333%</td>
</tr>
<tr>
<td>Disagree</td>
<td>12</td>
<td>40%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>4</td>
<td>13.3333%</td>
</tr>
</tbody>
</table>
Analysis

34% participants agreed with the statement, Low incentives of nurses lead to poor nurses’ practice.

Question no: 12

Lack of support from management results in poor nursing practice

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly agree</td>
<td>11</td>
<td>36.66667%</td>
</tr>
<tr>
<td>Agree</td>
<td>8</td>
<td>26.66667%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>Disagree</td>
<td>5</td>
<td>16.66667%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>3</td>
<td>10%</td>
</tr>
</tbody>
</table>

Analysis

63% participants are agreed with the statement, Lack of support from management results in poor nursing practice.

Question no: 13

Poor communication skill of nurses leads to ineffective communication between nurse and patient

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>11</td>
<td>36.66667%</td>
</tr>
<tr>
<td>Agree</td>
<td>12</td>
<td>40%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>4</td>
<td>13.33333%</td>
</tr>
<tr>
<td>Disagree</td>
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<td>10%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
77% RNs agreed with the statement, Poor communication skills of nurses leads to ineffective communication between nurse and patient.

**Question no: 14**

Poor task organization by nurses results in poor nursing practice

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly agree</td>
<td>10</td>
<td>33.33333%</td>
</tr>
<tr>
<td>Agree</td>
<td>17</td>
<td>56.66667%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>2</td>
<td>6.666667%</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>1</td>
<td>3.333333%</td>
</tr>
</tbody>
</table>

Analysis
Analysis

90% RNs agreed with the factor of Poor task organization by nurses which results in poor nursing practice.

Ethical considerations

The study was approved by the humane research ethics advisory group of College of Nursing, Lahore. Completion of the questionnaire was voluntary. Informed Consent to participate in the study was also taken from the participants (see appendix-II). The nurses/participants were also assured that their employment/educational status within the organization would in no way be affected and all the information’s they provide us will be kept confidential. We respect our subjects’ autonomy by taking informed consent from them; also we maintain dignity of the participants as possible and maintain principle of justice by fair selection of participants on the basis of our sampling technique i.e. convenience sampling.

Results

It was concluded by adding all the responses of participants that 73.3% (308 out of 420 participants) were agreed with the factors that lead to poor nursing practices included in questionnaire (see appendix-III). See Table I for detailed results.

<table>
<thead>
<tr>
<th>Statements</th>
<th>Frequency</th>
<th>Relative Frequency</th>
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<td>35.71%</td>
</tr>
<tr>
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<td>155</td>
<td>36.90%</td>
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<tr>
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<td>39</td>
<td>9.28%</td>
</tr>
<tr>
<td>Disagree</td>
<td>45</td>
<td>10.70%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>28</td>
<td>6.67%</td>
</tr>
</tbody>
</table>

Figure iv

Total answers=420
Percentage of agreed participants=308/420*100≈ 73.3%
73.3% participants agreed with the factors leading to poor nursing practice involved in our questionnaire.
Discussion

This study was the first to report an examination of factors that lead to poor nursing practices. The barriers most frequently mentioned by nurses in this study were related to shortage of staff and the context in which practice occurred. Specifically, shortage of staff, high work load, poor task organization and poor time management were nominated as important barriers to nursing practice by 90% to 94% of nurses, which is similar to the findings of other international studies as high work load on staff increased fatigue, which slows reaction time, diminished attentions to detail, and contributes to error. Unhealthy work environment, unavailability of proper equipment’s, lack of clinical experience, lack of professional knowledge, poor communication skills and job dissatisfaction were also important factors leading to poor nursing practices mentioned by 70% to 90% nurses as evidenced in the study of Aiken LH, (2012) that bedside nurses were emotionally exhausted and highly dissatisfied with their jobs and consistent with other studies. Lack of support from management, cultural differences, domestic problems, and low incentives of nurses were specified by less than 70% of participants as we know from different research studies that managements were not solve patients as well as nurses related concerns and problems our research findings were also matches with the recent research studies which shows that factors we identified in our research study were significant and we must have to reduce those factors to improve practice.

Study limitations

The limitations of this study was that the research findings cannot generalized to a large group due to small sample size of n=30 Registered Nurses.

Conclusion

In conclusion, a survey design was used to elicit nurses’ responses about factors leading to poor nursing practices. It was concluded that there were a lot of factors which leads to poor nursing practice among registered nurses of College of Nursing and service hospital, Lahore, as shown in analysis and result section and must have to reduce those factors to improve nursing practice and quality of patient care.

Recommendations

It is recommended that hospitals develop an official policy regarding the nursing practice. The policy should recommend:

- Appropriate number of staff nurses
- Good management and provision of healthy work environment for staff nurses

Finally, the policy needs to apply to all staff in the hospital.

Acknowledgments

I have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I am highly indebted to (Texila American University) for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the project.

I would like to express my special gratitude and thanks to coordinator Ms. Cinthana for her strong coordination

My thanks and appreciations also go to my colleague in developing the project and people who have willingly helped me out with their abilities.
References


Can Health Information Technology Decrease Antibiotic Use in the Neonatal Intensive Care Unit

Article by Natasha Wilma Remy
RN-MSN Nursing, Texila American University, Saint Lucia
E-mail: natashamarcellinremy@gmail.com

Abstract

Clinical signs of infection during the neonatal period are often nonspecific and non-localized. For this reason, it is extremely difficult to control antibiotic use during the neonatal period. Most times indication for antibiotics therapy in this population is based only on clinical presentation. A significant number of infants are prescribed antibiotics based on the symptom of tachypnea alone. Of these infants, a significant number of are later diagnosed with a benign condition called Transient Tachypnea of the Newborn. The purpose of the study is to evaluate whether a complete health history delivered through health Information technology can potentially decrease unnecessary antibiotic use in the neonatal intensive care unit at the Victoria Hospital in Saint Lucia. The research was conducted by interviews. Physicians mentioned that a major challenge they face in determining infant risk factors for the development of bacterial infection is the availability of critical information on the maternal history as well as the event surround the birth and delivery of the neonate. Other factors such as reliability, efficiency and availability of lab investigation as well as unit policies and guidelines were identified as influential in their decision of whether to administer treatment to the infant or not. The results of the study concluded that physician agreed that information delivered via information technology would potentially guide health care providers in the decision on antibiotics use in the neonatal unit.

Keywords: Tachypnea, Transient Tachypnea of the Newborn, Antibiotics, Resistance

Introduction

Antibiotic therapy although in most cases has been warranted; are sometimes unnecessary in the newborn. The indication for initial antibiotics therapy in the Neonatal Unit, are often based only on clinical presentation which is the common practice used. A significant number of infants are prescribed antibiotics based on the symptom of tachypnea and are not given a chance to transition from intrauterine to extra-uterine life. Later a significant number of these infants were diagnosed with Transient Tachypnea of the Newborn a benign condition in which the tachypnea is resolved within 12 - 24 hours of age. Because of the non-specific and non-localized nature of clinical signs of infection in the neonatal period, appropriate guidelines and resources should be in place to guide physician into the use of antibiotic therapy in neonates in the absence of positive septic screening. Research has shown that maternal health history significantly influences the health of a newborn. It is therefore important for this information should be readily available to those in direct care of the infant. The purpose of the study is to evaluate whether a complete health history delivered through health Information technology can potentially decrease unnecessary antibiotic use in the newborn.

Method

Various online database and search engines were used to gather information on the topic. This included CINAHL: Cumulative Index to Nursing and Allied Health, MedlinePlus, PubMed, BMC Medicine, Open Access Library at Texila American University. Then 6 pediatricians working in direct contact with neonates in NICU located at the Victoria Hospital were interviewed.
Results

The pediatric team at the Health Care Facility were interviewed on antibiotic usage in the NICU at the Victoria Hospital in Saint Lucia. When asked to identify the challenges they faced in determining infant risk factors for the development of bacterial infection or sepsis, physicians mentioned the availability of critical information on the maternal history and the events surrounding the birth and delivery of the neonate as important factors in influencing their decision. Other factors included reliability, efficiency and availability of lab investigation as well as unit policies and guidelines. They all voiced that having to search the mother's health record was cumbersome and most times incomplete and that they sometimes go on the decision to administer antibiotic just on the clinical presentation of the infant. They were of the view that they should take charge of the possibility of infection and treat the infant rather than to wait and place the infant at risk. They all agreed that an electronic copy of maternal health would be very useful and influential in guiding infant care and reduce antibiotic exposure in the neonatal period. They also pointed out that the availability of information technologies would also place critical information at their fingertips such as access to laboratory results, pharmacy, unit policies, key data elements, algorithms and recommendation from such health agencies as World Health Organization and improve patient care.

Discussion

Well-designed observational studies have found that antibiotics are overused in hospitals. It was estimated that approximately one-third of all hospitalized patients received antibiotic and that of these patients an alarming 50% did not require this therapy (Fishman 2000). The Intensive care units produce a number of factors and circumstance to substantiate the use of antibiotics. Research has estimated that antibiotics use are as much as 10 folds higher in Intensive Care Units than the general population (Roder, Nielsen, Magnussen, Frimodt-Moller(1993); Gruneberg and Wilson (1994)).

The Neonatal Intensive Care environment is no different and antibiotics therapy was found to be the most commonly used therapy in the neonatal period. The growing rate of antibiotics in the Neonatal Intensive Care Unit has been attributed to the difficulty in physicians accurately identifying and distinguishing a bacterial infection from non-bacterial infection (Yang et al 2012).

Neonatal sepsis or bacterial infection is difficult to diagnose because clinical presentation is often subtle, nonspecific and non-localized (Chiesa, Pellegrini, Panero et al (2003);Tripathi, Cotton and Smith 2012) ranging from nasal flaring, tachypnea, convulsion, bulging fontanelles, fever, feeding intolerances, severe retractions and grunting (Weber, Carlin, Gatachalian, Lehman, Muhe and Mulholland, 2003).

Although more than 95% of infants admitted to neonatal intensive care units receive empirical antibiotic in the first postnatal days, only a mere 1- 5% have a positive blood culture result (Clark et. al 2006; Cotton, Taylor and Stoll et. al 2009 : Stoll, Hansen, Higgings, et al. 2005). To further compound the problem and difficult decision faced by pediatrician and neonatologist is how longs to treat and which antibiotics to use (Clark, Bloom, and Spitzer, et. al 2006)

The decision to administer antibiotics is complicated by the fact that infants are uniquely susceptible to bacterial infection and neonatal sepsis has been found to be the main cause of morbidity and mortality in that group (Clark et al 2006, Baraff, Bass, and Fleisheret al 1993). Of the estimated 9.7 million children under the age of five deaths, neonatal mortality accounts for almost 40 percent (UNICEF 2012). Research has found that a child is about 500 times more likely to die on the first day of life than at one month of age. A common factor in these deaths is the health of the mother. Premature infants have the highest rates of infection due to their relatively immature systems and therefore, rapid administration of antibiotics by a physician for suspected neonatal sepsis is often accepted.
Empirical use, as well as the prolong use of antibiotics, have been shown to be associated with many health outcomes. The major health risk and widely documented is the development of bacterial antibiotic resistance. Antibiotic use in infancy have also been associated with (1) alter gut colonization (Gewolb, Schwalbe, Taciak et. al 1999), (2) increase risk of candida colonization and candidiasis invasion (Cotton, mc Donald & Stoll et al 2006; Saiman, Ludington& Dawson et al 2001),(3) increase rate of late onset sepsis and increase risk of death(Clark et al 2006). Research has found that the choice of perinatal and early onset neonatal antimicrobial agents has facilitated the emergence of organisms which causes late onset sepsis and has altered the antibiotic resistance patterns of organisms that cause early onset sepsis. (Stroll et al 2002; de Man, Verhoeven, Verbrugh, Vos and van de Anker 2000; Cordero, Rau, Taylor& Ayers 2004).

Septic screening

Ideally, the administration of antibiotics should be dependent on a positive blood cultural result obtain from a sterile site (eg. blood, cerebrospinal fluid, urine, or closed body space. However due to the unavailability of the results of bacterial cultures in a short space of time and the serious consequences of neonatal sepsis oscillating from neurodevelopmental defects to deaths (Stoll, Hansen, Adam- Champman et al (2004); Klinger, Levy, Sirota et al (2010); Benjamin, DeLong, Cotton et al. 2004); Fanaroff, Korones, Wright et al, 1998), physician often administer empirical antibiotics to symptomatic infants and infants at high risk while awaiting culture results (Clark et al 2006).

The overuse of antibiotics, however, has permitted bacteria to evolve defenses, making some antibiotics inadequate against strains of bacteria that continue to appear in hospitals. Those strains include Clostridium difficile, Multidrug-Resistant Staphylococcus Aureus (MRSA), and Carbapenem-Resistant Enterobacteriaceae (CRE), which Frieden, CEO, Center for Disease Control, branded as “nightmare bacteria.”

Solutions to drug resistance

Experts have suggested that health care facilities play an important role in the solution to drug resistance. Frieden suggests that every hospital should have a strong antibiotic stewardship program to help solve this problem. “Antimicrobial stewardship programs are a critical step toward stemming the tide of antibiotic resistance and ensuring patients are receiving the right antibiotic, at the right dose and for the right duration” (Cosgrove 2014). CDC notes that, “hospitals should commit to antibiotic stewardship with accountability, expertise, action, education, and tracking of antibiotic prescribing practices and hospital infection rates” (CDC 2014).

Electronic health history

A health history can aid both individuals and health care providers by supplying essential information that will assist with diagnosis and treatment decisions in the neonate. This current collection of organized information includes biographical, demographic, physical, mental, emotional, socio-cultural, sexual, and spiritual data is unique to an individual. The health of the infant is similarly influenced by many factors including the physical and mental health of parents. Therefore, the ease of access to information on maternal record can have significant benefits in the holistic care of every newborn. Assessment of family health history, one component of a complete health history, for example, allows determination of an infant's inherited disease risks and has gained recognition as an important tool in the prevention of disease and an integral part in health promotion of the all category of patients (Valdez et al. 2010; Yoon et al. 2003).

Health information technology

Health information technologies, such as electronic health record, have been considered by health care experts, and policy makers as well as consumers, to be critical to transforming the
health care industry (Chaudhry et al 2006). Information management is fundamental to health care delivery for many reasons including (1) the fragmented nature of health care, (2) the large volume of transactions in the system, (3) the need to integrate new scientific evidence into practice, and (4) the presence of other complex information management activities.

In a systematic review on the Impact of Health Information Technology on Quality, Efficiency, and Costs of Medical Care conducted by Chaudhry et al 2006, literature has identified many important benefits of health information technology such as increased delivery of care based on guideline, enhanced monitoring and surveillance activities, reduction of medication errors, and decreased rates of utilization for potentially redundant or inappropriate care (Chaudhry et al 2006).

**Diagnosing bacterial infection in newborn**

To date, there exist no specific marker suitable for the early diagnosis of bacterial infection in the newborn. In the majority of cases and in the absence of blood culture results clinical presentation of infants are used to make an early diagnosis. Weber et al 2003 reported however that there is limited specificity in using clinical signs as the basis for antibiotics use because of the nonspecific nature signs and symptoms of neonatal sepsis in the neonate. Laboratory data on infants with bacterial infection may reveal leukocytosis, increased immature to total neutrophil (I/T) ratio elevated C-reactive protein but have been found to be nonspecific to neonatal bacterial infection. Other possible markers although more reliable and shows promising results; have been found to be either too expensive or time-consuming. These include interleukin (IL)-6, IL – 8, tumor necrosis factor-alpha, interferon gamma, procalcitonin.

**Administering antibiotic in neonate**

The decision to administer antibiotics as Yang, et al. 2012 proposed, should be based on the clinical presentation of infants, as well as the maternal health history and laboratory investigation result. This information can be made available to the physician in computerized form omitting the need for the physician to browse through a considerable amount of paper record often from different sources. The technologies ensure that all information surrounding the infant’s health is available in one place.

In order to reduce the rate of antibiotic use in the NICU Yang et, al 2012 developed the Neonatal Bacterial Infection Screening Score (NBISS) tool which is the first to incorporate maternal risk factors, clinical presentation and laboratory data of infants in order to determine the need for antibiotic treatment. The tool was developed in order to determine the appropriate score or cut off points to guide antibiotic use by physicians. A maternal health history is essential to successfully determine the infant risk of infection. Maternal risk factors such as premature rupture of membranes of more than 18 hours, maternal pyrexia, meconium stain amniotic fluid or chorioamnionitis are components of the tool and have been found to be stand-alone characteristics in determining the infants need for antibiotic therapy.

In response to the growing problem of antibiotics usage the World Health Organization (WHO) has published guidelines for the management of neonatal sepsis. WHO suggests that prophylactic antibiotics for prevention of sepsis in neonate with risk factors for infection (i.e. membranes ruptured >18 hours before delivery, mother had fever >38 °C before delivery or during labor, or amniotic fluid was foul smelling or purulent) should be treated with the prophylactic antibiotics ampicillin (Intramuscular – IM – or intravenously, IV) and gentamicin for at least two days. After two days, the neonate should be reassessed and treatment continued only if there are signs of sepsis or a positive blood culture

Neonates with signs of sepsis should be treated with ampicillin (or penicillin) and gentamicin as the first line antibiotic treatment for at least 10 days.

If a neonate with sepsis is at greater risk of staphylococcus infection (e.g. extensive skin pustules, abscess, or omphalitis in addition to signs of sepsis), they should be given cloxacillin and gentamicin instead of penicillin and gentamicin.
Where possible, blood cultures should be obtained before starting antibiotics. If an infant does not improve in two to three days, antibiotic treatment should be changed, or the infant should be referred for further management.

Dr. Sara Cosgrove, chair of the Society for Healthcare Epidemiology of America's Antimicrobial Stewardship Taskforce and an associate professor of medicine and epidemiology at Johns Hopkins University believes that antibiotics are a precious resource, and the lack of a systematic approach in hospitals to control its use has created problems. The problem may stem from the belief that the immediate risk to the patient outweighs the long-term disadvantages of the liberal use of antimicrobial drugs held by most physicians (Harbarth & Samore 2005).

Conclusion

Overuse of antibiotic in the neonatal period is a problem of major concerns. These group of patients present with unique circumstances which leads to the use of these drugs. However, the use comes with major risk to the infants and adds to the problem of antibiotic resistant microorganisms. Maternal health history is a crucial factor in determining the health of a newborn infant. A complete maternal health record delivered by information technology can provide pediatrician and other health care providers with pertinent information which can potentially guide health care provider in the decision on antibiotics use which has the potential to decrease overuse and curb the effects on the neonates.

References


Occupational Risk and Hazards related Nurses Working in Central Hospital Warri, Nigeria

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Abstract

Nursing is a risky and hazardous occupation in the developing countries, but little is known about the occupational risk and hazards facing the nursing work force in Nigeria. In this article, the purpose is to identify some of the work-related risk and hazards among a sample of nurses in central hospital warri. Cross-sectional data were collected through a self-administered survey in the hospital facilities. 25 questionnaires was submitted, 22 Nurses returned theirs (88%) Measures included four categories: work-related demographics, occupational risk /illness, reporting behaviour, and safety awareness. From the study, the result shows that Nurse who are not satisfy with the working conditions (working environment, safety measures, staff shortage, etc), at the Hospital has 78.9%, Over 85% are faced with extreme pressure at work, while 57.89% report any work-related health risk and hazards to the hospital authorities, 80%, of the sample of nurses experienced fatigue (temporal loss of strength and energy from hard physical/mental work. While 50% of Nurses experience low back pain and are regularly exposed to contagious pathogens/agent the results also revealed that 70% of the nurses claim they work under unclean working environments. 15% of nurses are exposed to radiation as stated in the data collected, another 20 % have been involved in electrical shock accident. 85% of Nurses understand their role in the safety and health management system, while 65% of nurses say that the management team do not regularly inspect the hospital. Future research should examine a factor which leads to risks and strengthen policies?

Keywords: Risk, Nurses, hazards Ergonomics, Nigeria

Introduction

Purpose

The purpose of this study is identify some of the occupational health risks and hazards that are associated in public hospitals in Nigeria using central hospital Warri, in Delta State as a study centre. The main issues that this study is about to address is the mechanism in curtailing the numerous concerns and issues that make the nurse not to enjoy their day to day operation, the non setting of systems that capture health care-specific exposures among nurses is another problem that are needed to be tackled in this research work. The none and well defined policies for the training of new and old nursing staff working in public hospital need to implementing in the area of educational and training strategies that focuses on workplace risk,hazards,health and safety. Given the risk, hazards, concerns, working environment and conditions that nurses in the public hospital report, advocacy is needed at the national and organizational levels for the enforcement of occupational health and safety policies. Additionally, the central hospital management team, the nursing leadership of the hospital should identify priority areas for research and can partner with researchers to investigate these problems.

The best and practicable solution to be used to solve this problem, because of the peculiar situation in our country as relate to our economic issues is for the hospital management to look in house for those professional who has additional knowledge on health safety and environment to immediately initiate internal and external training for all nurses to make them be aware of some of the inherent risk and hazards that are associated in their day to day operation as nurses. Personal protective equipment like nose mask, hand gloves, aprons. Simple hand tools and equipment should be provided for the
short term. While a long term solution should be focused on a well grounded health, safety, environment and security policies and plan that will govern the health care worker in central hospital, warri.

The management should stationed security personnel in the wards to protect the nurses from the frequent assault by patient and patient relatives. Nurses should be immunised against contagious blood pathogens like hepatitis and prompt attention should be given to any nurse that have an accident which leads to puncturing by used needle or contaminated sharps.

From the American Nursing Association, most of the respondents reported the following as being the occupational health risk that nurses are faced with. (1) Psychosocial risk and hazards – (Acute and chronic effects of stress and being overworked); (2) Ergonomically risk and hazards – (low back pain and injury); (3) biological risk and hazards (infected with a blood borne pathogen from a needle stick. These injuries and illnesses appeared to be consequential not only for the nurse, but also for the workplace. About 23% reported missing 2 or more days in the past year due to a work-related injury or illness, and 76% reported that unsafe working conditions interfered with the delivery of quality nursing care (Houle, 2001).

In the developed countries such as France, United Kingdom, Canada and United State of America, these countries may have safer working conditions than nurses in developing countries. It may be as result from their superior economic power and a well articulated regulatory oversight that supports quality occupational health and safety protections. In 1991, the U.S. Occupational Safety and Health Administration (OSHA) promulgated the Bloodborne Pathogen Standard to protect all workers at risk for exposure to bloodborne pathogens through sharps injuries or contact with skin or mucous membranes (OSHA, 1991). In contrast, the Philippines has no equivalent policy, even though the nursing profession is regulated by the Department of Labor and Employment and the Department of Health.

Meanwhile, study into the occupational health risk, hazards and safety issues among nursing work forces outside Western, developed countries has been limited, these studies have been gaining increasing attention. For example, a number of studies have been published in recent years examining occupational exposures in health care settings throughout Africa, the Middle East, and Asia (Ansa, Udoma, Udom, & Anah, 2002; Arafa, Nazel, Ibrahim, & Attia, 2003; Celik, Celik, Agirbas, & Ugurluoglu, 2007; Hiransuthikul, Tanthitippong, & Jiamjarasrangsi, 2006; Ilhan, Durukan, Aras, Turkcuglu, & Aygun, 2006; Nsubuga & Jaakkola, 2005). Both the World Health Organization (WHO) and the International Council of Nurses (ICN) have expressed the need to better protect international health care work forces (“ICN, WHO lead effort to reduce needlesticks,” 2004; Wilburn & Eijkemans, 2004.

This research had some limitations. The first limitation was the delay in the approval of the application to conduct research study in central hospital Warri, from the ethic committee of the institution. There were also no existing records for case of nurses that has actually been affected by this occupational risk and hazards. There was also reluctance in cooperation on the part of some nurses who feel the result of the research would not be considered by the hospital authorities for any meaningful improvement on their working conditions and were therefore not willing to cooperate. Other Nurses were afraid that if they participate, they will be victimized, while the last batched were not just interested in research even when it concerns them.

Recorded success and achievement: The achievement recorded in central hospital warri was the tight screening and diagnostic exercise that are carried out on patient that are suspected to have this high risk infections and contagious illness, and the prompt referral exercise and the quarantine of such cases to other competent hospital.
Methodology

Study location

The hospital used for this study is a public health institution, which is located in Warri, south local government area of Delta, Nigeria. It is in the south - south part of Nigeria, in the coastal region. The hospital has about 247 beds.

Data collection

Data were collected from a survey of nurses working in central hospital warri, Nigeria. The nurses who provided data were all working in the all the wards/unit with a response of 88%. The Surveys were self-administered and anonymous and followed guidelines for human subject’s protection specified by the ethic committee of the hospital. Nurses completed all surveys in English, as English is widely used in the Nigeria for business and education. The analyses excluded 2 respondents who wrongly tick every content of the question, leaving a sample of 20 respondents.

Measures

The data collection involves five major techniques which are 1. Sociodemographic characteristics of the respondents’ age, sex and work experience as a nurse. 2. Knowledge on Occupational Hazards/Exposure 3. Personal Role in Occupational Health Hazards, Risk, and Safety Management 4. Incidents and Accident Suffered by Nurses Working in Central Hospital Warri 5. Comments from Nurses Working in Central Hospital.

The Work-related sociodemographic characteristics of the respondents were measured using questions about type of work setting (e.g., age, sex and work experience as a nurse); The highest age group working is between the age bracket of 40-49 (50%), age bracket of 50years and above recorded 35%,while 30-39 had a 15 %, 100 % of female nurses participated in the study, currently the on the job experiences ranges from 16years and above with a 60%, 11-15 years has 25% while 6-10years is 15%. Nurses that rated high as having knowledge of occupational hazards/exposure is 55%,while the other sets of nurses that says that they have the knowledge of hazards are 30%,soe nurses says it is fair, 10% and the last 5% did not respond to the questions.

85% of Nurses that personally play a role in health, risk and safety management system in the hospital while 10% do not participate in it, 5% of nurses did not respond to the questions 50% of nurses has not been involve in incident and accident, 40 % says they have been involve within 1 to5 times working as a Nurse in the hospital, The remaining 10% says they have been involve for more than 15 times. On the comment session, 33% nurse says they need training and reforms, another 33% complain of the poor working environment, that need urgent attention as some times, they are forced to work in darkness whenever the national power supply goes off 17% of nurses says the work is too stressful, while a second 17% did not comment on the issues.

Occupational health and Safety concerns were explored: (1) do the management team regularly inspect the hospital physical environment to identify conditions that pose or could pose a worker safety or health concern 65% says years, 35% says no, (2) do you consider working pressure on nurses the greatest risk/hazards (heavy work load-shift work, small staff numbers), 55% said yes, while 45 % says no. (3) do central hospital nursing staff know they have the right to report injuries without fear of retaliation or discrimination, 85% says yes, 15% says no,(4) Do you consider low back pain and back injuries as an occupational injuries related to your job in the hospital, 50% said yes, 50 % says no,(5) do you consider needle stick injuries as a source of contagious pathogens/agent only, 50% says yes, while another 50 % says no, that you can also gets this infections from other means apart from needle stick injuries (6) does the hospital management have a hazards control plan that is up to date 10% says yes, while 75% says no, the last 10% did not response to it.
Data analysis

Descriptive statistics were used for easy interpretation of the data collected. Graphical representation of charts and tables were also used to aid the comparison of responses from data collected. Data collected were analyzed using pie and bar chat. Percentages were generated for each of the measures listed above.

Results

Table 1 provides work-related sociodemographic characteristics of the respondents’ age, the sample. Clearly shows that nurses within the age bracket of 40-49 recorded 15 in the frequency table making it 50% of the nursing staff are within this age, the second set of age bracket are nurses who are 50 and above with a frequency record of 7, making 35% and the last is the age between 30 and 39 with a frequency of 3 and 15%. From this result, it is indicative that there is more advance nurses working in the hospital, which also show that, employment of young nurses has been stall for quite some times, which is a direct contribution to the workload of the few old nurses on ground.

<table>
<thead>
<tr>
<th>S/n</th>
<th>Years in range</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30-39</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>2</td>
<td>40-49</td>
<td>10</td>
<td>50%</td>
</tr>
<tr>
<td>3</td>
<td>50 AND ABOVE</td>
<td>7</td>
<td>35%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2: Stress relationship to working environment

From table 2 below, it is very clear that 100% responded that participated in the study were all women. this can be attributed to the imbalance in the entry percentage of male nursing student as compare to female nursing student’s, nursing profession originally is more represented by women than men. Therefore the total numbers of 20 (100%) respondents were females.

<table>
<thead>
<tr>
<th>S/n</th>
<th>Sex</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FEMALE</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>MALE</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>MISS/NO RESPONSE</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 3: Work related stress

<table>
<thead>
<tr>
<th>Sex</th>
<th>without stress</th>
<th>very high</th>
<th>high</th>
<th>Moderate</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage/no</td>
<td>% and no</td>
<td>% and no</td>
<td>% and no</td>
<td>% and no</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0%</td>
<td>9 (45%)</td>
<td>9 (45%)</td>
<td>2 (10%)</td>
<td>20 (100%)</td>
</tr>
</tbody>
</table>

Table 3 provides the number of the majority of the respondents that have worked for 16 years and beyond with a (60%). with a Twelve (12) frequency number, Nurse who have worked for 11 – 15 years has a frequency number of 5 with (25%). The next group of nurse working experience in central hospital warri was the category of nurses who has put on between 6 years to 11 years. There was no
Nurse that has worked below 5 years; this indicates that large majorities of the respondents are experienced because they have served for a longer period as professional Nurse, and this will also be a factor for them to be most affected by occupational health stress that relate directly to the working environment.

Table 4. Years of experience

<table>
<thead>
<tr>
<th>Years of experience as a Nurse</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S/N Yes of experience of Nurses</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>1 Up to 5 years</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>2 6 to 10 years</td>
<td>3</td>
<td>15 %</td>
</tr>
<tr>
<td>3 11 to 15 years</td>
<td>5</td>
<td>25 %</td>
</tr>
<tr>
<td>4 16years and beyond</td>
<td>12</td>
<td>60 %</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100 %</td>
</tr>
</tbody>
</table>

Table 4 below provides information that 55% of nurses are aware of the high occupational health risk, while 30% says, that the health risk is very high, 10% of the nurses that participated in the study says, the health risk is fair, while only 5% of nurses did not respond to the issue.

Table 5. Awareness of health risk in central hospital warri.

<table>
<thead>
<tr>
<th>Sex</th>
<th>very high</th>
<th>high</th>
<th>fair</th>
<th>No response</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>% and no</td>
<td>% and no</td>
<td>% and no</td>
<td>Not represented</td>
<td>Not represented</td>
</tr>
<tr>
<td>Male</td>
<td>Not represented</td>
<td>Not represented</td>
<td>Not represented</td>
<td>Not represented</td>
<td>Not represented</td>
</tr>
<tr>
<td>Female</td>
<td>6 (30%)</td>
<td>11 (55%)</td>
<td>2 (10%)</td>
<td>1 (5%)</td>
<td>20 (100%)</td>
</tr>
</tbody>
</table>

The table below indicates that majority of the nurses were exposed to extreme pressure at work which can be related to the shortage of nursing staff from non employment of new nursing personnel for more than 6 years which is a reflection in the statistic that indicated that no nurse that is working in central hospital warri, has below 5 years working experience in the hospital 30% complain of heat while 20% said they are experiencing low back pain, the remaining 10% said that they are always expose to contagious pathogens/agent.

Table 6. Specific risk and occupational health hazards

<table>
<thead>
<tr>
<th>specific risk and occupational health hazards</th>
<th>Total in both frequency and percentages 20(100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S/N Heat Low back pain Extreme pressure at work Contagious pathogens/agents or microbes</td>
<td>6(30%) 4(20%) 8(40%) 2(10%)</td>
</tr>
<tr>
<td>%</td>
<td>30%</td>
</tr>
<tr>
<td>Total</td>
<td>6(30%)</td>
</tr>
</tbody>
</table>

The table below provides information that shows that 85% Nurses working in the hospital know their personal role in relation to health and safety management system, while 10% says they do not know, the remaining 5% did not response.
Table 7. Personal role on health and safety management system

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>17</td>
<td>85%</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The table below indicates that 50% of the nurses have not been involved in any form of health problems or has sustain injury in the course of doing their jobs, 40% says they have suffered some health problems and injuries within the range of 1-5 times, 10% said that, they have been involved in health problems and has injuries from their place of work, for more than 15 times.

Table 8. How many times have you had health risk/injuries

<table>
<thead>
<tr>
<th>Times</th>
<th>Frequency</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non</td>
<td>10</td>
<td>50%</td>
</tr>
<tr>
<td>1-5 times</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>6-10 times</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11-15 times</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>More than 15 times</td>
<td>2</td>
<td>10%</td>
</tr>
</tbody>
</table>

Individual comment

The table below provides comments from individual nurses on some issues, 33% of them says that the hospital management should improve on the training and reform of the hospital, another 33% says that the hospital has a very poor working environment, 17% says that the stress they face is high and that the management should employ new sets of nurses to reduce the work load. The remaining 17% was for the nurse that wrote no comment.

Table 9. Nurses final comment from the questionnaire

<table>
<thead>
<tr>
<th>Comments by nurses</th>
<th>Frequency (no)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training and reform</td>
<td>2</td>
<td>33%</td>
</tr>
<tr>
<td>Stress</td>
<td>1</td>
<td>17%</td>
</tr>
<tr>
<td>Poor working condition</td>
<td>2</td>
<td>33%</td>
</tr>
<tr>
<td>No comment</td>
<td>1</td>
<td>17%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Reporting behaviour

From the study, 55% of the nurses say they report any work related health problems to the hospital management, while 40% says do not report. Only 5% of the nurses did not respond to this question.
Table 10. Reporting behaviour

<table>
<thead>
<tr>
<th>Action</th>
<th>Frequency (no)</th>
<th>Percentages (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse that report</td>
<td>11</td>
<td>55%</td>
</tr>
<tr>
<td>Nurses that do not report</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>Nurses that did not respond</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Nurses working in the hospital say the safety measure of the hospital is fair with a 70%, while 20% said, that the hospital is unsafe, the remaining 10% say the hospital is safe to work.

Table 11. Safety concern of central hospital Warri.

<table>
<thead>
<tr>
<th>Rating of hospital safety measures</th>
<th>Frequency (no)</th>
<th>Percentages (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair</td>
<td>14</td>
<td>70%</td>
</tr>
<tr>
<td>unsafe</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>safe</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Discussion

This study of occupational health risk and hazards among nurses who work in central hospital, Warri, provides preliminary insight into the health, hazards and risk that they encounter in the Nigeria public health care system.

Occupational health risk, hazards and injuries

From the study so far, a considerable portion of the respondents reported they had experienced occupational health risk, hazards, low back pain, extreme pressure at work, health, work related stress, needle stick injuries, and contagious blood pathogen/agent or microbes as they go about their daily activities as nurses. Roughly 40% of the nurses mentioned that they are regularly face with extreme pressure at work, suprisingly, 10% says they have been involved in health risk, hazards and injuries for more than 15 times in the hospital, while 40% say, they have only sustain injury or been face with occupational health risk, hazards and injuries for within 1 to 5 times in the course of their day to day operation in central hospital Warri in Delta State.

Awareness of health risk in central hospital Warri.

<table>
<thead>
<tr>
<th>Sex</th>
<th>very high</th>
<th>high</th>
<th>fair</th>
<th>No response</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>percentage</td>
<td>% and no</td>
<td>% and no</td>
<td>% and no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Not represented</td>
<td>Not represented</td>
<td>Not represented</td>
<td>Not represented</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>6 (30%)</td>
<td>11 (55%)</td>
<td>2 (10%)</td>
<td>1 (5%)</td>
<td>20 (100%)</td>
</tr>
</tbody>
</table>
Specific risk and occupational health hazards

<table>
<thead>
<tr>
<th>S/N</th>
<th>Heat</th>
<th>Low back pain</th>
<th>Extreme pressure at work</th>
<th>Contagious pathogens/agents or microbes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>4</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>%</td>
<td>30%</td>
<td>20%</td>
<td>40%</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>6(30%)</td>
<td>4(20%)</td>
<td>8(40%)</td>
<td>2(10%)</td>
</tr>
</tbody>
</table>

These proportions were similar to those reported by American nurses participating in the ANA survey (Houle, 2001). For example, 37% of this sample and 40% of the ANA survey respondents indicated a past-year work injury. 45% of Nurses working in central hospital, warri says they are also faced with worked related stress, which is same when compare to nurses working in different wards of Al-Zahra hospital which showed that 42 ± 6 mean stress level. Nurses level of stress were 44.4 % had a low-stress level, 55.1 % had a moderate-stress level, and 0.5 % had a high-stress level. (BioMed Central- Tadesse Dagget) There were significant correlation with stress level, job satisfaction and leisure. This study suggest that future investigation is warranted and should provide comprehensive information on the type of occupational health risk, hazards and injury that are seen in public hospital in developing world.

Extreme work pressure

It is shocking to see that 40% nurses working in central hospital warri, Nigeria reported that they faced with extreme pressure at work or workload pressure as compare to the study conducted by (Alper and colleagues) they conducted a survey of 120 nurses (59 percent response rate) in three units of a paediatric hospitals to assess self-reports of workload pressure at work. Between 8 percent and 30 percent of the nurses reported mild pressure at work, and between 32 percent and 53 percent of the nurses reported extreme pressure at work most especially in the cases of emergency situations.

Nurses Sex

<table>
<thead>
<tr>
<th>S/n</th>
<th>Sex</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FEMALE</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>MALE</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>MISS/NO RESPONSE</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Work related stress

<table>
<thead>
<tr>
<th>Sex</th>
<th>without stress</th>
<th>very high</th>
<th>high</th>
<th>Moderate</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage/no</td>
<td>% and no</td>
<td>% and no</td>
<td>% and no</td>
<td>% and no</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0%</td>
<td>9 (45%)</td>
<td>9 (45%)</td>
<td>2 (10%)</td>
<td>20 (100%)</td>
</tr>
</tbody>
</table>

Further research is needed to understand the work system factors that lead to extreme work pressure which is as a result to violations at the side of the hospital management. Extreme pressure occurs more frequently when nurses are under time pressure or high workload because of emergency situations. Under high workload, nurses may not have time to follow rules and guidelines for safe care, especially if following the rules and guidelines necessitate additional time, such as hand washing, having needle stick injuries, involving in work injury or illness. These findings are not
atypical to central hospital, Warri Nigerian. For example, roughly one fourth of U.S. nurses also reported missing two or more days for work-related injury or illness resulted to extreme pressure at work (Houle, 2001). From this study, it was clearly observed that they have not been any new employment for nurses in central hospital, Warri, eventhough nurses are retired from service every year, no replacement, there by mounting more pressure on the nurses that are left to do the same job that was done by the retired nurses and the once left. (No nurses have 0 -5 years working experience in the hospital).

**Low back pain /back injuries**

20% of the nurses complain of low back pain /back injuries in the study, which was found to be attributed to wrong lifting procedure, irregular movement and some ergonomic risk associated to the tight working environment of the hospital. This study can also be compare to the estimated prevalence of back pain for U.S. nurses which range from 20% to 52% (Harber et al., 1985; Nelson, 2003; Owen, 1989). Because back pain is an important cause of disability, this acknowledgement of working after an injury suggests that ergonomic control measures (e.g., mechanical patient lifting equipment and training) may improve nurses’ well-being and, potentially, the quality of patient care.

**Reporting behaviour**

Majority of nurses working in central hospital, Warri, Nigeria that is 55% says they report work-related problems to the hospital authorities although a large proportion of participants indicated a work-related injury, 40% did not report their injuries to the hospital authority, 5% did not even respond to the question. It is not only peculiar in Nigeria that Nurses do not report cases to hospital authority, Underreporting of work-related injuries and illnesses has also been noted as a significant problem among nurses in the United States (Brown et al., 2005; de Castro, 2003; Haiduven, Simpkins, Phillips, & Stevens, 1999; Siddharthan, Hodgson, Rosenberg, Haiduven, & Nelson, 2006; Tabak, Shiaabana, & Shasha, 2006). In part, low incident reporting in this sample was due to respondents feeling that the injury was not significant, but other key reasons were that nurses were too busy or felt that the injury was just “part of the job.” These reasons are concerning as they not only contribute to nurses working with injuries, but could also result in an artificially low injury rate. Efforts must be made to encourage nurses to report their injuries within their schedule to improve nurse outcomes and the accurate assessment of workplace health and safety.

**Safety Concerns**

<table>
<thead>
<tr>
<th>Years of experience as a Nurse</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S/N</td>
<td>Yes of experience of Nurses</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Up to 5 years</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>6 to 10 years</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>11 to 15 years</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>16years and beyond</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4 below provides information that 55% of nurses are aware of the high occupational health risk, while 30% says, that the health risk is very high, 10% of the nurses that participated in the study says, the health risk is fair, while only 5% of nurses did not respond to the issue.
Nurses age

<table>
<thead>
<tr>
<th>S/n</th>
<th>Years in range</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30-39</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>2</td>
<td>40-49</td>
<td>10</td>
<td>50%</td>
</tr>
<tr>
<td>3</td>
<td>50 AND ABOVE</td>
<td>7</td>
<td>35%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>20</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The table below indicates that majority of the nurses were exposed to extreme pressure at work which can be related to the shortage of nursing staff from non employment of new nursing personnel for more than 6 years which is a reflection in the statistic that indicated that no nurse that is working in central hospital warri, has below 5 years working experience in the hospital 30% complain of heat while 20% said they are experiencing low back pain, the remaining 10% said that they are always expose to contagious pathogens/agent.  

The table below provides information that shows that 85% Nurses working in the hospital know their personal role in relation to health and safety management system, while 10% says they do not know, the remaining 5% did not response.

**Personal role on health and safety management system**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>17</td>
<td>85%</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The table below indicates that 50% of the nurses have not been involved in any form of health problems or has sustain injury in the course of doing their jobs, 40 % says they have suffered some health problems and injuries within the range of 1-5 times, 10% said that, they have been involved in health problems and has injuries from their place of work, for more than 15 times.

**How many times have you had health risk/injuries**

<table>
<thead>
<tr>
<th>How many times have you had health risk/injuries</th>
<th>Frequency</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non</td>
<td>10</td>
<td>50%</td>
</tr>
<tr>
<td>1-5 times</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>6-10 times</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11-15 times</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>More than 15 times</td>
<td>2</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Individual comment**

The table below provides comments from individual nurses on some issues, 33% of them says that the hospital management should improve on the training and reform of the hospital, another 33% says that the hospital has a very poor working environment, 17% says that the stress they face is high and that the management should employ new sets of nurses to reduce the work load. The remaining 17% was for the nurse that wrote no comment.
Nurses final comment from the questionnaire

<table>
<thead>
<tr>
<th>Comments by nurses</th>
<th>Frequency (no)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training and reform</td>
<td>2</td>
<td>33%</td>
</tr>
<tr>
<td>Stress</td>
<td>1</td>
<td>17%</td>
</tr>
<tr>
<td>Poor working condition</td>
<td>2</td>
<td>33%</td>
</tr>
<tr>
<td>No comment</td>
<td>1</td>
<td>17%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Reporting behaviour

From the study, 55% of the nurses say they report any work related health problems to the hospital management, while 40% says do not report. Only 5% of the nurses did not respond to this question.

<table>
<thead>
<tr>
<th>Action</th>
<th>Frequency (no)</th>
<th>Percentages (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse that report</td>
<td>11</td>
<td>55%</td>
</tr>
<tr>
<td>Nurses that do not report</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>Nurses that did not respond</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Nurses working in the hospital say the safety measure of the hospital is fair with a 70%, while 20% said, that the hospital is unsafe, the remaining 10% say the hospital is safe to work.

Safety concern of central hospital warri

<table>
<thead>
<tr>
<th>Rating of hospital safety measures</th>
<th>Frequency (no)</th>
<th>Percentages (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair</td>
<td>14</td>
<td>70%</td>
</tr>
<tr>
<td>unsafe</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>safe</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

From the study, 70% of the staff nurse says that the safety measure of the hospital is fair, while 20% says, the working environment of the hospital is unsafe, the remaining 10% says, the hospital is safe. Which when compared to 44% of U.S. nurses (Houle, 2001). Which says their hospital is safe? However, this difference may also reflect nurses’ lower expectations for safe working conditions. Currently, in the Nigeria, nurses are not united as each zone what to be superior than the other, therefore do not have a formal mechanism to identify workplace hazards and advocate for improved working conditions.

Conclusion

From this research work, studies in the United States and other Western countries suggest that nurses face considerable occupational health and safety risks. Nerveless, this study suggests many commonalities in the types of occupational health risk and hazards that are inherent in public hospital, Majority of the nurses reported occupational health risk, hazards, which is very helpful in curtailing the menace of work related occupation risk and hazards that nurse are exposed, this same research work, can be extended to other medical field, as they work in the same environment and attend the
same patient. The report from the respondents was very helpful as it will be used to formulate workplace plan, policies and practices, such as the provision of patient lifting devices, but about one third of the sample reported poor or no employer information related to nursing occupational hazards. Future research should verify these findings and assess the potential interventions that may enhance nurses’ health and well-being and promote quality patient care. It will be very nice to see the entire health care stakeholder joining hand together to carry out all inclusive study on the occupational health risk, hazards that the health care industries are exposed to, most especially in the developing country like ours. Nigeria.

Figures

![Figure 1](image1.png)

**Figure 1.** Represent the age bracket of nurses working in central hospital Warri.

![Figure 2](image2.png)

**Figure 2.** Represent the sex of nurses that participated in the research work as stated above.
**Figure 3**: Level of stress that nurses faced in the hospital.

**Figure 4**: Bar chart represent yes of experience of nurses working in central hospital warri.

**Figure 5**: The bar chart represent nurses response to acknowledging risk in the hospital.
**Figure 6.** The bar chart represents nurses who have suffered from various occupational issues at work.

**Figure 7.** The bar chart represents the personal role of each nurse on health and safety management.

**Figure 8.** The bar chart represents the number of times that nurses have sustained injuries or risk.
Figure 9. Last comment issues by respondent concerning the hospital

Figure 10. Report behaviour of nurses as stated in the bar chat

Figure 11. Represent the safety rating of central hospital

Acknowledgement
I want to acknowledge God Almighty who made this project work a very successful one; I can do all things through coordinator -SPH/SON of Texila American University.

I also wish to thank the ethic committee members who made it possible for me to carry out my research work in the hospital. I will not fail to thank the entire Nursing staff of central hospital, warri for their cooperation and for opening their doors to me to conduct my study.

Finally, my sincere thanks go to my wife Mrs Stella Udogwu for all round support.
Christ which strengthens me”, Philippians 4:13 I wish to acknowledge my supervisor, Dr. Clara Agbedia of Delta State University Abraka, for the patience and directions in assessing every aspect of my work. My appreciations go to V. Pradeep Kumar student coordinator and Jaya Lakshmi C Student

References

Knowledge and Practice of Ethical and Legal issues among Doctors and Nurses in Plateau State Specialist Hospital, Jos, Nigeria

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E-mail: dangyangs@yahoo.com

Abstract

Background: There has been growing public concern regarding the moral behaviours of healthcare professionals. Complaints of poor ethical conduct and rise in litigation against healthcare practitioners is not uncommon. All qualified, healthcare personnel are expected to have adequate knowledge of ethical practice and legal issues (ELI). This study aims to explore the knowledge and practice of ELI among nurses and doctors of Plateau state specialist hospital, Nigeria.

Method: A cross-sectional survey was conducted among eighty-nine nurses and doctors working in the study site who gave written consent. Information on socio-demographic characteristics, knowledge and practice of ethical and legal issues (ELI) and influencing factors was collected using a semi-structured, interviewer-administered questionnaire. Data was analysed using descriptive statistics and chi-square test. Level of significance was set at $p \leq 0.05$.

Results: The modal age group was 31-40 years (40.4%). About 15% of participants were doctors. Majority (94.4%) had heard about ELI. A greater number (78.7%) of indicated being faced with ethical problems on daily basics. Roughly 40% indicated that they have not had enough training on ELI. Lack of time (68.5%), not having mentors (82%), lack of knowledge (75.3%), lack of awareness (83.1%) and lack of motivation (82%) were major factors influencing proper ethical conduct and practice. There was no significant association between socio-demographic characteristics, knowledge and practice of the participants.

Conclusion: There is need for continuing education on ELI in the study center. Medical ELI should be formulated to suit local context.

Keywords: Ethical, legal issues, knowledge, practice, doctors, nurses

Introduction

Health care delivery of recent is getting more complex, as patients are increasingly becoming aware of their rights and readily seek legal processes to address unethical conduct and practice from health care professionals. Due to globalization and information technology, today’s patients have become more sentient and outspoken about the quality of health care delivered by their health care professionals. It is therefore very pertinent that health care practitioners become acquainted with the ethics and legal issues consistent with medical practice.

Before now, ethical principles in medical and nursing practice have been enunciated in number of guidelines; these include including the Hippocrates oath, Nuremberg code, Helsinki Declaration, to mention but a few. These principles have also been included in the training curriculum for health professionals in many countries with rise in the number of ethicists and ethical committees in clinical research domains today. However, escalating reports of unethical and illegal issues are still being reported, particularly in our third world regions. Many health care professionals are yet to fully come to terms with the demands and
complexities that characterize the morality of medicine and health care delivery. Many training curricula do not emphasize ethics of practice thus many health care professionals exhibit unethical behaviours and attitudes in their practice which has affected patients negatively, particularly the poor and marginalized populations who are not able to fight or speak for themselves.

In Nigeria, there has continued to be reports of unethical issues including negligence of responsibilities, delay and inappropriate referrals, substandard unregistered facilities with inadequately trained personnel, incessant strike, an unnecessary but typical evil which has gradually characterized communication link of health care professionals with the government; to mention but a few (B., O., & A., 2015; Oyetunde, 2011; Rodrigues, 2000). All these, no doubt occur at the cost of innocent lives. Some clinicians act as if they are litigation proof and display with impunity, gross malpractice and willful negligence (Oyetunde 2011). There is thus the dire need to re-visit our health care centers and hospitals to evaluate and assess the knowledge and practices of our health care professionals. This will help to ensure conformity to recommended ethical conduct thus reduce if not totally eradicate compromised patient care.

This study was therefore designed to understudy the knowledge and practice of ethical and legal issues among doctors and nurses in Plateau State Specialist hospital, Jos, Nigeria.

Methods

Study site

Plateau State Specialist hospital is located in Jos North Local Government Area of Plateau state, Nigeria. It is a tertiary health care institution comprising 9 wards with 177 beds and about 560 staff. It also serves as teaching hospital and training center for resident doctors, student doctors, nurses and other health care professionals. It is also a referral center for other hospitals within Plateau state and other adjacent states like Bauchi, Taraba, Kaduna and Nassarawa states. Plateau State has an area of 30,913km² (2006 population census) and a population of 3,178,712 people.

Study population

All nurses and doctors working in the study site who gave their written informed consent were recruited in to the study.

Study design

Descriptive, cross-sectional.

Study period

1 month (July, 2016)

Sample size determination

All doctors and nurses who were on duty during the period of recruitment were eligible.

Sampling method

Convenience sampling: study was carried out in wards where permission was granted by nursing department; subsequently, doctors and nurses in the selected wards (5) who were on duty during the period of recruitment and gave informed consent were enrolled into the study.

Inclusion criteria

All doctors and nurses working in any of the selected wards, who gave written and informed consent.

Exclusion criteria

All doctors and nurses who refused consent, or was ill or absent during the period of recruitment for each ward.
Instrument

A pre-tested self-administered questionnaire was used to obtain information from the participants on socio-demographic characteristics, awareness of ethical issues, knowledge and perception about ethical legal issues and hindrances to effective implementation of ethical legal issues in the study center. The questionnaire was designed in English language. Pre-test of the questionnaires was carried out among doctors and nurses at Dadin Kowa comprehensive health center, Jos.

Statement of confidentiality

All information obtained from this study has been kept confidential and will not be linked to the participants in anyway. They were not assigned any identification numbers neither nor identified by their names.

Data analysis

Data was entered and analyzed using SPSS (Statistical Package for Social Science) version 22.0. Descriptive statistics has been used to summarize the data while chi-square was used to test association between categorical variables, all analysis were done at a 5% level of significance (p <0.05).

Limitation

Although consistently reminded, some of the respondents failed to complete or return the questionnaire due to the short study time, busy schedule and also self-administered nature of the instrument. Thus the targeted sample size was not reached and may limit the extent of generalizability of our findings. However considering scanty evidence available to understand the knowledge and practice of ethical and legal issues of healthcare practitioners, we propose that the findings from this study are valid and will provide useful information for larger studies, particularly among clinicians in public healthcare centers in Nigeria.

Ethical consideration

Ethical approval was obtained from the Plateau specialist State hospital /State ethical committee. Permission letter was also obtained from Chairman, Medical Advisory Committee (CMAC) and Heads of the chosen departments.

Also participation in the study was voluntary and detailed description of study were communicated to each participant. The respondents were assured of their confidentiality and written informed consent was obtained from each participant before the administration of the study instrument.

Results

Characteristics of the study population

Eighty-nine (89) questionnaires out of the one hundred and fifteen(115) given out were returned. The modal age group was 31-40 years (40.4%). There were 75 (84.3%), 14 (15.7%) nurses and doctors respectively. More than half 51(57.3%) of the respondents were females and there were fewer Muslims 20 (22.5%) than Christians. We also collected information on their cadre and wards. Table 1 summarizes the socio-demographic characteristics of the respondents.

Respondents’ awareness of ethical and legal issues in medical practice

One hundred and ninety (190) respondents returned the filled questionnaires representing a response rate of 86.4%. Almost all the respondents 84 (94.4%) indicated that they had heard about ethical and legal issues in medical practice. Ethical journals 25 (28.1%) and workshops/conferences 24 (27%) were the two major sources of awareness mentioned. Other sources include books 17 (19.1%), media 15 (16.9%) and text messages 8 (9.0%). About 80 (78.7%) of the respondents affirmed that they are faced with ethical problems on daily basis.
Though the hospital had an existing and active ethical review board, about one-third (33.7%) stated that they were not aware of existence of any ethics committee in their institution. Among those that were aware, 43(72.9%) asserted that the ethical committees were not fulfilling their roles. The institution carries out a regular pre-employment course for newly recruited staff; when asked, many 68 (76.4%) affirmed that the course improved their level of awareness on ethical issues.

Respondents’ knowledge of ethical and legal issues in medical practice

Majority of the respondents gave correct responses with regards to questions assessing their level of knowledge. However it is note-worthy that some of the participants were ignorant of the fact that a civil law suit follows violation of ethical principles; 13 (14.6%) and that an illegal act is that which is against the law and is almost unethical, and 14 (15.7%).

An 8- point score was used to assess participants’ knowledge of ethical and legal issues in medical practice. Each of the questions were given 1 mark for correct response and 0 for incorrect response.

Only very few, 5 (5.6%) failed to answer at least 4 of the questions correctly, they were classified as having poor knowledge whereas 84 (94.4%) corrected answered 5 questions and above, these were graded as having good knowledge of ethical and legal issues in medical practice. Details of their responses are shown in Table 2.

Respondents’ practices and perceptions about ethical and legal issues in medical practice

Some issues that bothered on ethical and legal issues in health care service delivery were presented to assess the opinion of each participant about ethical and legal issues in medical practice.

A greater number of the respondents 75 (84.3%), supported the idea that doctors and nurses must do their best irrespective of patient’s opinion, and about 69 (77.5%) agreed that they usually considered patient’s wishes and views before taking any major decision for their care.

There were mixed reactions among participants on some of the ethical concerns: close relatives should always be told about patient’s opinion, 53(59.6%) agreed whereas 36(40.4%) disagreed; children should never be treated without consent of parent(s), 49 (55.1%) agreed, 40 (44.9%) disagreed; If law permit, abortion doctors and nurses cannot refuse to do abortion, 43 (48.3%) agreed while 46 (51.7%) disagreed. About one-third 23(33.3%) supported the opinion that doctors and nurses should refuse to treat a violent patient. Many 65 (73.0%) disagreed that consent is only needed for surgeries and not for tests and other treatments.

About 66 (74.2%), 69 (77.5%), 61(68.5%) disagreed with the opinions of: assisting a patient wishes to die to do so; dispose of a patient quickly whenever I am in a bad mood for personal reasons; always maintain a distance with leprosy, TB or AIDS patients as I am afraid of getting infected, respectively. Details of their responses are presented in Table 3. A 15-point score was designed to assess the practice and perception of ethical and legal issues by participants. Respondents were graded based on their responses to 15 practice questions, each question was given 1 mark for each correct response, giving a total of 15 marks. They were then grouped in two (≤ 7 marks – poor practice/perception, ≥ 8 marks – good practice/perception). In summary, majority, 75 (84.3%) of the respondents had good perceptions/practice of ethical and legal issues.

Factors affecting the adherence of practice of ethical legal issues

When asked about factors that influence their adherence to recommended ethical and legal practices; lack of awareness 74(83.1%), lack of motivation 73(82%), lack of mentors 73(82.0%), among others, were indicated as major factors. Table 4 illustrates their responses in more details.
There was insufficient evidence to conclude that participants’ level of knowledge and practice were influenced by their socio-demographic characteristics.

Discussion

This study revealed a high level of awareness about ethical and legal issues in medical practice. A similar and recent study in Ghana also reported high awareness among participants (Barnie et al., 2015), this can be the positive impact of recent ethical programs specially within the training curriculum of health institutions. There is need for on-the-job workshops and structured seminars on ethical and legal issues as this could be the reason why a third of the respondents were not aware of existence of the ethical committee in the institution, even though majority were faced with ethical problems on daily basis, Hariharan et al., in a study in the Caribbean, also noted that some participants were not aware of their institution’s ethical review committee (Hariharan, Jonnalagadda, Walrond, & Moseley, 2006)

Although generally, participants had a high level of knowledge of ethical and legal issues, it is noteworthy that some were ignorant of the consequence of violating ethical principles, this can be reason why some clinicians handle patients with impunity and willful negligence; there is thus need for the government and other human rights activists and stakeholders to put in stringent measures to ensure awareness and implementation of legal actions against such malpractices. Majority of respondents agreed that doctors and nurses must do their best irrespective of patient’s opinion though paradoxically many still affirmed that they considered their patient’s wishes and views before taking any major decision for their care. This draws attention to gaps in knowledge of basic medical ethics; this is however similar to findings of a study in northern Nigeria by Monsudi et al., (Monsudi, Oladele, Nasir, & Ayanniyi, 2015) and contrary to findings from another related study in India (Chopra et al., 2013). Further consideration of the responses of the participants buttress the fact that there is still gaps in knowledge of basic ethical and legal issues of medical practice, there were mixed reactions as to whether close relatives should always be told about patient’s opinion, children should be treated without consent of parent(s), or doctors and nurses should refuse to do abortion as law permits.

Our study also found out that a considerable number of participants thought that doctors and nurses should refuse to treat a violent patient. This is probably due to reports about assaults faced by clinicians especially when managing psychologically injured patients. Clinicians have been advised to ensure safety management; make necessary inquiries about nature and severity of patient’s illness before deciding to treat or manage the person as an outpatient. Caution should be applied in treating or managing such patients alone (Simon, 2011).

Conclusion

This study has shown that there are still gaps in knowledge and practice of ethical and legal issues among nurses and doctors of Plateau state specialist hospital, Nigeria. The need for periodic continuing education on ethical and legal issues in order to bridge the gap in ethical and legal practices among health care professionals cannot be overemphasized.

Larger studies should be designed and carried our regularly to monitor and evaluate the knowledge and practice of ethical and legal practices among health care professionals, this will provide evidence-based information to correct and improve upon the knowledge and practice of medical ethics in our health care centers and ensure quality health service delivery.

Acknowledgements

The authors would like to appreciate all nurses and doctors who participated in this study; the Heads of Departments; Chairman, Medical Advisory Committee and Director of Administration, Plateau State Specialist hospital for all the support.
References


<table>
<thead>
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<th>Variable</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
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<td></td>
</tr>
<tr>
<td>Sex</td>
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<td></td>
</tr>
<tr>
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<td>38</td>
<td>42.7</td>
</tr>
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<td>Female</td>
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<td>57.3</td>
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<tr>
<td>Age (years)</td>
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<td>31-40</td>
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<td>51 and above</td>
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<td>&lt; 5 years</td>
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<td>11-15 years</td>
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<td>16-20 years</td>
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<tr>
<td>≥ 21 years</td>
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<tr>
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<td>Islam</td>
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<td>Doctor</td>
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<td>15.7</td>
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<tr>
<td>Professional Cadre</td>
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<td>Nursing Officer I/II</td>
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<td>Principal nursing officer and above</td>
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<td>7.9</td>
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<td>Medical Officer</td>
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<tr>
<td>Senior Resident Doctors</td>
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<td>7.9</td>
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<td>Surgical ward</td>
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<td>18.0</td>
</tr>
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<td>Children’s Ward</td>
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<td>15.7</td>
</tr>
<tr>
<td>Accident and emergency ward</td>
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<td>10.1</td>
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Table 2 Respondents’ knowledge about ethical and legal issues in medical practice

<table>
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<th></th>
<th>(N=89)</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowledge of ethics is important to my work everyday</td>
<td>80 (89.9)</td>
<td>9 (10.1)</td>
</tr>
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<td>2</td>
<td>Ethical issues require skill in decision making</td>
<td>80 (89.9)</td>
<td>9 (10.1)</td>
</tr>
<tr>
<td>3</td>
<td>When ethical principles are violated, a civil law suit often follows</td>
<td>76 (85.4)</td>
<td>13 (14.6)</td>
</tr>
<tr>
<td>4</td>
<td>Ethics relates to morality and moral principles, involving human character and conduct, decision between right and wrong</td>
<td>82 (92.1)</td>
<td>7 (7.9)</td>
</tr>
<tr>
<td>5</td>
<td>Health workers are to be held responsible when they delegate responsibility to junior staff</td>
<td>83 (93.3)</td>
<td>6 (6.7)</td>
</tr>
<tr>
<td>6</td>
<td>An illegal act is that which is against the law and is almost unethical</td>
<td>75 (84.3)</td>
<td>14 (15.7)</td>
</tr>
<tr>
<td>7</td>
<td>Do you know that the practical application of moral philosophy of good or bad right or wrong is called ethics</td>
<td>81 (91.0)</td>
<td>8 (9.0)</td>
</tr>
<tr>
<td>8</td>
<td>Ethics means moral principles or moral roles to be followed</td>
<td>85 (95.5)</td>
<td>4 (4.5)</td>
</tr>
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Table 3 Respondents’ knowledge and perception about ethical and legal issues in medical practice

<table>
<thead>
<tr>
<th></th>
<th>(N=89)</th>
<th>Strongly Agree (%)</th>
<th>Agree (%)</th>
<th>Strongly Disagree (%)</th>
<th>Disagree (%)</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Doctors and Nurses must do their best irrespective of patient’s opinion</td>
<td>42 (47.2)</td>
<td>33 (37.1)</td>
<td>11 (12.4)</td>
<td>3 (3.4)</td>
</tr>
<tr>
<td>2</td>
<td>Consent is needed only for surgeries and not for test and treatments</td>
<td>12 (13.5)</td>
<td>12 (13.5)</td>
<td>30 (33.7)</td>
<td>35 (39.3)</td>
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<tr>
<td>3</td>
<td>Close relative should always be told about patient’s opinion</td>
<td>22 (24.7)</td>
<td>31 (34.8)</td>
<td>25 (28.1)</td>
<td>11 (12.4)</td>
</tr>
<tr>
<td>4</td>
<td>Children should never be treated without consent of parent(s)</td>
<td>28 (31.5)</td>
<td>21 (23.6)</td>
<td>18 (20.2)</td>
<td>22 (24.7)</td>
</tr>
<tr>
<td>5</td>
<td>Doctors and nurses should refuse to treat a violent patient</td>
<td>10 (11.2)</td>
<td>13 (14.6)</td>
<td>23 (25.8)</td>
<td>43 (48.3)</td>
</tr>
<tr>
<td>6</td>
<td>If law permit abortion doctors and nurses cannot refuse to do abortion</td>
<td>24 (27.0)</td>
<td>19 (21.3)</td>
<td>29 (32.6)</td>
<td>17 (19.1)</td>
</tr>
<tr>
<td>7</td>
<td>If a patient wishes to die should be assisted to do so</td>
<td>12 (13.5)</td>
<td>9 (10.1)</td>
<td>22 (24.7)</td>
<td>46 (51.7)</td>
</tr>
<tr>
<td>8</td>
<td>If patient refuse treatment due to belief, they should be instructed to find another doctor</td>
<td>24 (27.0)</td>
<td>33 (37.1)</td>
<td>21 (23.6)</td>
<td>11 (12.4)</td>
</tr>
<tr>
<td>9</td>
<td>I usually consider patient’s wishes and views before taking any major decision for their care</td>
<td>32 (36.0)</td>
<td>37 (41.6)</td>
<td>9 (10.1)</td>
<td>11 (12.4)</td>
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<tr>
<td>10</td>
<td>I will dispose of a patient quickly whenever I am in a bad mood for personal reasons</td>
<td>11 (12.4)</td>
<td>9 (10.1)</td>
<td>31 (34.8)</td>
<td>38 (42.7)</td>
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<td>11</td>
<td>I always maintain a distance with leprosy, TB or AIDS patients as I am afraid of getting infected</td>
<td>19 (21.3)</td>
<td>9 (10.1)</td>
<td>20 (22.5)</td>
<td>41 (46.1)</td>
</tr>
<tr>
<td>12</td>
<td>I always explain to patients the risk (physical, mental and social) involved in any investigation or treatment procedures</td>
<td>30 (33.7)</td>
<td>37 (41.6)</td>
<td>15 (16.9)</td>
<td>7 (7.9)</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Yes (%)</td>
<td>No (%)</td>
<td></td>
<td></td>
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<td>------------------------------------------------------------------------------</td>
<td>---------</td>
<td>-----------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>When there is the need to consult my seniors for patients care, I always take their views</td>
<td>31 (34.8)</td>
<td>36 (40.4)</td>
<td>7 (7.9)</td>
<td>15 (16.9)</td>
</tr>
<tr>
<td>14</td>
<td>I do not have a long time to listen to the stories of mine patients</td>
<td>20 (22.5)</td>
<td>14 (15.7)</td>
<td>27 (30.3)</td>
<td>28 (31.5)</td>
</tr>
<tr>
<td>15</td>
<td>I always obtain permission from patient before doing any physical or internal examination</td>
<td>46 (51.7)</td>
<td>26 (29.2)</td>
<td>7 (7.9)</td>
<td>10 (11.2)</td>
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</table>

**Table 4** Factors affecting the adherence of practice of ethical legal issues

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>(N=89)*</th>
<th>Yes (%)</th>
<th>No (%)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Lack of time</td>
<td>61 (68.5)</td>
<td>28 (31.5)</td>
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<tr>
<td>2</td>
<td>Lack of good mentors</td>
<td>73 (82.0)</td>
<td>16 (18.0)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Lack of knowledge</td>
<td>67 (75.3)</td>
<td>22 (24.7)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Lack of awareness</td>
<td>74 (83.1)</td>
<td>15 (16.9)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Lack of motivation</td>
<td>73 (82.0)</td>
<td>16 (18.0)</td>
<td></td>
</tr>
</tbody>
</table>

**Multiple response included**
Knowledge and Practice of Tracheostomy Care: A Case of Federal Medical Centre, Umuahia South East of Nigeria

Article by Okam, Nwakaego
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Abstract

Tracheostomy as a medical procedure is carried out to help secure airway of patients with respiratory challenge. It is not without adverse effect. When tracheostomy stays for a long time there is usually an inherent discomfort which the nurse as a care giver will help to alleviate. This study was designed to explore the knowledge and practice of tracheostomy care for the patients.

The study was conducted at Federal Medical Centre, Umuahia, Abia State of Nigeria. The hospital is the major tertiary institution that serve the communities around as well as far away neighboring states. This study was conducted among the nurses who work in this institution. It was a descriptive cross-sectional study with quantitative methods of data collection.

Data was analyzed using Statistical Package for Social Sciences (SPSS) version 17.0. Descriptive statistics were presented in frequency distribution tables. The t-test was used to determine associations between nurse in two major wards used as regarding knowledge if indication of tracheostomy and factors that influence outcome of care. Statistical significance was determined using a cut off value of 0.05

The result study showed that 80% respondents most favoured failed intubation as indication 82.5% were of the opinion that effective mobilization of secretion is the major area of scope in management of tracheostomy. Change in respiration as an indication for initiating suctioning to clear the patient’s airway rather had low score which calls for in assessing the learning needs of the nurses. Their knowledge associated with proper techniques of suctioning is also a source of concern (21%). The nurses have high opinion about clinical outcome of tracheostomy (above 66%). The result also showed that there is significant difference between the ICU and surgical ward staff knowledge of indication for tracheostomy ( T-tab was 1.6 while t-cal was 5.04 at p-level of 0.05. the result showed a high value of t-cal of 5.04). Also, the result showed the values of mean and standard deviation which were collated and computed using t-test as; T-tab was 1.6 while t-cal was3.69 at p-level of 0.05. The result showed a high value of t-cal of 5.04 showing significant difference between the Icu and surgical ward staff knowledge of care.

Introduction

Background

The basic role of the nurse is to care for patients to do what they could not do because of the inherent health challenge. Their tasks range from caring for airway, nutrition and fluid and making then comfortable as the need arises. Independent decision making forms the bedrock of this responsibility. The role he/she plays in tracheostomy cannot be overemphasized.

Tracheostomy is creating a surgical opening into the trachea between the second and third rings of cartilage. The main purpose is basically to secure airway for a patient with challenge of breathing. Tracheostomy helps to facilitate weaning a mechanically ventilated patient. By so doing there will be decreased dead space, managing secretions, relieving upper airway obstructions.

The creating an opening in the trachea is called tracheostomy. Tracheostomy tube is placed through the opening to secure airway to safe guard it from closing. In caring for the
tracheostomy cleaning around the stoma, dressing and replacing the inner cannula is done every eight hours (Esteban, 2000).

The main objective of tracheostomy care are to ensure a patent airway for the patient, prevent infection and skin breakdown. As a matter of fact, the use of sterile technique should not be ignored.

The tracheostomy has two parts namely; the inner cannula which can be removed if obstruction occurs especially in the case of copious secretion. Then is the tracheostomy tube itself which maintains the airway. Structurally the tube can be cuffed or uncuffed.

The nurses’ main role is to care for the tracheostomy (Blot F, Similowski, 2005). Tracheostomy care is very important in both the intensive care setting and the general ward. It is, therefore, ever more important that trained nurses are equipped with the appropriate skills, knowledge and support to meet the unique needs of each patient safely and competently (Nieszkowska, Combes, Luyt, Ksibi, Trouillet, Gilbert, 2005).

Creative, responsive, holistic and individualized, based on sound knowledge in accordance with local policies is a necessary framework to be employed by the nurse. There is a need for training in order to improve nurses’ competence (Griffiths, Barber, Morgan, Young, 2005).

Theoretical model

The organizing framework for this study is a synthesis of an Intervention Theory. Neuman proposed that nurses assist clients in retaining, attaining, and maintaining optimal stability by implementing prevention measures to decrease risk factors that allow stressors to invade the clients’ defense system (Neuman and Fawcett, 2002).

Neuman’s system model provides a comprehensive flexible holistic and system based perspective for nursing practice. Neuman’s model focuses on the response of the client’s system to actual or potential environmental stressors and the use of primary, secondary and tertiary nursing prevention intervention for retention, attainment, and maintenance of optimal client health status.

Neuman’s theory would support that one of many nursing intentions is to assist patients by implementing effective nursing care for prevention measures. This framework was appropriate for the study because it provide guidance and support necessary during the literature review, development of study tool and discussion of the results.

In this study primary prevention was taken into account where nursing intervention and knowledge of what they intervene to prevent adverse event occurrence to patients. Furthermore, nursing practices in relation to tracheostomy care prevention were assessed include suctioning.

Importance of the study

As a surgical operation that can be done by the bedside, tracheostomy is usually performed on a critically ill patient especially in need of long stay in mechanical ventilation. Approximately 10 percent of critically ill patient on MV undergo tracheostomy to enhance long time airway and ventilator support. In respiratory failure prolonged trachea intubation has inherent complications. These complications can be early or late complications.

‘Patients received a tracheostomy for airway obstruction (38%), chronic ventilation (53%), or multiple indications (9%). The mean duration of tracheotomy (adjusted for death and loss to follow-up) was 2.13 years. The tracheostomy-related mortality was 0.5%, and the nontracheostomy-related mortality was 22%. Nineteen percent of patients had complications in the first postoperative week, and 58% had 1 or more late complications. In comparison with the previous study from our institution, there was a great increase in long-term tracheostomy and a continuing trend away from tracheostomy for short-term airway management. Better monitoring and improvements in parental teaching may have contributed to a decrease in tracheostomy-related mortality’’

In long term ventilation tracheostomy prevalence was 10% as opin by Christophe et al (2007). Precutaneous or conventional surgical tracheostomy can be used. It has the risk of
being removed accidentally. Its major outcomes may range from patent airway to low mortality, short stay in ICU and easy weaning from MV. More importantly skin excoriations and breakdown is reduced with infection prevention.

The three major guideline for care include, mobilization of secretion, humidification and patent airway. Pulmonary complications can be easily prevented by applying the appropriate skills in mobilizing secretions.

**Statement of the problem**

Tracheostomy is an important procedure carried out to help patients with respiratory distress to secure the airway for effective care to prevent event resulting to mortality. Proper management of patients on tracheostomy is unquestioning the major influence to clinical outcome.

Lucas and Gillis declared that every person has the right to enjoy the highest possible level of health and quality care in order prevent adverse outcome in area of morbidity and mortality.

Emphasizing the importance of quality of care for the ill patient, the care given by nurses could be more responsive to the patients needs and able to provide them with the care they deserve at the time mostly deserved.

The importance of nursing care has been drawn attention of all. Protocols have been put in place to improve outcome. Unfortunately, despite these efforts made by the nursing authority the protocols has not been implemented properly.

In spite of the laid down protocols of care the vulnerable patients problems has continued to swell to threaten the life of these patients. Problems that arise from tracheostomy has continued to influence them and their families significantly.

The investigator being a nurse clinician has on several occasions in the course of practice observed that some patients face adverse effect following tracheostomy procedures Although, ICN and individual hospitals have provided policies for management same is presently having ugly toll on the patients. Based on this backdrop the researcher was poised to ask the following questions;

- What is the level of knowledge of indications of tracheostomy?
- What are the practice competencies and knowledge of basic skills in tracheostomy care?
- What are the clinical outcomes of tracheostomy care of the patients?
- What is the extent of their knowledge about implications of inadequate care of tracheostomy?

**Purpose of the study**

A study on the knowledge and practice of tracheostomy care: A case of Federal medical centre, Umuahia South East of Nigeria.

**Specific objective**

The specific objective of the study if to assess the knowledge and practice of tracheostomy care: A case of Federal medical centre, Umuahia South East of Nigeria

**General objectives**

1. To determine the knowledge about indication for tracheostomy by the nurses of FMC, Umuahia
2. To ascertain the scope of management known and areas of practice competencies of tracheostomy care by the nurses in FMC
3. To explore the knowledge of clinical outcome of tracheostomy care of patients by the FMC nurses
4. To find out the extent of knowledge about the implications of inadequate care of tracheostomy care by the nurses working in FMC

**Research questions**

1. What knowledge do the nurses in FMC Umuahia have about indications of tracheostomy?
2. What are the scope of management known and areas of practice competencies by the FMC nurses?
3. What are the clinical outcomes of tracheostomy care of the patients?
4. What are the factors that influence outcome of tracheostomy care?

Hypothesis

Ho1. There will be no significant difference in the mean responses of the ICU and surgical ward staff regarding the knowledge of indication of tracheostomy.

Ho2. There will be no significant difference in the level of practice competence of tracheostomy care of ICU and surgical wards staff participants.

Significance of the study

It is an established fact that tracheostomy is a very important surgical procedure which ultimately has its basic function of securing patent airway to a patient that has respiratory challenge. In recent time the percentage of patients undergoing this procedure has increased because of awareness of its benefit in securing positive patient outcome.

More specifically, the study would provide awareness on how to care for these patients. In this regard, it is hoped that the result obtained from this study would benefit the nurses by knowing what their learning needs are as regards tracheostomy care.

Data that were generated on indication of tracheostomy will benefit the care giver to identify target groups for tracheostomy. Prompt intervention of this group may help them recover.

Information generated on competence will provide help in ascertaining learning needs. The management of nursing will use the information to be able to establish continuing professional programme for the nurses to improve in evidence-based practice.

The information derived from inadequate care will important in providing a foundation which the nurse will consider in the right care. Information may dissuade nurses from being complacent in the future management of patients.

Data from outcome will be of great benefit to the researchers to see the need to investigate more on the factors affecting care and its clinical outcome of patients.

Review

This the review of relevant past research related to the study. There is paucity of research, but relevant works to the study will be employed. This will be discussed in the following headings:

- Conceptual framework
- Empirical studies on the following:
  - Indications of tracheostomy
  - Practice competencies and knowledge in tracheostomy care
  - Outcome of tracheostomy management/care and
  - Implication of inadequate follow-up post tracheostomy
- Conceptual framework

This section deals with conceptualization of tracheostomy care and its practices. There are many reasons for the use of tracheostomy tube in the care of critically ill patients. For patients requiring prolonged respiratory support and airway support, tracheostomy is performed as a temporary measure. There could be many indications for tracheostomy. Whitmar et al (2013) grouped indications for tracheostomy tubes placement into general categories which include ventilation, airway obstruction, airway protection, and secretions. They submitted that category one are for patients with perceived long-term mechanical ventilation, patients that are unable to maintain respiratory function without assistance and patients that has problem from being weaned from intubation and mechanical ventilation. Hess. (2005) and Masoudifar, Aghadvoudi and Nasrollahi (2012) submitted that there is no consensus to when best to place tracheostomy from intubation because of variations in patients differences in terms of...
conditions and comorbidities. However, Plummer and Gracey 1989 state that the American College of Chest Physicians considers patient who could be on endotracheal intubation for 21 days for tracheostomy which will benefit a patient in areas of decrease of laryngeal injury, comfort improved activities of daily living mobility, eating and communicating. Bittner and Schmidt (2012) identified the second category of patients as those with tumors within the airway, paralyzed vocal cords, swelling, stricture, or unusual airway anatomy because of the obstruction which compromises normal respiration. Thirdly are patients without ability to protect their airway and patients with an inefficient swallow and/or cough mechanism, common situations in patients who have a high spinal cord injury, cerebrovascular accident, or traumatic brain injury. The fourth group are those who cannot mobilize or manage their secretions.

In his view Durbin (2005), indications for tracheostomy are when there is prolonged airway support especially in failed extubation. When a patient with respiratory failure cannot be weaned within 7–10 days tracheostomy is most appropriately needed. Other cases are severely injured trauma patients who require intubation that may apparently be longer than 5 days, and where there is supratentorial intracranial bleeds necessitating that patient may not wake within 3–5 days. They argued that when there is a delay of tracheostomy in these categories of patients the inherent problem will be prolonged hospital stay and pneumonia.

Mahafza, Batarseh, Bsoul, Massad, Qudaisat, & Al-Layla, (2012), concurred with the previous authors that elective surgical tracheostomy for intensive care unit (ICU) patients should be done for patients with the need for prolonged translaryngeal intubation in order to evaluate the proper timing and advantages of early vs. late tracheostomy and more importantly to stress on the major risks associated with delayed tracheostomy.

Durbin (2010) categorically insisted that indications for tracheostomy should include the need for a prolonged artificial airway, copious secretion during in intubated patient, poor airway protective reflexes, and upper-airway obstruction for any of a number of reasons. In that case expected intubation for more than 14 days should be considered a common reason for tracheostomy. His general reasons are:

“To relieve upper-airway obstruction due to tumor, surgery, trauma, foreign body, or infection
To prevent laryngeal and upper airway damage due to prolonged trans-laryngeal intubation
To allow easy or frequent access to the lower airway for suctioning and secretion removal
To provide a stable airway in a patient who requires prolonged mechanical ventilation or oxygenation support”, pp 2.

Tracheostomy just as any other medical procedure is not without complication. Engles et al (2009), categorized the complications into three which include;

“Intraprocedural (occurring during or immediately after insertion) Multiple attempts, paratracheal insertion, posterior tracheal wall laceration.
**Early postprocedural (occurring before maturation of stomal tract)
Bleeding, pneumothorax, subcutaneous emphysema, Tracheoesophageal fistula accidental decannulation, stoma infection, loss of airway and aspiration.
Late postprocedural
Tracheal stenosis, tracheal malecia, tracheoesophageal and tracheoarterial fistula and delayed stoma closure
unesthetic scar/cosmetic deformity, vocal paralysis and airway symptoms”.

In the same vein Walkevar and Myers (2008) affirm that perioperatively hemorrhage at the stoma or into the trachea forms a major complication. This type of bleeding may be a source of concern. Others are Tracheal stenosis, tracheal malecia, tracheoesophageal and tracheoarterial fistula. In another opinion Krishnamurthy and Vijayalakshmi (2012) reiterated that fracture leading aspiration of a tracheostomy tube in the tracheobronchial tree can occur but rare though which is a very medical emergency.
Impact of this procedure abound. Quan, (2006) generally view an outcome of care as the impact and or result of any form of treatment/intervention which the patient received during his/her admission in the hospital and/or during an outpatient visit to a health facility. Outcome of care is the term used to describe the effect or result of the treatment/intervention received by a patient in the course of hospitalization or visit to a health care facility [Quan, 2006]. The author affirmed that the contributory factors that influence patient outcome are input and process. According to the author resources, time, manpower, money and material are input. While process embraces knowledge, expertise and standard of practice of the human resources of the specific services to be rendered. Patient outcome can be adverse or positive. To achieve positive outcomes in patients with trach tubes, keep abreast of best practices and develop and maintain the necessary skills. Every nurse who performs trach care needs to be familiar with facility policy and procedure on trach tube care.

Adverse outcome as defined by Marang-van de, Stadlander and Kievit (2006) is; “an unintended and unwanted event or state occurring during or following medical care, that is so harmful to a patient's health that (adjustment of) treatment is required or that permanent damage results. The adverse outcome may be noted during hospitalisation, until 30 days after discharge or transferral to another department. The intended result of treatment, the likelihood of the adverse outcome occurring, and the presence or absence of a medical error causing it, is irrelevant in identifying an adverse outcome.”

They further explained outcome to be rated as the quality of care as lower, and more often indicated that both the patient–caregiver contact and medical care could be improved. These adverse events include development of complications like pneumonia, surgical wound breakdown, shock, hemorrhage, and pressure ulcer, poor functional status, and increased length of hospital stay, death, health status and dissatisfaction with care. Patient outcomes could be measured by the incidence of the following: length of stay (increased or decreased), hospital costs (high or low), medication error, nosocomial infection, surgical wound infection/breakdown, pneumonia, so on (Cho, 2008).

Positive patient outcome is characterized by reduced length of hospital stay, no complications, improve functional status. Patient admitted into the hospital are expected to go home within stipulated time all things being equal. In that case patients are expected to resume activities of daily living. Aiken and Needleman [2005] identified the following as the factors influencing patient outcome in hospitals; technology in use in the hospitals and units, available health personnel in the units, specialties of the health personnel [nurses and doctors], experience of the staff, severity of ill health, overall health status of patient, complexity of care required etcetera. Patient outcome is generally measured by length of patient stay, patient falls, medication errors, and patient satisfaction scores. So, outcome of patient with tracheostomy in the context of this study will be measured by mortality, morbidity, length of stay, weaning from mechanical ventilation infection and so on.

Tracheostomy as it were helps to reduce the complications rate, shortens the ICU stay, lower the mortality in the ICU, and consequently will result in decreasing the cost in cases with prolonged tracheal intubation. Therefore, close assessment of ICU patients for proper timing of doing tracheostomy is essential. Mahafza, Batarceh, Bsideul, Massad, Qudaisat, & Al-Layla, (2012). Patients, who had prolonged tracheal intubation and consequently had late tracheostomy, had more complications; airway injuries and ventilator-associated pneumonia than those who underwent early tracheostomy.

According to Oreadi and Carlson (2012) tracheotomy procedure is a safe and frequently life saving manoeuvre in situations with an unsecured airway, and it provides better outcomes in patients requiring long term ventilatory support. Mortality rates are low and its potential morbidity is exceeded by its benefits.
Empirical studies

Empirical studies on indications of tracheostomy

Itamoto, Lima, Sato and Fujita (2010) conducted a study to evaluate the indications and complications of tracheostomies performed in children. It was a retrospective study with review of medical records of patients aged from 1 day to 16 years who underwent tracheostomy at a university hospital during the period of August 2000 to July 2008. They assessed data on age, gender, indications and intra and postoperative complications. Results showed that Fifty-eight children under 16 years of age underwent tracheotomy during the study period. The mean age was 3.7 years. Airway obstruction was the main indication for surgery (n = 40; 69%). The incidence of complications in the postoperative period was 19% (11 patients), the majority happening during the late postoperative period. A further complication observed was cannula clogging. There were no complications related to the procedure during the surgery so the main indications for tracheostomy in children were airway obstruction and prolonged OTI.

Empirical studies on scope of management known and areas of practice competencies of tracheostomy care

Morris, Whitmer and McIntosh (2013) did a review to assess knowledge on how to provide care for Tracheostomy in the intensive care unit. One of the most important considerations is effective mobilization of secretions, and a suction catheter is the most important tool for that purpose. They considered that bedside should be equipped with a functional suctioning system, an oxygen source, a manual resuscitation bag, and a complete tracheostomy kit, which should accompany patients wherever they go in the hospital. They opine that Tracheostomy emergencies include hemorrhage, tube dislodgement and loss of airway, and tube obstruction and such emergencies are managed more effectively when all necessary supplies are readily available at the bedside.

This study by Vejdan and Khosravi (2013) was to evaluate the role of flexible bronchoscopy (FB) and bronchoalveolar lavage (BAL) on pneumonia prevention of tracheostomy patients in intensive care unit. Methodology: This clinical trial was conducted on 67 head-injury patients who needed tracheostomy. The eligible patients were divided into two groups of different methods for removing the airway secretions. In intervention group, FB and BAL was added to routine conventional methods for airway clearance. Patients were followed for signs and symptoms of pneumonia. Results showed that risk of nosocomial pneumonia decreased from 35% to 14% in intervention group. The days of hospital stay were significantly reduced with bronchoscopic method. Flexible Bronchoscopy is recommended to all ICU admitted patients that have tracheostomy tube and high volume of secretion in their airways. It can not only prevent the pneumonia formation decrease the morbidity and mortality rate but it can even shorten the ICU stay time and consequently reduce the costs of treatment.

Myers et al. (2004), conducted a study on emergency ventilation of the tracheostomy patient, Part 1: Knowledge assessment of healthcare professionals. A nurse-driven investigation, using a convenience sample and comparative descriptive design, was conducted within a large medical center to identify healthcare professionals' (N=885) knowledge of emergency ventilation strategies for the tracheostomy patient. Registered nurses and physicians comprised the majority of survey respondents (n=587) who answered a three-item questionnaire to assess specific knowledge. Findings focused primarily on differences in knowledge among subgroups of nurses, including those in critical care and noncritical acute care settings. Although increasing knowledge levels are documented since the mid 1980's, concern for the knowledge available to manage the emergency ventilation of tracheostomy patients is voiced. Less than half of nurses and physicians in this sample were able to answer correctly all three questions asked regarding emergency strategies. Recommendations address this knowledge deficit.
Day et al. (2002), conducted an explorative study on nurses' knowledge and competence in acute and high dependency ward areas about tracheal suctioning. With an increasing demand for intensive care beds more nurses in acute and high dependency wards would be expected to care competently for patients with tracheostomy tubes. Aims of this study was to explore nurses' knowledge and competence in performing tracheal suctioning in acute and high dependency ward areas and to investigate discrepancies between knowledge and practice using method triangulation. Twenty-eight nurses were observed using non participant observation and a structured observation schedule. Each subject was interviewed and questioned about their tracheal suctioning practices, and subsequently completed a knowledge-based questionnaire. Scores were allocated for knowledge and practice. The findings demonstrated a poor level of knowledge for many subjects. This was also reflected in practice, as suctioning was performed against many of the research recommendations. Many nurses were unaware of recommended practice. In addition, there was no significant relationship between knowledge and practice. However, during the interviews, many nurses were able to provide a rationale for specific aspects of practice that were perhaps not based on current research recommendations. The study raised concern about all aspects of tracheal suctioning and has highlighted the need for changes in practice, clinical guidelines and focused practice-based education.

Ania et al. (2004) conducted an assessment of practice competence and scientific knowledge of ICU nurses in the tracheal suctioning. Objectives of this study was to evaluate practical competence of the nurses, as well as the scientific knowledge that they have on this procedures in a Polyvalent Intensive Care Unit and analyze if there were discrepancies between the practice competence and scientific knowledge. This descriptive study, performed in 34 nurses, analyzed the performance of tracheal suctioning by direct observation, using the data collection of a structured grid that included 19 aspects to evaluate, grouped into 6 categories. In the same way, knowledge on the procedure was analyzed, using a 19-item self-administered questionnaire, also grouped into 6 categories, which evaluated the same aspects observed. The total mean score obtained in the practice observation grid (P) was 12.09 for a maximum score of 19, while it was 14.24 in the knowledge questionnaire (Q). When analyzed by categories, discrepancies were obtained in the following aspects: in the need for hand washing prior to suctioning (P = 55.9%; Q = 97.1%), in cleaning of the suction catheter after each suctioning during the procedure (P = 0%; Q = 38.2%), in the correct performance of hyperoxygenation and hyperinsufication, before, during and after the procedure (P = 11.8%; Q = 941%), in the correct selection of the size suction catheter in relationship with endotracheal tubes internal lumen (P = 0%; Q = 52.9%), in the maximum time the catheter remains in the trachea (P = 1 00%; Q = 23.5%), in the maximum number of times that the catheter should be introduced in each suctioning (P = 1 00%; Q = 73.5%) and in the non-instillation of saline solution (P = 29.4 %; Q = 58.8%). When the total scores obtained were compared, both in practice and knowledge, with the years of experience in ICU, no statistically significant differences were found. It is concluded that the study nurses have scientific knowledge of the suctioning procedure that are better than their practice competence. Discrepancies between practice and knowledge were also found in several of the aspects evaluated, which oriented towards the specific needs of training in this procedure.

Day et al. (2001), conducted an evaluation of a teaching intervention to improve the practice of endotracheal suctioning in intensive care units. This study was designed to examine to what extent intensive care nurses' knowledge and practice of endotracheal suctioning is based on research evidence, to investigate the relationships between knowledge and practice, and to evaluate the effectiveness of a research-based teaching programme. This quasi-experimental study was a randomized, controlled, single-blinded comparison of two research-based teaching programmes, with 16 intensive care nurses, using non-participant observation and a self-report questionnaire. Initial baseline data revealed a low level of knowledge for many participants, which was also reflected in practice, as suctioning was performed against many of the research recommendations. Following
teaching, significant improvements were seen in both knowledge and practice. Four weeks later these differences were generally sustained, and provided evidence of the effectiveness of the educational intervention. The study raised concern about all aspects of endotracheal suctioning and highlighted the need for changes in nursing practice, with clinical guidelines and focused practice-based education.

Crimlisk et al. (2002) conducted a study on closed tracheal suction system: implications for critical care nursing. The Closed Tracheal Suction System (CTSS) is a multiple-use suction catheter available for suctioning the ventilator dependent patient. While research has been reported on its impact on oxygen desaturation, ventilator function, and nosocomial pneumonia, the practical issues of the technical design of the catheter and its advantage in decreasing exposure of staff to infected respiratory secretions have not been investigated. This study reported the critical care nurses' perceptions in the use of the SteriCath (Concord/Portex)

CTSS focusing on hemodynamic stability, effectiveness of suctioning, patient safety and staff personnel exposure. The techniques for effective suctioning of are paramount in the care of an ill patient with tracheostomy.

Ackerman et al. (1996) conducted review of normal saline instillation: implications for practice. Nurses commonly use normal saline instillation (NSI) as a component of the suctioning procedure. The current research on NSI has not clearly identified many positive aspects of the procedure. Much of the research suggests it may actually be harmful. There has been little investigation into the reasons NSI is used. It is presumed that NSI is used to increase secretion removal when patients have thick endotracheal secretions due to inadequate humidity to the airway. Nurses need to be aware of the potential negative effects of routine NSI as well as alternative.

Ania González, Martínez, Eseberri Sagardoy, Margall Coscojuela, Asaien Erro (2004) evaluated practical competence of the nurses, as well as the scientific knowledge that they have on this procedures in a Polyvalent Intensive Care Unit and analyze if there are discrepancies between the practice competence and scientific knowledge. This descriptive study, performed in 34 nurses, analyzed the performance of tracheal suctioning by direct observation, using the data collection of a structured grid that included 19 aspects to evaluate, grouped into 6 categories. In the same way, knowledge on the procedure was analyzed, using a 19-item self-administered questionnaire, also grouped into 6 categories, which evaluated the same aspects observed. The total mean score obtained in the practice observation grid (P) was 12.09 for a maximum score of 19, while it was 14.24 in the knowledge questionnaire (Q). When analyzed by categories, discrepancies were obtained in the following aspects: in the need for hand washing prior to suctioning (P = 55.9%; Q = 97.1%), in cleaning of the suction catheter after each suctioning during the procedure (P = 0%; Q = 38.2%), in the correct performance of hyperoxygenation and hyperinsulflation, before, during and after the procedure (P = 11.8%; Q = 941%), in the correct selection of the size suction catheter in relationship with endotracheal tubes internal lumen (P = 0%; Q = 52.9%), in the maximum time the catheter remains in the trachea (P = 100%; Q = 23.5%), in the maximum number of times that the catheter should be introduced in each suctioning (P = 100%; Q = 73.5%) and in the non-instillation of saline solution (P = 29.4%; Q = 58.8%). When the total scores obtained were compared, both in practice and knowledge, with the years of experience in ICU, no statistically significant differences were found. It is concluded that the study nurses have scientific knowledge of the suctioning procedure that are better than their practice competence. Discrepancies between practice and knowledge were also found in several of the aspects evaluated, which orients towards the specific needs of training in this procedure.

Empirical studies on outcome of tracheostomy

A study by Brotfain, Koyfman, Frenkel, Semyonov, Peiser, Hayun-Maman, Boyko, Gruenbaum, Zlotnik and Klein (2014) in assessing bed side tracheostomy concluded that it has the advantage of saving medical staff and operating room resources de Mestral, Iqbal,
Fong, LeBlanc, Fata, Razek and Khwaja (2011) studied on the impact of dedicated tracheostomy care nurse program on outcomes of tracheostomized patients. A tracheostomy care nurse program was improvised by the critical care physicians, with the objective of improving care of tracheostomized patients, wherein nursing staff from noncritical areas were selected for training purposes. The training included evidence-based knowledge and hands-on training. After a written assessment and a skill test, they were certified as 'Tracheostomy Care Nurse.' At least one of the tracheostomy care nurses was supposed to be responsible for tracheostomy care in specific wards. Comparative data of two periods, a pre-intervention period from January 2011 to November 2011 and a post-intervention period from December 2011 to October 2012, were analyzed. According to the result, during the pre-intervention period, of 82 tracheostomized patients, 28 (34.15 %) had complications including 20 (24.39 %) readmissions to the ICU. During the post-intervention period, 107 patients had a tracheostomy, of which 7 (6.54 %) had complications with only 2 (1.87 %) readmissions, which was significant (p < 0.05). Decannulations nonsignificantly increased during the post-intervention period (25 vs. 16 %, p > 0.05). The average length of hospital stay (ALOS) decreased from 36 to 27 days (p < 0.05).

Jeon, Hwang, Lim, Lee, Woo and Park (2014), conducted a study to determine the effect of the timing of tracheostomy on clinical outcome in mechanically ventilated neurosurgical patients admitted to the surgical intensive care unit. They used 125 patients that underwent tracheostomy and mechanical ventilation. They find out that early tracheostomy reduced the MV duration, ICU length of stay, and incidence of ventilator associated pneumonia in critically ill patients. However, there is no evidence that tracheostomy reduce either the ICU or hospital mortality.

Huang H, Li, Ariani, Chen and Lin, (2014) conducted a study to compare important outcomes between early tracheostomy (ET) and late tracheostomy (LT) or prolonged intubation (PI) for critically ill patients receiving long-term ventilation during their treatment. They performed a computerized searches for relevant articles on PubMed, EMBASE, and the Cochrane register of controlled trials (up to July 2013. Included in the study was a randomized controlled trials (RCTs) that compared ET (performed within 10 days after initiation of laryngeal intubation) and LT (after 10 days of laryngeal intubation) or PI in critically ill adult patients admitted to intensive care units (ICUs). Two investigators evaluated the articles; divergent opinions were resolved by consensus. They evaluated a meta-analysis from nine randomized clinical trials with 2,072 participants. Compared to LT/PI, ET did not significantly reduce short-term mortality [relative risks (RR) = 0.91; 95% confidence intervals (CIs) = 0.81-1.03; p = 0.14] or long-term mortality (RR = 0.90; 95% CI = 0.76-1.08; p = 0.27). Additionally, ET was not associated with a markedly reduced length of ICU stay [weighted mean difference (WMD) =

Shan, Hao, Xu and Chen (2013) conducted a study to assess if tracheostomy improves patients outcome. It was a meta-analysis using 2103 subjects from 6 observational studies. The result showed that tracheostomy decreased mortality and reduced ICU stay, hospital stay, and mechanical ventilation duration in ICU patients. Contrary to this view, Speed and Harding (2013) argue that there is insufficient evidence to determine that tracheostomy reduce hospital or intensive care unit LOS.

Another study was carried out by Pennelaus, Frutos-Vivar, Gordo, Apezteguia, Restrepo, Gonzalez, Arabi, Santos, Alhashemi, Perez, Esteban and Anzueto (2013) to determine the outcome of tracheotomized patients following re-intubation. Secondary analysis from a prospective, multicenter and observational study including 36 Intensive Care Units (ICUs) from 8 countries was employed. A total of 180 patients under mechanical ventilation for more than 48 hours, extubated and reintubated within 48 hours were used. The result showed that the length of ICU stay was significantly longer in the tracheotomy group compared with the group without tracheotomy and ICU mortality in the tracheotomy group was not significantly different.
K Vejdan and Khosravi (2013) affirm that tracheostomy does not only prevent pneumonia, morbidity and mortality rate but also shorten the ICU stay time and consequently reduce the costs of treatment. Surprisingly in a study by Koch, Hecker, Hecker, Brenck, Preus, Schmelzer, Padberg, Weigand and Klasen (2012), tracheostomy is not in any way associated with decreased mortality and morbidity. In agreement with KVejdan et al (2013) early ICU discharge, shorten duration of mechanical ventilation, and decreased length of overall hospital stay without affecting mortality are the major outcome of tracheostomy. Devarajan, Vydanathan, Xu, Murthy, McCurry, Sessler, Sabik and Bashour (2012) were of the same opinion with the foremost writers.

Other authors have noticed the additional risks of having a tracheostomy tube, as compared to a standard translaryngeal tube in place, even when the patient resides in an ICU environment.

Kapadia (2000) reported airway accidents occurring in all intubated patients in a 16-bed multidisciplinary ICU. The study population was 5,046 patients intubated for 9,289 days during a 4-year period. They prospectively collected data, including the number and timing of airway accidents, the type of tracheal tube used the duration of intubation, description of the type of accident, the severity of the accident, impact on the course of the patient’s illness, and whether the accident was preventable. Result showed that even when monitored in an ICU, airway accidents associated with tracheostomy tubes occurred more frequently and resulted in higher mortality (10%) than in patients with conventional ETTs. The clinician’s reassurance of a secure airway by having a tracheostomy may not translate into actual greater safety.

Binyamin et al (2010) did a study where they found that 63.5% of most tracheostomies are done on men and their average age is 59.8 years. In this study, patients who survived for 30 days after the procedure had a lower burden of background morbidity as reflected by their Charlson Score. Mortality in one year was 56.6% of which 70% died in the first month following the procedure. Survival rate here was high among the group of patients who underwent tracheostomy during the first 10 days after initiation of mechanical ventilation.

Bhandary and Niranjan (2011) in a related study did a cohort analysis which included nearly 11,000 critically ill patients. They sought to evaluate the impact of tracheostomy timing on mortality. They concurred with Binyamin et al (2010) that there was a slight improvement in survival in patients who underwent tracheostomy within the first 10 days of intubation.

The above studies are however opposed by a tracheostomy management study which was cited by Bhandary and Niranjan (2011), where patients were randomized to early and late tracheostomy. The patient characteristics were similar across both groups and it was found out that there was no significant difference in mortality between the early and late tracheostomy groups at 30 days or even at 2 years post randomization with a 74% follow up rate.

In a different study, Engoren and Engoren (2004) found out that overall survival and functional status are poor in patients with tracheostomy for respiratory failure. Patients who are liberated from mechanical ventilation and have their tracheostomy tubes removed have the best survival; however, it comes at a higher hospital cost and longer length of stay. It then seen that in this particular characteristic, tracheostomy is not very successful in patients with respiratory failure but would succeed in a longer length of stay in hospital which of course comes with more costs.

Jeon, Hwang, Lim, Lee, Woo and Park (2014) conducted retrospective study to determine the effect of the timing of tracheostomy on clinical outcome in mechanically ventilated neurosurgical patients admitted to the surgical intensive care unit (ICU). A total of 125 neurosurgical patients, who underwent tracheostomy and had total mechanical ventilation (MV) duration of >7 days from October 2007 to December 2011, were enrolled. Patients were divided into 2 groups based on the timing of tracheostomy. Tracheostomy was performed within 10 days of MV in the early group (group E, n=39), whereas in the late group, it was performed after 10 days of MV (group L, n=86). The ICU and in-hospital mortality rates,
total duration of MV, length of stay (LOS) in the ICU, hospital LOS, and incidence of ventilator-associated pneumonia (VAP) were compared between both the groups. Result showed that total MV duration and ICU LOS were significantly longer in group L than E (21.5±15.5 vs. 11.4±5.6 d, P<0.001; 31.1±18.2 vs. 19.9±10.6 d, P<0.001). The incidence of VAP before tracheostomy was higher in group L than group E (44 vs. 23%, P=0.05). No significant difference was found in the ICU and in-hospital mortality rates and hospital LOS between the groups. They concluded that early tracheostomy reduced the MV duration, ICU LOS, and incidence of VAP in critically ill neurosurgical patients. However, early tracheostomy did not reduce either the ICU or hospital mortality.

**Empirical Studies on the factors that influence outcome after in the ward**

Mondrup F, Skjelsager K, Madsen KR (2012) performed an electronic questionnaire survey among heads of unit at registered Danish ICUs. A total of 34 out of 43 ICUs responded. 56% of the ICUs do not document individual plans for decannulation in the patient's chart. 91% of the ICUs do not perform daily follow-up of tracheotomised patients on the ward. No guidelines for decannulation on the ward were found, and only 6% have a guideline for accidental decannulation. Furthermore, as little as 47% of the ICUs report any formalized education or training of staff nurses in the management of tracheotomised patients. Guidelines relevant to patients discharged from Danish ICUs with a tracheal cannula in situ are scarce; few ICUs employ individualized plans for tracheostomy management and decannulation; there is largely no daily intensivist-led post-ICU follow-up, and formal staff education in tracheostomy management on the ward is scarce. They affirmed that these factors create a potential for adverse events and increased morbidity in this high-risk, high-cost patient population. Possibly individualized plans for tracheotomised patients as well as intensivist-led follow-up on the ward can improve patient outcome and safety and this should be confirmed in a future study.

In another study Martinez et al (2009) tried to determine the relationship between tracheostomy tube in place after intensive-care-unit (ICU) discharge and hospital mortality. It was a prospective observational cohort study in a medical-surgical ICU in a tertiary-care hospital that does not have a step-down unit. They recorded clinical and epidemiologic variables, indication and timing of tracheostomy, time to decannulation, characteristics of respiratory secretions, need for suctioning, and Glasgow coma score at ICU discharge. A total of 118 patients were tracheostomized in the ICU, and 73 were discharged to the ward without neurological damage. Of these, 35 had been decannulated. Ward mortality was 19% overall, 11% in decannulated patients, and 26% in patients with the tracheostomy tube in place; that difference was not statistically significant in the univariate analysis (P=.10). However, the multivariate analysis, which adjusted for lack of decannulation, age, sex, body mass index, severity of illness, diagnosis at ICU admission, duration of mechanical ventilation, Glasgow coma score, characteristics of respiratory secretions, and need for suctioning at ICU discharge, found 3 factors associated with ward mortality: lack of decannulation at ICU discharge (odds ratio 6.76, 95% confidence interval 1.21-38.46, P=.03), body mass index > 30 kg/m(2) (odds ratio 5.81, 95% confidence interval 1.24-27.24, P=.03), and tenacious sputum at ICU discharge (odds ratio 7.27, 95% confidence interval 1-55.46, P=.05).

Fernandez, Bacelar, Hernandez, Tubau, Baigorri, Gili and, Artigas (2008) carried out a study to determine the effect of discharge from the ICU with a tracheostomy tube on ward mortality and its relation to patient vulnerability. It was a retrospective single-center cohort study Database (2003-2006) review of patients undergoing mechanical ventilation (MV) > 24 h and discharged from the ICU with or without tracheostomy tube in place and followed up to hospital discharge or death was used. From 3,065 patients admitted to the ICU, 1,502 needed MV > 24 h. Only 936 patients (62%) survived the ICU and were transferred to the ward; of these, 130 (13.9%) had a tracheostomy tube in place. Ward mortality was higher in patients with a tracheostomy tube in place than in those without (26 vs. 7%, P<0.001). Increased ward mortality among cannulated patients was seen only in those with intermediate Sabadell.
score (24 vs. 9% in score 1, P = 0.02, and 38 vs. 24% in score 2, P = 0.06), but not in the "good prognosis" (2 vs. 2%, score 0) and "expected to die in hospital" (80 vs. 75%, score 3) groups. Multivariate analysis found three factors associated with ward mortality: age, tracheostomy tube in place, and Sabadell score. Lack of tracheostomy decannulation in the ICU was associated with ward mortality.

Fernandez, Tizon, Gonzalez, Monedero, Garcia-Sanchez, de-la-Torre, Ibañez, Frutos, del-Nogal, Gomez, Marcos and Hernández (2011) carried out a research to analyze the impact of decannulation before intensive care unit discharge on ward survival in nonexperimental conditions. Prospective, observational survey was used. Population was Thirty-one intensive care units throughout Spain. Ans sample was all patients admitted from March 1, 2008 to May 31, 2008. Multivariate analyses for ward mortality, with Cox proportional hazard ratio adjusted for propensity score for intensive care unit decannulation. included in the study were 4,132 patients, 1,996 of whom needed mechanical ventilation. Of these, 260 (13%) were tracheostomized and 59 (23%) died in the intensive care unit. Of the 201 intensive care unit tracheostomized survivors, 60 were decannulated in the intensive care unit and 141 were discharged to the ward with cannulae in place. Variables associated with intensive care unit decannulation (non-neurologic disease [85% vs. 64%], vasoactive drugs [90% vs. 76%], parenteral nutrition [55% vs. 33%], acute renal failure [37% vs. 23%], and good prognosis at intensive care unit discharge [40% vs. 18%]) were included in a propensity score model for decannulation. Crude ward mortality was similar in decannulated and nondecannulated patients (22% vs. 23%); however, after adjustment for the propensity score and Sabadell Score, the presence of a tracheostomy cannula was not associated with any survival disadvantage with an odds ratio of 0.6 [0.3-1.2] (p=.1). they concluded that intensive care unit discharge before decannulation is not a risk factor.

Paul (2010) carried out a literature review to identify current perspectives and areas for research regarding care and management of tracheostomized adult patients discharged to general wards and the community. Database searches of MEDLINE, BRITISH NURSING INDEX and CINAHL (1998-2009) was used. Inclusion criteria was literature regarding tracheostomized adult patients discharged to non-specialized areas. Exclusion criteria was paediatric literature. They concluded that even though best practice is applied to the care of tracheostomized adult patients in some areas, including support for ward staff from specialist nurses or teams, this is not always formalized or consistent. Moreso, the search showed a lack of medical follow-up once the patient is discharged from specialized areas with a tracheostomy. They noted that research is very limited in relation to the care and management of tracheostomized adult patients outside specialized areas, yet there is morbidity and mortality associated with this patient group. Staff education is widely recommended, but further development is needed to determine the best methods of delivering education, especially for health care professionals who care for tracheostomized patients on an infrequent basis.

However, in the study conducted by Norwood, Spiers, Bailiss and Sayers (2003) to evaluation of the role of a specialist tracheostomy service. A total of 170 patients were studied. After service implementation, fewer patients (17.6%, n=21) were discharged from the intensive treatment unit to the wards with tracheostomy tubes compared with the first group (39%, n=20) (p=0.006), and the number of tracheostomy related complications on the wards were significantly reduced (p=0.031).

Summary of literature review

In this study various literatures were reviewed based on conceptualization of tracheostomy. Theoretical framework used in this study is Betty Neuman system theory development developed by Neuman and Fawcett. The review of literature also presented some studies carried out by researchers that indicated the variables in the study. Most of the research were mostly foreign based. Though some studies has been conducted on same topic but none has been conducted in Umuahia to the best knowledge of the researcher.
Operational definition of terms

Knowledge: Knowledge in this study means the score obtained in the knowledge test on tracheostomy prepared by the investigator.

Practice, an implementation of measures to prevent ventilator associated pneumonia, according to the current study a score of 50% and above is considered adequate

Suctioning – removal of material through the use of negative pressure, e.g. removal of operative wound exudates during and after surgery, and also removal of respiratory secretions from the respiratory passages that the patient cannot remove by coughing.

Tracheostomy - This consists of making an incision on the anterior aspect of the neck and opening a direct airway through an incision in the trachea. The resulting stoma can serve independently as an airway or as a site for a tracheostomy tube to be inserted.

Chapter Three

This chapter discusses the research method used for this study, area of study, target population, sample, sampling technique, inclusion/exclusion criteria, data collection instrument, instrument validation and revalidation and test of reliability of instrument. It will also discuss ethical consideration, procedure for data collection and method of data analysis.

Research design

A cross sectional descriptive design was used for this study because it is concerned with the present situation (status quo). This is considered appropriate because the general purpose of descriptive survey is to observe, describe and document aspect of a situation as it naturally occurs and to show the need for change

Area of study

The area of study is the Federal Medical Centre (Queen Elizabeth Hospital) Umuahia, the largest and the most active tertiary hospital in Abia state, south East, Nigeria. It is the oldest mission Hospital East of the Niger, built in the early 1950’s and taken over by the Federal Government of Nigeria in 1992 and renamed Federal Medical Centre Umuahia.

This hospital serves both self and non-self referred patients with diabetes mellitus from the seventeen local Government areas of Abia state and the neighbouring states like Imo, Ebonyi and Akwaibom state. It is located at NO 29 Aba Road Umuahia, Abia state capital. It is bounded on the South East by Afara Village and Nigerian Prisons Umuahia. On the East by Ibeaku Central School and World Bank Housing Estate. On the North by Ndume Village and on the West by Umuahia/IkotEkpene Road.

Being a tertiary health institution, it has facilities for training, research, clinical practice and specialty services. It was chosen because of the specialist services it offers. It runs both in-patients and out-patients facilities. The clinics run from Monday to Friday weekly by different consultants.

Target population

The target population refers to all the nurses ICU and surgical wards in Federal Medical Centre Umuahia, Abia state.

Sample size

This consists of all the nurses working in these two areas; ICU and surgical ward with staff. The sample size is fifty nurses.

Sampling technique

Convenient sampling technique was used to select the participants which will include all the nurses in the selected areas.

Data collection

A self report instrument (Pre-tested Questionnaire) shall be used to source information primarily from the subjects. Secondary data will be collected by the researcher through review of literature
Method of data analysis

The data gathered will be grouped and analysed using descriptive statistics to present data in percentages, frequency table etc. Inferential statistics will also be employed too. The SPSS software which will be used to calculate the mean and the standard deviation for all the variables. The association of outcome with independent variables will be assessed using multivariate analysis tool.

Validation of instrument

Face validation of the instrument will be done by one project supervisor. Her input will be used to effect some corrections before using the instrument for field testing.

Content validity

The researcher-made questionnaire will be given to two experts in the field of study to evaluate.

Reliability and instrument

Reliability testing with test-retest method will be done. The coefficient of reliability of 0.85 - 0.9 using Pearson product moment correlation coefficient formula will be accepted.

Result and discussion

This chapter presents and discusses the result of the study. Data for this study were analyzed and presented based on the research questions and hypothesis that guided the study. The findings of the study were organized in three parts; demographic data, data answering research questions and the third part verifying the hypothesis.

Table 1. showing the demographic data of the participants

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30</td>
<td>15</td>
<td>18.75%</td>
</tr>
<tr>
<td>30-40</td>
<td>42</td>
<td>52.5%</td>
</tr>
<tr>
<td>41-50</td>
<td>15</td>
<td>18.75%</td>
</tr>
<tr>
<td>51+</td>
<td>8</td>
<td>10%</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>16</td>
<td>20%</td>
</tr>
<tr>
<td>female</td>
<td>64</td>
<td>80%</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>23</td>
<td>28.75%</td>
</tr>
<tr>
<td>Married</td>
<td>50</td>
<td>62.5%</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>2.5%</td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
<td>3.75%</td>
</tr>
<tr>
<td>Widowed</td>
<td>2</td>
<td>2.5%</td>
</tr>
<tr>
<td>Professional qualification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RN/RM</td>
<td>25</td>
<td>31.25%</td>
</tr>
<tr>
<td>Diploma</td>
<td>20</td>
<td>25%</td>
</tr>
<tr>
<td>Bsn</td>
<td>30</td>
<td>37.5%</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>5</td>
<td>6.25%</td>
</tr>
<tr>
<td>Years of experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-10</td>
<td>30</td>
<td>37.5%</td>
</tr>
<tr>
<td>11-20</td>
<td>32</td>
<td>40%</td>
</tr>
<tr>
<td>21-30</td>
<td>20</td>
<td>25%</td>
</tr>
<tr>
<td>31-35</td>
<td>18</td>
<td>22.5%</td>
</tr>
</tbody>
</table>

Table 1 showed the bio-data of the participants. Age 21-30 were 15 (18.75%), 31-40 were 42 (52.5%), 41-50 were 15 (18.75%) and 50+ were 8 (10%). Out of 80 participants 16(20%)
were males and 64(80%) were females. In marital status Single were 23 (28.75%), married were 50 (62.5%), separated were 2 (2.5%), divorced were 3 (3.75%) and widowed were 2 (2.5%). Data on years of experience were RN/RM 25 (31.25%), Dp were 20 (25%). Bsn were 30 (37.5%) and postgraduate were 5 (6.25%). In Years of experience 1-10 were 30 (37.5%) 11-20 were 22 (25%), 21-30 were 20 (25), 31-35 were 18 (22.5%).

Research question one

What knowledge do the nurses in FMC Umuahia have about of indications of tracheostomy?

<table>
<thead>
<tr>
<th>Indications</th>
<th>Yes</th>
<th>Percentages</th>
<th>No</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airway obstruction</td>
<td>55</td>
<td>68.75</td>
<td>25</td>
<td>31.25</td>
</tr>
<tr>
<td>Prolonged airway support</td>
<td>61</td>
<td>76.25</td>
<td>19</td>
<td>23.75</td>
</tr>
<tr>
<td>Airway tumor</td>
<td>30</td>
<td>37.5</td>
<td>50</td>
<td>62.5</td>
</tr>
<tr>
<td>Copious secretion</td>
<td>38</td>
<td>18.05</td>
<td>42</td>
<td>81.95</td>
</tr>
<tr>
<td>Failed extubation</td>
<td>64</td>
<td>80</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Intubation over 21 days</td>
<td>51</td>
<td>63.75</td>
<td>29</td>
<td>36.25</td>
</tr>
</tbody>
</table>

Table 2 showed result of the respondents on indication of tracheostomy. Airway obstruction recorded 55(68.75%), Prolonged airway support recorded 61(76.25%). Others include Airway tumor30 (37.5%), Copious secretion, 38(18.05%), Failed extubation 64(80%) and Intubation over 21 days, 51(63.75%). from the data failed intubation with frequency of 68(80%) rated high level of knowledge by the participants while airway tumor rated low with 30(37.5%).

What are the scope of management known and areas of practice competencies by the FMC Nurses?

<table>
<thead>
<tr>
<th>Scope of management</th>
<th>Agree</th>
<th>%</th>
<th>Disagree</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Effective mobilization of secretion</td>
<td>66</td>
<td>82.5</td>
<td>14</td>
<td>17.5</td>
</tr>
<tr>
<td>2. Prevention of pneumonia</td>
<td>41</td>
<td>51.25</td>
<td>39</td>
<td>48.75</td>
</tr>
<tr>
<td>3. Promoting skin integrity</td>
<td>45</td>
<td>56.25</td>
<td>35</td>
<td>43.75</td>
</tr>
<tr>
<td>4. Humidification</td>
<td>39</td>
<td>48.75</td>
<td>41</td>
<td>51.25</td>
</tr>
</tbody>
</table>

When asked about the area of competence using scope of management, the nurses had generally above average knowledge of the expected scope of management

Table 3: This table showed that the respondents had above average of knowledge in Effective mobilization of secretion 66(82.5%). Prevention of pneumonia 41(51.25) Promoting skin integrity 45(56.25) Humidification 39(48.75)
In evaluating competence knowledge of need assessment of patients was applied. Table 4 indicated that the nurses had just a little above average of how to assess patients need. The data showed that Increased work of breathing has respondents of 42 (51.21%). Changes in respiration were 30 (37.5%). Decreased SpO2, was 47 (58.75%) Copious secretion, indicated 48 (60%) Wheezing was 44 (55%) and Unable to clear airway, 36 (45%). surprisingly well above average did not accept that changes in respiration is an alert for action with score of 50(62.5%).

Table 5 indicated the nurses had just a little above average of how to assess patients need. The data showed that Increased work of breathing has respondents of 42(51.21%). Changes in respiration were 30 (37.5%). Decreased SpO2, was 47 (58.75%) Copious secretion, indicated 48 (60%) Wheezing was 44 (55%) and Unable to clear airway, 36 (45%). surprisingly well above average did not accept that changes in respiration is an alert for action with score of 50(62.5%).

In competence evaluation Table 5 showed that the practice of Hyperoxygenate before suctioning rated 30(37.5%); Suction pressure for open system is not more than 120mmhg;closed system not more than 160mmhg had 21(26.25%) respondents while 69 (73.75%) disagreed. Limit suction to three catheters only 40(50%), Allow 20-30 seconds in between passes rated 52(65%).

What are the clinical outcomes of tracheostomy care of the patients? Table 6 showed knowledge of outcome as in Reduced ICU and hospital length of stay, 52 (65%) and 2 8 (35%) disagree. Reduced mechanical ventilator support 56 (70%). Whereas 24 (30%) disagree. Decreased mortality were 64 (80%) Reduced ventilatory associated pneumonia 46(57.5%).

What are the factors that influence outcomes in the ward? Table 7 showed knowledge of outcome as in Reduced ICU and hospital length of stay, 52 (65%) and 2 8 (35%) disagree. Reduced mechanical ventilator support 56 (70%). Whereas 24 (30%) disagree. Decreased mortality were 64 (80%) Reduced ventilatory associated pneumonia 46(57.5%).
In responding to the factors that influence outcome after discharge to the ward, there was relatively high score for all the variables. Table 7 showed Lack of follow up on discharge 64 (80%) which is above average. Scarce staff education rated 40 (50%). Timing of decannulation was 66 (82.5%). Discharge to the ward with tube had 15 (18.75%) while 65 (81.25%) disagree entirely. Co-morbidity had 62 (77.5%)

Hypothesis

Hypothesis 1: There will be no significant difference between ICU and surgical ward staff regarding the knowledge of indication of tracheostomy.

Table 8. showing t-test summary of ICU and surgical wards

<table>
<thead>
<tr>
<th>variables</th>
<th>N</th>
<th>X</th>
<th>SD</th>
<th>df</th>
<th>t-tab</th>
<th>t-cal</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU</td>
<td>12</td>
<td>32.62</td>
<td>4.32</td>
<td>78</td>
<td>1.62</td>
<td>5.04</td>
<td>0.05</td>
</tr>
<tr>
<td>Surgical wards</td>
<td>68</td>
<td>41.63</td>
<td>5.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8 above showed the values of mean and standard deviation were collated and computed using t-test. T-tab was 1.6 while t-cal was 5.04 at p-level of 0.05. the result showed a high value of t-cal of 5.04 showing significant difference between the ICU and surgical ward staff knowledge of indication for tracheostomy.

Hypothesis 2: There will be no significant difference in the level of practice competence of tracheostomy care of ICU and surgical wards staff participants.

Table 9. showing

<table>
<thead>
<tr>
<th>variables</th>
<th>N</th>
<th>X</th>
<th>SD</th>
<th>df</th>
<th>t-tab</th>
<th>t-cal</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU</td>
<td>12</td>
<td>38.04</td>
<td>4.47</td>
<td>78</td>
<td>1.62</td>
<td>3.69</td>
<td>0.05</td>
</tr>
<tr>
<td>Surgical wards</td>
<td>68</td>
<td>42.41</td>
<td>5.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9 above showed the values of mean and standard deviation were collated and computed using t-test. T-tab was 1.6 while t-cal was 3.69 at p-level of 0.05. The result showed a high value of t-cal of 5.04 showing significant difference between the ICU and surgical ward staff knowledge of care.

Discussion summary and recommendations

Discussion

In this study 80% respondents most favoured failed intubation as indication for tracheostomy and this conforms the opinion of Whitmar et al. (2013). Durbin (2005), says that tracheostomy is a helpful procedure to secure airway in long or failed extubation. However the participants’ response indicated that copious secretion is far from being an indication for tracheostomy. This is against the assertion made by Durbin (2010). Effective mobilization as the first to consider in the scope of management of tracheostomy (82.5%). As quoted by Morris, Whitmer and McIntosh (2013) it has been a concern in the care of critically ill patients.

In need assessment for suctioning the concern is that above average of the response did not accept change in respiration as an indication for initiating suctioning to clear the patient’s airway. This calls for concern in assessing the learning needs of the nurses.

Their knowledge associated with proper techniques of suctioning is also a source of concern (table 5). This is not in keeping with the assertion of Crimlisk et al. (2002). The nurses have high opinion about clinical outcome of tracheostomy (table 7) which is consistent
with Martinez et al (2009). These outcomes are considered either to be positive or negative which should not be allowed to arise in the course of patient’s admission. The nurses have above average of the influence of outcomes of tracheostomy procedure. However, discharge to the ward with tube was not viewed as a factor over patient outcome. Norwood, and Sayers (2003) has a different opinion.

**Summary and recommendations**

This is a study to explore the knowledge and practice of tracheostomy care by the nurses at FMC, Umuahia. It was across-sectional study and descriptive analysis was employed to analyze data collected.

The results study showed that 80% respondents most favoured failed intubation as indication. 82.5% were of the opinion that effective mobilization of secretion is the major area of scope in management of tracheostomy. Change in respiration as an indication for initiating suctioning to clear the patient’s airway rather had low score which calls for in assessing the learning needs of the nurses. Their knowledge associated with proper techniques of suctioning is also a source of concern (21%). The nurses have high opinion about clinical outcome of tracheostomy (above 66%).

The result also showed that there is signifigant difference between the ICU and surgical ward staff knowledge of indication for tracheostomy ( T-tab was 1.6 while t-cal was 5.04 at p-level of 0.05. The result showed a high value of t-cal of 5.04). Also, the result showed the values of mean and standard deviation which were collated and computed using t-test as; T-tab was 1.6 while t-cal was3.69 at p-level of 0.05. The result showed a high value of t-cal of 5.04 showing signifigant difference between the Icu and surgical ward staff knowledge of care.

Findings from this study suggest that there is a great need for education for nurses focusing on tracheostomy. Nurses need to be encouraged to assess their learning needs which will help them get required knowledge which they can translate into practice. Education for these nurses poses a great challenge to the hospital and health system at large. Learning resources made accessible in the units for nurses will go a long way to improve their practice.

To avoid untoward events and reduce mortality, it is necessary to audit nursing practice in order to offer the best of practice. Continues program development need to be put in place by the policy makers to improve their knowledge especially in area of tracheostomy and its proper care.

**Acknowledgement**

I would like to express my sincere appreciation to the following people who assisted me in one way or another during the project writing. My supervisors, Jayalakshmi C for guidance and follow up in my research proposal, the Texila American University, School of Nursing Sciences’ Lecturers and classmates for their encouragement and support.

**References**


The Quality Nursing Educational Innovation and Enhancement of the Decentralized Practical Model for Health Education and Training in Rural Zambia

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Abstract

St. Luke’s School of Nursing and Midwifery is located at a rural Mission Settlement in Mphanshya, Zambia. It opened in 2009, with just 30 students, but was recognized for its success and innovation and upgraded, now serving 210 students. 400 have successfully graduated and work across the country.

To accommodate the increased intake and meet quality training standards the School pioneered a decentralized practical training model, the first of its kind in Zambia.

Zambia, like many other low income countries, faces considerable challenges in providing sufficient human resources for health. It has a shortfall of 9’000 nurses (60% of its requirement). Rural hospitals suffer particularly drastic gaps between planned and actual staffing numbers, with difficulties retaining them. Zambia failed to meet MDG5 (UNDP, 2013) and still only 47% of births are attended to by skilled personnel, contributing to maternal mortality of 440 deaths in 100,000 live births. International health strategies (WHO 2008, 2010) and Zambia’s national health priorities (MoH, 2011, 2012, 2013) emphasizes training institutions need to increase their output.

Keywords: Pioneering, Decentralized practicum sites, quality, practical-training, rural, Zambia

Introduction

In rural clinics Zambian nurses are likely to be the sole health professionals. Without having experienced the reality and challenges of rural practice the outlook for staff performance and retention is poor (WHO, 2010). Equipping professionals for these demands is only possible by training them in the rural context. The decentralized model enables this need to be met.

Aim of innovation

To design and implement a model which will help train higher numbers of quality nurses and midwives in rural settings for carers in rural communities.

Innovation 1) When the student intake was increased the hospital attached to the School had insufficient capacity to offer a quality learning environment with adequate supervision. To enable greater numbers of students to be trained a fresh concept of decentralized sites was designed and implemented by the School. This is novel to Zambia as typically students are only attached to the hospital next to the school.

The school engaged two rural hospitals to provide decentralized training. Students rotate through each site benefitting from three different learning environments. A fourth-site expansion has since been completed and ready to house the students.

Innovation 2) Clinical Instructors in Zambia are typically full-time and attached to a school, posing problems with supervising a large pool of students. To address the unacceptably high ratio of students to CIs the School engaged a decentralised team of nurses and midwives. They take on the supplementary role of Clinical Instructor, supervising and assessing the students in addition to their existing responsibilities. On the job training is provided by the School, meaning concurrent capacity building of staff.
Methods used to assess the innovation

- Comparison of examination results pre and post implementation of decentralized training at the school.
- Monitoring levels of rural/urban graduate postings at the posting centre in the Ministry of Health.
- Ongoing monitoring and evaluation by School tutors at all three (3) sites.
- Regular assessment by stakeholders at the national level.
- Needs analysis

Method

A needs analysis tool, Rosset (1987) was used to structure the process of gathering evidence, analyzing evidence and reporting back findings. This tool has been previously implemented in clinical needs assessments and involves a systematic four step process to conducting the needs assessment; stating the current way processes are taking place, conducting the need assessment, analyzing results to identify thematic areas and then proposing recommendations for a new way. This will be used as the basis of reporting what was found in this needs assessment.

There are currently three (3) practical training sites. One mother site and two decentralized training sites at other rural hospitals. Two sites are mission run and one is government funded. Agreements are currently being made with a third government run institution to create a new site.

At the time this needs assessment was conducted there were a minimum of two clinical Instructor (CI) at each site (supported by the SolidarMed project) and two based at the School (fulltime, government funded positions) with 8 in total. This makes a ratio of approximately 1:20 (CI: students) which is not in keeping with the General Nursing Council of Zambia who recommend 1:10 as a best practice standard.

Each site has a student cupboard of equipment to use for practicing procedures and for practical exams. This supplements the hospital equipment which is not always adequate. Consumables are supplied to each site for use by students on a yearly basis. This is currently funded by SolidarMed.

Supervision is done on an ad hoc basis, mainly by the Principal Tutor.
There are currently three different streams of nurse training running simultaneously. This makes it difficult to follow the course master plans.

Methodology

A variety of methodologies were used to complete the needs assessment with all major stakeholders. Methodologies chosen were thought to provide the best way to engage the specific stakeholder group and gather the most reliable information. The CI’s and Hospital Management Team’s were interviewed using open ended questions to guide the discussion and ensure some uniformity between sites and a SWOT analysis to record the answers and satisfaction levels. A questionnaire was given to students to collect quantitative data and allow anonymous evaluation, followed by a reflective session to gain more qualitative information and to detect themes emerging. Inventories were taken of equipment at all sites, plus observations of equipment usage and the contents of student cupboards during practice and practical exams were performed.

Results

The quantitative results were formulated into the graphs below;
Q2: Other staff members (not CI’s) do not help you

Q3: Whilst on shift I was asked to do things without s
Q4 - It's difficult to fully meet learning objectives by time:

- 45
- 40
- 35

Q5 - Each practical training site expects you to do time:

- 40
- 35
- 30
Q6- You are re-taught to do things differently in the class.

Q7- You have not been taught things in class that you need to know.
Q8 - You are not given a chance to give feedback after p

Q9 - It is difficult to contact the school if you have p
STRENGTHS

- Staff house opposite to students works well
- Lots of learning opportunities at the hospital
- The hospital benefits from the students as a human resource

WEAKNESSES

- Infrastructure means that there is no real defined area for students to study, eat and socialise together
- Maintenance structure is poor. No one person responsible- no fee for workmanship
- Bad communication from school
- No regular meetings with School to discuss terms and conditions.
- School have delays with answers to letters
- Delay from school with payments owed
- Objectives sometimes too broad and difficult to meet.
- NO MOU between St. Luke’s hospital and the school
- Has not always been adequate management/supervision of CI from the school

OPPORTUNITIES

- Would be good to meet up with other HMT to share ideas and learning
- Would be good to tell general nursing staff more about what is happening in the teaching at the school
- Training, capacity building for nurses on clinical issues as well as mentoring could help change attitudes and mean more assessors on the ground.

THREATS

- CI allocated not interviewed as the lack of nurses means there is not always that many options for RN.
- When CI are on leave it is difficult to find people to take responsibility for students.
- If students are given evaluation manuals etc late this compromises practical training.
- MOU’s with all three sites differ, eg hosting fees
- Late delivery of equipment needed for students ie gloves can mean the HMT need to step in,
Nurse’s attitude is often poor towards students? Due to fear of teaching or lack of own knowledge

Overall analysis of student feedback

Overall analysis of this section shows that the students have had a varied clinical experience in their first year of training with both positive and negative outcomes. When results of both the questionnaire and open reflective session are analyzed together there is indication of a need for more supervision and equipment to ensure a higher quality of practical training. These issues will be looked at in more detail later in the needs analysis, with comparison of the views of other stakeholders.

Hospital management teams (HMT)

Representatives from HMT at all sites were interviewed. In some sites this included both the Medical Officer in charge and the Nursing Officer but on one site only the Senior Nursing Officer was available to complete the needs assessment. Barriers included people being on leave and the handover of responsibility at one hospital to a new acting medical officer during the process meaning historical information was only hearsay and so it was not deemed appropriate to involve this in the assessment.

Open ended questions were asked but some structure was used for the areas asked about. Answers from each site were firstly recorded on separate SWOT tools however for analysis they have all been combined into one tool below, with the inference that if something is identified as a threat at one site it could also be a potential threat at all sites.

HMT Overall analysis

Overall analysis of feedback from interviews with the HMTs shows a need for more administrative structures to be put in place (such as maintenance procedures and how to effectively communicate) in order to strengthen the partnership. Emerging themes included a need for more communication with the

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
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<tbody>
<tr>
<td>• Good team of CI with differing experiences.</td>
<td>• Don’t feel like valued member of the school team</td>
</tr>
<tr>
<td>• Many have done EN- RN therefore understand both cadre courses.</td>
<td>• Nurses rotate around wards meaning there is no permanent in-charge. This makes continuity difficult for students and poses problems with the end of placement progress tool</td>
</tr>
<tr>
<td>• Done at different institutes</td>
<td>• Very rarely get to meet with other CI from other sites meaning they can’t share ideas or discuss concerns about students.</td>
</tr>
<tr>
<td>• Have 2 x full time CI</td>
<td>• Food transportation is not done regularly and not worked out per student. Would be better to have monthly distributions.</td>
</tr>
<tr>
<td>• Some current CI have done 2 week GNC assessor course</td>
<td>• Money (top up) is not given regularly and is not enough for the current workload. 1 CI: 15 students.</td>
</tr>
<tr>
<td>• Have In charges on each ward so can gain their help to supervise students</td>
<td>• Demands on time such as workshops, extra programmes takes</td>
</tr>
<tr>
<td>• Some CI are I/C and the shift pattern makes it easier to supervise students</td>
<td></td>
</tr>
<tr>
<td>• Do a good orientation and set objectives as well as meet with each student individually*** NOT a model used everywhere.</td>
<td></td>
</tr>
<tr>
<td>• GNC assessor course was very useful</td>
<td></td>
</tr>
<tr>
<td>• Works better if CI is on 8-16.00 shifts</td>
<td></td>
</tr>
<tr>
<td>• Some CI already OSCE trained.</td>
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them away from the students.
- Anti-social shifts means difficult to see students
- Don’t think HMT are aware of the extra pressures on CI as well as normal job
- Lack of support for the CI from the School.
- Some equipment falling apart- not good quality.
- Attitude of other nurses is that CI should do everything for students and that they should not be involved

<table>
<thead>
<tr>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
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<tbody>
<tr>
<td>• New CPD points mean that nurses are more eager to help out with students and teaching- however they might need formal assessors training.</td>
<td>• Anti-social shifts means difficult to see students</td>
</tr>
<tr>
<td>• Use In-charges for exams and supervision- they might benefit from more training.</td>
<td>• Don’t think HMT are aware of the extra pressures on CI as well as normal job</td>
</tr>
<tr>
<td>• Could be more academia set whilst they are on placement- currently they do not have assignments whilst they are in practice.</td>
<td>• Lack of support for the CI from the School.</td>
</tr>
<tr>
<td>• More equipment would be helpful for students and the hospital</td>
<td>• Some equipment falling apart- not good quality.</td>
</tr>
<tr>
<td>• Nurses should be taught more about the school and the students course</td>
<td>• Attitude of other nurses is that CI should do everything for students and that they should not be involved</td>
</tr>
<tr>
<td>• Need to strengthen the teams so they split work better.</td>
<td>• Need HMT to help out with nurse attitudes to students and CI</td>
</tr>
<tr>
<td>• An extra CI would be very useful</td>
<td>• Nurses meetings could be used to</td>
</tr>
<tr>
<td>• If tutors were more involved they could help bridge the theory/practical gap</td>
<td></td>
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School, more support for students on the ground in terms of building up nurses as better mentors and supporting CI’s or bringing more CI into the team. Equipment was deemed to be adequate but systems of deciding and prioritizing what is needed, how much and how to deliver it on time are needed. An evaluation tool for use by the HMT could help strengthen communication and help quality assurance from both stakeholders; the School and the HMTs.
The resigning of MOU’s could provide the forum for sharing good practice and harmonizing agreements between all sites and the School.

Clinical instructors:

In total 6 out of the 8 Clinical instructors were interviewed during the needs assessment, two from each decentralized practical training site. At the mother site one of the CI was supported by SolidarMed and the other was one of the full time CIs based at the school but with responsibilities at the hospital. The two not involved were due to leave of absence and in service-training. The SWOT analysis was completed with one group of two CI together and the rest individually. Similar questions were used (See Appendix 1) to provide uniformity. All CI involved in the needs assessment had been working with the School since it commenced practical training at their site. Four of them were Registered Nurses (RN’s) and two Registered Midwives (RM’s).

In keeping with confidentiality answers from CI across all three sites will be analyzed together to see themes emerging.

Clinical instructors-overall analysis

Overall analysis of feedback from interviews with the CI’s were very similar to that of the HMT and showed emerging themes included a need for more communication with the School, more support for students on the ground in terms of building up nurses as better mentors and supporting CI’s or bringing more CI into the team due to demands on their time. Equipment was deemed to be lacking in quantity and sometimes in quality. There were numerous opportunities but mainly sharing experiences with another CI was seen to be the most useful.

Thematic areas identified

Discussion of themes emerging from analysis of students, HMT and CIs:

Clinical themes

• A need for more supervision

Analysis from stakeholders shows that there is a need for more supervision. A large majority of students expressed a need for more Clinical Instructors or for more time with the Clinical Instructors already in role in both of the assessments. The reflective exercise demonstrated the negative feelings and experiences that some had had during their first year of practice which, although would not be avoided with more Clinical Instructors, could have been better dealt with more support. They expressed that they wanted to learn, inferring that at times a learning environment was not being fostered. In direct response to this, analysis of comments from Clinical Instructors across all sites showed a frustration at wanting to give more time, but having too many demands on them and themselves identifying this as a potential threat for the training of students. Compounding this the large number of students, making poor student: CI ratios further diluted their ability to supervise all students to their desired standard. Interestingly feedback from CI indicated that they felt HMT’s did not always recognise the extra demands being a CI had on their staff and did not always take that into consideration when allocating extra hospital related work. Although this is controversial as the role and incentive is in place as a recognition that the CI first have a duty to the hospital and are expected to fulfil most of the CI role alongside this or in their spare time- it is notable that the HMT were the only stakeholders not to all identify the number of CI’s as a problem and their ability to effectively supervise, but chose to focus more on the negative attitudes of
other nursing staff as a barrier to sharing the teaching of students. Taking all of this into consideration, with the addition of recommendations from the GNC that best practice ratios should be one CI to 10 students, there appears to be a need for additional CT’s on all sites. This would mean the work could be split between instructors better and that there would be room for one to be off site due to hospital demands and still mean there was adequate supervision for students in the clinical environment. It is necessary to use the lessons learned regarding the barriers to role performance when selecting future CT’s such as those already doing distance learning or with anti-social shift patterns to avoid making the same mistakes.

Diagrams 1a and 1b below demonstrate how a 3rd clinical instructor could better meet the demands of the large pool of students. Meaning the CI: student ratio would improve and roles and responsibilities could be shared, creating better opportunities for quality teaching and learning.

Diagram 1a. In this model one (1) Clinical Instructor would be expected to directly supervise 18 students.
Diagram 1b. In a model where there are three (3) available Clinical Instructors meaning one Clinical Instructor would be expected to directly supervise a reduced amount of 6 students.

On the same theme all stakeholders recognised the potential of other nurses as being a useful resource in also combatting difficulties with supervision. 76% students said that there was a lack of support and sometimes unhelpful attitudes from other staff. Similarly HMT’s echoed potential concerns about the attitude of nursing staff to mentoring. CI’s saw an opportunity in building up some of the nurses to act as assessors, as something which would also help with their work load. The model shown in Diagram 2 could be a positive way to improve the learning environment in the future. This model would mean you could send more students to a site with the same number of Clinical Instructors but by securing the support of Nurse Mentors on the ground to ensure the increased number of students still have close supervision and a quality learning environment, but with a broader range of input and experiences. Clinical Instructors could then act both as direct assessors but also as supervisors of the nurse mentors and overall facilitators of the student experience on the site. This model would also benefit the hospital as it builds up the capacity of their work force and to the nurse mentors as it would count towards their Continuing Professional Development (CPD) points. Implementation of this model would require careful and sensitive capacity building and would require an outside supervisor from the School to act to provide support to the Clinical Instructors as they supervise both Nurse Mentors and Students.
Diagram 2. Shows a model with a proposed new hierarchy with the supervisor from the School supporting the Clinical Instructor(s). The Clinical Instructors supporting the Nurse Mentors and the Nurse Mentors working directly with the Students. In this model the staff: student ratio would be further reduced meaning 3 students would be supported by 1 Nurse Mentor, and Each Clinical Instructor would support two (2) Nurse Mentors. Still giving a CI: Student ratio of 1:6, but on the ground level the students have closer supervision.

Administrative themes

- Communication

The overwhelming theme arising from CIs and HMTs under the banner of administrative needs was around communication networks. Phillips & Simmons (2013) stated that good communication is essential to make everyone feel valued and in touch with what is being done. This is reflected in discussions of communication as a weakness by both of these key stake holders.

Communication between the School and Hospital: The HMT stated that communication with the School was irregular and often delayed. CI said that the lack of face to face contact was a weakness and it was commented that this made them feel like a less valued member of the school team. Both HMT and Cis identified that a lack of notice regarding student rotations made it difficult for them to adequately prepare. There appeared to be a gap in knowledge about what was happening at the School which led to interruptions in the theory to practice continuum. Students interestingly did not identify more communication as a priority need for them, with the majority saying they could contact the school if needed. This possibly reflects the available tools for easier communication such as Facebook and WhatsApp which are used by the students but not the CI or HMT. Distance could be suggested as one of the barriers to sending timely, but despite this the analysis shows there is a need to improve the communication and that this should be seen as a high priority in the next phase, both for improving the partnership and reducing gaps created in the transition from theory to practice.

Communication between the sites:

The CI made a unanimous call for more opportunities to meet up with their fellow CI at other sites. Reasons for this included sharing concerns about specific students, learning from good practice and lessons learnt at other sites and awareness of a need to harmonise practices such as demonstrations, assessments and evaluations in to improve quality of training. Harmony between sites was also alluded to in the student’s questionnaire. When asked if things were done differently 90% of students said that they were sometimes, often or always taught things differently at each site. Whilst it is acknowledged that each hospital is meant to
offer a different learning experience to the students, such differences in practice could confuse a learner and impact on their learning.

On observation by the facilitator it was seen that very good practices were taking place on different sites, but this good practice had not been shared with other teams allowing them the chance to improve their procedures. HMTs similarly stated that it would be of interest for them to occasionally meet up with other HMT in partnership with the School. Although this does not seem as high a priority as for the CIs, who have the direct contact with the students, it shows a similar need. Scher (2013) states that goal alignment and sharing a vision, as well as support from managers, all constitute part of the foundation for ongoing good morale and execution of a project. As evidence should guide best practice, and in addition that it is an area all CI identified as weak there is a strong need for more communication between the same cadre stakeholders at different sites so they do not feel they are working in isolation.

From this analysis there appears to be a robust argument for the systems to be changed to lead to more timely and effective communication between both practical sites and schools and practical sites to each other.

Procedural policies and standardised roles

Philips & Simmonds (2013) state that to make clinical improvements, roles and responsibilities of key leads in the project (such as CI) should be well defined. The analysis above shows that practices differ across sites. One of the possible causes of this could be the lack of a clear identity for CI on the project. As the role has been designed by the school and no government funded positions are available there has never been a clear job description. This makes uniformity and appraisal, both important things for quality assurance, difficult. CI stated that they did not know exactly what the ‘top-up’ was for. There is a clear need to define the role of, and expectations on each CI. There are few obvious barriers to implementing this change and then supervising the performance. This would also make the HMT more aware of the demands on the CI. New MOU’s are also due which would give a chance to define things further and collaborate with the HMTs to arrive at an agreed and well defined job description.

Maintenance issues and consistency of food and equipment delivery were also areas identified as potential threats by HMT and CI. This was possibly down to a lack of formal policies/ procedures to follow in these areas. Infrastructure however was seen as a real strength in the partnership, but realistically closely followed maintenance schedules are required to upkeep these infrastructures. There appeared to be a willingness from the HMT to take the role as overseers, but only if formalised procedural policies were there. This could eventually could take pressure off the human resource at the school and show healthy partnership working. Face to face meetings would be the best forum for such agreements to be made and implemented and could be facilitated during supervision.

Evaluation

70 student out of 106 stated that they were ‘only sometimes’ or ‘never’ asked for feedback after a placement. This could arguably be a potential threat as it hinders gaining insight into gaps in quality. Student input is crucial to improving learning. The HMT also highlighted that although students got chance to evaluate at the end of a placement they currently did not. Gathering feedback and actively responding to it is a way to ensure people valued as well as learning lessons. It would be important to both get and feedback this information from all stakeholders.

Progress reports currently being used to evaluate students at the end of the placement were identified as useful to the school however practices for filling them in differed at all sites, with some CI doing them in conjunction with students and others filling them in without discussion. CI stated that the number of students meant it was difficult to know what level each one was at and what their learning needs were when they arrived. Making changes to the progress report tool and standardising practice, as well as making them available to students and CI as well as the school could be needed to improve standard of evaluation.
Phillips & Simmonds, (2013) stated that that actions around implementing new ways of working should first include organizing meetings to feedback findings.

**Recommendations**

**Feedback**

- Give formal feedback from needs assessment to school management, HMT, CI and students. This should be done face to face and soft copies of the assessment be made available for comment. All recommendations should be approved by all stake holders before implementation.

**Communication**

- Communication needs to be seamless; two way and timely.
- Agreed methods of communication between sites should be agreed (i.e. via email, letter, followed up by a phone call).
- Need to have a master plan agreed in advance and stick to it. This is needed ASAP in order to prepare for the three years of RN programme.
- There should be a notice period before rotations and objectives should be presented early enough to allow CI time to prepare the clinical environment.

**Standardisation**

- Documents and operational procedures should be revised and standardised for use across all sites. These documents should include;
- Clear job description and appraisal system for CI
- New MOU’s with clear roles and responsibilities for each stake holder
- New operational procedures for maintenance issues
- Contracts of all staff working on decentralised sites but under School/ SolidarMed payroll to be made available to the HMT for more transparency and for them to oversee management of such persons.

**Capacity building**

- Interview and appoint new CI so there are 3 on each site (aim 1 x RM, 2 x RM). Need to use lessons learned if employing new CI and ensure less conflicting demands
- Nurses at decentralized practical training sites to be given teaching on mentoring by LW and CI, to build up a pool of assessors to support CI-
- CI workshops to be held to help with identification of problem students’, differing levels of training, better for continuity, shared learning, what is working, harmony of evaluation. These should be held at the School to encourage

**Equipment**

- 6- Month procurement should be done based on new minimum level equipment and consumable analysis. Evaluation to be done after 6 months to make changes and ensure sustainability of stock at these levels by School after SolidarMed project finishes
- Inventory of cupboards to be kept up to date with accountability to students and CI on stock levels and broken equipment.
Evaluation

- Evaluation needed after every placement from all stakeholders; students, CI, HMT
- Progress reports to incorporate self-assessment and to be made available or discussed between all CI so that student progress can be tracked as they rotate.
- It is thought that all these recommendations could be implemented, evaluated or supervised during regular supervision visits from the School to the sites.

Regular supervision

- Regular supervision is required to provide support and monitor implemented changes. This will also help in harmonization between the School and other sites. Supervision should be standardized, well structured, easily used and sustainable. It has been well documented (Falender & Shafranske, 2008) that quality supervision should include; ADMINISTRATION (HMT), EVALUATION (students and CI) and CLINICAL (students and CI) aspects which fit in with our stakeholders and the themes that have arisen in the needs assessment.
- This format of supervision should be trialled and a tool devised that can be used by any supervisor.

Overall conclusions of the needs analysis

The needs assessment that has been undertaken supports that the following priority areas should be addressed in order to help improve the quality of the practical training at decentralized sites: communication, capacity building, levels and quality of equipment, standardization of policies and evaluation.

All of these areas could be covered in regular supervision trips although a simultaneous approach would be needed; looking at administrative issues, clinical issues and evaluating performance.

This needs assessment should be re-visited regularly and should be continuously managed through regular Monitoring and evaluation during supervision visits and at the end of each rotation. A full needs assessment should be conducted again after a period of implementation.

If the model of supervision is found to work one could expect to see high quality of practical training and it is hoped it that the model of decentralized training and partnership working could be rolled out to any new practical training sites.

Key findings

- Examination results (theory and practical) improved after decentralized training was implemented.
• Students report gaining a wide variety of experiences. Exposure to different hospitals is better preparing them for practice.
• The hospital workforce reports the students enabling improved patient care.
• On-site Clinical Instructors have significantly increased student supervision and teaching contact.
• The model has increased the output of graduates directly meeting the human resource crisis in Zambia.
• Local research monitored the first graduates and saw 80% posted rurally, reversing previous trends.
• The School has been recognized for its quality by the MoH for its 2015 and 2016 99% pass rate.
• National stakeholders (Ministry of Health/General Nursing Council) now recognize the pilot as a cost effective method of increasing output of trained professionals with additional benefits for the hospitals.
• Tanzanian visitors have expressed interest in adopting the model.

Discussion
• Decentralized sites enable an institution to deliver training to higher numbers of nurses and midwives, with a better student to mentor ratio, exposure to a variety of learning environments and has proved an innovative model for increasing quality alongside quantity. This has benefits for both students and hospitals.
• Rural training equips medical professionals for work in the rural setting but demands fresh concepts such as decentralized training to better deliver the curriculum.
• This small scale innovation for practical training in Zambia can be translated to other developing countries to improve the quality of their training against similar barriers to change.

Conclusion
The Decentralised practicum sites enable an institution to deliver training to higher numbers of nurses and midwives, with a better student to mentor ratio and an exposure to a variety of learning environments. It has proved to be an innovative model for increasing quality alongside quantity. This has benefits for both students and hospitals. Rural training
equips medical professionals for work in the rural setting but demands fresh concepts such as decentralised training to improved curriculum delivery. The innovative approach of decentralised practical nurse training should be translated to other developing countries to improve the quality of training and to address the human resource crisis especially in rural areas by training people from the rural in the rural for the rural.

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Creating Environments that Heal: This Manuscript Explains the ways to Improve patient Safety Taking into Consideration of How the Environment Plays a Critical Role

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Abstract
The patient environment of care plays a vital role in the discipline of patient safety for every hospital. Demonstrating that the hospital is a safe place for patients and for those that work there should be of the utmost importance for all healthcare personnel. This article broadly describes or outlines ten important points that will improve overall patient and staff safety in any hospital or healthcare set-up to ensure safety and increase patient satisfaction.

Introduction
The goal of this manuscript is to provide fundamental definitions that link with patient safety with environmental considerations. Evidence has been summarized that indicates how nursing personnel play key roles to improve quality healthcare through patient safety and interventions and strategies. Patient safety is a new healthcare discipline that emphasizes the preventing, reducing, reporting and analysis of medical error (A medical error is a preventable adverse effect of care, whether or not it is evident or harmful to the patient. This might include an inaccurate or incomplete diagnosis or treatment of a disease, injury, syndrome, behavior, infection, or other ailment.) That often leads to adverse healthcare events. The frequency and magnitude of avoidable adverse patient events was not well known until the 1990s, when multiple countries reported staggering numbers of patients harmed and killed by medical errors. Recognizing that healthcare errors impact 1 in every 10 patients around the world, the World Health Organization calls patient safety an endemic concern. Indeed, patient safety has emerged as a distinct healthcare discipline supported by an immature yet developing scientific framework. There is a significant transdisciplinary body of theoretical and research literature that informs the science of patient safety. The resulting patient safety knowledge continually informs improvement efforts such as: applying lessons learned from business and industry, adopting innovative technologies, educating providers and consumers, enhancing error reporting systems, and developing new economic incentives.

Global health continues to redefine itself from the historical legacy of 'international health' and 'humanitarian medicine'. A process of 'co-development' and mutual learning between countries is now needed to strengthen health systems and improve health outcomes. Kaplan sees this evolution as running “parallel to a shift in philosophy and attitude that emphasizes the mutuality of real partnership, a pooling of experience and knowledge, and a two-way flow between developed and developing countries” Lord Nigel Crisp also eloquently highlights the utility of shared learning to secure global health improvements. This concept of bidirectional learning between rich and poor countries is increasingly being explored in emerging literate

Traditional approaches to patient safety have focused primarily on research to demonstrate how a new practice leads to improved quality and patient safety. Much less attention has been paid on how to implement this practice. The importance of considering improvement as a socio-behavioral process has also been emphasized, but remains an emerging field of enquiry.

There is now growing recognition that patient safety and quality is a critical dimension of universal health coverage. Since the launch of the World Health Organization Patient Safety Programme in 2004, over 140 countries have worked to address the challenges of unsafe care.
This unique approach to tackling patient safety through partnerships between hospitals in Africa and Europe is paving the way for improving patient safety across the African region,” says Dr Shams Syed, who oversees the programme at World Health Organization.

“The tools co-developed by this programme are now available free to any hospital anywhere in the world that wants to take action to improve patient safety,” he adds.

Patient safety is a serious global public health issue. Estimates show that in developed countries as many as one in 10 patients is harmed while receiving hospital care. In some developing countries, the risk of health care-associated infection is as much as 20 times higher than in developed countries.

One in 10 patients may be harmed while in hospital

Estimates show that in developed countries as many as 1 in 10 patients is harmed while receiving hospital care. The harm can be caused by a range of errors or adverse events.

Patient Safety Issues

Diagnostic Errors: Such as wrong, missed or unintentional delayed diagnosis.
Health Care: Acquired Infections: These are the errors which occur during patient’s hospitalization.
Medication Errors: When a patient gets the wrong medication, or when he or she receives the right medication but in the wrong dosage.
Readmissions: A readmission is when a patient needs to return to the hospital less than 30 days after being discharged.
Wrong-Site Surgery: Wrong-site surgery means an operation done on the wrong part of the body or on the wrong person.
Communication: Proper communication between the hospital workers as well as between the patient and doctor.

How to ensure proper patient Safety?

Ensure proper patient identity. Patient coding/labeling can be helpful.
Do not use abbreviations while writing prescriptions. Preferably use capital letters so that it is easy for the patient to understand.
Training of healthcare professionals and team building activities can help in reducing such errors.
Proper healthcare infrastructure will help in reducing patient harm during hospitalization.
Effective use of signage will avoid unnecessary delays during hospitalization.
Take proper charge when handing over/taking over the patients especially during shifts.
Engaging patient and their families in their own care. Adherence to Standard Operating Procedure (SOP) facilitates patient’s safety.

Doctors should be trained for rational use of medicines and especially avoid over prescription.

Hospital infections affect 14 out of every 100 patients admitted

Of every 100 hospitalized patients at any given time, seven in developed and 10 in developing countries will acquire health care-associated infections (HAIs). Hundreds of millions of patients are affected worldwide each year. Simple and low-cost infection prevention and control measures, such as appropriate hand hygiene, can reduce the frequency of Healthcare Associated Infections by more than 50%.

Nosocomial infections are infections are acquired in hospitals and other healthcare facilities. To be classified as a nosocomial infection, the patient must have been admitted for reasons other than the infection. He or she must also have shown no signs of active or incubating infection.

These infections occur:
- Up to 48 hours after hospital admission
- Up to 3 days after discharge
- Up to 30 days after an operation
- In a healthcare facility when a patient was admitted for reasons other than the infection
- Urinary tract infections are the most common type of nosocomial infection

The location of a nosocomial infection depends on the nature of a patient's hospital procedure.

Nosocomial infections are caused by pathogens that easily spread through the body. Many hospital patients have compromised immune systems, so they are less able to fight off infections. In some cases, patients develop infections due to poor conditions at a hospital or a healthcare facility, or due to hospital staff not following proper procedures.

Some patients acquire nosocomial infections by interacting with other patients. Others encounter bacteria, fungi, parasites, or viruses in their hospital environment.

Any hospital patient may obtain a nosocomial infection.

Patients in intensive care units have a higher risk of developing an infection. According to the 1995 European Prevalence of Infection in Intensive Care Study, up to 20.6 % of Intensive Care Unit patients acquire nosocomial infections during or after their stay.
Most people lack access to appropriate medical devices

There are an estimated 1.5 million different medical devices and over 10,000 types of devices available worldwide. The majority of the world's population is denied adequate access to safe and appropriate medical devices within their health systems. More than half of low- and lower middle-income countries do not have a national health technology policy which could ensure the effective use of resources through proper planning, assessment, acquisition and management of medical devices.

"The medical device industry holds great promise for public health, sometimes spectacular promise, sometimes seductive promise," said Dr Margaret Chan, World Health Organization Director-General. "Health officials and hospital managers in all countries, at all levels of development, need guidance. We are also holding this forum because the unquestionable benefits of medical devices are so unevenly and unfairly distributed."

Today there are some 10,500 different types of medical devices on the market. They range from high-cost, high-tech diagnostic and therapeutic equipment such as linear accelerators to treat cancer to stethoscopes and other basic technologies that help doctors and nurses provide health care on a daily basis. They also include devices that improve millions of people's lives such as wheelchairs, hearing aids, eyeglasses, pacemakers and prostheses. A new WHO study, Medical devices: managing the mismatch; and an ongoing survey that has so far mapped medical device use in 140 countries, reveal that too many people are currently excluded from their benefits.

Affordability is one problem. Worldwide, annual government expenditure on health ranges from well over US$7,000 per person to less than US$10. Low levels of expenditure on health in general lead to low levels of expenditure on medical devices. This, in turn, leads to inadequate investment in all forms of medical devices: in some countries, shortages of needles, syringes, and sterilizing equipment mean that up to 40% of injections are unsafe.

A second problem is that most medical equipment used in low-resource settings is imported or donated from industrialized countries. Many of these devices do not function properly.

A third problem is lack of capacity. In many areas, devices are not used to full effect because of erratic power supplies, uncertain water quality, a shortage of health personnel, limited training capacity, difficulties in getting spare parts, and poor or inadequate maintenance.

A fourth challenge is the absence of a single naming system, harmonized regulatory processes and universally standardized medical devices. This is often exacerbated by the lack of effective management of medical devices at government level and within health-care facilities.

The fifth issue is the need to focus more on ensuring that medical devices fulfill their potential to improve public health. This means increasing access to the medical devices that
are required to deliver basic services: blood transfusion equipment to prevent women experiencing complications in labour, anaesthesia machines, oxygen supplies and basic surgical equipment. It also means addressing new challenges in public health, notably the ongoing rise of chronic diseases such as cardiovascular disease, stroke, cancers and diabetes, and providing medical devices enabling patients to self-monitor their health.

Unsafe injections decreased by 88% from 2000 to 2010

Key injection safety indicators measured in 2010 show that important progress has been made in the reuse rate of injection devices (5.5% in 2010), while modest gains were made through the reduction of the number of injections per person per year (2.88 in 2010).

Measurements for the year 2000

The annual number of injections per year per person and the proportion of re-use had been estimated by World Health Organization using the tools from these data; the annual number of unsafe injections per year per person can be calculated. At the time, the Demographic and Health Surveys (DHS) did not collect information on injection practices. World Health Organization had relied on studies of injections practices through standardized injection safety surveys in 10 African countries and Kyrgyzstan (observations in < 80 randomly selected healthcare facilities in each country), on non-standardized surveys in Pakistan, India, China and Indonesia (observations in a convenience sample of health facilities), on back-calculations from relative risks (Egypt and Moldova), on extrapolations and on the combination of several methods. These had been fetched from published literature, unpublished World Health Organization reports, and SIGN reports. Sources of information included population-based injection frequency surveys (14 countries) and other types of population-based data using the World Health Organization guide for rapid assessment of injection practices. Measurements for 2010 As data on injections were not available for each calendar year, the 2010 estimates used information generated as close as possible to this date, the limits being 2005 to 2011 (similar rounding had been used for 2000). Within each region, data from as many countries as possible were collected and regional estimates were calculated after weighting by total population size for the countries where estimates were available.

In countries where this information had been collected, the following measures were extracted from the reports: The average number of injections received during the last year (or, in some countries, over the last 6 months, which was then doubled).

The proportion of participants who claimed that their last injection had been made with a syringe and a needle coming from an unopened package.
Delivery of safe surgery requires a teamwork approach

An estimated 234 million surgical operations are performed globally every year. Surgical care is associated with a considerable risk of complications. Surgical care errors contribute to a significant burden of disease despite the fact that 50% of complications associated with surgical care are avoidable.

Studies in operating theatres reveal that teams who communicate and co-operate well commit less technical errors, whilst analysis of medical accidents shows that poorly designed systems of work which rely on human memory and diligence are often responsible. We therefore believe that an effective strategy to improve safety should address the issues of teamwork, communication and “failsafe” systems of work. We can take lessons in how to correct the problems from other industries who have addressed them before us. We have studied interventions to improve teamwork (using a training system adapted from aviation) and have shown improvements in technical performance and safety-related process reliability. We have also noted difficulties with acceptance of specific aspects of training.

We now need to: Confirm the benefits of the training; demonstrate its applicability beyond operating theatres into other areas of acute surgical care; Test modifications designed to deal with the problems identified in earlier work.

About 20%–40% of all health spending is wasted due to poor-quality care

Safety studies show that additional hospitalization, litigation costs, infections acquired in hospitals, disability, lost productivity and medical expenses cost some countries as much as
The World Health Organization recently reports that about 20%–40% of all health spending is wasted due to poor-quality care.

The reports states that safety studies show that poor diagnosis skills due to incomplete history taking, physical examination and work up in addition to poor physician-patient communication skills cause additional hospitalization, litigation costs, infections acquired in hospitals, disability, lost productivity and medial expenses cost some countries as much as US$ 19 billion annually. The economics of addressing these issues to improve patient safety are therefore compelling.

In current busy clinical environment and short patient interview time, how can physician work efficiently and comprehensively at the same time?!

Bottom line reality is; Physicians have limited time allocated to each patient visit. There are more patients than physicians and training more physicians with these economical circumstances is not possible

Have a wide list of differentials to cover in order to be a good physician and to protect themselves. Obviously, the focused history and physical approach became so focused that failed frequently

Have no time for establishing an effective patient-physician relationship Have limited time to explore patient management options.

A poor safety record for health care

Industries with a perceived higher risk such as the aviation and nuclear industries have a much better safety record than health care. There is a 1 in 1 000 000 chance of a traveler being harmed while in an aircraft. In comparison, there is a 1 in 300 chance of a patient being harmed during health care.

Among the technology hazards identified for 2014 are the following:

Medical device alarm hazards, Infusion pump medication errors, Computed tomography radiation exposures in pediatric patients, Computer-assisted sedation, and Emergency departments for the elderly Wearable powered exoskeleton rehabilitation for individuals with paraplegia

The expanding capabilities of electronic health record systems require increasingly complex software, which heightens the likelihood of software failures that may harm patients. A software flaw in an electronic health record system containing hundreds or thousands of medical records, such as a glitch that causes an inaccurate recording of patients’ allergies or medications, could adversely affect a large number of patients. Software bugs may jumble data, deleting information or depositing it in the wrong place. Computers may spew forth a slew of disorganized data, such that physicians are unable to quickly find critical patient
information. Data may be missing or corrupted (e.g., a laboratory value may come back with an extra character inadvertently inserted). System interface problems can lead to poor decisions, delays, data loss, errors, unnecessary testing, and system downtime. Workarounds are often employed by users when systems are not flexible enough to support real-life clinical practice and workflow patterns. However, these workarounds can further undermine patient safety. For example, when a medication system does not allow administration of a drug until the order has been entered in the system by the physician, even in urgent situations, documentation of the order may occur after it has been administered, which could result in the medication being administered again. Disabling functions such as alerts because they are distracting or disruptive can result in a critical safety feature not being deployed when needed.

**Patient and community engagement and empowerment are key**

People’s experience and perspectives are valuable resources for identifying needs, measuring progress and evaluating outcomes. There are strong democratic reasons for involving local people as much as possible in the decisions that shape their communities. Their input ensures services are better suited to local needs. For councils, community empowerment is important as it demonstrates the result of effective community engagement between service providers and the public. For ward councilors, community empowerment is important as it demonstrates that there is an effective democratic process and that people feel that they can influence local decision-making. Councillors from all Community empowerment means different things to different councilors. This section illustrates what it may mean for you. It focuses on knowing who the community groups in your ward are, linking participation to your representative role, balancing community views and managing your workload. Although consumer and community engagement in health care is receiving increasing attention, research and practice in this area are hampered by the variability of concepts and terminology commonly employed. This scoping meta-review aims to identify key consumer and community engagement concepts and examine terminology used to describe them. 59 systematic reviews met the selection criteria and were included in the final analysis. The analysis identified nine different concepts related to consumer and community engagement: shared decision making, self-management, consumer and community engagement in health care systems, community-based health promotion, and providing access to health care, rehabilitation, and participation in research, collaboration in research design and conduct, and peer support. The identified concepts differ from each other in many aspects including the aim of the activity, the role of consumers and the type of professionals’ involvement. Each concept was described by a range of terms, with some terms shared by different concepts. In addition, two overlapping concepts of patient-centeredness and patient empowerment were recognized.
This study describes consumer and community engagement-related key concepts and provides new insight into their relationship with different consumer and community engagement-related terms. Identification of key consumer and community engagement-related concepts and terms will be useful to focus future studies and initiatives and enhance production of consumer and community engagement-related evidence.

Hospital partnerships can play a critical role

Hospital-to-hospital partnerships to improving patient safety and quality of care have been used for technical exchange between health workers for a number of decades. These partnerships provide a channel for bi-directional patient safety learning and the co-development of solutions in rapidly evolving global health systems.

Four of the foundation’s 10 culture-of-health principles describe long-term outcomes for the nation’s health and health care systems:

- Optimal health and well-being flourish across geographic, demographic, and social sectors; everyone has access to affordable, high-quality health care; No one is excluded; and the economy is less burdened by health care spending. Making health a shared value Fostering cross-sector collaboration to improve well-being creating healthier, more equitable communities
- Transforming health and health care systems
Conclusion

Improving the environment of care to improve patient safety is more than just about perception; rather it is a constant challenge for hospitals. Further, responsibility for safety resides in each department and individual. From administration to the clinical and non-clinical staff, to housekeeping and volunteers, the shared accountability for patient safety has no boundaries. It demands an open and honest evaluation of the norms, values and current environment of the hospital, prioritizing eliminating or minimizing unnecessary and often inadvertent risks to patients, families and staff. Furthermore, because outcomes are systemic, only the hospitals that commit to being a culture of safety will be successful over the long term. It is requisite that each individual be proactive in addressing patient safety which, in turn, will result in better patient and staff outcomes.

Patient safety is the cornerstone of high-quality health care. Much of the work defining patient safety and practices that prevent harm have focused on negative outcomes of care, such as mortality and morbidity. Nurses are critical to the surveillance and coordination that reduce such adverse outcomes. Much work remains to be done in evaluating the impact of nursing care on positive quality indicators, such as appropriate self-care and other measures of improved health status.

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The Effect of Migration Caused by Insurgency (Boko-Haram) on Urban Town of Yola, Adamawa State, Nigeria

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Abstract

The research is on the effect of migration (caused by insurgency-Boko Haram) on Yola metropolis, Adamawa State. A case study design was adopted in this research and the target population of 202 respondents. A self-constructed questionnaire was made and an interview was conducted with the help of three assistants.

The purpose of the study was to ascertain its effect on the health of children, women and the elderly.

The research looked at the public health situation of the migrants; they were assessed using advanced health assessment and also had health education that centered on primary prevention, promotion of health and inhabitation (restoration) of health.

Conclusively, it was found that the children, women and elderly were greatly affected by migration.

Introduction

Background of study

Rural-urban migration has been historically connected with industrialization, urbanization and economic growth (Bhattacharya, 1993). Rural-urban migration eases inter-sectoral factor mobility and plays a vital role for structural changes. Moreover, migration has also been a key livelihood and survival strategy for many poor groups across the developing world, particularly in Africa.

Hundreds of thousands of people are displaced due to conflict every year globally (UNHCR, 2010). They are forced to flee from their homes in search of protection, some are able to find refuge with families and friends, but most are crowded into camps where they become victims of further violence, mental stress, and disease (IDMC, 2012). One noticeable aspect in the society today is the rate at which people migrate from rural to the urban centers in search for greener pasture, while the rural centers are decreasing in population; the Adamawa State capital has experienced population explosion because of the impact of insurgency. This led to migration from rural areas to urban city of Yola.

The subjects involved are public Health, Advanced Health Assessment and Health Education. The project will focus on the effect on health of the internally displaced, the public health aspect, the health assessment done to the internally displaced and the health education given. The researcher used physical interview, assessed the situations of the internally displaced and took history of their conditions. Photographs were taken at the spots to show the state of their conditions.

Objectives of the study

The objective of the study is to find out the impact of migration (caused by insurgency Boko Haram) on urban town of Yola. The specific objectives are:

1. To find out the impact of migration on children’s health
2. To find out it’s impact on women’s health.
3. The impact on the health on the elderly.
Study methodology

A case study design was adopted in this research where Yola metropolis was choosen as a case study. The data for this study were mainly collected in the internally displaced camps. A random sampling method was used to select the respondents. A total of 202 respondents were involved in the study. Data were collected by using structured questionnaire and interview.

Effect of migration

Effect of migration on health of children

Migration is either planned or unplanned. Unplanned migration has serious consequence, especially if it is caused by insurgency. Insurgency witnessed its highest peak in North Eastern Nigeria in 2014. This led to influx of internally displaced people from Southern Borno and North Adamawa states to Yola metropolis. The rural areas were most affected because there are no security forces stationed there. So people were killed un-numbered, this particularly affected the lives and health of children. Male children were particularly killed and pregnant women were brutally murdered in case they were carrying male children. Since their targets are mostly men, the men had to run for their lives leaving women, children and the elderly. Crops, markets, animals were looted, drinking water sources was also poisoned. Women fled, some carried only the number of children they were able to carry. Some children died on the way and were left to rotten without burial. These people left unprepared, without food, water or drugs. The assessment is therefore done on a few that survived.

Oxford online Dictionary states that urban areas are communities of 1000,000 or more with a number of at least 50,000 and surrounding communities that share a high degree of social and economical integration. Yola with a population of about 395,871 populations with surrounding communities is an urban area.

Healthy children are active, alert, curious, have clear skin, bright eyes, regular and normal bowel movements, sleep soundly, good eaters, steadily gain weight and grow taller, enjoy individual and group activities, are curious and excited about new experience, feel good about themselves but not these ones. You see them confused, cry a lot, afraid, malnourished and scared.

Effect on women health

Women also suffered greatly on the hands of insurgents. The women are raped and forcefully used as cooks and some forced to go war. They have lost husbands, children, comfort and food. They are the ones mostly seen in the camps.

A woman complained of how her husband was killed in her house and her two months old baby boy killed, rosted and eaten in her presence. She could not sleep for weeks because of the trauma.

Effect on the elderly

Most of the elderly were left in the rural areas because there was no one to carry them. Some of them were not ready to leave; they feel there is no need to run. They were left behind and some were cared for by the insurgents. Some of them died because of lack of food, water and health care. Those that were lucky to be carried along were left in the cold in the camps. No proper or regular food, no clothings, beddings no regular checkup for their health.
Findings

Interview for the elderly (27 Elderly)

<table>
<thead>
<tr>
<th>No. of Present</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Incontinence</td>
<td>5</td>
</tr>
<tr>
<td>2 Immobility</td>
<td>6</td>
</tr>
<tr>
<td>3 Risk for fall</td>
<td>5</td>
</tr>
<tr>
<td>4 Dimension/depression</td>
<td>2</td>
</tr>
<tr>
<td>5 Obesity</td>
<td>4</td>
</tr>
<tr>
<td>6 Arthritis</td>
<td>9</td>
</tr>
<tr>
<td>7 Diabetes</td>
<td>12</td>
</tr>
</tbody>
</table>

The elderly were twenty seven (27) in number in the various camps, and at homes. Out of this number 5 of them representing 19% were incontinent (these are found in relatives homes). i.e 22% of the elderly visited also were immobile, 5 people that is 19% also had risk for fall. Only 2 that is 7% of the elderly had dementia/ depression. 4 that is 15% of the elderly were obese.

The number of those that had arthritis were 9 that is 33%. Diabetes were 12 that is 44% of the population.

The elderly were assessed using the advanced health assessment and were given health education on how to care for their condition. The relations were also involved in the care. The diabetics we taught on how to give themselves injection and how to test urine for sugar.

Questionnaire for 100 Children

<table>
<thead>
<tr>
<th>Healthy Child</th>
<th>No. of Respondents</th>
<th>% Not in Good Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Active, Alert, curious</td>
<td>47</td>
<td>53</td>
</tr>
<tr>
<td>2. Have clear skin, bright eyes</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td>3. Bowel movement</td>
<td>37</td>
<td>63</td>
</tr>
<tr>
<td>4. Sleep</td>
<td>22</td>
<td>78</td>
</tr>
<tr>
<td>5. Good eaters</td>
<td>54</td>
<td>46</td>
</tr>
<tr>
<td>6. Steadily gain weight and grow taller</td>
<td>36</td>
<td>64</td>
</tr>
<tr>
<td>7. Enjoy individual and group activities</td>
<td>48</td>
<td>52</td>
</tr>
<tr>
<td>8. Dental hygiene</td>
<td>12</td>
<td>88</td>
</tr>
<tr>
<td>9. Dressing for weather</td>
<td>07</td>
<td>93</td>
</tr>
<tr>
<td>10. Feeling and emotions</td>
<td>18</td>
<td>82</td>
</tr>
<tr>
<td>11. Personal cleanliness</td>
<td>13</td>
<td>87</td>
</tr>
<tr>
<td>12. Rest and sleep</td>
<td>11</td>
<td>89</td>
</tr>
<tr>
<td>13. Physical Assessment done to all</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 53% of children not active, alert or curious
- 70% of the children have skin diseases and eye problems
- 63% had problems with bowel movements
- 78% of the child had problem with normal sleep
- 46% do not eat well
- 64% have lost weight.
- 62% do not enjoy individual or group activities
- 88% had problems with their teeth, no dental care free
- 93% of the children have no provision for the weather-harmattan
- 82% of the children emotions and feelings have no control over them
- 87% of the children do not know how to keep themselves clean and are not being cared for. They eat anything they get and play anywhere, defecate anywhere
- 89% of the children have no particular time to rest and sleep

The children were assessed using the advanced health assessment learnt starting from head to toe. The researcher used inspection, auscultation, percussion and palpation to assess the children. Some of them were found to be malnourished; some had respiratory track infection etc. The children were also given health education.

**Women’s Questionnaire (75 in numbers)**

<table>
<thead>
<tr>
<th>i</th>
<th>Feeling of sexism (bias against gender)</th>
<th>75%</th>
</tr>
</thead>
<tbody>
<tr>
<td>ii</td>
<td>Feeling of misogyny (hatred towards women)</td>
<td>75%</td>
</tr>
<tr>
<td>iii</td>
<td>Malnutrition</td>
<td>50 67%</td>
</tr>
<tr>
<td></td>
<td>Anaemia</td>
<td>47 63%</td>
</tr>
<tr>
<td></td>
<td>Early marriage</td>
<td>63 84%</td>
</tr>
<tr>
<td></td>
<td>Teenage pregnancy</td>
<td>57 76%</td>
</tr>
<tr>
<td></td>
<td>School dropout/childhood labour</td>
<td>42 56%</td>
</tr>
<tr>
<td></td>
<td>Skin diseases</td>
<td>43 57%</td>
</tr>
<tr>
<td></td>
<td>Alcohol addiction</td>
<td>40 53%</td>
</tr>
<tr>
<td></td>
<td>Smoking</td>
<td>37 49%</td>
</tr>
</tbody>
</table>

**Physical Examination**

The data showed that 50% of the women that is 67% of the respondents had malnutrition. While 47 that is 63% of the women were anaemia. The data also showed that 63 that is 84% of the respondents went through early child marriage. 57, that is 76% of the respondents also carried of having teenage pregnancies. Forty-three (43) of them that is 57% had one form of skin disease or another. Forty (40) of the respondents representing 53% confessed of being addicted to alcohol, while 37 that is 49% of the respondents are smokers or snuff local tobacco.

The women’s health was assessed, health education was also given.

**Types of illness IDP’s Suffer in the pasts month (n-202)**

<table>
<thead>
<tr>
<th>Illness</th>
<th>Elderly (n-27)</th>
<th>%</th>
<th>Women (n-75)</th>
<th>%</th>
<th>Children (n-100)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Cold</td>
<td>12</td>
<td>(44)</td>
<td>62</td>
<td>(83)</td>
<td>86</td>
<td>(86)</td>
</tr>
<tr>
<td>Chest Infection</td>
<td>14</td>
<td>(52)</td>
<td>13</td>
<td>(48)</td>
<td>32</td>
<td>(32)</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>5</td>
<td>(19)</td>
<td>2</td>
<td>(3 )</td>
<td>16</td>
<td>(16)</td>
</tr>
<tr>
<td>Skin infections</td>
<td>2</td>
<td>(7 )</td>
<td>43</td>
<td>(57)</td>
<td>28</td>
<td>(28)</td>
</tr>
<tr>
<td>Cardiac Problems</td>
<td>3</td>
<td>(11)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Arthritis</td>
<td>9</td>
<td>(33)</td>
<td>7</td>
<td>(9 )</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diabetes</td>
<td>12</td>
<td>(44)</td>
<td>8</td>
<td>(11)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Loss of Vision</td>
<td>8</td>
<td>(30)</td>
<td>3</td>
<td>(4 )</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Reproductive Health Problem</td>
<td>-</td>
<td>-</td>
<td>13</td>
<td>(17)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Anemia</td>
<td>2</td>
<td>(7 )</td>
<td>47</td>
<td>(63)</td>
<td>27</td>
<td>(27)</td>
</tr>
</tbody>
</table>

312
Pictures of migrants caused by insurgency in IDP camps in Yola metropolis

Pictures of IDPs being fed before clinical assessment of both mothers and children

Some IDPs feeding malnourished children in Yola
IDPs receiving health education in Malkohi camp Yola town

Women IDPs waiting for health assessment after health education in NYSC orientation camp Yola.
IDPs at routine health check at NYSC orientation camp

IDPs receiving health education and routine clinical health assessment to prevent outbreak of diseases
Conclusion

Migration has negative health consequences due to physical and psychological strains experienced by migrants throughout the entire migration process. These strains may lead to stress and rustic behaviors having a negative effect on the migrant’s somatic and mental health especially many of the women and the elderly were found to be hypertensive.
References


Nurses’ Compliance with Medication Safety Standard in Enaya Specialized Care Centre, Doha, Qatar

Introduction

Background

One of the most fundamental components of health care quality is the patient safety (World Alliance for Patient Safety, 2004). Patient safety is a priority for every health care system that follows specified standards by ensuring and improving the quality of health care services as one of the main concerns of managers of health care systems (Westat, Sorra, Famolaro, et al., 2010; Stratton, Blegen, Pepper et al., 2004; Bahadori, Ravangard, Aghili et al., 2013).

Patient safety is an essential and vital component of quality nursing care. However, most nations’ health care system is prone to errors, and can be detrimental to safe patient care, as a result of basic systems flaws. A variety of stakeholders (society in general; patients; individual nurses; nursing educators, administrators, and researchers; physicians; governments and legislative bodies; professional associations; and accrediting agencies) are responsible for ensuring that patient care is safely delivered and that no harm occurs to patients (Ballard, 2003).

Most hospitals across the U.S. put ever-changing compliance and quality improvement standards toward the top of their list of organizational priorities. This is important for not only providing a safe environment for the delivery of patient care, but also for assuring that operations are aligned with standards set forth by the Joint Commission on Accreditation of Healthcare Organizations (TJC) and the Centers for Medicare & Medicaid Services (CMS) (Reigle, 2013).

In Qatar, safety is a fundamental principle of patient care and an important component of quality management. Its improvement demands a complex system-wide effort, involving a wide range of actions in performance improvement, environmental safety and risk management. Patient safety involves nearly all health care disciplines and sectors, therefore it requires a comprehensive multifaceted approach to identifying and managing actual and potential risks and finding broad long-term solutions for the health care system (Qatar Supreme Council of Health, 2015).

As part of efforts towards achieving quality patient care in Hamad Medical Corporation, the Best Care Always campaign was launched in October 2013. This marked an important milestone in Hamad’s journey to achieve the safest, most effective and most compassionate care for its patients. The campaign’s rationale is a systematic, coordinated and focused approach to institutional quality improvement, designed in partnership with the Institute for Healthcare Improvement (IHI) - the world leader in the science and practice of healthcare improvement (Hamad Medical Corporation 2013/2014 Annual Report).

In the first year, forty multi-disciplinary teams from wards, critical care units and operating theaters in all eight hospitals have started to test and measure selected changes, with the aim of identifying and implementing evidence-based system improvements that can be applied across the organization. Best Care Always initiative is designed to encourage a culture of transparency and openness to report where new safety measures can be introduced and care can be improved, and provide staff with the know-how to respond (Hamad Medical Corporation 2013/2014 Annual Report).
**Statement of problem**

Patient safety aims to prevent harm and negative outcomes of care. Quality management systems are an important factor in promoting patient safety and reducing the risk of adverse events and medical errors in health care organizations (Tutuncu, 2008). A key aim of nursing is to ensure patient safety and at the very least do the patient no harm (Smith, 2005). However, patients are often harmed unnecessarily through drug errors by medical and nursing staff (Cleary-Holdforth and Leufer, 2013).

Almost all patients admitted to a clinical setting receive medication as part of their treatment (Esi Owusu Agyemang and While, 2010). In drug administration, the nurse is the last person in the process to rectify and defend against errors, and needs to know the effect, rationale and compatibilities of the drug, and be able to calculate the correct dose for patients (Rainboth and DeMasi, 2006).

Most medication errors occur at the time of administration (Miller and Emanuel, 2010). Many are caused by inadequate prescribing, dispensing, updating of prescriptions and administering of drugs (Royal Pharmaceutical Society, 2009). Errors in administering medicines are common and can compromise the safety of patients. Safe practice in medicine administration is crucial, yet errors by nurses are compromising patient care. Errors can happen at different stages of the administration process, and nurses play a key role in checking the medication is correctly prescribed, signed and dated by the prescriber before administration, and that it is administered as prescribed, following the correct protocols (Ofusu and Jarret, 2015).

**Objectives of study**

1. To review the current medication safety standards as specified in the International Patient Safety Goals according to the Joint Commission International for Long-term facilities.
2. To highlight existing mechanisms implemented for prevention of errors and adverse events during care of residents in the Enaya specialized care centre in Rumailah hospital.
3. To evaluate level of nurses’ compliance with the guidelines of medication policy in Enaya specialized care centre in Rumailah hospital.
4. To provide recommendations for improvement in medication safety practices and continuous compliance with specified standards of the Joint Commission International in Enaya specialized care centre in Rumailah hospital.

**Purpose of the study**

Keeping an organization compliant and abreast of continuously evolving standards, regulations and requirements can be a cumbersome task, requiring a full-time commitment of dedicated nurses, quality assurance managers or team; depending on the size of your organization and scope of clinical services offered (Reigle, 2013). Hence, involvement of nurses is essential to any significant healthcare improvement initiative (Bosagnano, 2010).

Ongoing monitoring and identification of opportunities for improvement help to maintain optimal compliance with quality assurance standards, develop patient safety culture among workforce and promote the chance of future accreditation by surveyors from The Joint Commission (TJC). No department, unit or staff member is “exempt” from this process, so it is important that everyone working for the organization is up-to-date on quality standards and protocols, at all times (Reigle, 2013).

Therefore, the purpose of this project is to review the current medication safety standards for long-term facility as specified by the Joint Commission International in order to discover areas for improvement. Moreover, the level of nurses’ compliance with medication safety policy through practical mechanisms for prevention of errors and adverse medical events as a way of achieving guaranteed safety will be critically examined.
Relevance of the study

High rates of medication errors have been reported in many hospitals across the world, despite implementation of medication safety standards and policies as required by regulatory agencies. Considering the chronic conditions of residents which often necessitate multiple prescriptions and constant drug reviews for recovery and positive outcomes, there is need to pay extra attention to compliance with established standards for prevention of medication errors in long-term facilities.

Ensuring compliance with patient safety standards, most especially towards prevention of medication errors is a vital and indispensable part of everyday practice expected from Joint Commission International (JCI) accredited healthcare organizations like Enaya specialized care centre. Moreover, the consequences of adverse medical events due to negligent practices can be fatal, sometimes leading to loss of lives and ligations. Hence, findings of this study will help to examine the level of compliance with medication safety standards among nurses with suggestions for improvement.

Study setting—Enaya specialized care centre, Rumailah hospital, Hamad Medical Corporation

Enaya specialized care centre is located within Rumailah hospital which is the only long-term facility in Qatar. Rumailah Hospital was opened in 1957 as a 200-bed general hospital with ambulance services and a large outpatient facility. Following the opening of Hamad General Hospital in 1982, Rumailah Hospital became a rehabilitation center for disabled adults, elderly people and handicapped children. A complete renovation program of Rumailah Hospital in 1997 by the Hamad Medical Corporation (HMC) transformed Qatar’s oldest healthcare facility into a modern yet quiet hospital offering a 306-bed facility with a spacious, clean and restful environment (Rumailah Hospital Website, 2015).

The Enaya long-term facility achieved Joint Commission International certification in 2009 and was reaccredited successfully in 2012. In 2015, Rumailah Hospital has successfully achieved JCI Triennial Hospital Reaccreditation as well as JCI accreditation for Long Term Care Standards. So far, Rumailah Hospital of the Hamad Medical Corporation is the first hospital in the Gulf Coast Countries (GCC region) to be granted this prestigious status (Rumailah Hospital Website, 2015). The JCI certification was achieved in Rumailah Hospital Unit of Hamad Medical Corporation in 2006 with reaccreditation in 2009 and 2012 respectively. Rumailah Hospital Unit delivers healthcare services for both acute and long-term rehabilitation patients. The long-term skilled nursing care facility offers skilled nursing care, rehabilitative services, social services and personal care to residents who are fully dependent or partially dependent.

Hamad Medical Corporation is the largest nonprofit healthcare provider in Qatar, providing around 90 percent of acute services in the country. The vision of the multi-unit healthcare facility is to provide the safest, most effective and most compassionate care to each and every patient. As evidence of the organization’s commitment to quality care and patient safety; Hamad General Hospital received JCI certification in 2006 with subsequent reaccreditation in 2009 and 2012 consecutively.

Literature review

Patient safety in healthcare facilities

Patient safety forms the foundation of healthcare delivery just as biological, physiological, and safety needs form the foundation of Maslow’s hierarchy. Little else can be accomplished if the patient does not feel safe or is, in fact, not safe. But the healthcare system is extremely complex, and ensuring patient safety requires the ongoing, focused efforts of every member of the healthcare team (Ulrich and Kear, 2014). Patient safety moved to the fore-front in health care with the release in 1999 of the Institute of Medicine (IOM) landmark report, To Err is Human: Building a Safer Health System, which estimated that annually in the United
States, up to one million people were injured and 98,000 died as a result of medical errors (IOM, 2000). The report caught the attention of the media, and there were headlines across the nation about the safety (or lack of safety) for patients in healthcare organizations (Ulrich and Kear, 2014).

Subsequently, patient safety became one of the main components of health services quality with emphasis on ways of avoiding any kind of injury to patient during health care delivery (Nash and Goldfarb, 2006). Examples of patient safety issues include medicinal failures, wrong surgical procedures, diagnoses failures, machinery and equipment failures, etc.; leading to misdiagnosis and other events such as hospital infections, patient falls and bedsore (Frankel et al, 2008; Mazhari, Hessam, Arabloo, et al., 2014).

These unsafe services have unpleasant consequences for patient and his/her family, with psychological pressure on health system staff and relatives as well as huge economic burden on health care system and society at large (Rockville, 2008). Research studies have shown that, on average, about 10% of all hospitalized cases are at risk of errors with patients being affected to different degrees. Also, about 75% of these errors are preventable (Battlesl and Lilford, 2003; Mazhari, et al., 2014).

In response to the urgent need to develop interventions related to patient safety, the Joint Commission International established the International Patient Safety Goals as the first goal of accreditation standards. Consequently, during accreditation of hospitals, patient safety is one of the basic aspects under monitoring (Alahmadi, 2010). Therefore, the realization of these standards provides assurance that patient safety is recognized as a necessary priority and every accredited hospital have the best performance in this regard. (Karen, 2011; Mazhari, et al., 2014).

**International patient safety goals in long term care facilities**

The purpose of International Patient Safety Goals is to improve certain reforms in patient safety. The specified goals highlighted the problematic areas in health care and define solutions based on expertise and evidence. In addition, implementation of the International Patient Safety Goals is to improve patient safety through constant monitoring and evaluation methods (Karen, 2011). Hence, the ultimate goal of evaluation is to improve patient safety in hospitals and create situations that lead to safer services and subsequently protecting the society from avoidable damages and reducing unwanted adverse events in the hospital setting (Gezairy, 2011; Mazhari et al., 2014).

The guideline for International Patient Safety Goals (IPSG) was issued by the Joint Commission International (JCI) under the International Standards for Long Term Care with compulsory implementation by all accredited long term care organizations as of 1st July, 2012. The purpose of the IPSG is to promote specific improvements in patient and resident safety (Joint Commission International, 2012).

As summarized by the Joint Commission International (2012), the goals include the following:

- **IPSG.1**: Identify Residents Correctly
- **IPSG.2**: Improve Effective Communication
- **IPSG.3**: Improve the Safety of High-Alert Medications
- **IPSG.4**: Ensure Correct-Site, Correct-Procedure, Correct-Resident Surgery
- **IPSG.5**: Reduce the Risk of Health Care–Associated Infections
- **IPSG.6**: Reduce the Risk of Resident Harm Resulting from Falls

The goals highlight problematic areas in health care and describe evidence- and expert-based consensus solutions to these problems. Recognizing that sound system design is intrinsic to the delivery of safe, high-quality health care, the goals generally focus on system-wide solutions, wherever possible (Joint Commission International, 2012).

The goals are structured in the same manner as the other standards, including a standard (goal statement), an intent statement, and measurable elements. The goals are scored similar
Resident medication management in joint commission accredited long term Facilities

1. Resident Medication Management (RMM) Standards, Intents, and Measurable Elements

Standard (RMM.1)

Medication use in the long term care organization is efficiently organized and compliant with applicable laws and regulations (Joint Commission International, 2012).

Intent of RMM.1

Medications are frequently used for treating illness and moderating symptoms. As an important resource, medication use must be organized effectively and efficiently within the long term care setting. Medication management is the responsibility of those providing pharmaceutical services as well as clinical care and service providers. How this responsibility is shared depends on the long term care organization’s scope of service and staffing (Joint Commission International, 2012).

Residents may receive their medications from a variety of sources. In some cases, the long term care organization providing services may have pharmacy services available, and in other cases, the pharmacy may be a part of the community setting.

Applicable laws and regulations are incorporated into the operations of the long term care organization and the medication management system used in the long term care organization (Joint Commission International, 2012).

Measurable elements of RMM.1

(1) There is a plan or policy or other written document in place that identifies how medication use is organized and managed throughout the long term care organization.

(2) All settings, services, and individuals who manage medication processes are included in the long term care organization medication management process.

Management and use of medications in long term care facilities

RMM.1:- Medication use in the long term care organization is efficiently organized and compliant with applicable laws and regulations.

RMM.1.1:- Policies and procedures govern a resident’s use of medications in the home setting and the control of medication samples.

RMM.1.2:- A selection of medications, for prescribing or ordering, based on the organization’s mission, resident needs, and types of services provided, is stocked or readily available.

Preparation, dispensing, and storage of medications in long term care facilities

RMM.2:- Policies and procedures govern the safe preparation, dispensing, and storage of medications.

RMM.2.1:- A system is used to dispense medications in the right dose to the right resident at the right time.

RMM.2.1.1:- Policies and procedures govern the storage, distribution, handling, and dispensing of chemotherapeutic, investigational, radioactive, or other hazardous medications.

RMM.2.2:- Emergency medications are available, monitored, and safe when stored out of the pharmacy.

RMM.2.3:- The long term care organization has a medication recall system.
Ordering and transcribing of medications in long term care facilities

- RMM.3:- Prescribing, ordering, and transcribing are guided by policies and procedures.
  - RMM.3.1:- The organization defines the elements of a complete order or prescription and the types of orders that are acceptable for use.
  - RMM.3.2:- The organization identifies those qualified individuals permitted to prescribe or to order medications.
  - RMM.3.3:- Medications prescribed and administered are written in the resident’s record.

Administration of medications in long term care facilities

- RMM.4:- The long term care organization identifies those qualified individuals permitted to administer medications.
  - RMM.4.1:- Medication administration performed by the long term care organization’s staff includes a process to verify the medication is correct based on the medication order and verify the correct resident before administering the medication.
  - RMM.4.2:- Medications prescribed and administered by long term care staff are documented.

Monitoring of medications in long term care facilities

- RMM.5:- Medication effects on residents are monitored, including adverse effects.
  - RMM.5.1:- Medication errors, including near misses, are reported through a process and time frame defined by the long term care organization.

Prevalence of medication errors in healthcare facilities

- Medication or drug administration forms a major part of the clinical roles and responsibilities of nurses. Medication administration by the nurse is only one part of a process which also involves doctors and pharmacists. In giving medications, some untoward incident may happen and medication errors may occur (Galiciono, 2011).
  - According to Aronson (2009); “Medication error is failure in drug treatment process that leads to or has the potential to harm the patient.” Many studies use this definition, often in tandem with Franklin et al’s (2005): “Any error in prescribing, dispensing or administering medication” (Ofusu and Jarret, 2015). Also, medication error is defined as any type of error in the prescription, transcription, dispensing and administration process which could bring about serious consequences or not. These events are not infrequent. Medication errors represent the largest single cause of errors in the hospital setting. The Institute of Medicine reports 44,000 to 98,000 people die in hospitals annually as a result of medical errors that could have been prevented (Kohn, Corrigan and Donaldson, 2000). Medication errors accounted for 7,391 deaths in 1993, compared to 2,876 deaths in 1983 (Kohn et al., 2000).
  - Ten to 18% of all reported hospital injuries have been attributed to medication errors (Hume, 1999). Hospital medication error rates can be as high as 1.9 per patient per day (Fontan, Maneglier, Nguyen, Loirat, and Brion, 2003). United States of America data from 1993 indicates that 7,391 patients died from medication errors. Patient stays associated with medication errors also increased by 4.6 days, with a resulting cost increase of $4,685 per patient (Hume, 1999; Galiciono, 2011).
  - Approximately 2% of all patients admitted to hospitals in the United States experience a medication error (Barber and Dean, 1998; Dean, Schachter, Vincent and Barber, 2002). Medication errors may have devastating, far-reaching consequences, not limited solely to patients and their families. Other individuals affected by medication errors include prescribing physicians, nurses administering the medication, and pharmacists filling and evaluating prescription orders. Many medication errors result from prescribing errors, which have an increased potential for serious complications (Leap, Bates, Cullen, et al., 1995; Bates, Cullen, Laird, et al., 1995; Lesar, Briceland, DelCoure, et al., 1990; Vincer, Murray, Yuill, et al., 1989; Warholak, et al., 2011).
After a comparative study of medication errors in a hospital in the United States and a hospital in the United Kingdom; Dean, Allan, Barber et al., (1995) reported that the medication error rate in the U.S. hospital was 6.9% (95% CI, 5.2% to 8.5%), significantly higher than the 3.0% rate observed in the U.K. hospital (95% CI, 2.4% to 3.7%). Hence, medication errors remain one of the most common causes of unintended harm to patients, even in advanced countries. They contribute to adverse events that compromise patient safety and result in a large financial burden to the health service (Cloete, 2015).

Therefore, the prevention of medication errors, which can happen at every stage of the medication preparation and distribution process, is essential to maintain a safe healthcare system. One third of the errors that harm patients occur during the nurse administration phase: administering medication to patients is therefore a high-risk activity (Cloete, 2015). Previous studies have identified medication errors in preparing and administering intravenous medicines of 13-84% in hospitals in individual countries (Cousins, Sabatier, Begue et al., 2005).

Preventable adverse events include errors of commission, errors of omission, errors of communication, errors of context, and diagnostic errors (James, 2013). When using medical records to identify adverse events, however, conservative estimates result because this method primarily targets errors of commission and are less likely to find other types of errors (Parry, Cline and Goldmann, 2012). As a result of the review, James (2013) estimated the number of premature deaths associated with preventable harm to patients to be more than 400,000 per year and that serious harm appeared to be 10 to 20 times more common than deaths (Ulrich and Kear, 2014).

**Causes and types of medication errors in hospitals**

Medication errors constitute a considerable concern for the patients and healthcare professionals. Therefore, in recent years there have been remarkable efforts through research papers to assess the etiology of medication errors (Karavasiliadou and Athanasakis, 2014). There is no specific definition of drug error, as it often depends on the type or classification of mistake (O’Shea, 1999). This can cause confusion and prevent reporting of mistakes and near misses (Ofusu and Jarret, 2015).

Omitted doses and incorrect doses were the most common types of errors in the U.K. hospital; incorrect doses and unordered doses were the most common types in the U.S. hospital. An American hospital with a unit dose distribution system had a significantly higher medication error rate than a British hospital with a ward-based supply system (Dean, Allan, Barber et al., 1995).

Understanding the types of errors and contributing factors to prescribing errors provides opportunities for error prevention at the earliest point of the medication process (Warholak, Queiruga, Roush, et al., 2011). Prescribing errors are classified into different categories based on knowledge, rules, action, and memory. Knowledge-based errors reflect lack of experience or understanding about certain medications. Rule-based errors reflect lack of application of fundamental rules. Action-based errors are those that are not intended (e.g., misspelling or mistaken drug name). Memory-based errors involve forgotten information (e.g., patient allergy) (Aronson, 2009).

One study found that most prescribing errors were attributed to: (1) lack of information about the patient; (2) specific drug therapy (e.g., narrow therapeutic index medications); or (3) inability to incorporate patient-specific factors (e.g., declining renal function) to appropriate selection and dosing of drug therapy. Other errors result from miscalculations, improper use of decimal points, unit or rate expressions, and nomenclature (Lessar, Briceland and Stein, 1997; Warholak, Queiruga, Roush, et al., 2011).

**Nurses’ responsibilities in medication management**

Medication management requires the collaborative efforts of many healthcare providers. Medications may be prescribed by a physician, dentist, or other authorized prescriber such as
advanced practice registered nurses as determined by individual state licensing bodies. Pharmacists are licensed to prepare and dispense medications. Nurses are responsible for administering medications. Dietitians are often involved in identifying possible food and drug interactions (Delaune and Ladner, 2002; Galicinao, 2011).

Nurses play an essential role in the administration of, education about, and evaluation of the effectiveness of prescribed medications. The nurse’s role changes with the setting of the client. In the home or community setting, referred to as primary care, clients take their own medication as prescribed by the health care practitioner. Nurses are responsible for educating the client about his or her medications and its possible side effects as well as for evaluating the outcome of the prescribed therapy in restoring and maintaining the client’s health (Delaune and Ladner, 2002; Galicinao, 2011).

In the acute care setting, nurses spend a great deal of time administering medications and evaluating their effectiveness. Nurses are responsible for teaching clients how to take their medications safely when they are discharged. Medication administration requires specialized knowledge, judgment, and nursing skill based on the principles of pharmacology (Galicinao, 2011).

The goal of the medication management standards is to provide a framework for an effective and safe medication management system. Effective and safe medication management is dependent on carefully implementing medication management processes based on the care, treatment, and services provided by the long term care organization. Planning provides the groundwork for the following critical areas of performance outlined as follows:

- Managing high-alert and hazardous medications
- Selecting and procuring medications
- Storing medications
- Managing emergency medications
- Controlling medications brought into the long term care organization by patients/residents, their families, or licensed independent practitioners
- Managing medication orders
- Preparing medications
- Labeling medications
- Dispensing medications
- Retrieving recalled or discontinued medications
- Administering medications
- Managing investigational medications
- Monitoring patients’/residents’ reactions to medications
- Responding to real or potential adverse drug events, adverse drug reactions, and medication errors (Long Term Care Accreditation Unit, Joint Commission, 2009)

**Fundamental rights of drug administration**

The responsibility for administering medication safely is one which nurses take seriously, and to assist in this procedure the five Rights (5 Rs) of drug administration have been devised as follows by Workmann and Bennett (2003).

**Right patient:** Check the identity of the patient with his identification band, using hospital number or date of birth as additional verification. If patients are long-stay residents, identification may be by photograph, rather than an impersonal name band (Williams 1996). In the home setting you should satisfy yourself that you have identified the right patient for medication by asking them their full name or date of birth to verify against the prescription.

**Right drug:** Drug names can be complex, and have similarities between names. Check for clearly written prescriptions, matching the name on the medication container. In hospital, drugs are prescribed by their generic names, and patients may be confused and think that they are having a new medication. If in doubt, consult the BNF for the generic and trade name of the drug. Check three times during the procedure: when you take the drug from the cupboard
or trolley, before you pour it into the medication receiver, matching it to the drug name on the
prescription sheet, as you return it to the cupboard or trolley.

**Right dose:** This should be clearly written on the prescription sheet. If the dose is very
small, then micrograms should be written out in full (BNF). Calculate the dose carefully and
check to see if there is a drug with the same name but dispensed indifferent strengths.

**Right time:** Most drugs are designed to be given with an interval of several hours apart to
provide a consistent therapeutic blood level. If given haphazardly, then the medication will be
less effective or may cause the patient to develop unwanted side effects. Therefore, it is
essential to give doses at prescribed intervals and to record the actual time of administration.

**Right route:** Medications are given licenses for specific routes of administration. It is
possible to give medication by the wrong route, for example, an intramuscular injection may
be given intravenously if sited in the wrong place.

**Factors affecting nurses compliance with medication safety standards**

Ford, Killebrew, Fugitt, et al., (2006), revealed that there is significant reduction in
reported Medication Administration Errors (MAE) rates on the ward (0.04% of drug
administrations and 0.03 MAEs per patient admission) in a Community Hospital due to
application of current safety guidelines. Hence, an emphasis on studying MAEs at individual
institutions is likely to result in meaningful process changes, improved efficiency of MAE
reporting, and other benefits (Galicinao, 2011).

However, Bailey, Engel, Luescher, and Taylor, (2008) discovered in a study of relationship
between nurses’ educational status and incidence of medication errors that the there is a direct
relationship between education and medication errors, rather than an inverse relationship,
wherein as education increased number of errors decreased. The study showed that Licensed
Practical Nurses (LPN) made the least number of medications errors followed by Registered
Nurses with Associate Degrees, with BSN Registered Nurses having the highest incidence of
medication errors.

The results indicate that as the education level increased so did the number of medication
errors. Also, the study showed that nurses made the most medication errors either in their first
five years of nursing experience or after twenty years of nursing. The study indicated that
giving medication at the wrong time was the most common type of medication error made by
the participants. The shift that reported having the most medication errors was 7 am - 7 pm,
when most medications are administered. The most common route for medications errors was
Per Oral or “by mouth” (Galicinao, 2011).

Furthermore, Davis, Ware, et al., (2011) affirmed that double checking the patient, double
checking the drug and checking the legality of the prescription were the three strongest
predictors of nurses’ actions regarding medication administration. Also, policy factors, and
not contextual factors, drive nurses’ judgement in most situations.

Moreover, colour branding is commonly used to distinguish one product from others
within the same class. Colour may also be used to identify a particular manufacturer, rather
than emphasizing a particular drug or dosage, but this practice can contribute to picking
errors. Colour-coding is the systematic, standardized application of a colour system to classify
and identify products, generally within the same pharmacologic class (Fasting and Gisvold,
2000). Colour matching uses colour to safely match one item to another. Use of such a tool
was associated with a significant reduction in deviation from recommended standards (Shah,

Colour differentiation involves the use of colour to enhance features on labels and
packaging, to help users discriminate one drug or product strength from another. Use of this
colour technique enhances the noticability of a label by increasing the speed and accuracy of
label identification and the perceived readability of labels (American Medical Association,
2008). In addition, label colour has been demonstrated to influence compliance levels, with
higher levels of compliance being associated with red labels than with either black or green
ones (American Medical Association, 2008; Filiatrault and Hyland, 2009). However, the
The practice of colour-coding is controversial among patient safety groups because of insufficient evidence demonstrating that it is effective in reducing medication errors, the numerous problems that have been reported with the use of colour-code systems, and the availability of technology (bar-coding) that minimizes the human element in the final check during drug administration (American Medical Association, 2008; Fasting and Gisvold, 2000; International Safe Medication Practices, 2008; Wildsmith, 2002; McKoy, 2005; Filiatrault and Hyland, 2009).

Although the use of colour is often endorsed, inconsistent application of colour schemes can cause confusion and has contributed to medication misadventures. Despite these limitations, colour is used in various areas of medicine, and the following descriptions highlight some of the most common colour techniques (National Patient Safety Agency, 2008; Venkatraman and Durai, 2008; Cohen, 1999; Filiatrault and Hyland, 2009). Anecdotal examples describe the successful use of colour differentiation to reduce other types of medication errors (Cohen, 1999).

In summary, the available literature favours the judicious use of two colour techniques: colour differentiation and colour matching. However, the effectiveness of any colour used on drug labels and packaging should be validated before it is adopted for that purpose (American Psychological Association, 2008). Colour-coding has not been tested as a way to prevent medication errors, and evidence exists that it may actually contribute to some errors (ISMP, 2008). Hence, it should be used with extreme caution only after international standardization (Filiatrault and Hyland, 2009).

**Data collection and analysis**

**Data collection procedure**

The following systematic data collection procedure was followed with measures adopted to avoid bias, violation of laws and confidentiality policies in the Enaya Skilled Nursing Facility, Rumailah Hospital, Doha.

(i) Official Application for brief facility inspection was granted by the authority through appropriate management personnel.

(ii) The structured Medication Safety Standard Checklist was submitted for screening by designated nurse managers before distribution among 50 nurses using incidental random sampling method.

**Instrument for data collection**

The structured Medication Safety Standard Checklist has the following sections:
- Awareness and Compliance with Medication Safety Policies
- Preparation, Dispensing, and Storage of Medications in the facility
- Ordering and Transcribing of Medications in the facility
- Administration of Medications in the facility
- Monitoring of Medications in the facility
- Suggestions for Effective control of Medication Errors in the facility
### Nurses’ assessment of medication safety in the facility

#### Table 3.3.1. Awareness and compliance with medication safety policies

<table>
<thead>
<tr>
<th>S/N</th>
<th>Statements</th>
<th>Agree N (%)</th>
<th>Disagree N (%)</th>
<th>Not Sure N (%)</th>
<th>Total N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There is a written policy guideline for medication administration in this facility</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>2</td>
<td>Medication use is efficiently organized and monitored in your ward or facility in compliance with the institutional policies, laws and regulations.</td>
<td>45 (90%)</td>
<td>2 (4%)</td>
<td>3 (6%)</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>3</td>
<td>Medications are frequently used for treating illness and moderating symptoms only after appropriate tests or investigations have been done.</td>
<td>38 (76%)</td>
<td>7 (14%)</td>
<td>5 (10%)</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>4</td>
<td>The roles and responsibilities of all professionals (i.e Doctors, Pharmacists and Nurses) involved in medication management and pharmaceutical services are clearly specified in the medication policy.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>5</td>
<td>Each professional is expected to take full responsibility for any form of medication or drug as prescribed, dispensed and finally administered to residents in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>6</td>
<td>Drugs and medications are readily stocked in your ward under strict monitoring and stock control processes to ensure availability for residents’ use always.</td>
<td>45 (90%)</td>
<td>2 (4%)</td>
<td>3 (6%)</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>7</td>
<td>Residents only receive their medications from Nurses during medication rounds only.</td>
<td>45 (90%)</td>
<td>2 (4%)</td>
<td>3 (6%)</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>8</td>
<td>High alert medications are administered after thorough scrutiny by nurse managers and doctors in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
</tbody>
</table>

In the table above, all the Nurses involved in this survey 50 (100%) affirmed that there is a written policy guideline for medication administration in the facility. They all emphasized that the roles and responsibilities of all professionals involved in medication management were fully specified in the policy. Also, all the Nurses that participated in the Medication Safety survey agreed that each professional takes full responsibility for any form of medication prescribed, dispensed or administered to residents in the facility. Moreover, all high alert medications are administered to residents after thorough scrutiny by nurse managers and doctors in the facility.

Nonetheless, only 38 (76%) agreed that medications are frequently used for treating illness and moderating symptoms only after appropriate tests or investigations have been done. This may be a very important area for improvement in ensuring evidence-based prescriptions in the facility.
Table 3.3.2. Preparation, Dispensing, and Storage of Medications in the facility

<table>
<thead>
<tr>
<th>S/N</th>
<th>Statements</th>
<th>Agree N (%)</th>
<th>Disagree N (%)</th>
<th>Not Sure N (%)</th>
<th>Total N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Policies and procedures govern the safe preparation, dispensing, and storage of medications in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>10</td>
<td>A system is used to dispense medications in the right dose to the right resident at the right time in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>11</td>
<td>Policies and procedures govern the storage, distribution, handling, and dispensing of chemotherapeutic, investigational, radioactive, or other hazardous medications in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>12</td>
<td>Emergency medications are always available, monitored, and safe when stored out of the pharmacy in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>13</td>
<td>There is a medication recall system in your facility.</td>
<td>20 (40%)</td>
<td>5 (10%)</td>
<td>25 (50%)</td>
<td>50 (100%)</td>
</tr>
</tbody>
</table>

In table 3.3.2 above, all the 50 nurses (100%) that participated in the survey agreed that clear policies and procedures govern the safe preparation, dispensing and storage of medications in the facility. They also affirmed that there is an established system being used to dispense medications in the right dose to the right resident at the right time in the facility. Moreover, emergency medications are always available, monitored and safely stored out of the pharmacy for easy access and guaranteed potency when used.

In contrast, half of the participants 25 (50%) were not sure of any medication recall system, while 20 (40%) claimed there is one in the facility.

Table 3.3.3. Ordering and Transcribing of Medications in the facility

<table>
<thead>
<tr>
<th>S/N</th>
<th>Statements</th>
<th>Agree N (%)</th>
<th>Disagree N (%)</th>
<th>Not Sure N (%)</th>
<th>Total N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Prescribing, ordering, and transcribing are guided by policies and procedures in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>15</td>
<td>There is a well defined pattern for a complete order or prescription and the types of orders that are acceptable for use in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>16</td>
<td>Individuals permitted to prescribe or to order medications are clearly specified in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>17</td>
<td>Medications prescribed and administered are written in the resident’s record using a clear format in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
</tbody>
</table>
All Nurses that participated in this survey agreed that prescribing, ordering, transcribing and recording of medications in the facility are done using established guidelines and specified format for clarity and avoidance of errors.

Table 3.3.4. Administration of Medications in the facility

<table>
<thead>
<tr>
<th>S/N</th>
<th>Statements</th>
<th>Agree N (%)</th>
<th>Disagree N (%)</th>
<th>Not Sure N (%)</th>
<th>Total N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Your facility clearly identifies the qualified individuals permitted to administer medications</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>19</td>
<td>Medication administration performed by the nursing staff includes a process to verify the medication is correct based on the medication order and verify the correct resident before administering the medication in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>20</td>
<td>Medications prescribed and administered by healthcare professionals are documented and verified in your facility.</td>
<td>50 (100%)</td>
<td>Nil</td>
<td>Nil</td>
<td>50 (100%)</td>
</tr>
</tbody>
</table>

100% of Nurses that participated in the survey agreed that only qualified individuals that can be identified or tracked are permitted to administer medications in the facility. Also they all agreed that medications prescribed and administered are documented and verified.

Table 3.3.5. Monitoring of Medications in the facility

<table>
<thead>
<tr>
<th>S/N</th>
<th>Statements</th>
<th>Agree N (%)</th>
<th>Disagree N (%)</th>
<th>Not Sure N (%)</th>
<th>Total N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Medication effects on residents are monitored, including adverse effects in your facility.</td>
<td>45 (90%)</td>
<td>2 (4%)</td>
<td>3 (6%)</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>22</td>
<td>Medication errors, including near misses, are reported through a defined process and time frame in your facility.</td>
<td>18 (36%)</td>
<td>5 (10%)</td>
<td>27 (54%)</td>
<td>50 (100%)</td>
</tr>
</tbody>
</table>

As shown in Table 3.3.5 above, a significant majority of nurses 27 (54%) claimed they are not sure if medication errors are reported through a defined process and time frame in the facility. However, 45 (90%) of nurses agreed that adverse effects of medication on residents are monitored in the facility.

Table 3.3.6. Suggestions for Effective control of Medication Errors in the facility

<table>
<thead>
<tr>
<th>S/N</th>
<th>Suggestions</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Training of staff on Medication Safety Principles and Practices through Continuing Education Courses</td>
<td>48</td>
<td>96%</td>
</tr>
<tr>
<td>2</td>
<td>Use of Coloured Codes and Alert Symbols</td>
<td>32</td>
<td>64%</td>
</tr>
<tr>
<td>3</td>
<td>Use of Adverse Drug Reaction Cards</td>
<td>40</td>
<td>80%</td>
</tr>
<tr>
<td>4</td>
<td>Anonymous reporting of Medication Errors for Quality Assurance Improvement</td>
<td>46</td>
<td>92%</td>
</tr>
</tbody>
</table>
## Suggestions for Effective control of Medication Errors

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anonymous reporting of Medication Errors for Quality Assurance Improvement</td>
<td>92%</td>
</tr>
<tr>
<td>Use of Adverse Drug Reaction Cards</td>
<td>80%</td>
</tr>
<tr>
<td>Use of Coloured Codes and Alert Symbols</td>
<td>64%</td>
</tr>
<tr>
<td>Training of staff on Medication Safety Principles and Practices through Continuing Education Courses</td>
<td>96%</td>
</tr>
</tbody>
</table>

### Qualitative Data: Pictorial survey of medication management processes in the facility

1. Color Coded Medication Trolley with Individual Resident’s Label and Central Lock
Medication Cabinet for Storing Intravenous Fluids with Central Lock
3. Transparent Medicine Storage Refrigerator with Automatic Cooling and Central Lock
4. High Risk Medication Safety Box with Automatic Sensor and Central Lock
5. Bedside System for Documentation and Monitoring Adverse Drug Reactions of Residents
6. Bedside Drug Control Pump for Automatic Dosage Control during Medication
6. Resident’s Bedside Identification Tags

7. Color coded Safety Box for Sharps
8. Labelled Stock Control Cabinet for Continuous Supply of Medication and Consumables
9. Labelled Stock Control Cabinet for Continuous Supply of Medication and Consumables

Discussion of findings

Awareness and compliance with medication safety policies

As shown in Table 3.3.1, all the Nurses involved in this survey 50 (100%) affirmed that there is a written policy guideline for medication administration in the facility. They all emphasized that the roles and responsibilities of all professionals involved in medication management were fully specified in the policy. Also, they all agreed that each professional takes full responsibility for any form of medication prescribed, dispensed or administered to residents in the facility. Moreover, all high alert medications are administered to residents after thorough scrutiny by nurse managers and doctors in the facility.
This revealed that the Enaya facility is fully compliant with the Standards and Intents of the Joint Commission International Standards for Resident Medication Management. Nonetheless, only 38 (76%) agreed that medications are frequently used for treating illness and moderating symptoms only after appropriate tests or investigations have been done.

This also corresponds with findings of the study conducted by Lessar, Briceland and Stein (1997) and Warholak, Queiruga, Roush, et al., (2011) with emphasis that most prescribing errors were attributed to: (1) lack of information about the patient; (2) specific drug therapy (e.g., narrow therapeutic index medications); or (3) inability to incorporate patient-specific factors (e.g., declining renal function) to appropriate selection and dosing of drug therapy.

Therefore, it may be a very important area for the policy makers in the facility to further review the medication policy toward ensuring evidence-based prescriptions and prevention of adverse drug events in the facility.

### Preparation, dispensing, and storage of medications in the facility

All nurses (100%) that participated in the survey agreed that clear policies and procedures govern the safe preparation, dispensing and storage of medications in the facility. They also affirmed that there is an established system being used to dispense medications in the right dose to the right resident at the right time in the facility. Moreover, emergency medications are always available, monitored and safely stored out of the pharmacy for easy access and guaranteed potency when used.

Furthermore, this finding is supported by the pictorial evidence shown above. However, half of the participants 25 (50%) were not sure of any medication recall system, while 20 (40%) claimed there is one in the facility. This clearly supported the submission of James (2013) which emphasized that “Preventable adverse events include errors of commission, errors of omission, errors of communication, errors of context, and diagnostic errors. Also, Parry, Cline and Goldmann, (2012) further affirmed that “When using medical records to identify adverse events, however, conservative estimates result because this method primarily targets errors of commission and are less likely to find other types of errors”. Hence, there is need to institute mechanism for monitoring expiry dates of drugs or consumables stocked in the facility so as to avoid medication error and adverse drug reaction due to unsuspected use of expired products. The use of bar code scanning method can help to digitally discover such errors and prevent them from occurring.

### Ordering and transcribing of medications in the facility

All Nurses that participated in this survey agreed that prescribing, ordering, transcribing and recording of medications in the facility are done using established guidelines and specified format for clarity and avoidance of errors. This is a vital component in the measurable elements of the Joint Commission International Standards for Resident Medication Management. Hence, it should be encouraged and continuously maintained for guaranteed medication safety in the facility.

### Administration of medications in the facility

All nurses that participated in the survey agreed that only qualified individuals that can be identified or tracked are permitted to administer medications in the facility. Also they all agreed that medications prescribed and administered are documented and verified. This is a very important area of interest, since majority of medication errors have been reported to commonly occur during administration. This was emphasized by Delaune and Ladner (2002) and Galicinao (2011).

Moreover, ensuring that only professionals administer drugs or medications will further guarantee strict adherence to the fundamental Rights of Medication Administration as documented by Workmann and Bennet (2003).
Monitoring of medications in the facility

A significant majority of nurses 27 (54%) claimed they are not sure if medication errors are reported through a defined process and time frame in the facility. However, 45 (90%) of nurses agreed that adverse effects of medication on residents are monitored in the facility. This clearly supports the findings of several authors who noted that many nurses do not feel confident to report medication errors for quality assurance and process improvement due to fear of consequences or official queries, legal liability, etc. Unfortunately, this has become a limitation to practical feedback and in-depth system reviews for policy makers toward ensuring continuous improvement of medication management system in many facilities worldwide.

Suggestions for effective control of medication errors in the facility

Majority of nurses 48 (96%) that participated in the survey emphasized the need for training of healthcare staff on Medication Safety Principles and Practices through Continuing Education Courses in the facility. Also, 46 (92%) suggested the use an anonymous reporting system for medication errors.

This is expected to remove the barrier of fear of negative consequences and improved feedback. Use of Adverse Drug Reaction Cards 40 and Use of Coloured Codes and Alert Symbols were also emphasized.

Recommendations for Improved Medication Safety in the facility

(1) Review the medication policy toward ensuring evidence-based prescriptions and prevention of adverse drug events in the facility.
(2) Institute a medication recall system especially for monitoring expiry dates, efficacy and reliability of drugs or consumables stocked in the facility.
(3) Use of bar code scanning method to digitally verify product specifications (e.g. drug name, category, dosage and expiry date) thereby preventing errors and avoidable harms due to adverse drug reactions.
(4) Training of all healthcare staff on Medication Safety Principles and Practices through Continuing Education Courses or periodic seminar/workshops.
(6) Use of Adverse Drug Reaction Cards especially for vulnerable residents e.g. elderly or residents with multiple cases of chronic illnesses.
(7) Use of Coloured Codes and Alert Symbols

Summary and Conclusion

The findings of this study revealed that the facility is highly compliant with the Joint Commission International (JCI) International Patient Safety Goals especially in area of Medication Safety and Residents Medication Management for Long term facilities. However, there are areas for improvement that requires the attention of nurse managers and quality assurance officers.

In conclusion, implementation of the recommendations stated above is expected to improve the quality of medication safety standard and prevent adverse drug events in Enaya specialized care centre in Rumailah Hospital, Doha, Qatar.

Acknowledgements

All glory to God for His guidance and sustenance upon my life. Every project big or small is successful largely due to the effort of a number of wonderful people who have always been there to support me at one time or the other.

Therefore, I specially appreciate the effort of Vanitha (student coordinator) and all the faculty members of Texilla American University. Also, I am very grateful to all my colleagues in Hamad Medical Corporation. You are all wonderful. Moreover, I humbly acknowledge the efforts and contribution of all officials of Enaya Specialized Care Centre.
towards the completion of this project. I am indeed grateful to all the nurses that voluntarily agreed to participate in the Medication Safety Survey. May the Almighty God reward you all abundantly.

Finally, I place a deep sense of gratitude to my husband and my precious children for all their encouragement and support.

Thanks a million times.

References


Risk Factors for Contacting HIV/AIDS among Health Care Workers in Peri-Urban-Hospitals in Kumasi, Study Conducted at Suntreso Hospital

Article by Tawiah Sampson
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E-mail: tawahsampson47@yahoo.com

Abstract

Health workers are vulnerable to occupational exposure to contagious substances and stand the risk of acquiring life threatening disease. The study assessed risk factors for contracting HIV/AIDS by healthcare workers in the three Peri-Urban Hospitals in Kumasi. The study was quantitative employing cross-sectional survey. Data was collected from 210 randomly selected healthcare workers from the three hospitals who were directly involved in given medical care to patients. Questionnaire and interview were the instruments employed in data gathering. The questionnaire was administered; key informant interview was conducted among healthcare practitioners. Study revealed that HIV/AIDS transmission in the hospitals emanates from several factors. The major cause of HIV/AIDS transmission was found to be percutaneous exposure. The items measuring percutaneous exposure all had high mean scores and relative importance indexes above 50%, indicating that they are risk factors. Injuries from needle and sharp devices contributed 80% of the risk. The study identified modifiable factors found that promotes HIV/AIDS transmission in the hospitals to be, non-use of safety devices, complacency, inattentiveness, negligence, and health and safety delivery rules and policies. The study discovered that healthcare workers exposed to the risk factors receive inadequate post exposure prophylaxis. A single dose therapy regimen is administered to healthcare worker who have encountered percutaneous and mucocutaneous exposures. The study provides useful information to hospital authorities and health personnel to work in an environment risk-free. Systematic risk factors, particularly percutaneous exposure should be a prime concern to healthcare practitioners in the hospitals.

Introduction

HIV/AIDS menace is an internationally concerned problem; the disease is catastrophically spreading throughout the world. The disease was first diagnosed in the 1980s among some homosexuals in Chicago in United State of America (Amosu et al., 2011). According to Buston and Engelkirk (2000), HIV/AIDS has gradually become a great killer; it has invaded mankind universally because of the absence of absolute cure. Initially, the disease was spreading at the rate of over 10,000 new cases per day (Quinn, 1996). But the effort to curtail the spread has reduced the spread significantly. Monasch and Mahy (2006) indicate in their estimation that 5000 – 6000 new infections occur each day, of which Sub-Saharan Africa alone comprise the majority of people living with HIV/AIDS. Plethora of literature points out that over 21 million out of people infected with the disease have died worldwide (Cambridge, 1996; WHO, 2000; AIDSMAP, 2001). Cambridge (1996) adds that adults who got infected in 2000 amount to over 60 million, with 63% coming from Sub-Saharan Africa. A projected number of persons living with HIV and AIDS in Ghana according to a survey report was 217, 428, made up of 124, 411 females and 93, 017 males with annual AIDS death of 14,330 (Ghana Health Service, 2012). The national HIV incidence and AIDS estimates report project an increase of 221, 884 by 2015. To prevent HIV prevalence, the National Strategic Plan of Ghana Health Service presents interventions to be undertaken by hospitals (Ghana Health Service, 2012).
Problem statement

The growth of an economy depends on the health of its citizenry; because a healthy worker is productive than an unhealthy worker. Therefore, health care workers play significant role in the economic development of a country. They perform key social roles and are resources for producing good health for the country. Unfortunately, the catastrophic spread of HIV AIDS is reducing the already inadequate workforce in the country. With the emergence of HIV AIDS, the health workers have been vulnerable to occupational exposure to contagious materials and stand the risk of acquiring life threatening disease. The workers are increasingly being exposed to patients with HIV infections and AIDS.

Health care workers are among the people in the society who are constantly exposed to blood and other body fluids. Patients who visit hospitals with all kinds of diseases may have the agent of disease present in their blood. Even though precautionary measures are observed, health care workers are likely to accidentally be exposed to blood or potentially infectious materials. In this case, the infectious agent is transferred into their body; get infected and their lives become endangered or ruined.

Existing solution

HIV AIDS is a disease with no cure; there is no any effective vaccine for it. Notwithstanding the situation, the spread is so alarming such that health practitioners, international bodies, NGOs among others are always finding and reporting ways to reduce if possible eliminate the disease. The tendency of health care workers to contract the disease has as well been captured. The study identifies several risk factors of HIV infection among health care workers. With this, hospital authorities can develop or revise the interventions to match up with each risk factor effectively.

The HIV transmission depends to great extent the level of knowledge and kind of medical practices observed by health care workers in the hospitals. The study will identify practices which are risky and exposed health care workers to HIV infection. Through the study health care workers will get to know good and bad practices and make conscious effort to refrain from medical practices that are risky and prone to HIV infection.

Best solution

A comprehensive review of post-exposure prophylaxis will serve as guide to deal with post-occupational exposure to HIV to stop multiplication of the initial inoculums of virus and thereby preventing formation of chronic HIV infection. The result of the findings will aid in effective measures to deal with and manage occupational exposure to HIV AIDS in the hospitals.

Since the result is based on a sample, the result may not be the same if entire population was used. Cross-sectional study did not permit an investigation on the level of risk associated with the study variables, systematic and modifiable factors.

The following are the limitations of the study

a. Since the result is based on a sample, the result may not be the same if entire population was used.

b. Cross-sectional study did not permit an investigation on the level of risk associated with the study variables, systematic and modifiable factors.

Generally, the study seeks to assess the risk factors for contracting HIV AIDS by health care workers of public hospitals. However, specific ones include,

i. To measure the level of knowledge of health care workers about the risk factors for HIV transmission

ii. Examine how the interventions put in place by management to prevent HIV infection are observed by the health workers.

iii. Evaluate post exposure regimen given to infected health care worker.
Methodology

The study was carried out in three public hospitals in Kumasi namely, Chapatre Hospital, Tafo General Hospital and Suntreso Hospital. These hospitals were considered for the study in order to ascertain fair view of risk factors. These hospitals were considered for the study because they are the designated HIV/AIDS Centre in the Kumasi Metropolis. The number of HIV AIDS and other infectious diseases handle by these hospitals vary and the variation gives a true picture of a diverse health care practices exhibited in the public hospitals. It is therefore worthwhile to combine these hospitals for a study of this nature.

As a cross-sectional survey design, using questionnaire was the primary data collection technique for gathering data. It allowed collection of large amounts of information at a low cost (Kumar, 2005). The questions on HIV AIDS risk factors and treatment were developed out of the literature reviewed in chapter two. The questionnaire consisted of four parts: demography of participants; knowledge about HIV AIDS, risk factors and post exposure treatment. The questionnaire consisted mainly of closed questions requiring ‘tick’, however, few open-ended questions were included to encourage ‘unaided recall’ responses (Saunders et al., 2007); and participant’s personal views and feelings (Kumar, 2005) on risk factors and post exposure treatment of HIV AIDS.

Mixed research method was seen as an appropriate and relevant design for a study of this kind whose overall goal was to identify occupational risk factors of HIV transmission. The mixed method allows easy handling of complex data and provides more perspectives on the problem being studied (Hesse-Biber, 2010). According to Saunders et al. (2007), survey is efficient and effective for collecting large data from large sample and enables quantitative data analysis using descriptive and inferential statistics. Hence, a cross-sectional survey design which employs a combination of data gathering methods including questionnaire administration and interviews were used to collect data on occupational exposure and post exposure regimen to HIV AIDS.

The developed questionnaire was pilot tested among nine HIV AIDS experts, three from each of the selected hospitals. The responses were desk checked and revised to take care of all the ambiguity to ensure clarity, precision and coherency. The questionnaire was edited and finalized for the actual field work.

The collected instruments were sorted out to remove wrongly filled instruments, coded and then entered into SPSS for analysis. Correlation analysis was performed to ascertain the relationship and effect of the independent variables on the dependent variable. Descriptive statistics with graphs was performed to rate the risk factors using Microsoft excel. The relative importance index was computed to establish the magnitude of the measurement items. By this, the variable items and their proportionate contribution each made to the study phenomenon were determined.

Discussion of findings and results

The findings are organized and presented in the form of frequency distributions, descriptive statistics, chart and tables to enable examination and description on the patterns of the responses.

In order to ascertain the level of knowledge on HIV AIDS, basic knowledge about the disease, the causes, existence and mode of transmission were examined. As the literature indicated that HIV AIDS is a viral disease and spread through blood and body fluids, it was important that participants were examined. As health care practitioners, it was expected that all of the participants could agree that HIV AIDS is caused by exposure to blood and body fluid. However, a fraction (3.3%) of the participants disagreed, suggesting that not all of the health care workers have full knowledge on the disease. Meanwhile, Young et al. (2007) and M'ikanatha et al. (2007) state categorically that blood and body fluids were not just mere factors but main contributors of HIV AIDS infection. It suggests that handling of blood and body fluids in the hospital need special care and attention. In fact, blood and body fluids are substances so common and worked on in the hospitals; they use them very often for different kinds of diagnoses. Practices like injection, fusion, laboratory analysis, and surgical activities expose health care workers to blood and body...
fluids. Because of lack of knowledge on the main causative agents of HIV AIDS infection, handling of blood and body fluids is likely to be done anyhow. It is only when there is awareness and knowledge that handling of such substances would be done meticulously. Unfortunately, hospitals employ both skilled and unskilled workforce performing various activities from cleaning to medication duties based on their job description. As they perform the duties, health care workers are likely to be exposed to blood and body fluids in one way or the other. On the issue of the existence of HIV AIDS disease, participants were fully aware of it. The response confirms several reports which have established that HIV AIDS has existed for considerable years and have been spreading astronomically killing thousands of people (Amosu et al., 2011; Quinn, 1996; Buston and Engelkirk, 2000). Even though participants knew the existence of the disease, quite a number of the interviewees could indicate the types as distinguished in the literature (HSE, 1995) as Type 1 and Type 2. As part of knowledge, the survey wanted to establish whether HIV AIDS could be cured. A response of 3.3% indicated that the disease was curable, and that AIDS drugs could cure it.

Health care workers are expected to exhibit certain behaviours that would not put them at risk but rather prevent them from any form of infections. According to the literature, there are acceptable behaviours and unacceptable behaviours at work place. One of the acceptable behaviours is the assumption that every blood and other body fluids from all patients is potentially infectious (CDC, 2011). With this in mind, the worker would be extremely careful in handling it. Notwithstanding, survey findings identified behaviours which were susceptible to infections at the hospitals. Among the unacceptable behaviours identified, non-use of protective materials during health administration was found to be prevalent and leading. This is followed by failing to use sterile devices; negligence, complacency and over-zealous were the least rank misbehaviors at the hospitals. These negative attitudes and behaviours pose as threats of HIV transmission at the hospitals.

Demography of participants

Table 4.1. Demographic characteristics of participants (Source: Field survey, 2014)

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency, N=210</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profession</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Doctor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td>35</td>
<td>16.7</td>
</tr>
<tr>
<td>Midwife</td>
<td>133</td>
<td>63.3</td>
</tr>
<tr>
<td>Lab Scientist</td>
<td>14</td>
<td>6.7</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Working Department</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratory</td>
<td>28</td>
<td>13.3</td>
</tr>
<tr>
<td>Injection</td>
<td>28</td>
<td>13.3</td>
</tr>
<tr>
<td>Theatre</td>
<td>35</td>
<td>16.7</td>
</tr>
<tr>
<td>Male Ward</td>
<td>49</td>
<td>23.3</td>
</tr>
<tr>
<td><strong>Rank</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotational Nurse</td>
<td>76</td>
<td>36.2</td>
</tr>
<tr>
<td>Nursing Officer</td>
<td>42</td>
<td>20.0</td>
</tr>
<tr>
<td>Snr. Nursing Officer</td>
<td>56</td>
<td>26.7</td>
</tr>
<tr>
<td>Jnr. Nurse Officer</td>
<td>21</td>
<td>10.0</td>
</tr>
<tr>
<td>Other (Snr./Jnr. Medical Officer, Health Assist.)</td>
<td>15</td>
<td>7.10</td>
</tr>
</tbody>
</table>
Participants’ bio-data were sought on profession, gender, working status, work experience working department and educational level. Table 4.1 presents the demography of participants who were selected for the study.

Based on Table 4.1, participants who filled the questionnaire had varied characteristics. In terms of profession, 16.7% were medical doctors, 63.3% were nurses, 6.7% were midwives, 10% were lab scientists and 3.3% were other representing pharmacists and administrators. The working department of the participants indicated that 13.3% worked in the laboratory and injection department respectively, 16.7% worked at the theatre, 23.3% worked at male ward and 33.3% worked at female ward.

<table>
<thead>
<tr>
<th>Working Years</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than a year</td>
<td>14</td>
<td>6.7</td>
</tr>
<tr>
<td>1 – 3 years</td>
<td>42</td>
<td>20.0</td>
</tr>
<tr>
<td>4 – 7 years</td>
<td>80</td>
<td>38.1</td>
</tr>
<tr>
<td>7 years above</td>
<td>74</td>
<td>35.2</td>
</tr>
</tbody>
</table>

From the Table, 66.2% of the participants in the hospitals by their position suggested that they were greatly involved in various health care activities. Again, looking at the profession and the departments of participants, it was clear that they were exposed to all manner of fluids such as blood, urine and saliva making them susceptible to HIV and as such appropriate respondents for a study of this nature. The bio-data of the participants suggests that the questionnaires were filled by participants who were knowledgeable. Hence, the responses can be said to be reliable and that the information is the true reflection of the situation pertaining in the hospitals understudied.

HIV/AIDS transmission

The study sought to find out how HIV is transmitted in the health care setting. The study first ascertained the knowledge level of health workers and the risk factors of the HIV AIDS disease.

Knowledge about HIV AIDS transmission

Participants knowledge about the disease was ascertain. Several questions were asked and participants were asked to indicate their level of agreement with the statements by ticking from a scale of 1-4, where 1= strongly agree (SA), 2=agree (A), 3=disagree (D) and 4=strongly disagree (SD), a number that reflected on their answer (See Table 4.2 for detail responses.)
Table 4.2. Knowledge about HIV AIDS - SA (1); A (2); D (3); SD (4) (Source: Field survey, 2014)

<table>
<thead>
<tr>
<th>SR No.</th>
<th>Item/Question</th>
<th>Frequency (%)</th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AIDS is caused by a virus</td>
<td></td>
<td>93.3</td>
<td>6.7</td>
<td>-</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>HIV AIDS can be transmitted to health care workers through blood and body fluid</td>
<td></td>
<td>90.0</td>
<td>6.7</td>
<td>-</td>
<td>3.3</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>HIV/AIDS can spread through touching and hugging, saliva, cough and sneezing, urine and faeces.</td>
<td>10.0</td>
<td>26.7</td>
<td>40.0</td>
<td>23.3</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>HIV/AIDS can be transmitted through insect bite</td>
<td>-</td>
<td>-</td>
<td>73.3</td>
<td>26.7</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>AIDS can be cured</td>
<td>-</td>
<td>3.3</td>
<td>60.0</td>
<td>36.7</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>HIV AIDS can be prevented through vaccination</td>
<td></td>
<td>13.3</td>
<td>3.3</td>
<td>53.3</td>
<td>30.0</td>
<td>100</td>
</tr>
<tr>
<td>7</td>
<td>Blood transfusion can transmit HIV</td>
<td></td>
<td>80.0</td>
<td>20.0</td>
<td>-</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>8</td>
<td>Persons with HIV can be asymptomatic but still infectious</td>
<td></td>
<td>60.0</td>
<td>36.7</td>
<td>-</td>
<td>3.3</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>AIDS drugs only subside the disease</td>
<td></td>
<td>46.7</td>
<td>50.0</td>
<td>3.3</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>AIDS drugs are readily available</td>
<td></td>
<td>56.7</td>
<td>30.0</td>
<td>6.7</td>
<td>6.7</td>
<td>100</td>
</tr>
<tr>
<td>10</td>
<td>AIDS drugs are expensive</td>
<td></td>
<td>10.0</td>
<td>23.3</td>
<td>46.7</td>
<td>20.0</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.3. Percutaneous exposures and their ratings (Source: Field survey, 2014)

<table>
<thead>
<tr>
<th>SR No.</th>
<th>Item/Question</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>RII</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>An exposure to superficial injury or solid injury</td>
<td>2.53</td>
<td>1.12</td>
<td>0.64</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>2</td>
<td>Skin puncture</td>
<td>2.83</td>
<td>1.35</td>
<td>0.71</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>3</td>
<td>Visible blood on an instrument (needle, sharp device)</td>
<td>3.20</td>
<td>1.20</td>
<td>0.80</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
<tr>
<td>4</td>
<td>Procedure involving needle placed in a vein or artery of a patient</td>
<td>3.03</td>
<td>1.28</td>
<td>0.76</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td>5</td>
<td>Injection into the body</td>
<td>2.83</td>
<td>1.35</td>
<td>0.71</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>6</td>
<td>Intravenous or intramuscular injection of contaminated blood</td>
<td>2.90</td>
<td>1.3</td>
<td>0.73</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
</tr>
<tr>
<td>7</td>
<td>Exposure to larger quantity of blood from patient</td>
<td>2.93</td>
<td>1.24</td>
<td>0.73</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
</tr>
<tr>
<td>9</td>
<td>Insertion of intravenous catheters</td>
<td>2.47</td>
<td>1.06</td>
<td>0.62</td>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>10</td>
<td>Deep injury or needle stick injury</td>
<td>2.90</td>
<td>1.28</td>
<td>0.73</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
</tr>
<tr>
<td>11</td>
<td>Contact with device previously placed in a source patient’s vein or artery</td>
<td>2.83</td>
<td>1.35</td>
<td>0.71</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>12</td>
<td>Minor surgery</td>
<td>2.57</td>
<td>1.31</td>
<td>0.64</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>13</td>
<td>Major surgery</td>
<td>2.70</td>
<td>1.40</td>
<td>0.68</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Based on the calculations in Table 4.3, items measuring percutaneous exposure had very high score on the responses of the health care workers of the selected hospitals. The mean values of the items were all high ranging from approximately risk to very risky. Again relative importance indices (RII) of all the items were above 0.5, indicating that they were risky factors. At least each of the factors can lead to HIV infection. According to the findings, the riskiest factor was the visible blood on an instrument like needle and sharp device which yielded 80% RII. The least among the risk factors was the ‘insertion of intravenous catheters’ which yielded 62% RII; even the value is quite high. Collection of blood with...
hollow bore needles yielded the second highest risk factors with 76%. This is consistent with many of the submissions in the literature that percutaneous injury result from sharp devices and needle (Gerberding, 2003; Tokars et al, 1993; Henderson, 1995).

**Mucotaneous transmission**

<table>
<thead>
<tr>
<th>SR No.</th>
<th>Item/Question</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>RII</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unbroken healthy skin is likely to contract HIV</td>
<td>2.20</td>
<td>1.17</td>
<td>0.55</td>
<td>5th</td>
</tr>
<tr>
<td>2</td>
<td>Terminal illness in source patient</td>
<td>2.30</td>
<td>1.13</td>
<td>0.58</td>
<td>4th</td>
</tr>
<tr>
<td>3</td>
<td>Splash of blood onto the mucosal surface (like mouth, nose and eyes)</td>
<td>2.90</td>
<td>1.17</td>
<td>0.73</td>
<td>1st</td>
</tr>
<tr>
<td>4</td>
<td>Splash of visible bloody fluid in the mouth, nose or eye</td>
<td>2.80</td>
<td>1.14</td>
<td>0.70</td>
<td>2nd</td>
</tr>
<tr>
<td>5</td>
<td>Splash of potentially infectious material to the mouth, nose or eye</td>
<td>2.73</td>
<td>1.0</td>
<td>0.68</td>
<td>3rd</td>
</tr>
<tr>
<td>6</td>
<td>A bite from HIV-infected patient with visible bleeding in the mouth that causes bleeding in the health care worker</td>
<td>2.70</td>
<td>1.30</td>
<td>0.68</td>
<td>3rd</td>
</tr>
</tbody>
</table>

From Table 4.4, the mean value and RII rated blood splash onto open areas like mouth, nose and eye as very risky to HIV infection, confirming the claims made by Royal College of Nursing (1997) that accidental splash of blood onto mucosal surfaces can lead to HIV infection. The least ranked item of mucocutaneous factors was the unlikely that unbroken skin contracting HIV AIDS with RII of 55% and mean value of 2.20.

By examining the values and ratings of percutaneous and mucocutaneous factors on Tables 4.3 and 4.4, it was clear that health care workers were at risk of contracting HIV infection. Responses were all high, indicating that health care workers who encounter both percutaneous and mucocutaneous exposure were at risk of contracting HIV AIDS. Meaning, health care workers need not to take chances at all when carrying out various medical activities. Care must be taken at all times from being exposed to blood and body fluids.

In order to establish which of the exposures was riskier, the factors were aggregated and their mean value and RII were determined. Percutaneous factors yielded mean value and RII of 2.8 and 0.7 respectively while mucocutaneous factors yielded mean value and RII of 2.61 and 0.65 respectively as displayed in figure 4.2. Based on the values of the two factors, percutaneous exposure was seen to be riskier than mucocutaneous exposure. Findings therefore indicate that health care workers were at risk of HIV infection at the workplace if care is not taken. Specifically, health care workers stand 70% chance of contracting HIV disease through percutaneous exposure and 65% chance through mucocutaneous exposure. Since relative importance index of both risk factors yielded RII more than 50%, it implies that both exposures are very risky and are likely cause HIV infection in the hospitals.

### Conclusion

Recommendations are provided to address areas likely to result in exposure to risk in the hospitals to prevent them from occurring. Healthcare workers are exposed to body fluids in an attempt to discharge their various duties in the hospitals and therefore set them at risk of contracting HIV AIDS. These risk factors are grouped by this study as systematic and modifiable factors. The study assessed how these factors contribute to HIV AIDS infection in the three peri-urban the hospitals in Kumasi.
Knowledge about HIV AIDS transmission

All the participants were aware that HIV AIDS was a viral disease and for that matter is caused by a virus. The virus according to 96.7% of the participants, resides in blood and body fluid. Only 3.3% did not know that the virus lives in the blood and body fluid. Amazingly, 36.7% of the participants believed that the HIV AIDS disease can spread through casual situations like hugging, saliva, cough, sneezing, urine and faeces while 63.3% of the participants did not agree that AIDS is spread through such situations. All the participants admitted that the disease cannot be spread by insect bite but rather blood transfusion. While 96.7% accept that the disease is incurable, 3.3% think it is curable when one is infected with the disease.

Risk factors of HIV AIDS transmission

The individual items measuring percutaneous exposure and ranking it using relative importance index were assessed. In order of contribution of the items by ranking, findings established that visible blood is the major factor, followed by blood collection with hollow bore needles as second highest, intravenous or intramuscular injection of contaminated blood became the third ranked factor. The contributing factors were exposure to superficial or solid injury, followed by procedure involving placing needle in a vein or artery of a patient

Standard operating procedures (SOPs) use in the hospitals

The extent to which standard operating procedures were adhered to by healthcare workers was measured. These procedures were grouped into five main practices

By ranking, provision of safety devices and materials was the highest ranked item. In fact, the interview demonstrated that hospitals do not down play on safety issues, because of high risks of infection associated with health delivery.

Table 4.5. Ranking of standard operating procedures by respondents (Source: Field survey, 2014)

<table>
<thead>
<tr>
<th>Health Practices / SOPs</th>
<th>Mean Value</th>
<th>Ranking</th>
<th>RII</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision of safety devices and materials</td>
<td>3.11</td>
<td>2nd</td>
<td>0.78</td>
<td>1st</td>
</tr>
<tr>
<td>Usage of safety devices and materials</td>
<td>3.07</td>
<td>3rd</td>
<td>0.77</td>
<td>2nd</td>
</tr>
<tr>
<td>Proper disposal of used devices and materials</td>
<td>3.07</td>
<td>3rd</td>
<td>0.77</td>
<td>2nd</td>
</tr>
<tr>
<td>Personal precautionary measures</td>
<td>2.99</td>
<td>4th</td>
<td>0.75</td>
<td>3rd</td>
</tr>
<tr>
<td>Hospital precautionary measure</td>
<td>3.23</td>
<td>1st</td>
<td>0.75</td>
<td>3rd</td>
</tr>
</tbody>
</table>
Behavioural factors causing HIV infection

Apart from the hospitals' quest to curb workplace infection of any kind, individual workers' behaviour on the job can greatly pose a threat of infecting with disease at workplace. Findings revealed that non-use of protective materials when discharging or attending to patients was high in the hospitals. It was the item which exposes most of the workers to risk with the highest score. With the exception of this item, the rest of the items measured had low scores though, getting infected by a disease has nothing to do with less or huge misbehaviour. HIV AIDS infection can be predicted at even infinitesimal misbehaviour.

Post exposure regimen

According to the findings, the regimen was generally inadequate. The hospitals have stated guidelines for treating personnel exposed to blood and body fluid and this is strictly adhered. As part of the medication, the affected personnel undergo two-drug regimen within four weeks of exposure to blood and body fluid and three-drug regimen after exposure to highly infectious blood or body fluid. Findings from the participants however indicated that the regimen after exposure was not rigorous and adequate.

Relationship between systematic and modifiable factors

The study tried to establish the relationship between the practices and the chance of acquiring HIV AIDS. The item measurements were aggregated and Pearson correlation was performed. Based on the findings, some of the practices were inversely related to the risk factors. This implies that as the practices increase at workplace or in the hospitals, the chance of risk to HIV infection by the healthcare workers is reduced. Other items were directly related to the risk factors, indicating that the more such practices or situations occur in the hospitals, healthcare personnel have high change of getting infected with HIV disease. Knowledge as one of the independent variables had negative coefficient of correlation, meaning increase in knowledge on HIV AIDS, decreases the chances of the personnel from contracting the disease.
Tables and figures

**Figure 4.2.** Aggregate computation of percutaneous and mucocutaneous factors (Source: Field survey, 2014)

References


Community Health Program on Increase of Male Involvement in Reproductive and Child Health Services at Haydom Lutheran Hospital Mbulu Manyara United Republic of Tanzania

Article by Theodotha John Malissa
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E-mail: theodotha.malissa@yahoo.com

Abstract

Introduction: Male participation in child-bearing decisions is crucial and also has a positive impact on the acceptability of PMTCT interventions. Well-informed men will be more likely to participate positively in the decision making for the well-being of the couple.

There are reasons of involving men in reproductive health which are: expanding the range of contraceptive options; supporting women’s contraceptive use preventing the spread of sexually transmitted infections such as HIV/AIDS and to use the forum of reproductive health programs to promote gender equity and the transformation of men’s and women’s social roles.

Statement of the problem: A study done in Magu district Shinyanga region in Tanzania has showed that Male involvement in pregnancy and antenatal care in Magu district is low. Barriers for male involvement included: traditional gender roles, lack of knowledge, perceived low accessibility to join antenatal care visits and previous negative experiences in health facilities. The data obtained at Reproductive Health clinic at Haydom Lutheran Hospital shows that the number of male attended for reproductive health services for the past six months i.e. January to June 2016 is 920 (18.7%), while the targeted population at this catchment area is 9798 per year and 4899 per six months. As per this data it is obvious that male attendance is low due to either inadequate education on the importance of attending RCHC. So this program is done for the purpose of keeping aware men and the whole community about the importance of their attendance to RCHC hence good number of clinic attendance.

Objectives: to increase the number of male involvement to RCH clinic services at Haydom Lutheran Hospital

Program Stake holders: Health officers of all levels, Leaders and staff (HLH), division, ward and village leaders, politicians, education officers who will be involved in the program

Implementation of the program: During program implementation health education was given to the community for five days with good attendance of 92 male and 420 female. Reasons for not attending to RCHS by men was obtained after interview to 20 men. The results was as follows: 12 (60%) men said that there was low attendance due to sociological factors such as believes, attitudes, communication between men and women followed by 4 (20%) who said it is due to lack of space to accommodate partners So it shows that believes, attitude and communication plays major part in the low attendance of men to RCHC.

List of abbreviation

RCHC - Reproductive and Child Health Clinic
HLH - Haydom Lutheran Hospital

Introduction

Reproductive health is an important component of men's overall health and well-being. Too often, males have been overlooked in discussions of reproductive health, especially when reproductive issues such as contraception and infertility have been perceived as female-related. Every day, men, their partners, and health care providers can protect their reproductive health by ensuring
effective contraception, avoiding sexually transmitted diseases (STDs), and preserving fertility. Common issues in male reproductive health include: Contraception, avoiding sexually transmitted diseases and Infertility/fertility (www.nichd.nih.gov/health)

Man plays a key role socially and economically-first as a husband, then as a father- in the formation of the family, in child education, and in the health and nutrition of the family members. A husband is also required to be supportive of the decisions and needs pertaining to the reproductive health of his wife. There is evidence that not only couples, but also men and women of the extended families participate in fertility and in decision-making of contraceptive use (Asian-Pacific) Resource and Research Centre for Women, (1996)

According to family care international is that it is important for men to take more responsibility for their sexual and reproductive behavior and family life. Everyone is more aware than ever of the need to involve men in reproductive health programs.

Several NGOs are also conducting research to determine what men's reproductive health needs are, and to better understand their sexual, marital, parenting, and family decision-making roles (http://www.familycareintl.org)


Male participation is an important component in the optimization of Maternal and Child Health (MCH) services. This is especially so where prevention strategies to decrease Mother-to-Child Transmission (MTCT) of Human Immunodeficiency Virus (HIV) are sought. Providing suitable medical information to men has several important consequences related to PMTCT interventions (Semrau K, et. al. 2005).

Research suggests that male involvement can increase uptake and continuation of family planning methods by improving spousal communication through pathways of increased knowledge or decreased male opposition (Hartmann M. 2012)

In the past, men's involvement has sometimes been opposed by women's health advocates, who understandably fear that adding these services will damage the quality of women's services and create additional competition for already scarce resources (Grady W et al., 1996)

In United Republic of Tanzania, the Maternal Mortality Ratio (MMR) has remained high for the last 10 years without showing any decline and is currently estimated to be 578 per 100,000 live births. While significant progress has been made to reduce child mortality in Tanzania, the neonatal mortality rate remains high at 32 per 1,000 live births, and accounts for 47% of the infant mortality rate which is estimated at 68 per 1,000 live births (Mswia R.2003). The maternal and child mortality is due to several issues such as prolonged labor, eclampsia, fetal distress, obstructed labor antepartum, intrapartum and post-partum hemorrhage, neonatal sepsis etc. In order to reduce the maternal and child mortality rate, there should issue of male involvement in reproductive and child health services so as to cater along this matter.

There are reasons of involving men in reproductive health which are: expanding the range of contraceptive options; supporting women’s contraceptive use preventing the spread of sexually transmitted infections such as HIV/AIDS and to use the forum of reproductive health programs to promote gender equity and the transformation of men’s and women’s social roles (PATH 1997).

Studies have shown that in countries with high HIV prevalence there is also a high incidence of HIV infection in women during pregnancy or in the post-partum period.

Indeed in this period women are particularly vulnerable to become HIV infected, therefore it is very important that partners of pregnant women are also tested for HIV and that antiretroviral treatment is considered if they are found to be HIV infected (De Schacht C, 2011, De Paoli MM, 2004 and Katz DA, 2009).
Statement of the problem

There is a strong inverse relationship between low male participation in PMTCT services and high MTCT risk in exposed infants.

A study conducted in Nairobi/Kenya between 1999 and 2005 found that MTCT risk in exposed children was significantly associated with low male participation in Maternal and Child Health (MCH) services. In women whose male partners had come to the antenatal care (ANC) clinic, there was less MTCT compared with women whose partners did not take part in the PMTCT interventions.

Although there is lack of evidence that male involvement will directly help reduce maternal deaths, their involvement has shown benefits for other maternal health outcomes and is therefore highly recommended by the World Health Organization (WHO, 2015 and Yargawa J, 2015)

A study done in Magu district Shinyanga region in Tanzania has showed that Male involvement in pregnancy and antenatal care in Magu district is low. Although men perceived antenatal care as important for pregnant women, most husbands had a passive attitude concerning their own involvement. (E.Vermeulen et. al. 2015)

According to the data obtained at Reproductive Health clinic at Haydom Lutheran Hospital the number of male attended for reproductive health services for the past six months i.e. January to June 2016 is 920 (18.7%), while the targeted population at this catchment area is 9798 for the year 2016. This figure is obvious an indicator of poor involvement of male in Reproductive health services. So to meet the goal intended of having 100% attendance measures should be taken such as creation of awareness to people on the importance of male participation in Reproductive health clinics.

Objectives

Broad objective

1. To increase the number of male involvement to RCH clinic services at Haydom Lutheran Hospital

Specific objectives

To explore the reasons of low involvement of male to Reproductive and child health clinic.
To create awareness to individual, families and community about the importance of male involvement in Reproductive and child health clinic.
To explain the role of Community Health Nurse in the community.

Literature review

Barriers for male involvement included: traditional gender roles, lack of knowledge, perceived low accessibility to join antenatal care visits and previous negative experiences in health facilities (E. Vermeulen et. al. 2015)

Methodology

Study design

The study design which was used to this study was cross sectional study design, of which the data was collected in a specified point in time. This means data were collected from the whole study population at a single point in time.

Target population and study samples

The target population included all reproductive age men from 18 to 45 years old, attended for RCHC at Haydom Lutheran Hospital clinic. The study excluded male of less than 18 years and more than 45 years old, and those who were not attended in RCHC.
Sample size and sampling process

The sample size was identified by using the method of cost analysis approach. Consideration was done to avoid much cost due to insufficient funds to assist in coverage of cost due to large sample size. The non-probability sampling method was applied to obtain the study population conveniently (on availability basis).

Study methods and data collection

The method of data collection used in this study was interview which was conducted to clients. Interviewer was asking questions from clients and thereafter it was filled in the interview form.

Time frame

The time frame was only 10 days due to the fact that it was just a mini research study done to those clients being a ladder to another major research which will include large sample size with coverage of other context. Although it was for 10 days only but all the process of research study was considered.

Ethical consideration

As far as clients have rights to participate or not to participate without coercion, the consent was obtained from clients after thorough explanation of the benefits and risks of participating in the study. Patient were promised of maintenance of privacy and confidentiality as no names will be used in the questions response papers. Patients were given informed consent to sign after the participation agreement.

Limitation of the study

The study was limited by several factors such as time as the study was conducted within 10 days only and the results were out. Also it was limited by personnel this means, everything was done by investigator due to lack of funds etc. Questions for interview guide was few which didn’t cover everything as a result cannot be related with other variables Sample size was also small not equivalent to the required population attending at RCHC.

Results and findings

The interview was conducted to 20 male clients attended at RCH clinic, with age’s ranges from 18 years to 45 years. Their level of education ranges from informal to primary and secondary level. All were married with variation in number of children, their wives were alive.

There were different reasons which were given of why male are not attending to RCHS clinic as follows:

Demographic characteristics

Table 1. Reasons not attending RCHS (n - 20)

<table>
<thead>
<tr>
<th>S/N</th>
<th>VARIABLE</th>
<th>FREQUENCY</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Behavior of health providers</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Lack of space to accommodate male partners</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Sociological factors(believes, attitudes)</td>
<td>12</td>
<td>60</td>
</tr>
<tr>
<td>4</td>
<td>Economic status</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Health services factors(opening hours)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Discussion

The study was done to 20 men of age ranging from 18 to 20 years old, so according to the results findings it showed that 12 (60%) men said that there is low attendance due to sociological factors such as believes, attitudes, communication between men and women. This study is contradicted by a study
done in Magu district Shinyanga Tanzania which showed that traditional gender roles, lack of knowledge, perceived low accessibility to join antenatal care visits and previous negative experiences in health facilities are factor hindering men attendance to RCHC (E. Vermeulen et. al. 2015)

**Conclusion**

So according to the study is that there is low attendance of men to RCHC IS due to sociological factors such as believes, attitudes, communication between men and women

**Application**

The study was a mini study, but once done as a major study, will be of great importance to health fields as it will be used as a basis for teaching the community about the importance of male participation in RCHC. Also it can be used also as a basis for further study as per identified gaps.

**Create awareness to individual, families and community about the importance of male involvement in RCH clinic services**

**Health education program to community**

**Justification of the program**

This program is intending to provide health education to individual, families and community at Haydom village. The health education will be provided to patients/ clients coming to Haydom Lutheran Hospital reproductive and child clinic about the importance of involving male in Reproductive health services. The outcome measures for the program will be to have large number of male seeking for reproductive health services.

**Description of program area**

Haydom Lutheran Hospital a place where this clinic is accessible is located in the North of Tanzania, around 300 km South-West of Arusha. In the Mbulu area this is the biggest hospital, with more than 400 beds, serving around one million people in its direct catchment area and a population of 3 million for its secondary function as a referral hospital regional wise.

Haydom Lutheran hospital reproductive health clinic has its catchment areas where clients for reproductive health services are coming from. Usually the village leaders and people in those have being kept aware of where to receive those services.

This clinic provide other outreach reproductive and child clinic services to other areas outside either by car or flight, with intention of supporting the health of community around (see map indicating RCH services done by HLH reproductive and child health clinic)
Figure 1. Map showing RCHC services by HLH

Figure 2. Photograph 1. RCHC outreach services served by HLH
The role of Public Health Nurse on promotion of Reproductive and health services in the community

- **Build healthy public policy**

  Encourage and support community-based advocacy for health public policy at all levels and in all sectors (e.g. justice, education, housing, social services, recreation)

  Direct advocacy for healthy public policy.

  Educate and encourage decision makers in all sectors and at all levels to participate in the development of healthy public policy.

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Figure 3. Photograph 2. RCHS services served by HLH

Figure 4. Photograph 3. Safer birth
Foster partnership with community decision makers to evaluate public policy.

- **Create supportive environments**
  
  Assess and directly act on the factors affecting health in the social, emotional, spiritual, physical and ecological environment.
  
  Encourage and participate in health promoting initiatives with other communities and sectors.
  
  Increase awareness of the ecological and social environments affecting the health of individuals, families, groups or communities.
  
  Encourage and support related action.

- **Strengthen community action**
  
  Mobilize individuals, families, groups and communities to take individual and collective action on the determinants of health in the contexts in which they live, learn, work and play (e.g., schools, workplaces, homes, economic and social environments).
  
  Develop and support community-based and self-care services in which community members have ownership and an active role.

- **Reorient health services**
  
  Primary role in community assessment. Provide consultation with decision makers (e.g., RHA management and board regarding community strengths and needs as a foundation for health care decisions.
  
  Promote responsible and effective use of the health care system and community resources.
  
  Refer individuals, families, groups and communities for appropriate service.
  
  Engage other sectors in addressing the determinants of health.

- **Develop personal skills**
  
  Mobilize individuals to take individual and collective action on the determinants of health.
  
  Provide information regarding choices. Counsel and facilitate healthy choices.

**Stake holders to the health education program**

The community health program will involve several stake holders but attention will be mostly such as HLH reproductive and child health clinic staff, Community, Regional and district medical and Nursing officers, Regional and district health officers, RCHC coordinators (regional and district levels), Management (HLH), division, ward and village leaders, politicians, education officers(for primary, secondary and tertiary education) and all people who by any means will be part and parcel of the program.

**Duration of the health education program**

The program will be of six months but the first round will start three days starting from 16th/August -18th/August 2016. It will cover the provision of health education to clients coming to RCH clinic.

**Community health program preparation**

Conduct preparation meeting with all stake holders to keep them aware of the upcoming project.

The following preparations will be done:

- Participants for provision of health education and conduction a minor research
- Teaching aids and material.
- Adequate number of staff
- Announcement for the campaign program in school, market, mosque, churches, temple etc.
- Preparation of brochures, leaflet for distributing to people
• Ensure proper functioning of television in RCH venue
• CD presentation by using television which will be more attractive to patient as it will draw attention hence good concentration
• conducive environment for teaching
• Different methods of family planning (long and short term), interview guide or questionnaires, screen materials (for blood tests) etc.

Organization and management
Due to severity of the problem the program will be of six months and it will be done for 5 working days in a week
Program coordinator together with the nurse in charge of RCH clinic will organize the program with cooperation other staff. Through this cooperation the program will be successful as every staff will be aware of it.

Outcome of the program
It will be very easy to identify the outcome of the project as many men will be coming to Reproductive and child health clinic with their wives seeking for the services compared to their number right now.

Impact of the program
Through this program communities will see the need for attending to RCH clinic and eradicating the misconception that that clinic is for women only.

Benefits and risks
The benefits due to this program will be the reduction of maternal, infants, neonatal morbidity and mortality rate in the country which seems to be still high, to reduce the mother to child transmission of HIV/AIDS and last to increase the income to the country hence prevention of economic crisis.

Program budget
Because the program will be conducted within the hospital campus with hospital staff particularly during their working hours, so the same routines will be applied as per usual work done by this staff. So the health education to the clients will be within the usual staff duty schedule.

Commitment and follow up
This program will be overseen by the hospital at which the clinic is situated so follow up will be done by management to see whether things are running as per program Schedule.

Implementation of the program
For the first week of the program implementation the following issues were covered:

1. Health education to clients
The health education took place for five days among clients attending in Reproductive and child health clinic. The health education was given to clients after services of which at that time they were calm and hence good concentration.
The teaching was through discussion of which client’s knowledge was obtained before teaching. It was a very interesting topic as men were very eager to know importance of attending reproductive and child health clinic.
During the 5 days of the health education program the number of clients attended were as follows:

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Male</td>
<td>92</td>
</tr>
<tr>
<td>Female</td>
<td>420</td>
</tr>
</tbody>
</table>
Through this data it is obvious that male attendances to reproductive health Clinic is low.

References


[12]. https://www.nichd.nih.gov/health/topics/menshealth/


[20]. Semrau K, Kuhn L, Vwalika C, Kasonde P, Sinkala M, Kankasa C, Shutes E, Aldrovandi G, Thea DM. Women in couples antenatal HIV counselling and testing are not more likely to report adverse social events. AIDS. 2005; 19:603–609. Doi 10.1097/01.aids.0000163937.07026.a0. [PMC free article] [PubMed] [Cross Ref]
Acute Kidney Injury

Article by Sadia Akram
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Abstract

This article discusses the role of nurses in early identification of signs and symptoms of acute kidney injury (AKI) and then planning and implementing an appropriate nursing intervention. This article will give brief details about the physiology of the kidneys, risk factors, etiology, staging, clinical presentation, assessment guidelines and holistic nursing care of acute kidney injury.

Defining acute kidney injury

Acute Kidney Injury is an abrupt decrease in kidney function significant by any one of these parameters;
- Serum creatinine increase by 0.3 mg/dL or more within 48 hours
- Serum creatinine increases up to 1.5 times or more the baseline value within the prior 7 days
- Urine output decreases to less than 0.5 mL/kg/h for 6 hours.

Acute renal failure (ARF) was replaced by the term acute kidney injury to better reflect the spectrum of injury ranging from minor changes in renal function markers to the need for renal replacement therapy. Renal replacement therapy includes intermittent hemodialysis, slow continuous ultrafiltration, continuous venovenous hemofiltration, continuous venovenous hemodialysis, continuous venovenous hemodiafiltration, and continuous arteriovenous hemofiltration.

This condition is marked usually by a rise in serum creatinine concentration or by a rise in blood urea nitrogen [BUN] concentration (azotemia). But, in some cases soon after a kidney injury, BUN or creatinine levels may be normal, and the only possible sign of a kidney injury may be decreased urine production.
Physiology of kidneys

Kidneys primary function is to excrete metabolic waste, maintain fluid and electrolyte balance and regulate acid-base balance. Along with this, it also secretes hormones such as renin, erythropoietin. An enzyme which converts vitamin D to the active form, 25-hydroxyvitamin D3-1-hydroxylase is also secreted by the kidneys. These functions are carried out by the functional units called nephrons. Each kidney comprises of 1.2 million nephrons which are supplied by a renal artery and its branches. Each nephron consists of afferent arteriole which delivers blood to the glomerulus. After which these capillaries combine into efferent arteriole, this is further divided to a network surrounding the tubular system returning blood to the venous system. Each minute 20 – 25 percentage of cardiac output is delivered to kidneys.
Glomerulus, a porous membrane which allows about 125ml per minute to pass through Bowman capsule. This 90 to 120 ml of plasma filtered per minute through the glomerulus is called as the glomerular filtration rate (GFR). Urine is formed in the capillary network by reabsorption at a rate of 1 ml per minute in the tubular system through the peritubular capillary network. Normally larger proteins like red blood cells and platelets do not pass through these filter but, renal disorders may disrupt this allowing the blood cell filtered which results in presence of protein and blood cells in urine. Secretory function of the kidneys is responsible for the production of hydrogen, potassium ions which help in regulation of acid-base balance of the blood. The mechanism of active and passive transport allows kidneys to reabsorb glucose, amino acids, electrolytes, bicarbonates and small proteins which are regulated by the parathyroid hormone.

**Risk factors**

1. Age 75 or older: Advancing age is an important factor predisposing a patient to AKI. As a person ages, the kidney undergoes structural and functional changes
2. Diabetes;
3. Hypertension
4. Preexisting chronic kidney Disease (CKD)
5. Heart or liver failure
6. Sepsis
7. Use of intravascular radiocontrast Agents
8. Cardiac surgery after use of a Radiocntrast agent
9. Polypharmacy: Many medications are associated with AKI. Some of the most are nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen; antimicrobials such as aminoglycosides, amphotericin B, vancomycin, and acyclovir; cardio vascular drugs such as ACE inhibitors and angiotensinreceptor blockers; diuretics;
antidepressants; chemotherapy agents such as cisplatin and methotrexate; and intravascular contrast media.

**AKI staging**

It is based on the severity of the kidney disease and the level of serum creatinine, GFR and urine output. There are three main stages;

1. Stage 1:
   a. Serum Creatinine 1.5 to 1.9 times baseline or greater than/equal to 0.3 mg/dL
   b. Increase with urine output of less than 0.5 mL/kg/h for 6 to 12 hours.

2. Stage 2:
   a. Serum Creatinine 2.0 to 2.9 times baseline and
   b. Urine output of less than 0.5 mL/kg/h for greater than/ equal to 12 hours.

3. Stage 3:
   a. Serum Creatinine 3.0 times baseline or increase in Serum Creatinine to greater than/equal to 4.0 mg/dL; or initiation of RRT; or in patients younger than 18 years,
   b. Decrease in estimated GFR to less than 35 mL/min/1.73 m2 and
   c. Urine output less than 0.3 mL/kg/h for 24 hours or more; or anuria for 12 hours or more.

**Etiology**

The etiology is categorized based on the affected part of nephron in the kidney.

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<tr>
<th>Category</th>
<th>Part of nephron affected</th>
<th>Clinical condition</th>
<th>Causes</th>
</tr>
</thead>
<tbody>
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<td>1. Prerenal</td>
<td>Afferent arteriole is affected as a results of vasoconstriction</td>
<td>Decrease renal perfusion</td>
<td>NSAIDs</td>
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<tr>
<td></td>
<td></td>
<td>Hypovolemia</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Decreased cardiac output, and Acute hemorrhage</td>
<td></td>
</tr>
<tr>
<td>2. Intrarenal or</td>
<td>blood vessels, glomeruli, tubules, or interstitium as a result of ischemia</td>
<td>decrease in renal perfusion</td>
<td>Nephron toxins</td>
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<tr>
<td>intrinsic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Postrenal or</td>
<td>Obstruction of urinary tract</td>
<td>Increased pressure, decreased GFR, and kidney injury</td>
<td>Tumors Calculi Neurogenic bladder, or prostate gland enlargement</td>
</tr>
<tr>
<td>obstructive</td>
<td></td>
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</tr>
</tbody>
</table>

**Clinical presentation**

Clinical course of AKI is very predictable however, the degree of injury and the complexity of the affected part’ function and duration of the illness varies considerably. Some of the most common signs and symptoms of AKI are;

- Oliguria, urine output is initially normal or even increased
- Impairment of fluid, electrolyte, and acid-base balance
- Listlessness
- Confusion
- Fatigue
- Anorexia,
- Nausea and Vomiting
Peripheral edema
Weight gain

Four phases of the general clinical course are as follows:
1. Initial (onset) phase. The time between the injury and the reduction in kidney function. Appropriate nursing action such as identifying hypotensive episodes, nephrotoxic agents, and other risks can help prevent or minimize subsequent injury.
2. Oliguric phase. In the first seven days after onset the urine output decreases considerably to 400ml per day and could last for 10-14 days and in some case even up to weeks or months.
3. Diuretic phase. The phase after oliguria in which the nephrons recover from the injury and results in increased urine production is called as diuretic phase lasting for 1-2 weeks. But the ability of glomerular membrane to excrete urea is diminished which lead to the inability to concentrate the urine. The increase in urine output may be usually from 1-3 liters per day and can be as high as 5 liters per day which often results in hypovolemia, hypotension, hyponatremia and hypokalemia. This gradually improves the acid base balance and normalization of blood urea nitrogen and serum creatinine levels in blood.
4. Recovery phase. This phase begins as soon as the kidneys recover completely and begin to excrete metabolic waste. The blood urea nitrogen and serum creatinine levels in blood will be back to normal. This usually takes weeks to years and in some it never recovers leading to chronic kidney disease which would necessitate lifelong management or renal replacement therapy. A detailed history is very important in differentiating acute kidney injury from chronic kidney disease. Some of the keys features of chronic kidney disease are normocytic anemia, hyperphosphatemia, and hypocalcemia,

Assessment guidelines
1. History of infections like Acute post streptococcal glomerulonephritis and gastrointestinal infection
2. History of trauma like injured skeletal muscle resulting from trauma, muscle overexertion or drug overdose. Any situations which could result in release of myoglobin such as Muscle compression, crush injuries, and prolonged immobility.
3. History of cardiovascular disease which could result in impaired renal perfusion.
4. History of hypotensive episode because of failed airway or breathing.
5. Medication history would give clues related to nephrotoxic drug use.
6. Signs and symptoms of fluid overload or fluid loss.

Monitor lab values closely
1. Blood Urea Nitrogen
2. Serum Creatinine
3. Serum Electrolytes particularly sodium, potassium, magnesium, calcium, and phosphate.

Nursing and collaborative care
The primary goal of care in acute kidney injury is to prevent further injury and facilitate recovery. Nursing care of patient consists of early identification and appropriate intervention of the cause behind AKI. Some other priorities include fluid and electrolyte imbalance correction, maintenance of acid-base balance, adequate nutrition and very close monitoring of signs and symptoms of any complication.

The most crucial part of monitoring is the intake and output of fluids. Daily weight and accurate documentation are imperative in the correction of fluid and electrolyte imbalance. Correction of fluid imbalance will prevent further damage to the kidneys.
Fluid correction can be initiated by administering isotonic crystalloids in the case of non-hemorrhagic shock rather than colloids like albumin or starches which would increase the intravascular volume for the patient who is in AKI or at risk for AKI.

Fluid replacement therapy begins usually with 0.9% sodium chloride except in the management of volume overload. Use of low dose inotropic drugs such as dopamine is not recommended because of its increase risk in cardiac complications rather than increasing renal perfusion. Inotropic drugs are recommended for patients with inadequate cardiac output In the case of hypervolemia fluid restriction is initiated by reducing the fluid intake of the patient to 500-600ml plus any fluid loss per day.

Signs and symptoms of cardiac failure and pulmonary edema such as respiratory deterioration, increased work of breathing and decreasing oxygenation must be monitored closely and precautions for respiratory failure and oxygen supplement should be made available.

The risk of hyperkalemia is well documented with AKI so initiating insulin and dextrose in the case of serum potassium values greater than 6.5 mEq/L. along with this Sodium bicarbonate I.V will push the potassium into cells. However, this approach is temporary as the potassium eventually is released by the cells which necessitate the importance of closer monitoring. Calcium gluconate or calcium Chloride may act as an antagonist in counteracting the toxic hypokalemic effects which left untreated may lead to cardiac dysrhythmias. Nebulization with albuterol and cation exchange resin can be very effective as an emergency treatment.

Some of the indication which is to be monitored for initiating renal replacement therapy are volume overload, compromised oxygenation, metabolic acidosis, pericarditis, pericardial effusion, cardiac dysrhythmias, and impaired neurologic status. Tissue perfusion is greatly affected by decreased mobility and edema (as a result of fluid overload), so assessing the patient skin condition is vital in preventing pressure ulcers. Nursing interventions like skin care, ambulation depending on the physical condition of the patient and adequate maintenance of nutritional status are to be carried out.

Psychosocial considerations

Psychosocial health is one of the most affected because of the fear of prognosis of the disease to a chronic condition which would result in major lifestyle modification. As the patients are overloaded with complex information, unfamiliar environment, and caregivers along with altered regular routines results in increased stress, anxiety and fear.

Nurse’s role is to act an educator by proving all information related to the disease process and the therapy options. Adequate knowledge level would minimize anxiety and fear. In addition to this interdisciplinary rounds and care plan will provide a holistic care to the patient.

References

Assessment of Weaning Practices of Mothers of Under-Five Children Attending Infant Welfare Clinic, Wesley Guild Hospital, Ilesa, Osun State

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Abstract

This study was conducted to assess the weaning practices of mothers of under-five children attending Infant Welfare Clinic, Wesley Guild Hospital, Ilesa, Osun State. The aim was to assess the knowledge, weaning practices, nutritional status of the under-fives and factors affecting weaning practices. Findings will help improve mothers’ weaning practices and also provide empirical evidences for nurses for health education. A descriptive survey design was adopted and samples selected though convenient sampling. 135 questionnaires were administered and filled by the participants.

Findings showed that majority (92.6%) had good knowledge about weaning practices. A 55.6% initiated weaning at 4-6months of age. About two-third (65.2%) wean their babies with solid foods and larger percentage used milk substitutes for their child. Maternal smoking, lack of knowledge, lack of support, low maternal education, and low socio-economic status were factors identified influencing weaning practices of mothers. Moreover, the study determined the nutritional status of the under-five children. The findings also showed that 65.9% of the respondents’ babies had normal weight, while 28.9% had underweight. Significant association was found between maternal education, occupation and the age of initiation of weaning (P = .001)

In conclusion, despite adequate knowledge of weaning and exclusive breastfeeding among mothers, only about half started weaning at 4-6month, more than a quarter of the children were under-nourished. This shows a gap between knowledge and practice. Therefore, it is recommended that nurses at all levels should educate mothers on exclusive breastfeeding and good weaning practices to promote the health of under-five.

Keywords: Weaning Practices of Under-five mothers

Introduction

An appropriate diet is critical in the growth and development of children especially in the first two years of life (Aggarwal, Verma, Faridi & Dayachand, 2008). Mother is the most important person in a baby’s life for both its physical as well as its psychosocial care and growth. The mother-infant relationship is the most vital formative relationship for the child. From the very first moments of life, a baby begins interacting with its mother. Thus, mother’s health, her education, her beliefs & attitude regarding child rearing are important milestones on the road of child’s health right from in utero period. Also, faulty breast-feeding and weaning practices have their roots in socioeconomic and educational status of the parents, their cultural beliefs, number & spacing of siblings and the employment status of the mother. Improved breast feeding practices & reduction of artificial feeding could save an estimated 1.5 million children a year (UNICEF, 2011). The delayed introduction of semisolid foods is a major cause of child malnutrition in South Asia. Most children do not receive semisolids until after 9 months of age, and many not until their second year of life (UNICEF, 2007).

Every day, on an average, more than 26000 children under the age of five die around the world. Malnutrition contributes to more than half of these deaths (UNICEF, 2008). Malnourished children often suffer the loss of precious mental capacities. They fall ill more often. If they survive, they may grow up with lasting mental or physical disabilities.
Malnutrition prevents children from reaching their full physical and mental potential. Health and physical consequences of prolonged states of malnourishment among children are: delay in their physical growth and motor development; lower intellectual quotient (IQ), greater behavioural problems and deficient social skills; susceptibility to contracting diseases (FAO: State of Food Insecurity in the World, 2008). Furthermore, child malnutrition is associated with approximately 60 percent of under-five mortality in Sub-Saharan Africa countries (UNICEF, 2008).

The majority of studies on child nutritional status have described prevalence of malnutrition among under-five children and analyzed socioeconomic, demographic and cultural factors associated with child malnutrition (Pongou, Ezzati & Salomon, 2006).

Weaning should be started after the age of 6 months and should contain energy rich semi-solid food. Natural weaning occurs as the infant begins to accept increasing amounts and types of complementary feedings while still breastfeeding on demand. When natural weaning is practiced, complete weaning usually takes place between two and four years of age. Planned weaning occurs when the mother decides to wean without receiving signals from the infant that he is ready to stop breastfeeding. Some reasons commonly given for planned weaning include the following: not enough milk or concerns about the baby’s growth, painful feedings or mastitis, returning to work, a new pregnancy etc. (Imtiaz & Izhar, 2004).

Malnutrition makes a child susceptible to infections and delays recovery, thus increasing mortality and morbidity (Chatterjee & Saha, 2008). Rapid growth of baby during the first year of life and specifically the first 6 months postpartum requires an adequate supply of nutrients to cope with rapid build-up of body muscle and other tissues (Domellof, Lonnerdal, Abram & Hernell, 2006). This critical transition period is associated with dramatic increase in malnutrition among infants.

Appropriate complementary feeding depends on accurate information and skilled support from the family, community and health care system. Inadequate knowledge about appropriate foods and feeding practices is often a greater determinant of malnutrition than the lack of food (WHO, 2009). A study was conducted to assess the determinants of early weaning in infants, it was noted that young maternal age, low maternal education, low socioeconomic status, absence or short duration of breastfeeding, maternal smoking, and lack of information or advice from health care providers were statistically associated with early weaning (Wijndaele, Lakshman, Landsbaugh, Ong & Ogilvie, 2009).

Infants are particularly vulnerable during the transition period when complementary feeding begins. Ensuring that the nutritional needs of the infants are met thus requires that complementary foods be: timely – meaning that they are introduced when; the need for energy and nutrients exceeds what can be provided through exclusive and frequent breastfeeding; adequate – meaning that they provide sufficient energy, protein and micronutrients to meet a growing child’s nutritional needs; safe – meaning that they are hygienically stored and prepared, and fed with clean hands using clean utensils and not bottles and teats; properly fed – meaning that they are given consistent with a child’s signals of appetite and satiety, and that meal frequency and feeding method – actively encouraging the child, even during illness, to consume sufficient food using fingers, spoon or self-feeding –are suitable for age.

The optimal practice of breastfeeding (BF) is exclusive breastfeeding for the first six months of life and thereafter cereals are introduced while BF is continued till the age of two years and beyond (WHO, 2005). The barriers for BF and weaning practices include lack of mothers’ knowledge regarding BF and weaning practices, inadequate IEC activities in hospital, advertisement of breast milk substitutes, lack of support for the act and also many women identify employment as barrier (Stewart-Glenn, 2009).

Methodology

This research employed a descriptive survey design. The study was conducted at Infant Welfare Clinic, Wesley Guild Hospital, Ilesa Osun State. Wesley Guild Hospital was
established in 1912 by the Methodist Church Nigeria as a missionary Hospital. In 1974, the Federal Government of Nigeria took over to be incorporated to the Teaching Hospital Complex for the new Medical School in Ile-Ife about twenty miles away. The initial missionary name was retained to differentiate it from other three hospitals that made up the complex. The location is along Bolorunduro Street, Ijofi in Ilesa East Local Government, Ilesa. The hospital has 17 wards with 212 beds; it also serves as a referral centre for neighbouring towns and states. An average number of 200 mothers of under-five attend the clinic on weekly basis. This number was gotten from the medical record register.

The instrument used for the study was a well structured questionnaire which contains five sections from A to D. Section A: is a 10-item question, deals with the socio-demographic distribution of the respondents. Section B: is a 7-item question, which assesses the knowledge of mothers on weaning practices. Section C: is a 5-item question that investigates the weaning practices of mothers. Section D: is also 11-item question which identifies factors influencing the weaning practices of mothers.

Initial v isit was made to the clinic to intimate the staffs about the modalities of data collection and the purpose of the study. I was notified about the clinic days, which was Tuesdays and Thursdays. All the women with children under-five who were willing to partake in the study were given questionnaire having explained the purpose of the study and informed consent was gained. About 135 questionnaires were administered, and areas of ambiguities were clarified.

The data collected will be analyzed with the use of statistical package of social sciences (SPSS), version 20. Analysis will be done in sections and data will be represented using percentile and frequency tables as the statistical tools.

**Results**

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<tr>
<th>Variables</th>
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</tbody>
</table>
The table above presents the demographic data of the respondents. A little above half of the respondents (52.6%) were within age range of 26-34, majority were married and about three quarter (72.6%) were Christians. Almost all were of Yoruba ethnicity and about two-third were employed. About two-third (63%) equally had tertiary education and half (52.6%) of them have only one child. The mean age of children of the respondents was 18.79 and the standard deviation was 9.95. 45.2% of them were aged 1-2years. The mean weight of the children was 11.55 and the standard deviation was 2.31. Half of them weighed 11-15kg.

Table 2. Knowledge of mothers about weaning practices

<table>
<thead>
<tr>
<th>Variables</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you understand by exclusive breastfeeding?</td>
<td>30 (22.2)</td>
<td></td>
</tr>
<tr>
<td>Breastfeed plus water for 6 months.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Breastfeed only for 4 months</td>
<td>14 (10.4)</td>
<td></td>
</tr>
<tr>
<td>• Breastfeed only for 6 months</td>
<td>91(67.4)</td>
<td></td>
</tr>
<tr>
<td>When do you think is ideal to start weaning process?</td>
<td>54 (40.0)</td>
<td></td>
</tr>
<tr>
<td>• 7-9 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 4-6 months</td>
<td>81(60.0)</td>
<td></td>
</tr>
<tr>
<td>Do you think weaning process could affect the nutritional status of under-five?</td>
<td>105(77.8)</td>
<td>30 (22.2)</td>
</tr>
<tr>
<td>Do you think weaning processes could cause the following?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>125 (92.6)</td>
<td>10(7.4)</td>
</tr>
<tr>
<td>Allergy</td>
<td>108 (80.0)</td>
<td>27 (20.0)</td>
</tr>
<tr>
<td>Stunt growth</td>
<td>125 (92.6)</td>
<td>10(7.4)</td>
</tr>
<tr>
<td>Vulnerability to diseases</td>
<td>125 (92.6)</td>
<td>10(7.4)</td>
</tr>
</tbody>
</table>

The table above showed that about two-third of the respondents understood exclusive breastfeeding to be breastfeed only for 6months; the ideal time to start weaning process by 60% is 4-6month. About three-quarter (77.8%) thought weaning process could affect the nutritional status of under-five. Majority (80% and above) felt weaning process could cause diarrhoea, allergy, stunt growth and vulnerability to diseases.

Table 2.1. Summary of the knowledge of the respondents

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Knowledge</td>
<td>125</td>
<td>92.6</td>
</tr>
<tr>
<td>Fair Knowledge</td>
<td>10</td>
<td>7.4</td>
</tr>
<tr>
<td>Total</td>
<td>135</td>
<td>100.0</td>
</tr>
</tbody>
</table>

All the questions in table 4.2 above were rated and scores were awarded. The highest possible score was 18 and the lowest was 7. Scores above 70% had good knowledge; 50-69% had fair knowledge, while scores less than 50% had fair knowledge.

Therefore, the table above showed that almost all (92.6%) the patients had good knowledge about weaning practices.
Table 3. Weaning practices of mothers

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of initiation of weaning (in months)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 months</td>
<td>13</td>
<td>9.6</td>
</tr>
<tr>
<td>4-6</td>
<td>75</td>
<td>55.6</td>
</tr>
<tr>
<td>7-9</td>
<td>47</td>
<td>34.8</td>
</tr>
<tr>
<td>Did you immediately stop breastfeeding following initiation of weaning?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>14</td>
<td>10.4</td>
</tr>
<tr>
<td>No</td>
<td>121</td>
<td>89.6</td>
</tr>
<tr>
<td>For how long did you breastfeed your child?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 months</td>
<td>10</td>
<td>7.4</td>
</tr>
<tr>
<td>1 year</td>
<td>95</td>
<td>70.4</td>
</tr>
<tr>
<td>11/2 years</td>
<td>24</td>
<td>17.8</td>
</tr>
<tr>
<td>2 years</td>
<td>6</td>
<td>4.4</td>
</tr>
<tr>
<td>Type of weaning food</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid</td>
<td>47</td>
<td>34.8</td>
</tr>
<tr>
<td>Solid</td>
<td>88</td>
<td>65.2</td>
</tr>
<tr>
<td>Did you use milk substitutes for your child?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>36</td>
<td>26.7</td>
</tr>
<tr>
<td>Yes</td>
<td>99</td>
<td>73.3</td>
</tr>
</tbody>
</table>

The table above showed the weaning practices of the respondents. A little above average (55.6%) initiated weaning at 4-6 months of age. Majority (89.6%) did not immediately stop breastfeeding following initiation of weaning. 70.4% breastfeed their babies for a year. About two-third (65.2%) wean their babies with solid. Larger percentage (73.3%) used milk substitutes for their child.

Table 4. Factors influencing weaning practices of mothers

<table>
<thead>
<tr>
<th>Variables</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young maternal age</td>
<td>71 (52.6)</td>
<td>64 (47.4)</td>
</tr>
<tr>
<td>Low maternal education</td>
<td>99 (73.3)</td>
<td>36 (26.7)</td>
</tr>
<tr>
<td>Low socioeconomic status</td>
<td>115 (85.2)</td>
<td>20 (14.8)</td>
</tr>
<tr>
<td>Absence or short duration of breastfeeding</td>
<td>101 (74.8)</td>
<td>34 (25.2)</td>
</tr>
<tr>
<td>Maternal smoking</td>
<td>135 (100.0)</td>
<td></td>
</tr>
<tr>
<td>Lack of information or advice from healthcare providers</td>
<td>125 (92.6)</td>
<td>10 (7.4)</td>
</tr>
<tr>
<td>Lack of mothers’ knowledge regarding breastfeeding and weaning practices</td>
<td>135 (100.0)</td>
<td></td>
</tr>
<tr>
<td>Inadequate IEC activities in hospital</td>
<td>112 (83.0)</td>
<td>23 (17.0)</td>
</tr>
<tr>
<td>Advertisement of breast milk substitutes</td>
<td>85 (63.0)</td>
<td>50 (37.0)</td>
</tr>
<tr>
<td>Lack of support</td>
<td>135 (100.0)</td>
<td></td>
</tr>
<tr>
<td>Employment as barrier</td>
<td>122 (90.4)</td>
<td>13 (9.6)</td>
</tr>
</tbody>
</table>

All the respondents (100%) signified that maternal smoking, lack of mothers’ knowledge regarding breastfeeding and weaning practices and lack of support were factors that influence weaning practices of mothers. More than 70% indicated that low maternal education, low socioeconomic status, absence or short duration of breastfeeding, lack of information or advice from healthcare providers, inadequate IEC activities in hospital and employment as barrier are factors influencing weaning practice of the respondents.

Table 5. Nutritional status of respondents’ children

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>39</td>
<td>28.9</td>
</tr>
<tr>
<td>Normal Weight</td>
<td>89</td>
<td>65.9</td>
</tr>
<tr>
<td>Overweight</td>
<td>7</td>
<td>5.2</td>
</tr>
</tbody>
</table>
The weight/age chart was used to determine the nutritional status of the respondents. Those weight within the growth curve are said to have normal weight, those above the curve are said to be overweight, while those below the curve were underweight. The table above showed that about two-third (65.9%) of the respondents’ babies had normal weight, while 28.9% had underweight.

Table 6.1. Association between maternal age and nutritional status of their children

<table>
<thead>
<tr>
<th>Age</th>
<th>Underweight</th>
<th>Normal Weight</th>
<th>Overweight</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>8</td>
<td>26</td>
<td>0</td>
<td>34</td>
</tr>
<tr>
<td>26-34</td>
<td>22</td>
<td>43</td>
<td>6</td>
<td>71</td>
</tr>
<tr>
<td>35-40</td>
<td>9</td>
<td>20</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>89</td>
<td>7</td>
<td>135</td>
</tr>
</tbody>
</table>

The table above showed that the sig-value is 0.312 which is greater than 0.05, we accept the null hypothesis (H₀) and conclude that “there is no significant relationship between the maternal age and the nutritional status of their children.

Table 6.2. Association between maternal education and age of initiation of weaning

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Age Of Initiation Of Weaning (In Months)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-3</td>
<td>4-6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>0</td>
<td>34</td>
</tr>
<tr>
<td>Housewife</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Employed</td>
<td>10</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>75</td>
</tr>
</tbody>
</table>

The table above showed that the sig-value is 0.001 which is less than 0.05, we reject the null hypothesis (H₀) and conclude that “there is a significant relationship between the maternal education and the age of initiation of weaning.

**Discussion of findings**

This study assessed the weaning practices of mothers and nutritional status of under-five children attending Infant Welfare Clinic, Lagos State University Teaching Hospitals, Lagos State. One hundred and thirty-five women were included in the study.

The socio-demographic data revealed that a little above half of the respondents were within age range of 26-34, majority were married and about three quarter was Christians. Almost all were of Yoruba ethnicity and about two-third were employed. About two-third equally had tertiary education and half of them have only one child. The mean age of children of the respondents was 18.79 and the standard deviation was 9.95, meanwhile a little below half were aged 1-2years. The mean weight of the children was 11.55 and the standard deviation was 2.31. Half of them weighed 11-15kg.

The study assessed the knowledge of the respondents on weaning practices. The result showed that almost all the patients had good knowledge about weaning practices. About two-third understood exclusive breastfeeding to be breastfeed only for 6months and that ideal time to start weaning process is 4-6month. This is consistent with recommendations by WHO (2009) that exclusive breast feeding for the first six months of life, with the addition of complementary feeds at six months with continued breast feeds until at least the age of two. Majority thought weaning process could affect the nutritional status of under-five, and could cause diarrhoea, allergy, stunt growth and vulnerability to diseases. This agrees with WHO (2007) in a statement that inadequate knowledge about appropriate foods and feeding practices is often a greater determinant of malnutrition than the lack of food. Wright et al,
(2004) opined that early weaning may cause diarrhea, damage the immature gut, kidneys and immune function.

Furthermore, the study sought the weaning practices of the study participants. The finding revealed that a little above average initiated weaning at 4-6months of age. This result agrees with Shadia, and Bedor (2013) in their study on infant feeding and weaning food practice among mothers in Hail. 61.2% weaned their babies at 4 to <6 months age. 62.4% preferred semi solids like mashed fruits or potatoes as the first weaning foods. However, this showed that although just above half of mothers initiated at 4-6months, significant number of them did not. Findings by Bolling et al (2007) and that of Imonikebe (2009) in Isoko North and South Local Government Areas in Delta State, Nigeria showed that most mothers started weaning their infants in the fourth month.

Also, the study examined the factors influencing the weaning practices of mothers. The result showed that all the respondents signified that maternal smoking, lack of mothers’ knowledge regarding breastfeeding and weaning practices and lack of support were factors that influence weaning practices of mothers. Meanwhile, more than seventy percent indicated that low maternal education, low socioeconomic status, absence or short duration of breastfeeding, lack of information or advice from healthcare providers, inadequate IEC activities in hospital and employment as barrier are factors influencing weaning practice of the respondents. This supports Stewart-Glenn (2009) who highlighted similar factors as barriers for breast feeding and weaning practices. Amuna et al (2010) also submitted that weaning practices are influenced by socioeconomic status, cultural and religious beliefs and practices.

Moreover, the study determined the nutritional status of the under-five children. The findings showed that two-third of the respondents’ babies had normal weight, while 28.9% had underweight. This finding is contrary to that of Olagunju and Babatunde (2011) in a survey that examined the prevalence and determinants of malnutrition among under-five children of farming households in Kwara State, Nigeria. They found that 23.6%, 22.0% and 14.2% of the sample children were stunted, underweight and wasted respectively. Aggarwal et al, (2008) asserted that initiating complementary feeds too early or too late can lead to malnutrition.

Furthermore, the study found a significant association between the maternal education and age of initiation of weaning, (X²= 76.443*, df = 6 P-value = .001); and also between maternal occupation and the age of initiation of weaning, (X²= 49.259*, df = 4 P-value = .001).

Conclusion

This study concludes that the study participants were knowledgeable about weaning practices and the consequences associated with inappropriate weaning practices. Despite good knowledge by almost all the respondents, only half of them started weaning their child at 4-6months. Also, most of the participant breastfed their babies only for one year, as opposed to two year periods recommended by WHO.

The following recommendations were made to further enhance weaning practices among women of under-five. Mother is principal fostering figure for the child. Her perceptions regarding feeding practices directly influence the health of the child. Therefore;

- False beliefs & myths attached to child’s feeding deeply rooted in all strata of community need to be replaced by sound & scientific messages. Therefore, health care providers at all levels need to educate mothers on good weaning practices and major role of this in laying a strong foundation of physical, mental & social health in the first five precious years of child’s life.
- Along with public awareness programmes for breast-feeding, the appropriate use of semi-solids after 6 months of age need to be promoted as an essential health message.
- All sources of information including electronic and print media should be tapped to strengthen the knowledge about infant feeding practices need to introduce educational programs for improvement in weaning practices to prevent malnutrition in children.
Mothers need instructions in preparing infant food from main family ingredients to make it soft, palatable and nutritionally balanced for children.

Acknowledgement

I acknowledge the mothers of under-five children, who volunteered to participate in this study. Also, authors whose works have been cited in this study are acknowledged.

References


Mothers Management of Malaria Fever among Under-Five Nomadic Fulani Children of Northeastern Nigeria: Role of Nursing

Article by Cecilia Obal Nyambi
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Abstract

Malaria is a deadly disease which is spread widely in the tropical regions of the world with holoendemicity in Sub-Saharan Africa. An investigation of fever management among mothers of under-five children was carried out in nomadic Fulani settlements of Adamawa State Nigeria. Management of fever was assessed through interviews and questionnaires. Nearly half of the nomadic Fulani mothers (49.47%) did not take any action within 24 hours when their children had fever. This was not significantly different (p < 0.05) with regard to age, clan and parity of the mothers. The duration between mother’s recognition and management of fever showed that almost half (49.6%) of the mothers did not take time into consideration during intervention of fever. Mothers of under-five who acted within 24 hours of noticing of fever in their children were 30.6%, while those who acted after 24 hours were 12.0%. There was no significant difference (p < 0.05) between mothers’ recognition of fever and management based on age, clan and parity. Home management of fever by most nomadic Fulani mothers was not satisfactory. Similarly, timely intervention of fever was not considered by most nomadic Fulani mothers. There is the need for appropriate education and adoption of new strategies for timely intervention of disease causing fever among the nomadic Fulani population.
Introduction

Malaria is one of the most severe public health problems and a leading cause of disease and death in many developing countries (Nigerian). According to WHO, over 3 billion people live in areas at risk of malaria transmission in 107 countries and territories. Between 350 and 500 million clinical episodes of malaria occur every year with at least 3 million deaths annually. About 90% of cases of malaria worldwide occur in Africa south of the Sahara.

Despite the improved understanding of malaria pathophysiology and its management, childhood morbidity and mortality remains very high particularly due to limited access to health care and increased drug-resistance.

Malaria is holoendemic in Nigeria with *P. falciparum* as the dominant species. It is the major cause of morbidity and mortality and accounts for over 600 deaths daily in Nigeria in children less than 5 years of age in rural and semi-urban settlements. It is also the main reason...
for out-patient admissions, visits to health facilities and is responsible for most deaths of pregnant mothers in Nigeria.

Malaria symptoms include fevers, chills, and headache, and muscle pains, enlargement of the spleen, convulsion, and cold sores around the mouth, enlargement of the liver, vomiting, cough and loss of appetite.

Malaria imposes substantial costs on individuals and their families which includes; purchase of drugs, expenses for travel to, and treatment at dispensaries and clinics, loss of days of work, absence from school, expenses for preventive measures and expenses for burial in case of death. Estimates show that families living in malaria affected areas in Africa may spend up to 25% or more of their annual income on prevention and treatment of malaria.

Prompt diagnosis and effective treatment may save lives, but many children still die from severe malaria despite efforts to improve health services and encourage families to seek treatment through health facilities. Many children living far away from health care units die while travelling to the nearest hospital. These deaths due to malaria usually occur in the first 24 hours of hospital admission which highlights the need for early diagnosis, prompt and appropriate management. It is clear that unless effective management of severe diseases is introduced early at the point of first consultation, the huge burden of morbidity and mortality from severe diseases such as malaria cannot be arrested. To manage malaria, better ways must be found to complement existing control methods. Improved tools must be developed and solutions must be identified to circumvent and combat emerging malaria problems. Case fatality from severe malaria varies from one place to the other in endemic countries, depending upon facilities available and the time of management.

Malaria management has exceeded a simple biomedical vision of health, in that parents and non-medical community sectors are now involved in the management of the disease. This mode of intervention against malaria will improve community-based health care delivery system. The family is known to be the first hospital for any child with high fever in Africa. Improved home management of malaria will have a significant reduction in the morbidity and mortality due to the infection.

It is a concern that poor diagnosis of malaria continues to hinder its effective management due to the over use of anti-malaria drug leading to resistance. The World Health Organization recommends that anyone suspected of having malaria should receive diagnosis and treatment with an effective drug within 24 hours of the onset of symptoms. When the patients do not have access to a health care provider within that time period (as the case for most patients in malaria endemic areas) home treatment is acceptable.

The nomads have an estimated population of 75 million in the developing World; over 60% of them are in Africa spread over more than twenty one countries. They migrate periodically with their herds to exploit resource (pasture and water). During the wet season when superficial water and pasture are abundant, nomads disperse over large areas of land while in the dry season; they tend to concentrate around wells, rivers, lakes or man-made ponds. In West Africa, nomads may travel thousands of miles in search of pasture for their animals, often within tribal and clan boundaries. Although they contribute to the national economies of their countries and are the major producers of milk, meat, and other animal products in many African countries, they have less access to health care, safe drinking water and formal education; and usually more exposed to diseases, such as malaria, than the settled population. Akogun, et al. reported that government programmers in Nigeria to Roll Back Malaria through health education, chemotherapy, insecticides and treated bed nets is yet to be felt by the nomadic Fulanis even though they are in greater risk than any other tribes because of their life style, yet are less served by government intervention programmers. They may remain reservoirs for fresh infections when the entire population is regarded as free.

There is a concern that very little is known about the epidemiology and management associated with malaria disease in the rural communities compared with urban and semi-urban areas. In modern times managing malaria could mean treating the infection using antimalarial drugs. Various anti-malarial drugs abound both local and scientific preparations,
and these are used by people to control malaria. Aribodor, et al. reported the management of malaria in Asia rural community of Anambra state which includes the use of traditional medicine from local healers, the buying of anti-malarial from drugs shops without the prescription of a physician or attendance at local hospitals, and few who do not manage malaria at all. In coastal area of Lagos, management of malaria by mothers by mothers elicited a lot of responses such as the use of chloroquine alone, antibiotics, and use of local herbal preparations made from varieties of indigenous leaves, roots, and barks of trees (agboiba). Their knowledge of laboratory diagnosis of malaria is poor. The attributes and kinetic of the disease differ in relation to geographical and ethnic variations. At the very moment, very little is known about the management of malaria in under-five nomadic Fulanis children in Adamawa State, Nigeria.

Objective

This study is aimed at enriching the management of malaria symptoms by mothers of under-five nomadic Fulanis children.

Methods

Study area

The study was conducted in Adamawa State, Nigeria. Adamawa state is located in the north-eastern Nigeria between latitude 7° and 11°N and between longitude 11° and 14° E. Adamawa state has four pastoral blocks and livestock movements. The Hong-Michika block, Jada-Mayo Belwa block, Toungo block and Benue-trough block. The Benue-Trough block is the largest block occupying 11,000sq kms, making up to 40% of the pastoral blocks (Figure 1). The Benue pastoral block is a grassland area characterized by the flood plains of the Benue River and that of its tributaries such as rivers Gongola, Kilange and Ine. As a tropical region, the area has two seasons. The dry season starts from November and ends in March; and the rainy season starts in April and ends in October with a mean annual rainfall between 900 and 1100mm and an average minimum temperature of 18°C and an average maximum temperature of 37°C. The hottest months are March and April with maximum temperature of 40°C

Study population

The nomadic camps are located in the Benue-trough pastoral block at the confluence of rivers Benue and Gongola in Adamawa State, Nigeria spread across four local government areas (Demsa, Numan, Lam urde and Shelleng) (Figure 2). With an open vegetation of shrubs and herbaceous plants much favored by animals, the extensive Savannah irrigation scheme that provides foliage and availability of water for domestic and animal use; the Benue-trough pastoral block is conducive for the nomadic Fulani in dry season and serves as a major campsite and stop post in the nomadic North-South migration (Figure 1). The nomads are located in bush encampments in the Benue-trough pastoral block. They live in huts and sleep on raised. Platforms made of woods. The nomads are surrounded by grasses, water ponds, streams and rivers. Such water sources serve as breeding sites for various disease vectors The study covered twenty three camps (11 in the rainy season and 12 in the dry season) spread across the Benue-trough pastoral block.

Pre-Survey contact and mobilization

The procedures described by Akogun et al. was used The organization that is working with the nomads; the Common Heritage Foundation, Yola, was first contacted to get access and seek information on the strategy for approaching the nomads. Informal visits and discussions were made with the camp leaders in the market places where many nomads mingle, and as well as in the camps. The visits were to negotiate and develop confidence with the camp leaders and the community as well as gain acceptance. This was necessary to ensure maximum co-operation from the nomadic Fulanis, and this was successfully carried out. The
informal discussion was to know the most common diseases among the nomads with regard to knowledge on the causes, symptoms, severity and management. The informal discussion was helpful in the development of tools for data collection.

**Determination of fevers**

In order to determine the number of under-five children that were ill, demographic data of each under-five child was first recorded which included: age, sex, clan, household number and camp code number. Thereafter, structured questionnaires on the symptoms of fever (hot body, vomiting, shivering, unable to drink and eat, convulsion, tiredness, diarrhoea and others) and its episodes in the last 12 months were administered to 272 nomadic Fulani mothers.

![Figure 1](image-url). Map of Benue-trough pastoral block showing the nomadic camps and sampling sites
Ethical considerations

Ethical clearance was obtained from Adamawa State Ministry of Health, Nigeria.

Data analysis

Data were entered into a database created in Epidata version 3.1. Data was then transferred to Statistical Analysis System (SAS) version 8.0 and were analyzed. Pearson chi-square was used to measure the association between the variables. Statistical significant difference were indicated by p < 0.05 and no statistical difference by p > 0.05.

Results

Management of fever

Age, sex and parity-related management of fever symptoms in under-fives are presented in
Table 1. Nearly half of the nomadic Fulani mothers (49.47%) did nothing within the first 24 hours of noticing fever in their children. Others (40.2%) gave drugs at home, visited chemist shops (5.8%), government-owned clinics (3.1%), do tepid sponging (1.5%), gave herbs and visited traditional healers (0.4% each respectively). More than half (66.7%) of the nomadic Fulani mothers who did nothing for the management of fever were between the age group of 36-45 years. However, it was not statistically significant ($X^2 = 1.616$, df = 3, $p > 0.05$). Also more than half (60.0%) mothers of the under-fives who gave drugs at home were between the age group of ≥ 46 years. The use of herbs (0.8%), visit to chemist shops (9.8%) and visit to traditional healers (0.8%) were more observed among mothers of age group 15-25 years, while visit to government-owned clinics (4.6%), private clinics (1.8%) and tepid sponging (3.7%) were more commonly observed in age group 26-35 years. Similarly, half (50.0%) of the Kiri and Jahun clan did nothing for the management of fever in under-five children. However, the differences was not statistically significant ($X^2 = 0.038$, df = 2, $p > 0.05$). The Jahun clan responded better (45.7%) to fever management at home, followed by Kiri clan (39.0%) and the least was among the Kitaku clan (31.0%). The use of herbs (2.4%), tepid sponging (7.1%), and visit to chemist shops (19.0%) were more considered by Kitaku clan than any other clan. Obtaining management from the private clinics (2.4%), government-owned clinics (4.9%) and traditional healers (0.8%) were more reported by the Kiri clan. The proportion of nomadic Fulani mothers who did nothing was higher (83.3%) among the group with parity ≥ 10, although there was no significant difference ($X^2 = 5.919$, df = 5, $p > 0.05$).

The proportion of nomadic Fulani mothers who managed fever at home was higher among the group with parity 6-7 (52.6%) when compared to other parity groups. Majority of those who visited government-owned clinics and applied tepid sponging (6.3% each) was higher among mothers of 8-9 parity. The nomadic Fulani mothers who visited chemist shops were more (22.1%) among mothers that had 1 parity. It was also observed that those who gave herbs (1.1%) were higher among mothers of 1 parity.

**Recognition, duration and management of fever**

Table 2 shows the duration between mother’s recognition and management of fever. Almost half (49.6%) of the mothers did not take action against fever. Mothers of under-five who acted within 24 hours of recognizing symptoms of fever in their children were 30.6%, while those who acted after 24 hours were 12.0%. It was observed that most (66.7%) of the mothers who did not take action at any specific time were between the age group of 36-45 years and the least were between the age group of ≥46 years. The mothers age was not a significant ($X^2 = 9.396$, df = 9, $p > 0.05$) influence on the time action was taken for the management of fever. Majority of the mothers who acted within 24 hours’ time frame were between the age group of 15-25 years (31.8%). It was observed that mothers who acted after
24 hours were between the age group of ≥ 46 years (40.0%). There was a gradual increase of the rate of time action was taken after 24 hours with increase in age of the mothers.

It was observed that over fifty percent (51.1%) of the Jahun clan did not take any action against fever in their children. However, the clan of the mothers was not a significant ($X^2 = 7.443$, df = 6, $p > 0.05$) influence on the time action was taken against fever in children. The Jahun clan has acted more (31.9%) within 24 hours after noticing fever as compared to the Kitaku (31.7%) and Kiri clan (29.3%). It was observed that 16.3% of the Kiri clan acted after 24 hours of noticing fever in their children.

Table 2. Duration between mothers’ recognition and management of fevers.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>No. Interviewed</th>
<th>Did nothing (%)</th>
<th>Acted within 24 hrs (%)</th>
<th>Acted after 24 hrs (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age(Years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-25</td>
<td>143</td>
<td>47.7</td>
<td>31.8</td>
<td>9.8</td>
</tr>
<tr>
<td>26-35</td>
<td>110</td>
<td>50.5</td>
<td>31.2</td>
<td>12.8</td>
</tr>
<tr>
<td>36-45</td>
<td>13</td>
<td>66.7</td>
<td>16.7</td>
<td>16.7</td>
</tr>
<tr>
<td>≥ 46</td>
<td>6</td>
<td>40.0</td>
<td>20.0</td>
<td>40.0</td>
</tr>
<tr>
<td>Clan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kiri</td>
<td>130</td>
<td>48.8</td>
<td>29.3</td>
<td>16.3</td>
</tr>
<tr>
<td>Kitaku</td>
<td>43</td>
<td>48.8</td>
<td>31.7</td>
<td>4.9</td>
</tr>
<tr>
<td>Jahun</td>
<td>99</td>
<td>51.1</td>
<td>31.9</td>
<td>9.6</td>
</tr>
<tr>
<td>Parity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>17</td>
<td>66.7</td>
<td>11.1</td>
<td>0</td>
</tr>
<tr>
<td>2-3</td>
<td>103</td>
<td>51.5</td>
<td>27.7</td>
<td>14.9</td>
</tr>
<tr>
<td>4-5</td>
<td>91</td>
<td>48.9</td>
<td>34.1</td>
<td>9.1</td>
</tr>
<tr>
<td>6-7</td>
<td>39</td>
<td>42.1</td>
<td>34.2</td>
<td>10.5</td>
</tr>
<tr>
<td>8-9</td>
<td>16</td>
<td>37.5</td>
<td>43.8</td>
<td>18.8</td>
</tr>
<tr>
<td>≥ 10</td>
<td>6</td>
<td>83.3</td>
<td>0</td>
<td>16.7</td>
</tr>
<tr>
<td>Total</td>
<td>272</td>
<td>49.6</td>
<td>30.6</td>
<td>12.0</td>
</tr>
</tbody>
</table>

The time action taken against fever by parity showed that mothers of Parity ≥ 10 responded more (83.3%) in doing nothing. Although, there was no significant difference ($X^2 = 16.680$, df = 15, $p > 0.05$). Time an action was taken within 24 hours was higher among parity group of 8-9 (43.8%). Similarly mothers between parity groups of 8-9 who sought for the treatment of fever after 24 hours were more (18.8%) as compared to others.

Discussion

Management of fever

Half of nomadic Fulani mothers did nothing for management of fever in their children because of the believed by the nomadic Fulanis that malaria fevers do not require treatment. This believe may increase the prevalence of malaria and its underlying effects. Lack of access to treatments due to poor road network, unfriendly health providers, lack of drugs in the health facilities, and poor economy of the consumers can be other reasons for doing nothing to manage fever by nomadic Fulani mothers.

Regardless of the age groups management of fever was not different; implying that nomadic Fulani mothers apply similar approach to disease interventions, probably due to health services that are most available to them. Mothers that are younger than 46 years managed fever more at home with drugs, probably these age group of mothers have received interventions of the disease, which is the current strategy for disease control especially malaria. Also it may be due to the fact that mothers of these age groups had more freedom to interact and willingly accept any intervention programs that was introduced to them.

There was no difference in the management of fever based on clan of the nomadic Fulani mothers. This is probably because they interact together under the auspices of Meyetti Allah (assembly of the nomadic Fulanis), and may acquire and share similar experience of disease

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interventions. However, the management of fever at home was more among the Jahun clan who are probably more curious and consistent in accepting intervention commodities supplied to them. The clan that was least involved in home intervention of disease was Kitaku, because they do not have direct access to the intervention commodities which is in the hand of the Kiriclan in the camp. The use of herbs, tepid sponging and visit to the chemist shops were more considered for the management of fever symptoms by the Kitaku clan. This maybe because these facilities are accessible and do not require any protocols. The use of herbs by the Kitaku clan may not be unconnected with the general belief that herbs are better than the orthodox medicines. The higher visit to chemist shops by the Kitaku clan may be due to the fact they do not want to spend money in visiting clinics or government-owned hospitals where list of comprehensive drugs will be administered for payments, which they may want to avoid. It could also be due to the proximity of the chemist shops which does not require any protocols before services can be rendered. Adams et al. reported that managing malaria fever has been shown to be related to cost, availability and cultural beliefs about the causes of disease. The reported high patronage of chemist shops by the Kitaku clan when compared to other clans may also be linked to the convenience of service and accessibility of drugs from the patent medicine stores.

Management of fever in private clinics, government-owned hospitals and traditional healers were more patronized by the Kiri clan. This may not be unconnected to the general belief that medical attention is more readily given in the private clinics than other health facilities. Similarly, the higher patronage of government-owned clinics by the Kiri clan may be due to the wider believe that the government hospitals has better manpower, drugs and infrastructure than others. Higher visit to the traditional healers by the Kiri clan may be due to the spiritual linkage of illness in the African traditional set up. The question “why me” which is linked to the traditional believe may not require orthodox medicine. Results of the study show that there was no significant difference between management of fever and parity of the mothers, implying that the differences in parity to fever intervention was similar, may be because they have similar knowledge and orientation towards health intervention programmes. Mothers who gave drugs at home for their children were higher among the parity group of 6-7 probably because of their previous experience which they have acquired with other children whom they have treated of fever, and will want to make a trial with home management. The availability of genuine blister packaged Arthemisinin-based combination therapy (ACT) antimalarial supplied to the nomads for the management of malaria may be another reason for higher interventions of fever by group with parity of 6-7 at home. The World Health Organizations recommended that parents and non-medical community sector can be involved in the management of diseases such as malaria. Improved home management of fever will have a significant reduction in the morbidity and mortality due to malaria infection. Majority of the mothers who gave drugs to their children at home were less than 46 years. Agyepong, Nebe, et.al. And Akogun et al. reported that personal experience by mothers play a significant role in the interventions of fever. Another method practiced to reduce the intensity of fever was tepid sponging, thus reducing the risk of convulsion in under-five children. This is in consonance with the findings on malaria management in Nigeria by Oshikoya and Senkanjo and, Ajayi and Falade who reported that the use of tepid sponging at home by mothers have dramatically reduced the fatal effects of malaria fever among children. Results of the study (Table 2) show that mothers who visited government-owned clinics and performed tepid sponging were higher among the group with parity of 8-9, because they are older mothers of child bearing age with a lot of personal experience, coupled with their freedom to interact with the health officials regardless of who they are, have made them to visit the government-owned clinics with confidence and also perform tepid sponging. The mothers who visited chemist shops and gave herbs for their children were higher among the group with parity of 1, probably these groups of nomadic Fulani mothers shy away from reporting any problem affecting their children, and as such they may prefer to solve their problems in private.
Recognition, duration and management of fever

Half of the nomadic Fulani mothers do not manage malaria in their children on time. This implies that fifty percent of the nomadic Fulani children were not promptly attended to during fever attacks. This may be due to factors earlier mentioned in this study which linked malaria fever to a disease of the nomadic Fulanis which does not require any management. However, mothers between the age group of 36-45 years do not manage fever in their children on time; probably these groups of mothers are older and may delay to take action in order to observe whether it is a different disease. Majority of the mothers, who manage fever within 24 hours were between the age group of 15-25 years. This may be because mothers between this age group were anxious to take action on their sick children for fear of death. There was a gradual increase in the management of fever with increase in age of the mothers. For example mothers between the age group of ≥ 46 years manage fever higher after 24 hours. This maybe because they are fewer in this study as majority of them have reached their terminal menopausal child bearing age and may also have few under-five children at the time of this study.

Over fifty percent of the Jahun clan mothers refused to act promptly against fever in their children. However, the clan of the mothers was not a significant influence on the time action was taken against fever in the nomadic Fulani camps, suggesting that irrespective of the nomadic Fulanis clan their action against fever is similar. Despite the similarity in action taken in respect to time, the Jahun clan managed fever promptly within 24 hours, while the Kiri clan acted less promptly within 24 hours. This is probably because the Jahun clan is more concerned to health matters affecting their children than the Kiri clan, despite the fact that both clans had access to the commodities supply for malaria control programme.

Mothers in the group with parity of ≥ 10 did not manage fever on time, implying that they do not take fever seriously. This may be because they are older with enough experience. It is interesting to note that mothers in the parity groups of 8-9 acted promptly within 24 hours of noticing fever in their children; probably they saw fever as a serious illness in under-five children that requires quick interventions. This in consonance with the report of WHO that any child suspected with fever should receive treatment with an effective drug within 24 hours of the onset of the symptoms, because deaths from malaria fever usually occur in the first 24 hours of admission which highlight the need for early diagnosis, prompt and appropriate management. Hills, et al. reported that delay in seeking for health care facilities was related to deaths of under-five children, due to lack of existence, accessibility, satisfaction, and cost of service. Appearance of illness at night deters individuals from health facilities care, waiting for the day break prolongs the duration of intervention of disease. Other major barriers that grossly affect timely intervention of disease were long waiting time, the attitude of health workers towards healthcare users, behaviour and financial access of the consumers.

Conclusions

There is a delay in the timely intervention of fever among nomadic Fulani children implying that a huge burden of morbidity and mortality from severe disease such as malaria may be recorded among the nomads. There is the need for appropriate education and adoption of new strategies for timely intervention of fever among the nomadic Fulani population.

Competing Interests

The authors declare that they have no competing interests.

Acknowledgements

I wish to express our appreciation to the nomadic Fulani household heads for their cooperation during the study.

I owe appreciation to the Primary Health Care Departments of the Local Government study areas.
References


Qi Gong: A physical Intervention (Complementary Therapies)

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Abstract

The word Qi means “breath of life”, Chinese explained it as life energy in human body. It has been evolved as central concept in Chinese medicine as a life force and flow on energy which is essential to sustain human health and life. Qi, ”a person’s vital energy force that circulates in the body through channels, supposed to be produced by visualization and affirmation. Due to limitations and side effects of conventional medical treatment, patients are increasingly utilizing complementary therapies. However, evidence for the safety and efficacy of qi-gong treatments is limited. The purpose of the current review was to investigate evidence for the role of Qigong in supportive care. Literature review is conducted using the search engines, Pubmed, Google scholar, Springer Link and CINHYL. Only scientific published articles were retrieved from the year 2001-2016. The effects of qigong on physical and psychosocial outcomes were examined in 28 studies and the effects on biomedical outcomes were examined in 15 studies. RCTs with larger sample sizes reflected positive results for the role of qigong in improving mood and fatigue parameters, fibromyalgia, cancer, diabetes mellitus, Arthritis, Parkinson’s disease and reducing inflammation. Moreover, qigong exercise in combination with conventional methods had significant improvement in immune function. Hence, Qi-gong has encouraging results in many of the progressive and poor prognosis diseases, hence, utilization of Qigong by the health care providers should be supported in quality improvisation.

Introduction

The term qigong is composed of two words: ‘qi’ means energy flow and ‘gong’ means skill or achievement (Li, Chen, & Mo, 2002). The history of qi-gong dates back to about 5000 years. There were many terms given to such kind of exercise before, like xing-qi (promoting the circulation of qi), fu-qi (taking qi), dao-yin (guiding the energy flow), tui-na (exhaling and inhaling), zuo-chan (sitting in meditation), yang-shen (nourishing the spirit) and jing-zuo (sitting still) (Ehling, 2001). It was not until 1953, when Liu Gui-zheng published a paper entitled "Practice On Qigong Therapy", that the term qi-gong was adopted widely as a formal name for this type of exercise (Chen, & Yeung, 2002). Qi-gong is thought to have originated as a form of "remedy dancing" created for healing and health preservation purposes.

Qi-gong has become a popular form of complementary and alternative medicine. Proponents of qigong recommend it for a wide range of conditions, symptoms and situations, including stress management, hypertension, chronic pain, depression, insomnia, cardiac rehabilitation, immune function and for enhancing the quality of life (QOL) of cancer patients(Astin at al.,2003; Chen et al., 2006; Chen et al., 2008; Chen, & Yeung, 2002; Li, Chen, & Mo, 2002). Qigong has been practiced for many years in the East to improve health, prevent disease and prolong life (Ernst, Pittler, Wider, & Boddy, 2008). There are numerous distinct forms of qigong which can be categorized into two main groups, internal qigong and external qigong. Internal qigong refers to a physical and mental training method for the cultivation of oneself to achieve optimal health in both mind and body. Internal qigong is similar to tai chi but its main differences are coordination of different breathing patterns and meditation (Lee, Pittler, & Ernst, 2009). External qigong refers to a treatment where qigong practitioners direct or emit their qi-energy to the patient with the intention to clear qi-blockages or balance the flow of qi within that patient (Lee, Pittler, & Ernst, 2007). Qi-gong has its underpinnings in Eastern medicine and philosophy. So far, it has not been explained
scientifically and, from a scientific point of view, it must seem biologically implausible. Despite the absence of a scientific basis, qigong has been submitted to numerous clinical trials and several systematic reviews of these data have recently been published. Unfortunately their conclusions are far from uniform.

The aim of this overview is to critically evaluate all systemic reviews of qigong as a treatment of any condition or symptom.

**Methodology**

Electronic literature searches were carried out using Medline, Embase, Amed, CINHAL, the Cochrane Library, Pubmed as well as six Korean medical databases and Chinese databases without restrictions of time. Key words of the research were ‘qigong’, ‘complementary therapies’, ‘external qigong’, ‘internal qigong’ and ‘nursing implications’ both literature reviews and experimental study designs were analyzed. Abstracts of the retrieved researches were inspected to meet the inclusion criteria. Reviews were defined as systematic if they included an explicit and repeatable methods section describing the search strategy and explicit inclusion/exclusion criteria.

To be included, systematic reviews had to be concerned specifically with the effectiveness of qigong and include evidence from controlled clinical trials. Systematic reviews evaluating qigong together with tai chi or other alternative therapy without evaluating the two approaches separately were excluded. Systematic reviews which evaluated the effects of qigong on healthy people and systematic reviews which included mixed populations such as healthy and medical conditions were excluded. Searches generated 61 articles out of which 28 articles met inclusion criteria (Figure 1, Table 1). The systematic reviews had been published from 2004 to 2016.

**Results**

**Bone density**

Resistance training and other weight bearing exercises are known to increase bone formation (Conn et al., 2008) and have been recommended for post-menopausal women for that purpose. Interestingly, most Qigong practices involve no resistance and only minimal weight bearing (such as gentle knee bends). Qigong has positive effects on bone health. Bone mineral density increased for women following Qigong exercises as compared to no-exercise controls (Chen, Yeh & Lee, 2006).

**Cardiopulmonary and cancer**

Seven studies reported favorable cardiovascular and pulmonary outcomes. Participants in this grouping of studies were generally older adults (mean age=61.02) and inclusion criteria varied from history of disease to reported sedentary behavior. Measures of cardiopulmonary function were representative of cardiopulmonary fitness and cardiovascular disease risk and included blood pressure, heart rate, ejection fraction rates, blood lipids, 6-minute walk distance, ventilatory function, and body mass index (BMI). One of the most consistent findings was the significant reduction in blood pressure reported in multiple studies, especially when Qigong (Lee et al., 2004; Lee et al.,2003)were compared to inactive control groups such as usual care, educational classes, or wait-list controls. Other indicators of cardiac health have been evaluated such as reduced heart rate is reported (Channer, 1996; Thomas, 2005). These reported changes suggest that Qigong may affect sympathetic and parasympathetic systems. Participants with a history of heart failure reported significant improvements in the incremental shuttle walk following qigong intervention implemented in two studies incorporating inactive control groups (Yeh, 2004).

Women treated for breast cancer achieved significantly increased distances in the 6-minute walk test in response to Qigong (Fouladbakhsh & Stommel, 2010).
Parkinson’s disease

In this small (n=11 in each arm of study) cross-over study of patients with Parkinson’s disease, participants practiced Qigong for 7 weeks reported significantly improved 6-minute walk test (Burini, 2006).

Obesity

Qigong has demonstrated a greater reduction in BMI as compared to an exercise control group in two studies (Cheung et al., 2005, Wolf et al., 2006) but this difference was not significant.

Physical function

Decreased physical activity is related to declining physical function in all populations and that decline is compounded by the natural process of aging (Freemont, 2007). Changes in physical function were assessed in many studies. Most of the studies were conducted with older adults (i.e., studies in which mean age = 55 years or older) and several recruited specifically for participants with chronic pain (e.g., osteoarthritis, neck pain, or fibromyalgia). Studies showed better overall changes in physical activity levels are also included (Lansinger et al., 2007; Gatts & Woollacott, 2006; Galantino, 2005).

Falling

Fear of falling is reported with the psychological outcomes. Outcomes related to falls such as balance, fall rates, and improved strength and flexibility were reported in extensive literature after practicing qigong (Choi, Moon, & Song, 2005; Tsang et al., 2007; Wang et al., 2005).

Quality of life

Quality of life (QOL) outcomes were reported in many articles. QOL is a broad ranging concept derived in a complex process from measures of a person’s perceived physical health, psychological state, personal beliefs, social relationships and relationship to relevant features of one’s environment (W.H.O, 2002). Studies showed that a wide range of participants (including healthy adults, patients with cancer, post-stroke, arthritis, etc.) at least one of the components of QOL was reported to be significantly improved by Qigong compared to inactive or active control groups (Tsang et al., 2003; Tsang et al., 2006). Interestingly, one study was of short duration (6 weeks) conducted with patients with traumatic brain injury which shows improvement in coping and muscular dystrophy (Gemmell & Leathem, 2006).

Self-efficacy

Self-efficacy is the confidence a person feels in performing one or several behaviors and the perceived ability to overcome the barriers associated with the performance of those behaviors (Glanz, Rimer, & Viswanath, 2008). Although this is not a health outcome itself, it is often associated directly with health behaviors and benefits (e.g., falls self-efficacy associated with reduced falls), or with psychological health. Significant improvements in this outcome were reported. Self-efficacy was generally assessed in the RCTs as a secondary outcome and reflected the “problem” area under investigation, such as falls selfefficacy (i.e., feeling confident that one will not fall) or efficacy to manage a disease (arthritis, fibromyalgia) or symptom (pain). Self-efficacy for falls was significantly increased as a result of participation in qigong (Li, Fisher Harmer & McAuley 2005; Hammond & Freeman, 2006).

Autoimmune

1 month qigong practice reported improvements in a number of immune-related blood markers, including total number of leukocytes, number of eosinphils, and number and percentage of monocytes as compared to usual care (Yang at al., 2007).
Discussion

This overview shows that a number of systematic reviews of qigong have been published. All of the systematic reviews have been published recently which indicates that the scientific interest in qigong is growing. The conclusions of the systematic reviews tended to be positive or equivocal. The major effects of qigong was on cardiopulmonary and hypertension. On contrary to this these studies were based on poor quality primary data. Moreover, hypertension is readily, and reliably, treatable and we doubt that the effect size of qigong is larger than that of antihypertensive drugs. The literature search included, English, Chinese and Korean databases, and was comprehensive. Yet this cannot be absolutely certain to have located all relevant articles from the databases. There was a minimal evidence for obesity and effects on immune system. Many of the important details from primary studies have been picked up and reported effectively in the article. Finally, publication bias can lead to an underrepresentation of negative results. The phenomenon could also be important for the publication of systematic reviews. The quality of the included systematic reviews was mixed but most of the quality of primary studies included was poor with the most frequent limitations of the primary studies are small sample size and lack of proper control group. Until there were a high quality clinical trial of qigong, it would be unwise to draw firm conclusions about its effectiveness. Even rigorous systematic reviews can be misleading if they are based on biased primary data.

Conclusion

A compelling body of research suggests the growing body of qigong studies. The evidence suggests that a wide range of health benefits accrue in response to these meditative movement forms, some consistently so, and somewith limitations in the findings thus far. In conclusion, several systematic reviews of qigong for a wide range of conditions have recently been published. Most of these systematic reviews were not conclusive and all were based on poor quality clinical trials. Given these important caveats, it would be unwise to draw firm conclusions about the effectiveness of qigong. Our overview does, however, suggest that this area merits further rigorous research.

References


Creating a Caring Nursing Environment at the University Teaching Hospital

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Abstract

The success of any health care delivery system depends on the value the professionals place on quality of the services given. Nursing practice is a major contributor to the success of the health care system especially if the caring concept is well defined and understood by the providers. The project that was undertaken was intended to awaken a spirit of caring in the identified ward with intentions to create a model care ward.

The method included flouting the old caring strategies that nurses embraced, stimulating them to rethink and identify approaches that could enhance ‘caring’ whilst creating a vibrant working and cooperative team. A consensus building meeting was held where 20 caring behaviours and 35 uncaring behaviours were identified

Keywords: Caring, nursing, professionalism, behaviours, patient.

Introduction

Caring is universally identified as the foundation of the nursing profession which differentiates nursing from medicine or curing management of patients. The distinction helps nurses to understand the critical role in the care delivery systems. Linking caring to charity and moral uprightness provides a clear distinct direction to the nursing profession. Caring should not just be something nurses do but those providing care need to understand the sacredness of the activity and honor inherent with it. DiNapoli P, P., et al (2010), advanced that professional nursing practice was rooted in humanistic ideals and directed by the carative factors and not merely focusing on mechanical task attainment. Tomey and Alligood (2006), discussed aspects of caring as perceived by various philosophers and theorists; Watson and Ericson's focused on care that considered love, charity and kindness as virtues inherent to the concept, while Ray introduced the cultural, moral and spiritual aspect of care. Martinsen stated that caring was beyond value base of nursing but a prerequisite for individuals' lives and emphasized on the need for professional knowledge as a requirement for engaging into meaningful concern for the patient. Hain, D., (May 31, 2013) indicated the need for a paradigm shift from traditional care approach to one rooted in Evidence Based Practice, that was focused on high quality care with controlled delivery costs and utilizing expertise in clinical decision making. Rhodes, M., (2011) reported acceptability of the caring concept as an essential quality and vital characteristic required in the nursing profession. Caring requires being available, knowing and doing. Moerman (1996), established that nursing practice was a key determinant to patient satisfaction during their hospital stay. Understanding behaviours that defines caring in professional nursing therefore is the basis for the nurse to practice in a professional manner. DeVries P, A., (1991), indicated that there would be no curing without caring while there would be caring without curing, the basis that should stimulate nurses to hold highly their position as care providers in the health care system.

Caring and nursing stands out undoubtedly as a key aspect of the health care system. The understanding of the importance of this role by nurses determines how the role is implemented and subsequently shapes the quality of care provided in that particular health facility. Mandalia et al (2012), stated that non caring attitudes by nursing staff often times has driven patients who are able to afford paying for health care services in the private hospitals to do so, rather than seeking care in public institutions which were perceived to be un caring.
Purpose

The purpose of the study was to collaborate with the nurses and develop strategies aimed at identifying caring behaviours that could be made as part of the norm in the selected ward.

Objectives

1. Conduct a team building workshop
2. Establish a friendly and accommodating work environment
3. Establish an acceptable work culture in the identified ward.
4. Identify acceptable caring nursing behaviours
5. Identify behaviours perceived as unacceptable by the patients

Methodology

Holding meetings with senior management in order to win their support in terms of human and material resources. Consensus building approach, based on individual nurses’ understanding of the Caring concept was adopted. The initial workshop was held to help identify caring behaviours that were going to be adopted by everyone in the selected ward. Pre-implementation exit interviews with the patients in the identified ward were going to be held in order to solicit none caring behaviors based on the patient or relative’s perspective of caring behaviour. A team building workshop was conducted in order to create team spirit and a sense of belonging for all the nurses and support staff in the identified ward.

Ethical considerations

Permission was sort from the Senior Medical superintendent to conduct the study in the hospital and also to hold a consensus building meeting with the nursing staff in the identified ward. The purpose and objectives of the study were explained to the nurses during the consensus building meeting.

Results

During the inception meeting, the purpose and objectives of the study were explained to the participants, an approach which was intended to win their support as well as building a project ownership 22 nurses participated in the consensus building meeting where 20 items were identified as caring behaviours while 35 statements were given to describe un caring behaviours. The team further agreed to hold further meetings aimed at detailing and conceptualizing the attributes of a winning team that was required to achieve the creation of a caring environment in the ward.

Identified caring behaviours

The following were some of the behaviours that identifies a caring nurse
1. Empathetic and provides a supportive environment to the patient
2. Present and approachable
3. Dedicated to work
4. Attends to the needs of the patient
5. Has a listening ear
6. Advocates for the patient
7. Greets the patients
8. Understands the patient
9. Shows concern for the patient
10. Communicates and listens to the patient
11. Reports for work early
12. Non selective to the patients
13. Allows patient to express themselves
14. Flexible and accommodative
15. Has love for her patients
16. Loves humanity
17. Works in collaboration with other nurses and also shows concern for them
18. Is responsible and accountable for the patient’s welfare.
19. Respects authority
20. Meets the expectations of patients

The following behaviours were identified with uncaring nurse

1. Does not greet the patients
2. No time for the patients but spends time on the phone
3. Does not know the patients
4. Uncooperative to both colleagues and patients
5. Reports for work late
6. Not flexible
7. Portrays no purpose for going to work
8. Uses bad language and shows no respect to patients and relatives
9. Does not attend to patients needs
10. Depend on colleagues to carry out tasks
11. Conducts self in an unprofessional manner
12. Does not maintain patient privacy
13. Neglects the patient
14. Exhibits incompetence
15. Shows no concern to patients
16. Does not change patients linen
17. Signs for medication that is not given to the patient
18. Not a good listener
19. Does not advocate for the patient
20. Takes bribes from patients and relatives
21. Not aware of environment
22. Calls patients by bed numbers
23. Gives instructions and does not smile at her patients
24. Can leave the ward unmanned
25. Does not account for her activities in the ward
26. Leaves the patient’s medication on the locker
27. Does not tough patients who are soiled
28. Locks self in an office
29. Chooses who to work with the patients or relatives
30. Does not talk to patients or relatives
31. Calls patients by their diagnosis
32. Patients refers to an uncaring nurse in a demeaning manner
33. Does not carry out any procedures
34. Does not feed patients
35. Does not call the doctor when patient’s condition changes

Discussion of findings

The nurses during the consensus building meeting identified twenty behaviours which were expected to be inherent to a caring nurse. In agreement with the findings of many nursing theorists, caring was rooted in humanistic ideals and directed by care givers’ disposition and not merely attainment of mechanical tasks, DiNapoli P., P., et al (2010).

According to Tomey and Alligood (2006), who outlined aspects of caring as perceived by various philosophers and theorists, indicated that Watson and Ericson identified love, charity and kindness as virtues characteristic to the caring concept, while Ray introduced the cultural, moral and spiritual aspect of care, which the team agreed with. However, the team did not ascribe to the views of theorist Martinsen who emphasized on the need for professional knowledge as a
requirement for engaging into meaningful concern for patients. The need for evidence based approach to care as stated by theorist Hain, D., (May 31, 2013) was also not identified as a critical element in enhancing quality care to patients. Furthermore, the nurses did not express an understanding based on the views of DeVries P, A., (1991), who indicated that there would be no curing without caring while there would be caring without curing, the fact that places nursing in a position of importance.

In addition to the aspects presented by the stated theorists, the nurses discussed that the following attributes were critical to meaningful care giving; dedication to duty, flexibility and accommodativeness to colleagues and the multidisciplinary team, accountability to patients’ wellbeing as well as royalty to authorities.

Conclusions

Caring remains the whole mark of the nursing profession and the effectiveness of care giving is dependent on the understanding of the individual care provider’s conceptualization of the concept. The project being undertaken is intended to stimulate nurses so that they develop their own understanding of the caring concept and subsequently create an environment with acceptable caring attitude.

References


The Effect of Transformational Leadership on Nurses’ Performance

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Abstract

Background: Transformational leadership globally plays an important role in the health care system especially patient care by nurses, because performance of the staff nurses link closely to the leadership styles. Now a day’s health care organizations facing shortage of nurses for delivery of evidence base care to patient. Suitable leadership style in nurses can overcome the dearth of qualified and competent nurses as well as fulfill the health care organizations goal. Numerous researchers proven that competent leaders enhance the nurses performance during patient care.

Objectives: The objective of this study was to identify the effect of transformational leadership on nurses’ performance in two tertiary care government hospitals (Jinnah and Children), Lahore Pakistan.

Method: In this study quantitative non-interventional descriptive cross sectional study design was used on n =250 participants from two government hospitals Lahore Pakistan.

Results: The effect of transformational leadership on nurses’ performance was identified positively. Descriptive, Correlation and Regression analysis on SPSS shows significant findings for this study. Finding of regression test shows that transformational leadership has positive effect on nurses’ performance. The values of regression test are 1 as it shows that strong relationship of transformational leadership on nurses’ performance.

Conclusions: This study highlighted that transformational leadership enhance nurses performance so, it is important to prepared and trained the nurses leaders for utilization of transformational leadership style at health care setting for enhancement of nurses performance. Nurses’ knowledge and practice may be enhancing through workshop and seminars. Health care organizations may develop mechanism for the improvement of nurses’ performance through transformational leadership style and develop the research based culture.

Keywords: Transformational leadership, Nurses, Nurses performance

Introduction

Traditionally nurses working in hospital within limited resources and have adequate resources for their training to meet the globally change in health care setting. It is necessary to produce research based nurses those can provide evidence based care to patient and face globally changes through advance study and flexible leadership. Now a days nurses trying to provide holistic care with collaboration of other health care team members. In holistic care nurses not only focus the patient care but also concentrate on patient family, culture, community, environment and natural hazards. Due to this reason nurses play a central role in transforming healthcare service.

The nurses’ work efficiently together with all stake holder including clients, physicians and health care providers to improve patient outcome while reducing the
cost of health care in future. The effectiveness of the nurses greatly depends on the style of leadership that the nurse leaders adopt in different situations. Leadership in clinical setting has been recognized as vital aspect in modern area whereas; more emphasis is given to transformational leadership (Mannix et al., 2015). In the recent eraseveral researchers are trying to identify the best leadership style of nursing leaders for delivery of advance patient care. Nursing professionals also recognized that appropriate nursing leadership is necessary for maintain and regularization of nursing activities, because nursing professionals focusing on transformational leadership instead of transactional leadership. Nursing organizations such as International Council of Nurses (ICN) and Sigma Theta Tau International (STTI) believed in transformational leadership style because it is good for leaders and junior nurses (Mittal et al., 2015). Similarly organizations have supported clinical leadership programmes particularly for health professionals (Mannix et al., 2015). Transformational leadership is one of the most effective leadership styles. Some leaders are more prefer the transformational leadership behaviors then other leadership styles for the organizational benefits (Muenjoh, 2015). Hence, it is very important to identify the appropriate style of leadership to engage nurses in implementation and providing care for quality care and best performance. By giving special attention to the followers the transformational leadership builds quality relationship with their followers. Subordinates feel valued as receiving special treatment (Muenjoh, 2015).

Transformational leadership is defining as the most important appreciated and positive change in its followers (Gousy et al., 2015). Transformational leadership is effective in a variety of setting. Transformational leadership initiates from personal principles and beliefs of leaders, not in an exchange of supplies between leaders and supporters. A leader is a role model for all the followers with his/her personal qualities. Transformational leaders have capability to unite both the followers and to change follower’s objectives and philosophies. This leadership type yielded higher level of achievement and performance among individuals than previously thought Possible. Several writers have confirmed that the transformational leadership is highly positive correlated with follower performance, extra effort and efficacy are obtained from the followers (Muenjoh et al., 2015).

Followers improvement and followers performance are targeted outcome of such leadership. Transformational leadership has positive relationship with team performance (Drenth, 2009). Transformational leaders first understand the changes and then focus on the vision and mission in the development of followers (Gousy et al., 2015).

**Definition of keywords**

*Transformational leadership:* is a style of leadership in which the leaders recognize the need for change, creates a vision to guide the change through motivation, and performs the change with the assurance of the members of the group (Giltinane, 2013).

*Nurse:* A person trained to care for the sick or infirm, especially in a hospital (Stevenson, 2010).

*Nurses Performance:* An activity that nurses do to entertain patient (Dictionary, 2006)

*Nurse’s performance* is dependent variable in this study that will effect with the manipulation of independent variable.

*Purpose:* To identify the effect of transformational leadership on nurses performance at clinical setting.
Objectives

1) To identify the effect of transformational leadership on nurses performance
2) To investigate the relationship of transformational leadership with nurse’s performance

Research question

“Does the transformational leadership have effect on nurse’s performance”? 

Hypothesis:
H 1: Transformational leadership has relationship on nurse’s performance.
H0: Transformational leadership has no relationship on nurse’s performance.

Significance of the study

Several studies proven that suitable leadership style boost up the nurses’ performance at clinical setting therefore administrative achieved their goals within stipulated time and period. But in nursing field it is difficult to identify the suitable leadership style. Therefore conducting this research to identify the effect of transformational leadership style on nurses’ performance. Issue of performance and effect of transformational leadership are not adequately addressed in government and private hospitals.

Problem statement

The quality of care, productivity and justice of services all depend on the availability of skilled, competent and motivated health care professionals when and where they are needed. Nurses need appropriate performance to deliver the required standard of care. In this point of view I conducted research that dose the transformational leadership has effect on nurses’ performance. Issue of performance and effect of transformational leadership are not adequately addressed in government hospital Lahore Pakistan.

Structural model

The above said research model showing the relationship between transformational leadership as independent variable (IV) and nurses performance as dependent variable (DV). The model is showing that transformational leadership is positively effecting nurses performance, on the basis of Null Hypothesis (H1)

Theoretical framework

This research study was based on system theory in which identify the effect of organizational system on workers and how workers effects the organizational environment. A system is comprises on various functions those perform by workers. System theory facilitate to managers to examine the different pattern and events at work place. Furthermore, system theory facilitate to management of organization to achievement of goal or mission of organization whole rather than isolated department.

Literature review

Healthcare in Pakistan is constantly changing and becoming increasing more difficult. The Future of Nursing: Leading Change, Advancing Health care, focuses on
the significance of nurses as leaders in healthcare. The American Nurses Association continues to encourage and support nurses to play a more positive leadership role in the various settings in which they practice at the state and national level. Nurses need leadership skill to play a vital role in health care setting for improvement and good out comes. Transformational leader always struggle for the followers contribution of any suggestions, competence to manage the problems at work place and search new trials to seek knowledge(Weberg, 2010).

In future, nursing leadership and management are the basic and essential requirement for achievement of the objective and meet the challenges of contemporary nursing practice. Moreover for better understanding the nurses need to update knowledge and practice as evidence based approach rather than experience and wisdom. It is important for nurse leader to utilize the critical thinking for the management of the unit and staff issues. The nurses must need appreciation and reward for their performance and role model for other professions (Doody et al., 2012).

Leadership plays an important role in the development of skilled, competent and new staff. Numerous studies have shown that leadership positively impact on organizational performance and its importance is highlighted in every field of life (Gumusluo˘glu et al., 2009).

The leader’s role is to connect with their followers for better team performance and achievement of specific goals, less contact with the followers decrease the level of performance. Proper education and training is required regarding leader’s role in every health care setting. This will help in achievement of the goals both short term and long term (Klionsky et al., 2012).

Addressing the influence of both followers and leaders should be established in two way process transactional and transformational. Transactional leadership just exchange of benefits and is founded on current beliefs and incentives. On the other hand transformational leadership is opposite to the transactional leadership, transformational leadership just pursues to change them (Klionsky et al., 2012).

Transformational leadership is positively associated with team performance analysis with individual and organizational levels. Several studies proposes that transformational leadership is concrete in an unpredictability of situation (Schaubroeck et al., 2007), may enhance team performance through high level of self-confidence, desired behavior and motivation for follower to involve in analysis. The leader guides the team members and helps better understanding and strengthen their beliefs that are successful team performance.

The importance of transformational leadership in health care setting is absolute. This is important at formal and informal setting. This leadership style is required from traning staff nurse(student) to nursing director. The importance of leadership in nursing is logical because its education started in the early nursing courses. Leadership play a vital role in nursing management and better performance (Sullivan et al., 2010).

Under the nursing scope, the leaders have many stages in which some required direct leadership role at departmental level and some required administrative role at service level. The conflict will be arises when the final decision needed on the behalf of employee. The leaders are in vulnerable position when they struggling for the benefit of the employees and the customers. Transformational leaders have capabilities to understand both the employees and the clients and handle the situation with the charismaticcharacteristics. They are confident and have ability to communicate their vision and goals with the subordinates for excellent performance and out comes (Doody et al., 2012).

Transformational leadership is favorable as the leaders have the authority to deliver future successful leaders, who have excellent solutions and strategies which are the
hardest part of any profession. Harmony among complex demands in an unbalanced environment is the heart of any organization, as needed in health care setting for the quality care of patients, families and communities (Sullivan et al., 2010). The leaders must be competent and knowledgeable in strategic planning, so their determination towards the team members must be acknowledged at higher level. Transformational leadership is effective regardless of culture, the level of performance depends on the cultural values (Doody et al., 2012).

Transformational leadership has effects on team performance with trust motivation and satisfaction. Transformational leadership and team performance has positive association of social impact progressions. These themes explore this relation very clearly that personal identification & internalization is our main focused area (Awases et al., 2013).

Followers has strong positive qualities, like ability to expressive vision, to a transformational leader then personal identification happened, on the other hand the internalization is only the leaders beliefs, values and perform constantly with them to placing mutual benefits over self-interest. On the behalf of this the followers receive leader’s admiration and credit (Li et al., 2015).

Transformational leadership and nurses performance has a social identification process. Therefore followers feel pride being part of this team or group. The followers have a sense of responsibility that they know their effort as an individual and contribute this with the goal achievement. This perception enhances the workers delicate significance towards their work. By stressing these transformational leaders is capable to buildup association between self-concepts and identifications by connecting the follower’s self-concept and vision (Laschinger et al., 2016).

The follower’s efficiency of work is enhanced when the transformational leaders show confidence in their performance and celebrate their activities in very respective ways. A positive association between transformational leaders and followers nurses performance received an experimental support (Chen et al., 2016).

Transformational leader’s emphasis & prioritize on the collective work environment instead individual concern (Schaubroeck et al., 2007). Individuals who are inherently inspired to accomplish the shared vision are not inserted in personal and concrete advantages. These individuals enhance sense of value and self-impression making these achievements. The individual who are not linking these are unable to establish goal and vision. Leadership covered by the use of interpersonal skills to influence the followers for the achievement of specific goals (Sullivan et al., 2010).

Methodology

Research Design: Quantitativnon-interventional descriptive cross sectional study design was used.

Target Population: The target population was all 750 female nurses of two government hospitals (Jinnah and Children), Lahore.

Setting: Two Government Hospital Jinnah and Children

Inclusion Criteria: All female nurses of both hospitals those have at least 1 year clinical experience and voluntarily participate in this research study.

Exclusion Criteria: All staff nurses those have less than one year clinical experience and all student nurses as well as those refused to participant were excluded from this study.

Sample Size: The sample size is 250 according to Solvin’s Formula $n = \frac{N}{(1+N e^2)}$.

Whereas:

$n$ = No of Participants,

$N$ = Total Population,

$e$ = Error Margin / Margin of Error
**Sampling Technique:** Random sampling technique was used for data collection through expert data collectors.

**Ethical Consideration:** Permission for conducting this research was taken from Ethical Review Committee of Lahore School of Nursing; The University of Lahore and permission taken from administration of both hospitals through permission letter. Furthermore, filled consent form was taken from each research participant.

**Research Tool:** A close ended questionnaire adopted from Drenth (2009) study which is comprises 25 questions in which 13 were belong to transformational leadership style and 12 were identify the nurses’ performance through Likert scale (1 = strongly disagree to 5 = strongly agree).

**Data Analysis:** The data were analyzed by using Statistical Package for the Social Sciences (SPSS) version 21 with descriptive, regression, and correlation methods.

**Results**

Descriptive analysis was used to analyze the demographic data and effect of transformational leadership on nurses’ performance. This result shows the effect of transformational leadership on nurses’ performance. Correlation analysis was used to identify the relationship between transformational leadership and nurses’ performance in both government hospitals, Lahore, Pakistan. Furthermore, identify the effect of transformational leadership on nurses’ performance through regression analysis and structure linear equation. It was also used to check the effect of moderation.

**Demographic analysis**

Data was collected from one gender only female staff nurses. In this study 44.8% of respondents belong to 25-35 years age groups. 55.2% of respondents belong to 36-45 years age groups.

<table>
<thead>
<tr>
<th>Table 1. Age</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 – 35 Years</td>
<td>112</td>
<td>44.8</td>
<td>44.8</td>
<td>44.8</td>
</tr>
<tr>
<td>36 – 45 Years</td>
<td>138</td>
<td>55.2</td>
<td>55.2</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>250</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

Most of the nurses (n=107, 42.8 %) were having 1 to 5 years’ clinical experience and 57.2% (n= 143) were having more than 5 years’ clinical experience.

<table>
<thead>
<tr>
<th>Table 2. Experience</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–5 Years</td>
<td>107</td>
<td>42.8</td>
<td>42.8</td>
<td>42.8</td>
</tr>
<tr>
<td>6–10 Years</td>
<td>143</td>
<td>57.2</td>
<td>57.2</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>250</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

Most of respondents (48%) having qualification 3 Years Diploma in General Nursing, 45.2% respondents are having Post RN BS Nursing Degree and remaining 6.8% having Generic BS Nursing Degree.

<table>
<thead>
<tr>
<th>Table 3: Qualification</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Nursing</td>
<td>120</td>
<td>48.0</td>
<td>48.0</td>
<td>48.0</td>
</tr>
<tr>
<td>Post RN BS Nursing</td>
<td>113</td>
<td>45.2</td>
<td>45.2</td>
<td>93.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>137</strong></td>
<td><strong>63.2</strong></td>
<td><strong>63.2</strong></td>
<td></td>
</tr>
</tbody>
</table>
Transformational Leadership

The first concept of this study is transformational leadership. The element of transformational leadership is considered as a major variable which identify the senior nurses’ leadership role and their contribution in improving the nurses’ performance. The organizations that are having transformational leadership reflection to quality care and are powerful for changing the old practices and improving the nurses’ performance. Many administrations are taking leadership as an aspect for competitive advantage. Actually leadership gives us the meaning of “influence” or the capability to influence others. The government hospital those are successful in implementing the leadership concept for getting their organization in a direction towards competitive advantage. These hospitals lead the other hospitals in which transformational leadership is not followed by the institute. So, in this study leadership is being taken as independent variable. To investigate the effect of transformational leadership on nurses’ performance with controlling role of transformational leadership in government hospital Lahore Pakistan, the following twelve questions were asked from the participants.
<table>
<thead>
<tr>
<th>S. #</th>
<th>Questionnaire on Transformational Leadership</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My supervisor is a role model for me.</td>
<td>112 (44.8%)</td>
<td>120 (48%)</td>
<td>0 (0%)</td>
<td>9 (3.6%)</td>
<td>9 (3.6%)</td>
</tr>
<tr>
<td>2</td>
<td>My supervisor display extra ordinary competence in everything he/she undertakes</td>
<td>70 (28%)</td>
<td>100 (40%)</td>
<td>63 (25.2%)</td>
<td>8 (3.2%)</td>
<td>9 (3.6%)</td>
</tr>
<tr>
<td>3</td>
<td>My supervisor inspire me to perform as good as possible</td>
<td>46 (18.4%)</td>
<td>119 (47.6%)</td>
<td>49 (19.6%)</td>
<td>27 (10.8%)</td>
<td>9 (3.6%)</td>
</tr>
<tr>
<td>4</td>
<td>My supervisor creates a collective sense of working on an important assignment / mission.</td>
<td>16 (6.4%)</td>
<td>136 (54.4%)</td>
<td>78 (31.2%)</td>
<td>11 (4.4%)</td>
<td>9 (3.6%)</td>
</tr>
<tr>
<td>5</td>
<td>My supervisor makes me proud working together with him/ her.</td>
<td>16 (6.4%)</td>
<td>100 (40%)</td>
<td>76 (30.4%)</td>
<td>46 (18.4%)</td>
<td>12 (4.8%)</td>
</tr>
<tr>
<td>6</td>
<td>My supervisor enhances his/ her image of competence through his/ her words and deeds.</td>
<td>13 (5.2%)</td>
<td>122 (48.8%)</td>
<td>97 (38.8%)</td>
<td>9 (3.6%)</td>
<td>9 (3.6%)</td>
</tr>
<tr>
<td>7</td>
<td>My supervisor gives me confidence that he/ she can overcome any problem</td>
<td>22 (8.8%)</td>
<td>133 (53.2%)</td>
<td>74 (29.6%)</td>
<td>12 (4.8%)</td>
<td>9 (3.6%)</td>
</tr>
<tr>
<td>8</td>
<td>My supervisor makes sure I have complete confidence in him/ her.</td>
<td>12 (4.8%)</td>
<td>123 (49.2%)</td>
<td>74 (29.6%)</td>
<td>32 (12.8%)</td>
<td>9 (3.6%)</td>
</tr>
<tr>
<td>9</td>
<td>My supervisor is a symbol of success and accomplishment for me.</td>
<td>1 (0.4%)</td>
<td>107 (42.8%)</td>
<td>86 (34.4%)</td>
<td>47 (18.8%)</td>
<td>9 (3.6%)</td>
</tr>
<tr>
<td>10</td>
<td>My supervisor articulates a clear vision of future opportunities.</td>
<td>2 (.8%)</td>
<td>111 (44.4%)</td>
<td>102 (40.8%)</td>
<td>26 (10.4%)</td>
<td>9 (3.6%)</td>
</tr>
<tr>
<td>11</td>
<td>My supervisor listens to things that are important to me.</td>
<td>0 (0%)</td>
<td>113 (45.2%)</td>
<td>82 (32.8%)</td>
<td>46 (18.4%)</td>
<td>9 (3.6%)</td>
</tr>
<tr>
<td>12</td>
<td>My supervisor makes me aware of important common values, ideals, and aspirations.</td>
<td>3 (1.2%)</td>
<td>89 (35.65%)</td>
<td>112 (44.8%)</td>
<td>46 (18.4%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>
The first question from transformational leadership style is “My supervisor is a role model for me” 92.8% nurses responded negatively that in government hospital our senior nurses are not a role model for us and only 7.2% nurses give positive feedback and nobody give response neutral for this question. Second question is “My supervisor display extra ordinary competence in everything he/she undertakes” 68% nurses respond negatively 63% neutral and only 6.8 % were agree for this question. “My supervisors inspire me to perform as good as possible”. In the response of this question 66% respondents were negatively response that the supervisor is not inspire me to perform as good as possible.19.6% nurses were neutral and 14.4% were respond positively means that leaders must have qualities to inspire the subordinates. “My supervisor creates a collective sense of working on an important assignment / mission”. In response to the next question 60.8% nurses response negatively that supervisors don’t have sense of creativity on an important mission 31.2% were neutral and only 8% were positively respond.” My supervisor makes me proud working together with him/ her. Regarding this question 46.8% nurses respond negatively that the supervisors don’t make me proud while working together 30.4% were responding neutral and 23.2% were responding positively. “My supervisor enhances his/ her image of competence through his/ her words and deeds”. In this response 53.6% respond negatively the higher level of respondent regarding this question shows that the leaders must show positive behavior towards the subordinates 38.8% nurses respond neutral and 7.2% respond positively the lower the response means leaders don’t have image of competence.” My supervisor gives me confidence that he/ she can overcome any problem”. In the response of this question the 62% respondent’s shows negative response 29.6% nurses respond neutral and 8.4% respond positively. My supervisor makes sure I have complete confidence in him/ her. Regarding this question 54% nurses respond negatively 29. 6% were neutral and 16.4% were responding positively. This result shows that the supervisor don’t have confidence towards subordinates. “My supervisor is a symbol of success and accomplishment for me”. In the 9th question 43.2% nurses respond negatively and 34.4% were neutral and 22.4% were showing positive response. “My supervisor articulates a clear vision of future opportunities”. Regarding this question 45.2% nurses respond negatively 40.8% were neutral and only 14% shows positive response, as per this response the nurse leaders don’t have vision for future opportunities. “My supervisor makes me aware of important common values, ideals, and aspirations”. In the response to this question nurses respond 36.8% negatively 44.8% neutral and only 18.4% were showing positive response that the supervisor was make me aware of the important values and objectives. Leadership covered by the use of interpersonal skills to influence the followers for the achievement of specific goals (Sullivan et al., 2010). These results shows that the leaders must adopt the leadership styles to motivate the subordinate and for the improvement of patient and client care in government setup.
<table>
<thead>
<tr>
<th>S. #</th>
<th>Questionnaire on Nurses Performance</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My performance is judged more by how much work I do that by how well I do it.</td>
<td>4 (1.6%)</td>
<td>102 (40.8%)</td>
<td>83 (33.2%)</td>
<td>61 (24.4%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>2</td>
<td>My manager emphasis’s my positive contribution when reviewing my performance</td>
<td>3 (1.2%)</td>
<td>129 (51.6%)</td>
<td>78 (31.2%)</td>
<td>40 (16%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>3</td>
<td>I am given enough authority to allow me to do my job effectively</td>
<td>1 (0.4%)</td>
<td>91 (36.4%)</td>
<td>109 (43.6%)</td>
<td>49 (19.6%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>4</td>
<td>People in this hospital put more energy into identifying mistakes than into figuring out how to do things right.</td>
<td>0 (0%)</td>
<td>110 (44%)</td>
<td>88 (35.2%)</td>
<td>52 (20.8%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>5</td>
<td>Judgment about my performance is fair.</td>
<td>3 (1.2%)</td>
<td>97 (38.8%)</td>
<td>98 (39.2%)</td>
<td>52 (20.8%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>6</td>
<td>The way things are organized around here makes it hard for people to do their best work.</td>
<td>1 (0.4%)</td>
<td>111 (44.4%)</td>
<td>106 (42.4%)</td>
<td>32 (12.8%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>7</td>
<td>I feel my work contributes to the organizations performance</td>
<td>1 (0.4%)</td>
<td>85 (34%)</td>
<td>90 (36%)</td>
<td>74 (29.6%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>8</td>
<td>Objectives to be achieved are known by individuals to be assessed.</td>
<td>1 (0.4%)</td>
<td>135 (54%)</td>
<td>82 (32%)</td>
<td>32 (12.8%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>9</td>
<td>Performance standards expected from staff are clear and understood by all nurses</td>
<td>6 (2.4%)</td>
<td>123 (49.2%)</td>
<td>112 (44.8%)</td>
<td>9 (3.6%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>10</td>
<td>Feedback on how staff is performing is provided throughout the year</td>
<td>4 (1.6%)</td>
<td>142 (56.8%)</td>
<td>96 (38.4%)</td>
<td>7 (2.8%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>11</td>
<td>Prompt action is taken when performance falls below acceptable standards</td>
<td>4 (1.6%)</td>
<td>152 (60.8%)</td>
<td>85 (34%)</td>
<td>9 (3.6%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>12</td>
<td>My manager / supervisor inspires me to do my best</td>
<td>30 (12%)</td>
<td>123 (49.2%)</td>
<td>90 (36%)</td>
<td>7 (2.8%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>13</td>
<td>Staff are given opportunity to make comments on the results of their performance</td>
<td>12 (4.8%)</td>
<td>143 (57.2%)</td>
<td>80 (32%)</td>
<td>15 (6%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>
The first question of nurses’ performance is “My performance is judged more by how much work I do that by how well I do it.” 42.6% respondents were disagreeing and 33.2% were neutral and 24.4% give response positively. In this statement the supervisor are not giving the value to the work productivity but the completion of task only. In second question “My manager emphasis’s my positive contribution when reviewing my performance “the respondent nurses give 52.8% negative response 31.2% were neutral and 24.4% give positive response. The performance is just checked without contribution. In 3rd question “I am given enough authority to allow me to do my job effectively “the nurse respondent’s give 36.8% negative response 43.4% neutral and only 16% were give positive response in 4th question “People in this hospital put more energy into identifying mistakes than into figuring out how to do things right”. In this question 44% nurses give negative 35.2% were given neutral response and only 19.6% were agree “Judgment about my performance is fair”. In next question 40% nurses give negative response 39.2% nurses give neutral response and only 19.6% were respond positively . “The way things are organized around here makes it hard for people to do their best work”. Regarding this question 44.8% nurse percipient gives negative response, 42.4% nurses give neutral and only 12.8% nurses give positive response.”I feel my work contributes to the organizations performance “for this question nurses were given 34.4% negative response 36% nurses were neutral and 12.8% nurses give positive response. In the 8th question “Objectives to be achieved are known by individuals to be assessed”. Regarding this question 54.4% nurses were give response negatively 32.2% nurses given neutral response and only 12.8% nurses give positive response .“Performance standards expected from staff are clear and understood by all nurses” in this question 51.6% respondent nurses were given negative response 44.8% were neutral response and only 3.6% nurses were with positive response so this shows that the performance standards were not clear for everyone. “Feedback on how staff is performing is provided throughout the year” regarding this question 62.6% nurses give disagree response 38.4% nurses give neutral response and only 2.8% respondents were give agree responses . “Prompt action is taken when performance falls below acceptable standards”. In this question 62.4% nurses give negative response 34% were neutral and only 3.6% nurses give positive response.”My manager/supervisor inspire me to do my best”. This question shows response of participants 61.2% with negative response 36% were with neutral response and only 2.8% were with positive response. The last question on nurses performance is “Staff are given opportunity to make comments on the results of their performance” this question shows that 62% nurses give negative response 32% were neutral and only 6% nurses were with positive response. These frequencies show that the transformational leadership has effect on nurses’ performance.

Reliability assessment

Reliability Analysis of Transformational and Nurses Performance Variable

Instrument reliability has been tested for each variable separately. It has been calculated through Cronbach’s alpha that shows the reliability of each variable that how much it is reliable to use and replicate it by different researchers under different conditions to get the reliable results. More the value of Cronbach’s alpha near to 1 therefore it is reliable variable.

Table # 6 presents Cronbach’s alpha for five point Likert scales used in the study. Cortina (1993) believed that Cronbach alpha is authentic statistical tool for identify the reliability of the tool / questionnaire.
Table 6. Reliability of instrument

<table>
<thead>
<tr>
<th>Variable of Study</th>
<th>No. of Items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformational Leadership (TL)</td>
<td>12</td>
<td>0.813</td>
</tr>
<tr>
<td>Nurses Performance (NP)</td>
<td>13</td>
<td>0.881</td>
</tr>
</tbody>
</table>

The value of Cronbach’s alpha for transformational leadership is 0.813 that is near to 1 and it shows that the tools are strongly reliable. Similarly other variable nurses’ performance are having value of Cronbach alpha is 0.881 that shows that the performance tool is also reliable.

Convergent Validity

Factor analysis performed by convergent validity test. Factor analysis based on varimox rotation test. This instrument comprises on 25 items. The instrument based on one independent and one dependent variable. During factor analysis 2 items of instrument were dropped therefore number of items were decreased. After analysis found that Kaiser-Meyer-Olkin (KMO) is .810 for transformational leadership and .909 for nurses’ performance. Valid assumption suggest that KMO value must be above .60 and this study results are .810 and .909, with significant Bartlett's Test. It means that items of instrument are valid.

Table 7. Summary of kaiser-meyer-olkin and bartlett’s assumptions

<table>
<thead>
<tr>
<th></th>
<th>Kaiser-Meyer-Olkin</th>
<th>Bartlett's Test of Sphericity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Measure of Sampling Adequacy.</td>
<td>Approx df Sig</td>
</tr>
<tr>
<td>Transformational Leadership (TL)</td>
<td>.810</td>
<td>1005.397 91 .000</td>
</tr>
<tr>
<td>Nurses Performance (NP)</td>
<td>.909</td>
<td>1267.873 66 .000</td>
</tr>
</tbody>
</table>

Note: Approx = Approx. Chi-Square, Df = Degree of Freedom, Sig = Significance

Regression analysis

Table 8 shows that the results of regression analysis, which demonstrate the nurses performance is (dependent variables) and transformational leadership is (independent variable).

Value of R explains the strength of association between independent variables (transformational leadership) and dependent variables (nurses’ performance) and range of the R value is 0 to 1 (Ibrahim et al., 2000). Strong association between independent and dependent variables based on high R value and vice versa. The results of the study are mention below:

Regression analysis of transformational leadership shows that 18.2%change in nurses’ performance is due to the transformational leadership. R value as .427 shows a strong and significant (F=.182, P<.05) relationship between transformational leadership and nurses performance. Thus, this model is fit.
### Table 8. Regression Table

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.427(a)</td>
<td>.182</td>
<td>.179</td>
<td>.19606</td>
<td>.182</td>
<td>55.158</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(a) Corrected for multiple comparisons.
Regression coefficients (β) of transformational leadership is 13.796 shows, that 1 unit change in transformational leadership will bring 13 unit changes in nurses’ performance in positive direction and shows significant relationship between independent and dependent variables. So, that the hypothesis were accepted that the transformational leadership had effect on nurses performance.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant) COMPUTE TransL = MEAN(Trans1, Trans2, Trans3, Trans4, Trans5, Trans6, Trans7, Trans8, Trans9, Trans10, Trans11, Trans12)</td>
<td>1.596</td>
<td>.116</td>
<td>13.796</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>.380</td>
<td>.051</td>
<td>.427</td>
<td>7.427</td>
</tr>
</tbody>
</table>

a. Dependent Variable: COMPUTE performance

Discussion

This study investigate the effect of transformational leadership on nurses’ performance. Demographic Statistics shows that 100% responses were female nurses from Jinnah and children hospitals Lahore. In this study 44.8% of respondents belong to 25-35 age groups. 55.2% of respondents belong to 36-45 age groups. Demographic statistics is also used for the analysis of transformational leadership on nurses’ performance (Ekaningsih, 2014).

Percentages of the positive values shows combine with strongly agree and negative shows from strongly disagree in frequency table 4&5. The analysis shows that transformational leadership has relationship on nurse’s performance so hypothesis is accepted that there is a significance relationship of transformational leadership on nurses’ performance.

The effect of transformational leadership on nurses performance were identified positively such as leader nurses were not playing role model for their subordinate and the nurses’ performance were not up to the standards (Ekaningsih, 2014). Numerous factors were responsible for both positive and negative performance of nurses in government hospitals (Awases et al., 2013). Strategies were developed for addressing the effect of transformational leadership on nurses’ performance. Literature shows that the transformational readership has positive effect on nurses’ performance (Frankel, 2015).

The statistical procedure analysis provides insight about the development of procedures and must be applied for the personality assessment study (Furr et al., 2015). So, as per this study to investigate the effect of transformational leadership style on nurses’ performance the statistical procedure is very important for strengthening the study, because this is all about the personality assessment of leaders and its effect on nurses performance (Furr et al., 2015).

The value of Cronbach’s alpha for transformational leadership is 0.813 that is near to 1 and it shows that the tool is strongly reliable. Similarly other variable nurses’
performance are having value of cronbach alpha is 0.881 that shows that the performance tool is also reliable. The value of Cronbach’s alpha value is 0.50 considered the reliability of scale(Khan et al., 2011).

The beta coefficients of transformational leadership value is 0.380 (p=.000) showing significant positive relationship between nurses performance. Whereas value of R² showing 18 % (F=1.0, p =.000) of variance contributed by independent variable transformational leadership and dependent variable nurses performance (Ekaningsih, 2014). It means that the transformational leadership has relationship and increase the performance of nurses in government hospitals Lahore. Furthermore, this study finding accepted the hypothesis that the transformational leadership has relationship on nurses’ performance.

Conclusions

The results of this study are concluded that if the nurse leaders adopt transformational leadership style the nurses’ performances enhance and patient gets quality care and improvement in government hospitals. The result of this study shows that transformational leadership has relationship with nurses’ performance. This study highlights the importance of developing strategies to promote the performance of nurses through transformational leadership. Enhance knowledge and practices through workshop and seminars for the leader nurses. Develop mechanism for the improvement of nurses’ performance and inflate leadership styles and management capacity and generate information and awareness among nurses through research. This study provides a valuable finding regarding the effect of transformational leadership on nurses’ performance in government hospitals Lahore.

Recommendations

A recommendation to facilitate the nurse leaders for transformational leadership is necessary for all nurse leaders. Coaching in transformational leadership could help furnish the leaders with those behaviors which lacking in their series. Nursing seminar and training must be conducted for the development of management dimensions necessities. In-house leadership training required for external consultation and internal implication. In government hospital there is no official guide lines available for the nurse leaders to adapt the leadership styles and enhance the performance of nurses.

Development of leadership and management capacity through leadership expansion and management programmes. In an organization employees are the important strength. Organizations need to have capable leaders to lead and inspire the followers. This study result suggested that the government hospitals should have the right person, to perform the right job and give follower’s appropriate training to enhance their performance and abilities.

Limitations

This study have only one independent and dependent variables because numerous variables are working together for enhancement of nurse performance. The generalizability of this research results may be limited because of the Scale short 25-item on 5 point likert scale. The data were collected from only one gender female nurses those belong to two government hospitals Lahore. Self-administration method of questionnaire may enhance the bias of responses. Some problem related to approval from Ethical Review committee because of the long process of permission in Government Hospitals.

References


Underutilization of Maternity Services at Seboche Hospital by Local Community

Article by Lebina Malethola Catherine
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Email: catherine.lebina@gmail.com

Abstract

Aim: The aim of this article is to identify the risk factors associated with pregnant women from the catchment population not delivering at the facility

Objectives: To reduce number of home deliveries

• To strengthen utilization of maternity services by catchment population
• To sustainably improve the health status of their populations to achieve national and global health targets.

Literature review: According to WHO 2014, Lesotho has a very high maternal and neonatal death rate being 487 deaths/100000 and 74 deaths/1000 respectively. This maybe attributed in part to the high rate of home deliveries. The report indicated that home deliveries accounts for 40% of all births in Lesotho and rates are even higher in the rural areas. The latest WHO (2016) report Annex A, global coverage of skilled attendance at birth was estimated to have reached 73% in 2013. However, despite steady improvement globally and within regions, millions of births were not assisted by a midwife, a doctor or a trained nurse. More than 40% of births in the WHO African Region and WHO South-East Asia Region were not attended by skilled health personnel.

2014 Lesotho Demographic Health Survey shows that 8 in 10 deliveries (78%) are assisted by a skilled provider, for the most part, a nurse/midwife (61%). Unskilled persons, such as traditional healers, village health workers, and relatives/friends, assist in 21%; 1% of births receive no assistance. Skilled providers assist at nearly 100% of deliveries in health facilities, but only 7% of deliveries that take place elsewhere. Indicators related to maternal health care have improved as depicted by Lesotho Demographic Health Survey (LDHS) 2014 showing that: “Seventy-seven percent (77%) of live births in the 5 years before the survey took place in a health facility, while 23% were delivered at home. Most institutional deliveries took place at public sector health facilities (70%).

Seboche Hospital catchment area was not an exception to this as it came to the facility observation that few number of local people deliver in the facility hence why the focus of the project was to increase facility based deliveries with local pregnant women. 2016 National projected catchment population for Seboche Hospital for expected deliveries is 431. Monthly the facility is expected to deliver +-36 pregnant mothers.

Keywords: Underutilisation of Maternity Services, Maternal health, Midwives, contributing factors, Interventions, community involvement, Nurse patient relationship, Nurses’ attitude, women empowerment.

Introduction

Purpose of the study: The purpose of this study is to improve local community practices required of continuous utilizing the locally available health facility for maternity services, to sustainably improve the health status of the populations so as to achieve national and global health targets.

Literature review

Worldwide, about one in four births (25 per cent) take place without the assistance of a skilled birth attendant. In 2015 alone, this translated into more than 40 million unattended
births in low- and middle-income countries, about 90 per cent of which were in South Asia and sub-Saharan Africa. data.unicef.org.> statistics by topic> maternal health updated in June 2016

There are a number of factors that affect the use of maternal health care facilities such as income, education, ethnic background, birth order and number of children. Lesotho is not exceptional in this regard. After every five years, there is demographic survey conducted in Lesotho. According to Lesotho Demographic Health Survey (LDHS), 2014 problems in accessing health care Women were asked whether each of the following factors is a big problem in seeking medical advice or treatment for themselves when they are sick:

- getting permission to go to the doctor
- getting money for advice or treatment
- distance to a health facility
- not wanting to go alone

Four in ten women (42%) in Lesotho reported at least one of the problems asked about in accessing health care for themselves. This proportion ranges from 36% in Maseru to 56% in Thaba-Tseka (Table 9.11). The most commonly reported problems are getting money to pay for treatment (27%) and distance to the health facility (26%). Fewer women say that not wanting to go alone (9%) or needing permission to go for treatment (4%) is a big problem in seeking medical advice or treatment.

It shows that skilled assistance declines sharply with birth order: 87% of first births have skilled assistance, compared with 50% of sixth or higher-order births (Table 9.6). Urban deliveries are more likely than rural deliveries to have received skilled assistance (90% versus 73%). There are moderate differences among districts in delivery assistance. Deliveries in Mokhotlong are least likely to be assisted by a skilled provider (63%) and most likely to be assisted by a relative or friend (27%). In contrast, skilled providers assist 85% of deliveries in Leribe while a relative or friend assists in 12%. Deliveries in Thaba-Tseka (8%), Mokhotlong (9%), and BothaBothe (14%) are less likely to be assisted by a doctor than in other districts (17-21%). The more education a woman has, the more likely it is that a skilled provider will assist at delivery. Ninety-seven percent of births to women with more than secondary education were delivered by a skilled provider compared with 59% of births to women with an incomplete primary school education. The wealthier the household, the more likely it is that deliveries are assisted by a skilled provider (Figure 9.6). Compared with deliveries in the lowest wealth quintile, deliveries in the highest quintile are three times as likely to be assisted by a doctor (23% versus 8%). Seventy-seven percent of live births in the 5 years before the survey took place in a health facility, while 23% were delivered at home. Most institutional deliveries took place at public sector health facilities (70%) (Table 9.5).

Trends: Institutional deliveries in Lesotho are increasing: the proportion of births in health facilities rose from 52% in 2004 to 59% in 2009 and 77% in 2014. Over the same period, home deliveries decreased from 45% to 23% (Figure 9.2).

Patterns by background characteristics: Higher-order births are much more likely to be home deliveries. Only 49% of sixth or higher-order births occurred at a health facility, compared with 85% of first births. Antenatal care increases the likelihood of an institutional delivery. If mothers have at least one ANC visit, births are more than three times as likely to take place in a facility. By districts institutional deliveries are least common in Mokhotlong (61%) and most common in Leribe (84%) (Figure 9.3). Institutional deliveries are most common among mothers with more than secondary school (96%) (Figure 9.4).

Problem to be solved

Recent facility statistics indicate that for the past 6 months April-September 2016, only 43% of deliveries are by local people, this is a clear indication of fair uptake of intra-natal care by pregnant mothers at the catchment area of Seboche Hospital.
Existing solution for the problem

Though there is an increase in facility based deliveries nationwide but a good number of women still conduct home deliveries. This is a wakeup call for all health facilities to address this issue jointly with the community being served. Engagement of community leaders at various level and influential people like mother in laws who are at the front line to dictate what the daughter in law should do. Reinforce health education and conduct ongoing workshops on maternal and child health care. Winning the influential group will be best one.

Limitations

This survey has several limitations which we acknowledge. The study population was too small to come up with the accurate results. We could not come across many women who delivered at home or to other facilities to find out the reason for that. There questionnaire itself was channelled to the mothers who delivered anywhere leaving out the in laws who many a time play a major role in determining place of delivery for their daughter in laws. Also, this analysis only tracked uptake of facility based deliveries and not ANC services which also might have assisted on the statistics of women attending ANC at the facility. However the results registered can to a great extent be safely attributable to these interventions.

Achievements

- Ability to reveal some of the contributing factors on low facility based deliveries by the local community that need to be addressed. At least 90% of interviewee responded
- Conducted capacity building for midwives on Emergency Obstetric Care (Emonce),
- Conducted trainings for traditional healers, in laws, Community councils and Community Health Workers on Mother Neonatal and Child health care.
- Community gatherings conducted in 7 villages

Methodology

Quantitative method was used to collect data. In this section of the plan we examine the competition that the Hospital faces at Health Service Area (HSA) level. The objective of these two exercises was to obtain information which would inform and enrich the process of developing detailed activity plans.

Background and method analysis

Below we describe how the work was done before going on to look at the results.

A competitor analysis was conducted over a period of two weeks during which interviews were carried with inpatients and outpatients. These included:

1. Seboche Hospital;
2. St. Peters Health Centre

In all 120 patients were interviewed. Of these 100 were interviewed at Seboche Hospital itself. Only 95 returned the questionnaires, 15 respondents were from outside the catchment area therefore their responses were rejected leaving he total of 80 respondents. At St Peter H/C all of them returned completely filled. At Seboche hospital, 55% of interviewees were outpatients, 25% were lactating mothers in MCH and 5% were inpatients. 15% were at St Peters H/C both outpatient and lactating mothers in MCH. This distribution should be treated as statistically significant.

Four people were engaged in data collection. Tools used to gather information were a questionnaire, for inpatients and outpatients, and open-ended interviews with traditional doctors, local council, Political leaders and chiefs. Data from the questionnaires were entered onto the computer and then analysed using the Statistical Package for the Social Science (SPSS). Responses to the open-ended interviews were recorded on field notes and typed up.
Description of the site

Seboche Mission Hospital is located in Botha-Bothe District, in the northern region of the country. It is a non-profit Roman Catholic health institution, owned by the Diocese of Leribe, under the administration of Sisters of Charity of Ottawa. It is one of nine facilities that fall within the jurisdiction of the Christian Health Association of Lesotho (CHAL).

The hospital serves a catchment population of about 14,200 as per 2016 population projections, people distributed throughout 31 villages. There are total of five health centers that are supervised by the hospital of which four belong to government of Lesotho. It has a total number of 160 employees, 6 general practitioners and 38 Nursing Sisters and 40 Nursing Assistants.

Seboche Mission Hospital is providing various services such as: Out Patient, Hospitalization (Female ward, Male ward, Pediatric ward, Maternity, High Care Unit for acute and critically cases, TB ward), Surgical services, Investigation (X-ray, Laboratory), Dental care, Ophthalmic nursing, Primary Health Care (PHC) which includes Maternal and Child Health (MCH), pastoral care, HIV Testing & Counseling, Environmental health and Social welfare services.

Description of experiments done

The study was implemented in 5 villages. These villages were randomly selected from a preconfigured list of villages that lay within 5-10 km distance from Seboche Hospital and were accessible by road.

The methods chosen were a review of the delivery registers, a focus group discussion (FGD), and a structured questionnaire and interviews. The information gathered from the opinions of the community leaders who participated in the structured interview were useful to finalize a structured questionnaire. The first version of the questionnaire consisted 10 items, and it was translated from English to Sesotho by two nurses, who were also oriented on interview. The questionnaire was tested in two respondents. It was observed that there was no bias on the questionnaire Thus, the final questionnaire consisted of 10 items.

Description of statistical methods used: Data used was abstracted from the delivery register that is used routinely by the health workers to capture patient care and treatment data. These included quarterly reports from April to September 2016.

Results

105 women were interviewed within 2 weeks of October 2016, 80 from Seboche Hospital and 25 from St Peter H/C. Gender, age, number of parity, education, ethnic group, and religion were the basic demographics collected. All the respondents were Christians. The mean age of the mothers was 35 years. Three women were illiterate so they were assisted to fill the questionnaire. 31 had attended primary school, and 41 mothers had attended secondary school 28 had attended high school and 20 did tertiary education. In terms of facility based delivery, 60 clients reported to have been satisfied with the services they get at Seboche Hospital and 23 from St Peter H/C.

However, there was a general trend among the mothers to mention the issue of nurse’s attitude during labour, 12 mothers from Seboche Hospital and 3 from St Peter H/C. Some mothers related the concept of economic crisis and premature labour. Observationally, there is still a continuous ignorance to our community despite health education provided daily at Out Patient, over the media and during community gatherings where the issue of free services is repeatedly done in the clinics and at the hospital for those who are indigents.

ALL IN ALL the questionnaire wanted respondents to elaborate on how are services offered by the maternity department in the hospital. 77.92% showed that services offered are EXCELLENT, 6.49 rated it POOR and 15.58 rated it FAIR.

There were issues raised by respondents that raider our Institution’s performance less than 85% which is our bench mark. The reasons being newly qualified staff 33.2%, bad attitude of nursing staff 66.4%. At St Peter Only 6 (24%) respondents delivered at the clinic with
satisfaction rate of 83%. 14 (56%) delivered at Seboche Hospital with the satisfaction rate 85.7%, 2 (14%) of them were not satisfied. The remaining 5 (20%) conducted home delivery reasons being low socio economic status, women's lack of decision-making autonomy regarding childbirth and depend on the mothers in laws, delivered before arrival to the facility and that the facility by then was not conducting deliveries, and premature labouring with transport scarcity and long distances.

Discussion

Out of 80 local respondents from Seboche Hospital, 73% got maternity services at the facility shows that at average 73% of respondents against 27% who got them elsewhere. This is a significant percentage that really need consideration. In comparison, St Peter H/C during the study rated at 24%.

Consistency of results with other resources

According to Lesotho Demographic Health Survey (LDHS) 2014, report shows that as much as there is an improvement but higher-order births are much more likely to be home deliveries. Only 49% of sixth or higher-order births occurred at a health facility, compared with 85% of first births.

Traditional birth attendants retain an important role in reproductive and maternal health in Tanzania. The Tanzanian Government promotes TBAs in order to provide maternal and neonatal health counselling and initiating timely referral, however, their role officially does not include delivery attendance. Yet, experience illustrates that most TBAs still often handle complicated deliveries. *BMC Pregnancy childbirth* 2013. Published online 2013 February 28

Despite the policy change stopping traditional birth attendants (TBAs) from conducting deliveries at home and encouraging all women to give birth at the clinic under skilled care, many women still give birth at home and TBAs are essential providers of obstetric care in rural Zambia. *Sia Lubanje C, Massar K, Hamer DH, Ruiter RA BMC Pregnancy childbirth* 2015.

Necessity of further research

Looking at the outcome of the survey the key points to consider or to focus are the midwife’s attitude being the highest. It is the duty of the hospital to identify the contributing factors to have bad attitude to the clients by some of the midwives. In regard to young newly qualified nurses which is the second highest, more research should be done to find out what about them and what should be done in order to influence the community to come for facility based deliveries. Engagement of all stakeholders also would help to come up with the positive results for proper use of the facility. Apart from use of questionnaires, also consider focus group discussion with community leaders in all directions inclusive of Village health workers, traditional healers, traditional birth attendants, Church leaders close family members.

Conclusion

Our findings suggest a need to train our nurses on Excellent Customer Care (ECC) to new staff and perform refresher training annually. Empowering pregnant women with decisionmaking skills regarding childbirth and to lower barriers that prevent them from going to the health facility. There is also need to improve the quality of existing facility-based delivery services and to strengthen linkages between TBAs and the formal health system.

Figures and tables

It is the hospital norm and culture to review its health care services annually, hence the same principle applied this year of 2016. The hospital conducted a study where a questionnaire was developed and at random administered to public to gather data. A data collection tool was designed to gather information to all respondents irrespective of religion, nationality either married or not. A questionnaire was age restricting, that is, it was not filled by people less than 15 years of age and above 70 years of age and also gender restricted, only
females were allowed to participate. This year the focus was on Mother-To-Child services, particularly in maternity department. The findings were as follows:

**The table below presents the coverage of data**

<table>
<thead>
<tr>
<th>AGE (in years)</th>
<th>NUMBERS</th>
<th>PERCENTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-20</td>
<td>10</td>
<td>12.5%</td>
</tr>
<tr>
<td>21-35</td>
<td>35</td>
<td>45.45%</td>
</tr>
<tr>
<td>36-40</td>
<td>7</td>
<td>9.10%</td>
</tr>
<tr>
<td>41-55</td>
<td>16</td>
<td>20.78%</td>
</tr>
<tr>
<td>59-70</td>
<td>12</td>
<td>15.58%</td>
</tr>
</tbody>
</table>

The table above presents number of participants in their various age groups irrespective of their gender. The findings illustrate that majority of participants were people aged between 21-35 years followed by group of 41-55 years. The least participated group found to be 15-20 years of age. Participants were all Basotho women.

![Figure 1.](image.png) The figure above shows marital status of the participants and the most dominating participants are married women.
Educational level

The respondents were selected irrespective of their educational background as the table shows, though illiterate respondents did not participate, the reason being the questionnaire was issued and filled by individuals. Secondly data was collected not using an interview technique.

Population target in this survey were people residing in villages around Seboche Mission Hospital and the table below represents in numbers participant from these villages.

<table>
<thead>
<tr>
<th>VILLAGES PARTICIPATED</th>
<th>NUMBER OF PARTICIPANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEBOCHE</td>
<td>20</td>
</tr>
<tr>
<td>LISELENG</td>
<td>17</td>
</tr>
<tr>
<td>PARAMENTE</td>
<td>11</td>
</tr>
<tr>
<td>CHABA</td>
<td>8</td>
</tr>
<tr>
<td>KHUKHUNE</td>
<td>11</td>
</tr>
<tr>
<td>LEBESA</td>
<td>8</td>
</tr>
<tr>
<td>KHAEBLE</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>80</td>
</tr>
</tbody>
</table>

The table clearly shows that only few participants participated in the study.

Another factor the questionnaire looked at was “parity” so the table below demonstrates the results.
Table 4

<table>
<thead>
<tr>
<th>PARITY</th>
<th>RESPONDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td><strong>80</strong></td>
</tr>
</tbody>
</table>

The other factor the questionnaire is looking at was to know place of birth, either in hospital or at home or at the clinic. The respondents responded as 3 had home deliveries, 68 had deliveries at hospital, 7 at the clinic and 2 did not respond to the question.

Assumptions

They may have no children.
They may be waiting mothers.

The questionnaire wanted respondents to elaborate on how are service offered by the maternity department in the hospital, 77.92% showed that services offered are EXCELLENT, 6.50% rated it POOR and 15.58 rated it FAIR.

There were issues raised by respondents that raider our institution’s performance less than 85% which is our bench mark. The graph bellows display them.

Figure 2

Recommendations were provided by each participant and they are as follows:
1. Bring back former nurses
2. Maintain good standard performance of health care deliveries
3. High incidences of caesarean section

The same study was conducted at St. Peter’s Health centre as well. This health centre is a branch to Seboche Mission Hospital and their results are as follows:
The table below presents the coverage of data

<table>
<thead>
<tr>
<th>AGES (in years)</th>
<th>NUMBER OF PARTICIPANTS</th>
<th>PERCENTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-20</td>
<td>4</td>
<td>12.12%</td>
</tr>
<tr>
<td>21-35</td>
<td>21</td>
<td>63.64%</td>
</tr>
<tr>
<td>36-40</td>
<td>3</td>
<td>9.09%</td>
</tr>
<tr>
<td>41-55</td>
<td>4</td>
<td>12.12%</td>
</tr>
<tr>
<td>56-70</td>
<td>1</td>
<td>3.03%</td>
</tr>
</tbody>
</table>

The table above indicates that the most participated group is 21-35 years age group, of which the age is considered to be a child bearing group. Comparatively the two institutions have similar group coverage though the difference is with the age group 15-20 years which is the second leading at St. Peter’s health centre.

Marital status

![Marital Status Percentiles](image)

**Figure 3.**

The figure above graphically indicates that most participants were married women. The results are similar to the hospital findings as well. All participants also were Basotho women.

Educational background

<table>
<thead>
<tr>
<th>LEVEL OF EDUCATION</th>
<th>NUMBER OF PARTICIPANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY</td>
<td>13</td>
</tr>
<tr>
<td>SECONDARY</td>
<td>14</td>
</tr>
<tr>
<td>HIGH SCHOOL</td>
<td>5</td>
</tr>
<tr>
<td>TERTIARY</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>33</td>
</tr>
</tbody>
</table>
The table tabulates educational background and it clearly shows that no illiterate women participated and the result holds, data was not collected using an interview technique, but a questionnaire was administered to participants to fill it freely.

Similarly the study focused to villages near or around the health centre. This was to see how people residing around the area, utilizing St. Peter’s health service are rating the services. The table below tabulates villages participated and number of participants in each village.

**Table 7**

<table>
<thead>
<tr>
<th>VILLAGES</th>
<th>NUMBER OF PARTICIPANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘MOTENG</td>
<td>7</td>
</tr>
<tr>
<td>SEBATAOLONG</td>
<td>3</td>
</tr>
<tr>
<td>HA HLAKACHA</td>
<td>4</td>
</tr>
<tr>
<td>HA PHAKELA</td>
<td>5</td>
</tr>
<tr>
<td>MALEFILOANE</td>
<td>3</td>
</tr>
<tr>
<td>HA-MOLAPO</td>
<td>11</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

The table shows that most of the participants were from Ha-Molapo, being a village in which the health centre is located.

Parity was another factor assessed in the study where participants were asked to say how many children they have and their place of birth as well. The participants parity found as table presents below.

**Table 8**

<table>
<thead>
<tr>
<th>PARITY</th>
<th>NUMBER OF PARTICIPANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

**Place of delivery**

The figure below shows that majority of respondents delivered at hospital, at the clinic and at home respectively. Most of the respondents might have delivered their children in hospitals because in past two years the clinics were not offering delivery service therefore St Peter’s as well.
References

[1]. Lesotho Demographic Health Survey 2014
[2]. BMC Pregnancy childbirth 2013. Published online 2013 February 28
[3]. data.unicef.org> statistics by topic> maternal health updated in June 2016
[4]. SiaLubanje C, Massar K, Hamer DH, Ruiter 2015
Significance of Effective Communication During Health Education in Nursing

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Summary

This study contributes to knowledge of nurses about communication as it is very vital and the landmark of any organization. Effective communication helps to improve quality of care given to patient and makes continuity in patient care more effective and the communities at large develops confidence in the profession, make early diagnosis easy and promotes the image of the medical field.

The study also emphasizes the important of effective communication between nurses, patients and other healthcare workers during health education as it is vital for client safety, disease prevention, curative and health promotion.

Nurses are also employed to learn good communication skills as lack of guidelines or format may contribute to medical errors as a result of communication problems.

Background of study

Communication, which is a dynamic reciprocal process of sending and receiving messages. Which is from the cry of a new born to the whispering of a dying person, has existed since the beginning of human being, but it was not until the 20th century that people began to study the process. Communication which is the transfer of information occurs at different levels in institutions, organization and fields, in different ways and for most beings as well as certain machine. Communication as a study or discipline was formed from three other major studies.

Communication studies focus in communication as central to the human experience, which involves understating how people behave in creating exchanging and interpreting message. Communication is the bases for a continuity of patients care and for team work among the staff; it is the exchange or sharing of information between two or more parties.

Effective communication both verbal and written is fundamental to organization management of a patients been given health education. Therefore effective communication skill is essential in health educating patients on the mode of disease transmission, prevention, treatment and curative in nursing practice so as to maximize the potentials for health of clients

Research questions

1. Can effective communication help to improve Patients awareness of disease?
2. Are there barriers to effective communication between the nurse, patient and other healthcare workers during health education?
3. Are the various types of communication skills utilized by nurses, during health education?

Objective of the study

• To ascertain the relevance of effective communication health education.
• To know the existing communication pattern between nurses, patients and other healthcare workers during health education.
• To determine mechanism that can be adopted by the nursing and other healthcare team to improve their communication.
• To discover the communication skills that will be useful by nurse and other healthcare team for the improvement of patients care.
Method

Methodology

This chapter discusses the research design, study setting, target population, sample and sampling technique, instrument development, validity and reliability of instrument, method of data collection, data analysis and ethical consideration.

Research design

The research design adopted by the researcher was a non-experimental design.

Research setting

This research was carried out among Nurses, Out-Patients and other healthcare workers mostly the domestic staff at the Matsanjeni health Centre, Lavumisa, Shiselweni Region. The hospital is located along Nhlangano –South Africa Express Road. The hospital was commissioned in 1992 as a 42 beds hospital and currently having a mini theatre, Public Health Department, Tb Clinic for Drug Sensibility Tuberculosis (DS-TB) and Drug Resistant Tuberculosis (DR-TB), ART Clinic for HIV/AIDS patients and a Maternity, X-Ray department, Dental Clinic and other non-medical departments.

The Shiselweni Region is bounded by Lubombo Region at the East, Manzini at the South, Kwazulu-Natal (South-Africa) at the North and West. It serves one of the mother’s facilities to the baby clinics in the region and also receives patients from the regions of Swaziland and provinces in South Africa. It also serves as a clinical practice center for some student nurses in the neighboring school of nursing and science and technology school.

A total of 12 Nurse were used due to the shortage of staff nurses thereby resulting in minimal number of nurses present at the research was been conducted. Sample size was calculated based on the number of questionnaires distributed. 100 questionnaires were distributed because the facility is in a rural area and it's not as populated as the urban thereby leaving the Out Patients Department with less load of patients.

Nurses types of skill

The total number of nurses used for the researched were 12, (2 BScN, 4 RNM, 4 RGN and 2 Nurse Assistants). There is need for upgrade for the nurses especially the RNM, RGN and N/A to BScN, because at BSc level nurses are taught communication skills and manners in order for them to be able to deliver messages to all the clients at their different levels of understanding. In addition, there is also the need for continuing professional developmental and in services training.

Target population

The target population for this study comprises of the nurses, patients and other healthcare providers.

Sampling technique

The researcher adopted a non probability convenient sampling technique in selecting the participants for the study among the healthcare workers and patients at the Out-Patients Department as a port of entry in the hospital. The sample size was based on the number of staff and patients seen during their morning review.

Instrument for data collection

After an in-depth literature review, the researcher designed a structured questionnaire. The researcher derived the questions from the literature review, from the researcher’s observations and from consultation with the supervisor. The questionnaire was made up of the introduction, demographic data, and data subject matter.
Validity and reliability

The instruments were developed initially by the researcher and were given to the supervisor for correction to ensure that it covers the scope of the research to ensure content, criterion and construct validity and also to obtain necessary information.

A pilot study was carried out at TB Clinic and was found reliable based on their responses.

Method of data collection

The questionnaire was distributed to the subjects by the researcher after their consent had been obtained following a comprehensive briefing about the objective of the research. Enough time was given to enable respondents complete the questionnaire before retrieving the completed questionnaire conveniently.

Method of data analysis

Data was analyzed after they have been gathered. The descriptive type of statistics was used to summarize and describe the data collected. The gathered data were presented using frequency distribution tables, percentage, pie chart, bar chart and histogram for easy understanding.

Ethical consideration

The researcher introduced and explained the nature of the study and its purpose to the respondents. Approval from subjects was sought before administering questionnaire. Columns for names, initials, address and signature were not provided in the instrument, thus ensuring privacy, anonymity and confidentiality in every aspect.

Analysis of data

This presents the data analysis and interpretation. The statistics are presented in frequency tables, histogram and pie chart. A total of 100 questionnaires were distributed and were retrieved. The researcher collected data from the respondents using structured questionnaire and the findings are discussed in numerical sequence, according to the format of the questionnaire.

Importance of the study

Effective Communication is the backbones of disseminating information to patients’. Nurses creates the vision support the strategies and are the catalyst for developing the individual bench strength to improve the patients quality care. Communication Process allows us to interact with other people; without it, we would be unable to share knowledge or experience with anything outside of ourselves.

Communication is a part of everyday activities and exempts no one that is why it is important to understand how to communicate effectively especially to first timers in the hospital or to a community where there is a disease outbreak. This study is aimed at understanding the significance of communication when giving of health education in nursing.

It is also aimed at finding solution to the factors responsible for ineffective communication, thereby creating a clear and open communication network between nurses, patients and other health care workers.

This research study will serves as a reference to other researchers on related topics.
Scope of study

This research study is limited to Out-patient department patients’ nurses and other healthcare workers of Matsanjeni Health Centre, Lavumisa Shiselweni Region, Kingdom of Swaziland, Southern African Development Commission (SADC).

Limitation

Factors such as inadequate finance, academic activities, language barrier and the time frame for this research tended to limit this study.

Literature review

Definition of communication varies widely, but with similar ideas. Communication is a process of sending information, idea, emotion, ability and so on (Berelsondan Stainer: 1964). Lievrouw (2007) defined communication as the process of sharing ideas, information and messages with others in a particular, place and time. It includes writing and talking as well as facial expression, body movement or gesture.

Communication means good understanding of another and makes for good relationship. It is fundamental to the organizational management of any establishment which makes it important in the operating theatre because the operating theatre personnel do no work in isolation and since they must work with someone, they must communicate effectively and efficiently. To achieve organizational goals, there must be good interpersonal relationship for smooth running of the theatre and success of surgeries.

Nurses and doctors who communicate effectively are better able to collect data for assessment and initiate interventions, evaluate outcomes of interventions, initiate changes that promote health, and prevent legal problems associated with medical practice (Huntington, 2010).

Purpose of communication

People communicate for many reasons. We communicate to inform, instruct, command, change, seek opinion, persuade, influence, educate, entertain, guide and control other people’s view as well as changing the opinions and to obtain information.

Communication is very important function to manage any organization whether it is small or large. In other words, nothing happens in management until communication takes place.

Effective communication

This is a two way process… sending the right message and to the right person. It is important to know the psychology of the people you are talking with, especially as a healthcare worker for there to be an effective interaction.
Quality of effective communication

A good communication process must be:

- Candid
- Complete
- Concise
- Clear
- Concrete
- Cautious
- Correct (accurate) (Lievrouw, 2007).

Communication is about the conscious transmission of information between parties. Frequently, what one party means to say is misinterpreted by the party who is meant to listen therefore for communication to be effective it should contain the above qualities.

Effective communicating starts with the individual understanding the common process. This involves listening and questioning, it involves the degree to which what is intended to be transmitted is actually what is received.

Element of effective communication

In health care, effective communication involves arriving at a shared understanding of a situation and in some instances a shared course of action. This requires a wide range of generic communication skill, form negotiation and listening, to goal setting and assertiveness and being able to apply this generic skill in a variety of contexts and situations.

Effective communication also requires individuals and teams having access to adequate and timely information necessary to perform their role effectively and appropriately.

Multiple players are often involved in the management and delivery of patient care. While there is often an underlying assumption that health professionals are inherently good communicators, the lack of formal training and assessment in this area would suggest otherwise with different technical expertise and communication styles among members of multidisciplinary teams, communicating effectively is considered important if teams are to function optimally and ensure patient safety and quality of care.

Members will have advance technical training and are likely to have different communication styles and this can compromise the effectiveness of communication. Skills development and training may be necessary to improve communication among teams (Berman, 2008).

The provision of feedback among teams assists in continuous improvement, and information feedback provided for the purpose of improving team performance and should focus on behavior not personal attributes and should be constructive and timely.

The purpose of communication

It is the broadest sense; the purpose of communication in an enterprise is to effect changes to influence action towards the welfare of the enterprise.

Communication is essentially for the internal functioning of enterprises because it integrates the managerial functions.

Communication is needed to:

- To establish and disseminate goals of an enterprise
- To develop plans for their achievement
- To organize human and other resources in the most effective and efficient way.
- To select, develop and appraise members of the organization.
- To lead, direct, motivate and create a climate in which people would want to contribute.
- To control performance.

The communication process

Effective communication involves the following processes:
THE SENDER: The person who is transmitting the information. The originator or initiator, of communication

THE MESSAGE: The information itself and the form it is being transmitted it includes: written communication, verbal communication and non-verbal or signs.

THE RECEIVER: The person who has received the intended transmission of information and provides feedback.

THE FEEDBACK: The reaction of the receiver on the received information. This is very important as it helps in ascertaining whether the message is understood or further clarification is required.

The communication process

Communication can be intra personal or interpersonal. It is intra personal(soliloquy) when it takes place within self and it is interpersonal when it takes places between two or more persons which include one to few, one to many, many to many, many to few, few to few, few to many (Adelaide, 2005).

Communication skill

- Trustworthiness
- Transparency
- Focus and stability
- Objective and fairness
- Confidence
- Leading by example

Dimension of communication

Downward communication: This is the transfer of information from the superior officers to subordinate officers. The top officials pass information or directive to the lower level official in the organization. Examples are from the chief Nursing Officer to the Senior Nursing Officer. The information could be warnings, orders, instructions, policies procedure, methods and directives.

Upward communication: This is the transfer of information from the subordinate officers to the superior officer. It enables an organization to know the concern of the subordinates. Typical means for upward communication besides the chain of command are suggestion systems, appeal, complaint systems, counseling sessions, joint setting of objectives, grape vines, and the practice of open-door policy.

Crosswise communication: Crosswise communication includes the horizontal flow of information with people on the same or similar organizational levels, and diagonal flow, persons at different levels who have no direct reporting relationships.

This kind of communication is used to speed information flow, to improve understanding and to coordinate efforts for the achievement of organizational objectives.

A great deal of communication does not follow the organizational hierarchy but cuts across the chain of command.
Types of communication

There are basically two types of communication

Verbal communication

Verbal communication refers to the form of communication in which message is transferred orally. In this, communication is done by word of mouth. Objective of every communication is to have a people understand what message one is trying to convey (Taylor and Campbell, 2009).

Passing of messages or information effectively through more than two people requires the message to be clear, concise, timely and fitting. Therefore when receiving and giving information, it is necessary to ensure the correct message has been transferred. Oral communication includes face-to-face conversations, speech, telephone conversation, video, radio, television, voice over internet. In oral communication, communication is influenced by pitch, volume, speed and clarity of speaking.

Advantages

- It provide for speedy interchange with quick feedback
- In a face-to-face conversation, by reading facial expression and body language one can guess whether he/she should trust what is being said or not.
- People can ask questions and clarify points.

Disadvantages

- The user is unable to deeply think about what he is delivery.
- It does not save time
- It is not a legal tender
- Reference cannot be made.

- Non-Verbal communication

Non-verbal communication is the sending or receiving of wordless messages. We refer any communication other than oral, such as gesture, body language, posture, tone of voice or facial expressions Non-verbal communication.

- **Nonverbal communication** has the following three elements:
  - **Appearance**: speaker: clothing, hairstyle, neatness, use of cosmetics. Surrounding: room size, lighting, decorations, furnishing.
  - **Body language (kinetics)**: facial expressions, gestures, postures.
  - **Sounds (paralanguage)**: voice note, volume, speech rate, whistling.

Types of communication based on purpose and style

Based on style and purpose, there are two main categories of communication and they both bears their own characteristics. Communication types based on style and purpose are:

- Formal communication
- Informal communication
Formal communication

In formal communication, certain rules, conventions and principles are followed while communicating message. Formal communication occurs in formal and official style. Usually, professional settings, corporate meetings, conferences undergo formal pattern.

In formal communication, use of slang and foul language is avoided and correct pronunciation is required. Authority lines are needed to be followed in formal communication.

Informal communication

Informal communication is done using channels that are in contrast with formal communication channels. It is just a casual talk. It is established for societal affiliations of members in an organization and face-to-face discussions. It happens among friends and family. In informal communication, use of slang words, foul language is not restricted. Usually, informal communication is done orally and using gestures. It does not follow authority lines. Informal communication helps in building relationship.

Written communication

In written communication, written signs or symbols are used to communicate. A written message may be printed or hand-written. In written communication, message can be transmitted via email, letter, report, memo e.t.c. Message in written communication is influenced by the vocabulary and grammar used grammar style, precision, and clarity of the language used.

Written communication is most common form of communication being used in business. So, it is considered core among business skills. For communicating with external environment in writing, electronic mail, internet web sites, letters, proposals, telegrams, faxes, postcards, contracts, advertisements, brochures, and news releases are used. (www.notesdesk.com/notes/business)

Advantages

- It provides records.
- It provides references
- It provides legal defenses.
- It provides uniformity in policy and procedures.
- It can be prepared and directed to large audience.

A written communication enables the receiver to fully understand it and send appropriate feedback.

Disadvantages

- Unlike oral communication, written communication does not bring instant feedback.
- It may be poorly expressed by ineffective writers.
- It takes more time in composing a written message as compared to word-of-mouth and number of people struggles for writing ability.
- Written communication constitutes problem to those who cannot read. It is also a problem to the blind unless Braille is employed.

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Function of communication

It helps in passing of information in an organization
It serves as a medium of interaction thereby bringing people together in an organization.
Communication satisfies most needs, physical, identity and social needs.
It is used for persuasion in resolving conflict
It is an instrument of motivation
It facilitates the development of skill, attitude and values of workers.
Communication is used for advancing and warning
It is an instrument of change in an organization (Adelaide, 2007).

Criteria for effective communication

The following criteria may foster communication between professionals.

- **Feedback**: Lewis (2010) defines feedbacks as using people responses to see how they are doing and to evaluate what is getting to the learner or subordinate.
- **Listening ability**: If the receiver do not listen well there is no way the message will be digested and understood not to talk of giving feedback.
- **Appropriate**: This means that the reply circumstances is relevant and is meant to initiate statement. Communication is effective when the language used is simple and when the instrument are clear, agreed upon and understood by those involved.
- **Efficiency**: This means that the sender/receiver must time his/her message adequately giving the receiver time to evaluate the message and transmit a response.
- **Flexibility**: This means there is neither exaggerated communication or exaggerated permissions message are not redundant and information not lost.

Impact of communication in health care

1. **Diagnostic accuracy**
   
   Most diagnostic decisions come from the history-taking component of the interview. Yet, studies of clinician-patient relationship visits reveal that patients are often not provided the opportunity or time to tell their history.

2. **Adherence**

   This is the extent to which a patient’s behavior corresponds with agreed upon recommendations from a healthcare provider. This is achieved through effective communication.
3. Patient satisfaction

The core elements comprising patient satisfaction include: expectations, control, decision-making, time spent, clinical team, referrals, continuity of care and dignity.

4. Patient safety

Research conducted during a 10 year period of 1995-2005 has demonstrated that effective team communication is the root cause of nearly 60 percent of all medical errors, in Australia (Williams, 2008). This means that patient’s safety is ensured with good communication.

5. Team satisfaction

Communication among healthcare team members influences the quality of working relationships, job satisfaction and profound impact on patient safety.

6. Eliminate malpractice risk

According to Huntington and Kulm (2009), the ‘root cause’ of malpractice claims is a breakdown in communication between nurses, patients, and other healthcare workers during health education. Effective communication eliminates the chances of forgetting surgical instruments in patients’ cavities.

Barriers to effective communication

- **Serial distortion:** It can be semantic or poor construction. Semantic are distortion arising from the use of ambiguous words which convey different meaning. Example, Gait/Gate, Course/Cause. Poor construction such as choice of words, lack of coherence, poor organization and structuring of the message, technical concept.
- **Noise:** Noise in the operating department can be either internal or external. Internal noise refers to a physiological or psychological state which can be stress, work pressure or personal issue. External noise could be from staff holding unrelated conversations, power tools, suction and others equipment noise levels in the operating room.
- **Information overload**
- **Wrong timing:** Factual information should be timely disseminated. Message released at inappropriate time are ineffective.
- **Premature judgment:** When a receiver jump into conclusion about what it intended to be sent or being transmitted, such lastly judgment reduces understanding and effectiveness.
- **Inconsistent verbal and non-verbal use:** When this becomes incongruent or not aligned, communication may be distorted.
- **Break in communication link:** When the channel of communication gets clogged, slowed or break down, the message may not reach the destination early enough or not getting at all to the receiver.

Other barriers include

- Lack of planning
- Status difference
- Selective perception/individual bias
- Verbal difficulties
- Inadequate machinery for communication
- Lack of proper documentation.

Strategies for overcoming ineffective communication

Using the feedback loop
Simplifying and use of understandable language
Listening attentively
Constraining emotions  
Aligning verbal and non verbal cues  
Appropriate timing  
Training employees in relevant communication techniques  
Developing the right attitude to communication techniques  
Setting up appropriate machinery for communication

**Communication among health professionals**

Maxfield et al (2008), on a study titled “Silence Kills” show that more than 60% of medication errors are caused by mistakes in interpersonal communication. How effective their conversations were, related strongly to medical errors, client’s safety, quality of care, staff satisfaction, and turnover. The study showed that those health care workers who were confident in their communication abilities to discuss their concerns with their co-workers were more satisfied and committed to staying in health care.

**Theoretical frame work**

The researcher applied Lasswell’s Model of Communication in this study. According to Harold Lasswell (1948), a convenient way to describe an act of communication is to answer the following question.

“Who” refers to the communicator who formulates the message; “what” is the content of the message; “channel” indicates the medium of transmission; “whom” describes either an individual recipient or the audience of mass communication; “effect” is the outcome of the message. The movement of the message travels from the communicator to the audience.

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>ELEMENT</th>
<th>ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who?</td>
<td>Communication</td>
<td>Control analysis</td>
</tr>
<tr>
<td>Says what?</td>
<td>Massage</td>
<td>Content analysis</td>
</tr>
<tr>
<td>In which channel?</td>
<td>Medium</td>
<td>Media analysis</td>
</tr>
<tr>
<td>To whom?</td>
<td>Audience</td>
<td>Audience analysis</td>
</tr>
<tr>
<td>With what effect?</td>
<td>Effect</td>
<td>Effect analysis</td>
</tr>
</tbody>
</table>

**Result**

**Section A: Demographic data**

**Question 1: Respondents’ sex**

<table>
<thead>
<tr>
<th>SEX</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>42</td>
<td>42%</td>
</tr>
<tr>
<td>Female</td>
<td>58</td>
<td>58%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4.1. The above table shows that 42(42%) of the respondent were male while 58(58%) were female.
Question 2: Respondent’s age

Table 4.2

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-25</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>26-30</td>
<td>30</td>
<td>30%</td>
</tr>
<tr>
<td>31-35</td>
<td>22</td>
<td>22%</td>
</tr>
<tr>
<td>36-40</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>41-100</td>
<td>18</td>
<td>18%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>
The table and figure above show that 10(10%) of the respondents fall between the ages of 20-25, 30(30%) falls between the ages of 26-30 years, 22(22%) falls between the ages of 31-35 years, 20(20%) falls between ages 36-40 years while 18(18%) of the respondents fall between ages 41 and above.

**Question 3: Respondents’ marital status**

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>32</td>
<td>32%</td>
</tr>
<tr>
<td>Married</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Divorced</td>
<td>09</td>
<td>09</td>
</tr>
<tr>
<td>Cohabitating</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Of the respondents, 32(32%) were single, 18(18%) were married, 09(09%) were divorced while 41(41%) were cohabiting.

**Question 4: Respondents’ profession**

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses</td>
<td>30</td>
<td>30%</td>
</tr>
<tr>
<td>Patients</td>
<td>37</td>
<td>37%</td>
</tr>
<tr>
<td>Other Healthcare Workers</td>
<td>33</td>
<td>33%</td>
</tr>
</tbody>
</table>
Question 4: Respondents’ profession

![Figure 4.2](image)

Figure 4.2. indicates that of the respondents, 30(30%) representing 108° in the pie chart were nurses, 37(37%) representing 133.2° were patients while 33(118.8) were Healthcare workers.

Section B: Data on subject matter

Question 5: Type of communication system the respondents normally use

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal</td>
<td>52</td>
<td>52%</td>
</tr>
<tr>
<td>Nonverbal</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>Written</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>All of the above</td>
<td>16</td>
<td>16%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>
Of the respondents, 52(52%) use verbal communication, 12(12%) indicated nonverbal, 20(20%) indicated written communication, and 16(16%) indicated ‘all of the above’.

**Question 6:** Type of communication that is generally most effectively used among the nurses, Patients and Healthcare workers during Health Education.

**Table 4.6**

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal</td>
<td>80</td>
<td>80%</td>
</tr>
<tr>
<td>Non-verbal</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

From the table 4.6 and figure 4.4 above, 80(80%) of the respondents indicated ‘verbal’ and 20(20%) indicated ‘nonverbal’

**Question 7:** How respondents can describe the type of communication that exists amongst Nurses, Patients and Healthcare workers during health education.

**Table 4.7**

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good</td>
<td>16</td>
<td>16%</td>
</tr>
<tr>
<td>Good</td>
<td>34</td>
<td>34%</td>
</tr>
<tr>
<td>Fair</td>
<td>46</td>
<td>46%</td>
</tr>
<tr>
<td>Poor</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>
From figure 4.5 and table 4.7, 16(16%) described the communication among nurses and patients during health education to be very good; 34(34%) indicated ‘good’, 46(46%) indicated that it was fair, and 4(4%) indicated it was poor.

Question 8: If effective communication aids cooperation during health education

Table 4.8

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>94</td>
<td>94%</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Figure 4.6
From figure 4.6 and table 4.8, 94(94%) of the respondents indicated that effective communication will aid cooperation during health education while 6(6%) indicated ‘no’.

**Question 9:** if respondents observe any barrier in communication between the nurses, patients, and healthcare workers during health education

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>84</td>
<td>84%</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>16%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

From the table above, 84(84%) of the respondents observe barrier in communication between the nurses and patients while 16(16%) did not observe any.

**Question 10:** Barrier the respondents think makes communication more ineffective amongst Nurses, patients and healthcare during health educational

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status/Ego</td>
<td>52</td>
<td>52%</td>
</tr>
<tr>
<td>Workload</td>
<td>18</td>
<td>18%</td>
</tr>
<tr>
<td>Noise</td>
<td>16</td>
<td>16%</td>
</tr>
<tr>
<td>Individual bias</td>
<td>14</td>
<td>14%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

From table 4.10 and figure 4.7 above, 52(52%) indicated Ego, that status makes communication more ineffective among nurses, patients and healthcare during health education, 18(18%) indicated ‘workload’, 16(16%) indicated ‘noise’ while 14(14%) indicated ‘individual bias’.

**Question 11:** If effective communication among nurses, patients and healthcare workers during health education will eliminate unintentional error

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>96</td>
<td>96%</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>
Of the respondents 96(96%) indicated that effective communication among nurses their patients and healthcare workers during eliminate health education, while 4(4%) indicated ‘no’.

**Question 12:** If the respondents think informal communication will improve the communication skills between nurses and patients during health education

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>90</td>
<td>90%</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

From the table above, 90(90%) think that informal communication will improve the communication skills between nurses, patients and healthcare workers during health education, while 10(10%) do not think it will.

**Question 13:** If it is necessary for nurses and other healthcare workers to attend workshop/seminars on how to improve their communication.

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>98</td>
<td>98%</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

From the table above, 98(98%) of the respondents indicated that communication can be improved on by attending workshops/seminars while 2(2%) indicated ‘no’
QUESTION 14: If level of education constitute a barrier to effective communication among nurses and doctors during health education

Table 4.14

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>84</td>
<td>84%</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>16%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Of the respondents, 84(84%) indicated that educational level constitutes a barrier to effective communication while 16(16%) indicated ‘no’.

QUESTION 15: If respondents think effective communication will bring about satisfaction between the nurses and patients during health education

Table 4.15

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>100</td>
<td>100%</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

From the table above, the entire respondents 100(100%) think that effective communication between nurses and patients during health education will bring about satisfaction.
QUESTION 16: If effective communication will eliminate medical errors.

Table 4.16

Of the respondents, 88 (88%) indicated that effective communication will eliminate medical errors while 12 (12%) indicated ‘no’.

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>88</td>
<td>88%</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Results

Answering of research questions

Question 1
Can effective communication help to improve the health education of patients?

From table 4.8 and figure 4.6, 94% of the respondents indicated that communication aids cooperation during health education. All of the respondents from table 4.16 indicated that effective communication will bring about patients’ satisfaction. Maxfield (2005) stated that effective communication among health team members yield a better client outcome.

Question 2
Are there barriers to effective communication between the nurse, patient, and other healthcare workers during health education?

From table 4.9, 84% of the respondents observe barrier in communication between the nurses and patients. From table 4.10, barriers to effective communication amongst the community team were status/ego (52%), workload (18%), noise (16%), and individual bias (14%)
Results
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Question 3
Are the various types of communication skills utilized by nurses and other healthcare workers during health education?

From table 4.5, 56% of the respondents use verbal communication, 20% indicated ‘nonverbal communication’ 12% indicated ‘written’ and 16% uses all communication skills. From table 4.6, the various types of communication skills are used by both nurses and patients and other healthcare workers. 80% of the participants indicated that verbal communication is mostly used while 20% indicated that nonverbal communication is mostly used.

Summary
This study contributes to knowledge of nurses about communication as it is very vital and the land mark of any organization. Effective communication helps to improve quality of care given to patient and makes continuity in patient care more effective and the communities at large develops confidence in the profession, make early diagnosis easy and promotes the image of the medical field.

The study also emphasizes the important of effective communication between nurses, patients and other healthcare workers during health education as it is vital for client safety, disease prevention, curative and health promotion.

Nurses are also employed to learn good communication skills as lack of guidelines or format may contribute to medical errors as a result of communication problems.

Conclusion
Communication is very important in every organization whether it Health Institution Profitable or non-Profitable. Effective communication is the responsibility not only of the sender but also of the receiver of the information. We need to be a good listener, we need to listen actively with our ears and eyes open, hearing what others are saying and understanding their non-verbal communication.

Communication is the transfer of information from the sender to the receiver with the information being under stood by the receiver. Communication is very essential between nurses, their patients and other healthcare providers; hence, no barrier should be permitted since communication contributes to effective quality care. To prevent poor communication, all the personnel should ensure that they have the correct skills to communicate effectively.

The total number of nurses used for the researched were 30 (6 BScN, 8 RNM, 14 RGN and 2 Nurse Assistants). There is need for upgrade for the nurses especially the RNM, RGN and N/A to BScN, because at BSc level nurses are taught communication skills and manners in order for them to be able to deliver messages to all the clients at their different levels of
understanding. In addition, there is also the need for continuing professional developmental and in services training.

The nurses who interviewed during the research are from the cadres of Nurse Assistants through BSc Nursing. Though training is needed in in-service training in order for them to get equipped in effective communication during health education so that they can get the intended message pass to the audience in like manner that it will be received according to their understanding.

For upgrading, the nurses find it difficult because the government give minimal support to them for them to go for higher qualification a they will be asked to resign as well sponsor themselves during the course, thereby making it stressful for them. In Swaziland here, the ministry of health and the nursing council are yet to approve distance learning for their nurses in order for them to go about upgrading to higher levels in nursing without financial constraints. Here I think Texila American University can through my research work make memorandum with Swaziland Nursing Council in order to get their Citizens registered with the school for distance learning programme for upgrading their training without financial hiccups’.

References

[12]. Tyagi Kavita &Misra Padma, Professional Communication, PHI?(2011)
[16]. Kim, H and Yuki G, Relationships of managerial effectiveness and advancement to self-reported and subordinate-reported leadership behaviors’ from the multiple-linkage model. Leadership Quaterly, vol.6 (1995_ pp361-377

Future steps

- Establish Trust: Build some levels of trust in clients/patients in order for them to have positive mind set in their care.
- Speak clearly and concisely. Avoid using ambiguous language.
- Recognise where is like some problems, if its language barrier, get an interpreter.
- Soft tone and body language should be used when communication.
Never assume you know what the client is having in his/her mind, assumptions are common problem in communication.

Identify the communication problem caused by technology.

**Current research work**

- Effective verbal or spoken communication is dependent on a number of factors and cannot be fully isolated from other important interpersonal skills such as non-verbal communication, listening skills and clarification.
- Use standard terminology when communicating information.
- Request and provide clarification when needed.
- Ensure statements are direct and unambiguous.
- Inform the appropriate individuals when the mission or plans change.
- Communicate all information needed by those individuals or teams external to the team.
- Use nonverbal communication appropriately.
- Use proper order when communicating information.
- For formal English-speaking groups

**Future research work**

Communication is the means by which the behaviour of the healthcare workers is modified and change to be effected in their actions. Through communication healthcare workers are motivated attitudes that assist in adherence purposes to achieve the goals, aims and objectives of the hospital and their morale is boosted.

**Effective control**

Communication acts as a tool of effective control. The plans have to be communicated to the healthcare workers and patients, the actual performance has to be measured and communicated to the top management and a corrective action has to be taken or communicated so as to achieve the desired goals.

**Job satisfaction**

Effective communication creates job and patients’ satisfaction as it increased mutual trust and confidence between healthcare workers and the patients.
Midwives’ Knowledge and Practices towards Primary Prevention of Premature Births in a Teaching Hospital in Uganda

Article by Elizabeth Namukombe Ekong

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Introduction

Prematurity has continued to be a threat in neonatal care for the developed and developing countries (Reedy, 2007). Complications of premature births account for 11.1% of all neonatal live births, and for one million deaths per year (Blencowe et al, 2013). In the U.S. where many infections and other causes of neonatal death have been markedly reduced, prematurity is the leading cause of neonatal mortality at 12.4% (Grady, 2009; Kent, 2009). To avoid the 116 million deaths and 99 million survivors with disability by 2035, the number of babies who are small for gestational age (10·4 million in south Asia and sub-Saharan Africa in 2010) must be reduced (WHO, 2014).

Prematurity is associated with significant costs in healthcare, even without considering the costs associated with the complications that occur later in life (Gilbert et al 2003). It places increased costs for the institution towards the care and to the affected families. There is a tremendous psychological impact on the mothers/care takers and health care providers due to increased workload especially in the era of understaffing. Generally, the consequences of prematurity have an impact on the general economy of the country.

Prematurely born infants face the risk of developing complications like respiratory distress syndrome, sepsis, necrotizing enterocolitis and intraventricular haemorrhage; long term complications include bronchopulmonary dysplasia and retinopathy of prematurity (Jitta and Kyadondo, 2008; Randis, 2008). Existing literature indicate that efforts to address the problem has been put on preparing health care providers in secondary management of preterm labour and care for preterm babies after birth. A midwife being key in the care of women/mothers and their new born babies, there was need to establish the knowledge and practices towards primary prevention of premature births to determine the relevant strategies that can be used to address any gaps and contribute to the reduction of premature births and neonatal deaths in Uganda.

Prevention of premature births can be accomplished through preconception counseling which offers an opportunity to identify clients (women) with high risk factors, initiate therapies like folic acid and other prenatal vitamins, vaccinations, nutritional counseling, and commencement of lifestyle modifications like cessation of smoking and alcohol intake which may improve future obstetric outcomes. Other recommendations include: early prenatal care which serves as the preconception care but also provides an opportunity for physical examination where cervical or uterine abnormalities can be identified and interventions sought early, comprehensive ultrasonography to detect other structural deformities or abnormalities of the fetus or the mother (March of Dimes, 2008).

In Uganda, premature births contribute 31% of the total neonatal deaths. Neonatal mortality rate stands at 22 per 1,000 live births (UNICEF, WHO, UN-Population Division, 2015; Li Liu et al, 2014; Wang et al, 2014), and it is the leading cause of neonatal mortality, followed by asphyxia at 27%. In one of the teaching hospitals in central Uganda, premature births accounted for 49.5% of the monthly admissions at the Neonatal Intensive Care Unit (NICU), and an average neonatal mortality of 33% per month (NICU reports for March, April, May, & June, 2010).
Specific objectives

The specific objectives were to assess the knowledge of midwives regarding the risk factors, approaches used, and the benefits of preventing premature births and identify the practices being employed by midwives towards the prevention of premature births in the antenatal units of this teaching hospital.

Methodology

The study used a descriptive cross-sectional approach and employed quantitative methods for data collection. The study population was all midwives working in the antenatal wards of the teaching hospital. Since the population of midwives was small and considering the research ethics of human respect, convenience sampling method was used.

A semi-structured questionnaire with both closed and open ended questions was used to collect data from 29 midwives working in the three antenatal clinics of the hospital on knowledge and their practices towards the prevention of preterm births. Knowledge on prevention of premature births is vast but for purposes of this study, midwives were assessed on the causes/predisposing factors of premature births, approaches used in the prevention of premature births and the benefits of preventing premature births.

Identifying the practice of midwives towards the prevention of premature births focused on the use of antenatal guidelines, ability to identify pregnant women at risk of premature births and offer specific care directed to prevention. Such care would include sharing and providing specific information on prevention of premature birth, availability of such specific information, availability of special room designated for mothers at risk of premature births, and clear strategy for follow up of such mothers.

Study area

The study was conducted at one of the teaching hospitals in Kampala district in Uganda. Kampala is the capital city of Uganda. Hospitals in Uganda are designed to serve all patients/clients requiring services of the different disciplines of medicine: medical, surgical, obstetrics, gynecology, and pediatrics. The hospital where the study was conducted handles cases from the surrounding communities and referrals from other hospitals, making this a large facility with generally higher acuity patient care.

At the time of data collection, three different antenatal clinics existed in this hospital; two for general clients (those who could not afford to pay for the health care services, and one for private clients (able to pay for the health care services either through insurance companies or by themselves). One of the two general antenatal clinics treated women with no or low pregnancy risk, expected to have spontaneous deliveries at term. All general clients (pregnant women) reported to this clinic for screening. Pregnant women found to be at risk were referred to the second general antenatal clinic which had a focus on high risk pregnancies.

Study population

The population included all midwives found in the three antenatal clinics of the teaching hospital. They were Certificate, Diploma & BScN -with diploma in Midwifery holder midwives

Sample size and sampling method

Since the population of midwives in the three antenatal clinics was small (44) and considering the research ethics of human respect, convenience sampling method was used. Convenience sampling entails using the available people as study participants (Polit & Beck, 2008). A final sample of 29 midwives was obtained.
Inclusion criteria
The sample included all midwives from the three categories (Certificate, Diploma & BScN with diploma in Midwifery) working in the three antenatal clinics who were willing to participate in the study.

Exclusion criteria.
All categories of midwives who were working in other maternal child health units other than the antenatal clinics were not included in the study. Student and intern midwives who were working in the antenatal clinics during the time of data collection were not included in the study.

Data collection process
The researcher met the midwives through the ward in-charge during the early morning meetings. The study was introduced and the purpose explained. The midwives who accepted to participate were given consent forms to sign, followed by a self-administered questionnaire after signing and handing on the consent. The researcher agreed with the midwife after how many hours to collect the filled questionnaire, before the midwife signing off duty. The ward in charges were used as research assistants and would receive the filled questionnaires when the researcher was not in that antenatal unit at the time the midwife was ready to hand in the tool. The same approach was used on all the antenatal wards until data was collected from all the midwives who were available during the period of data collection. The duty roster for each antenatal ward was used to determine the midwives who would on duty and when so they would be targeted on such days. Data collection was done for three weeks.

Study instrument
The instrument was developed with the help of experts from Uganda and the US. It included aspects of standardized information on the preventive measures for preterm births, upon which the midwives’ knowledge was measured. The standard practice for the prevention of preterm births was extracted from the National Standard Guideline for Antenatal Care (WHO, 2006) and designed in the form of a questionnaire to assess which of them the midwives employed during their practice. Pender’s Health Promotion Model guided the selection of the dependent and independent variables (Pender, 2008). The instrument was tested in one of the district hospitals with similar categories of midwives and reliability was ensured.

Data management and analysis
The completed questionnaires were collected by the researcher and research assistants from the midwives. They were checked then kept in a safe water proof bag until the researcher accessed the personal lockable cupboard. The ward in-charges also had water-proof bags where they put the filled tools and locked them up until the researcher collected them. The collected questionnaires were given identification numbers in terms of serial numbers and they were numbered to 29.

Using Epidata, a questionnaire, record, and check files were developed. Most of the questions were already coded and so data was entered using the codes. Validation was done by entering data twice in the Epidata software. The two files were validated and the results showed that both had the same file name, file label, and file date. The two files had same fields, no field was excluded in either file, and no records were missing in both files. Both files had the same numbers of: common records which were 29; fields checked per record which were 53; and total fields that were checked which were 1537. The validation revealed that 5 out of the 29 records had errors (17.24%), and 7 out of 1537 fields had errors (0.46%). After validation, the final file was exported to SPSS for data presentation and statistical analysis.
The information generated in the different sub-sections of the questionnaire included: demographic data, knowledge and practices of midwives. The data were presented in tables and narratives. Statistical analysis with the help of a statistician was done to interpret the findings.

In the section of knowledge, midwives were assessed on the knowledge of high risk factors for premature births, approaches that can be used to prevent premature labour/delivery, use of guidelines/standards of care in the antenatal clinic, and what guides midwifery practice. A midwife was regarded to have adequate knowledge towards the prevention of premature births if she scored 75% of the given questions, and inadequate knowledge if she scored below 75%. In Uganda, a score of 75% is accepted as excellent work both in academics and skills performance.

**Results**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in Years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 30</td>
<td>1</td>
<td>3.4</td>
</tr>
<tr>
<td>31 - 45</td>
<td>14</td>
<td>48.3</td>
</tr>
<tr>
<td>46 - 60</td>
<td>11</td>
<td>37.9</td>
</tr>
<tr>
<td>Education Level:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...O’level</td>
<td>24</td>
<td>82.8</td>
</tr>
<tr>
<td>A’ level</td>
<td>5</td>
<td>17.2</td>
</tr>
<tr>
<td>Qualification:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registered midwife</td>
<td>21</td>
<td>72.4</td>
</tr>
<tr>
<td>Registered nurse/midwife</td>
<td>4</td>
<td>13.8</td>
</tr>
<tr>
<td>Enrolled midwife</td>
<td>4</td>
<td>13.8</td>
</tr>
<tr>
<td>Total working experience:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-10 years</td>
<td>4</td>
<td>13.8</td>
</tr>
<tr>
<td>11-15 years</td>
<td>8</td>
<td>27.6</td>
</tr>
<tr>
<td>16-20 years</td>
<td>6</td>
<td>20.7</td>
</tr>
<tr>
<td>Above 20 years</td>
<td>11</td>
<td>37.9</td>
</tr>
<tr>
<td>Working experience in ANC:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 years</td>
<td>24</td>
<td>82.8</td>
</tr>
<tr>
<td>6-10 years</td>
<td>4</td>
<td>13.8</td>
</tr>
<tr>
<td>Above 15 years</td>
<td>1</td>
<td>3.4</td>
</tr>
<tr>
<td>Marital status:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>14</td>
<td>48.3</td>
</tr>
<tr>
<td>Single</td>
<td>7</td>
<td>24.1</td>
</tr>
<tr>
<td>Widowed</td>
<td>5</td>
<td>17.2</td>
</tr>
<tr>
<td>Separated</td>
<td>3</td>
<td>10.3</td>
</tr>
</tbody>
</table>

Of the 29 midwives who participated in the study, 3 did not indicate their age. The lowest age was 25 and the highest 59. The mean age of the respondents was 44.4 (SD = 8.5) years. Table 1 show that there were about 40% of midwives in their late 40s and above. Basically, it was an older population, mostly of O’level education and with longer working experience.

Most the midwives (82.8%) joined the profession after O’level; most of them (72.4%) were registered midwives, and 37.9% had worked for more than 20 years; no midwife in the antenatal clinics had a total working experience of less than six years. Only 3.4% had worked in an antenatal clinic for more than 15 years.
Midwives’ knowledge on prevention of preterm births

The midwives’ knowledge about the prevention of preterm births was tested in three areas: knowledge about the risk factors for preterm births, approaches for preventing preterm births, and the likely benefits of preventing preterm births. In all the three tested areas, the participants were asked to indicate whether the options provided were correct or wrong by ticking “Yes” or “No” respectively.

**Table 2. Midwives Knowledge on risk factors of Preterm Births**

<table>
<thead>
<tr>
<th>Options for risk factors of PTB</th>
<th>Frequency / Percentage (N= 29)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Multiple pregnancy</td>
<td>28 (96.6%) 1 (3.4%)</td>
</tr>
<tr>
<td>History of previous preterm birth</td>
<td>28 (96.6%) 1 (3.4%)</td>
</tr>
<tr>
<td>Gestation hypertension</td>
<td>28 (96.6%) 1 (3.4%)</td>
</tr>
<tr>
<td>Febrile disease during pregnancy</td>
<td>27 (93.1%) 2 (6.9%)</td>
</tr>
<tr>
<td>Emotional stress</td>
<td>27 (93.1%) 2 (6.9%)</td>
</tr>
<tr>
<td>History of &gt; one abortion</td>
<td>26 (89.7%) 3 (10.3%)</td>
</tr>
<tr>
<td>HIV in pregnancy</td>
<td>24 (82.8%) 5 (17.2%)</td>
</tr>
<tr>
<td>Smoking during pregnancy</td>
<td>21 (72.4%) 8 (27.6%)</td>
</tr>
<tr>
<td>Alcohol intake during pregnancy</td>
<td>16 (55.2%) 13 (44.8%)</td>
</tr>
<tr>
<td>Low socioeconomic status</td>
<td>16 (55.2%) 13 (44.8%)</td>
</tr>
<tr>
<td>Unstable marital relationship</td>
<td>14 (48.3%) 15 (51.7%)</td>
</tr>
<tr>
<td>Young mothers(&lt;18 years)</td>
<td>13 (44.8%) 16 (55.2%)</td>
</tr>
<tr>
<td>Elderly mothers (&gt;35 years)</td>
<td>13 (44.8%) 16 (55.2%)</td>
</tr>
<tr>
<td>Severe bleeding on previous delivery*</td>
<td>10 (34.5%) 19 (65.5%)</td>
</tr>
<tr>
<td>Abnormal lie or presentation*</td>
<td>3 (10.3%) 26 (89.7%)</td>
</tr>
</tbody>
</table>

*Were not considered as risk factors for premature birth

**Table 3. Midwives’ Knowledge on Approaches for Preventing Preterm Births**

<table>
<thead>
<tr>
<th>Approaches for preventing preterm births</th>
<th>Frequency/Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Sensitizing mothers risk factors of PTB</td>
<td>29 (100%) 0</td>
</tr>
<tr>
<td>Avoiding intensive physical exercises</td>
<td>25 (86.2%) 4 (13.8%)</td>
</tr>
<tr>
<td>Folic acid administration</td>
<td>18 (62.1%) 11 (37.9%)</td>
</tr>
<tr>
<td>Genital health</td>
<td>16 (55.2%) 13 (44.8%)</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>7 (24.1%) 22 (75.9%)</td>
</tr>
</tbody>
</table>

**Table 4. Midwives Knowledge on the Likely benefits of preterm birth**

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved national economic status</td>
<td>25 (86.2%) 4 (13.8%)</td>
<td></td>
</tr>
<tr>
<td>Reduced hospital workload</td>
<td>24 (82.8%) 5 (17.2%)</td>
<td></td>
</tr>
<tr>
<td>Increases full term pregnancies</td>
<td>21 (72.4%) 8 (27.6%)</td>
<td></td>
</tr>
<tr>
<td>Reduced newborn risks</td>
<td>19 (65.5%) 10 (34.5%)</td>
<td></td>
</tr>
<tr>
<td>Reduced hospital &amp; national costs</td>
<td>17 (58.6%) 12 (41.4%)</td>
<td></td>
</tr>
<tr>
<td>Reduced hospitalized newborn babies</td>
<td>14 (48.3%) 15 (51.7%)</td>
<td></td>
</tr>
</tbody>
</table>
Table 5. Midwives’ Total Knowledge on Prevention of Preterm Births

<table>
<thead>
<tr>
<th>Knowledge Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge on risk factors:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate</td>
<td>19</td>
<td>65.5</td>
</tr>
<tr>
<td>Inadequate</td>
<td>10</td>
<td>34.5</td>
</tr>
<tr>
<td>Knowledge on approaches for preventing PTB:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate</td>
<td>11</td>
<td>37.9</td>
</tr>
<tr>
<td>Inadequate</td>
<td>18</td>
<td>62.1</td>
</tr>
<tr>
<td>Knowledge on benefits for preventing PTB:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate</td>
<td>18</td>
<td>62.1</td>
</tr>
<tr>
<td>Inadequate</td>
<td>11</td>
<td>37.9</td>
</tr>
<tr>
<td>Total knowledge on prevention of PTB:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate</td>
<td>15</td>
<td>51.7</td>
</tr>
<tr>
<td>Inadequate</td>
<td>14</td>
<td>48.3</td>
</tr>
</tbody>
</table>

Table 6. Adequate total Knowledge against Education level, Qualification, total Working Experience and Working Experience in ANC

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Knowledge (Frequency/Percentage)</th>
<th>OR (95% CI)</th>
<th>X²</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education Level:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O’level</td>
<td>Adequate Knowledge 12 (41.4%)</td>
<td>1.5(0.21-10.65)</td>
<td>0.166</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>Inadequate Knowledge 12 (41.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A’ level</td>
<td>Adequate Knowledge 3 (10.4%)</td>
<td>-</td>
<td>3.16</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>Inadequate Knowledge 2 (6.8%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qualification:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolled midwife</td>
<td>Adequate 1 (3.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inadequate 3 (10.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registered midwife</td>
<td>Adequate 13 (44.8%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inadequate 8 (27.6%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registered nurse midwife</td>
<td>Adequate 1 (3.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inadequate 3 (10.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total working experience:</td>
<td></td>
<td>2.0(0.45-8.96)</td>
<td>0.83</td>
<td>0.36</td>
</tr>
<tr>
<td>&lt; 16 years</td>
<td>Adequate 5 (17.2%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inadequate 7 (24.1%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥16 years</td>
<td>Adequate 10 (34.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inadequate 7 (24.1%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working experience in ANC:</td>
<td></td>
<td>1.97</td>
<td>0.37</td>
<td></td>
</tr>
<tr>
<td>1-5 years</td>
<td>Adequate 12 (41.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inadequate 12 (41.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-10 years</td>
<td>Adequate 3 (10.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inadequate 1 (3.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above 15years</td>
<td>Adequate 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inadequate 1 (3.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Midwives practice towards prevention of preterm births

A list of six competencies was provided and the participants were asked to tick ‘yes’ for those they thought guide midwifery practice and ‘no’ to those they thought did not.

Table 7. Competencies for Midwifery Practice

<table>
<thead>
<tr>
<th>Competency</th>
<th>Frequency/ Percentage</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards of care and clinical guidelines</td>
<td>27 (93.1%)</td>
<td>2 (6.9%)</td>
<td></td>
</tr>
<tr>
<td>Individual’s experience</td>
<td>24 (82.8%)</td>
<td>5 (17.2%)</td>
<td></td>
</tr>
<tr>
<td>One’s attitude</td>
<td>22 (75.9%)</td>
<td>7 (24.1%)</td>
<td></td>
</tr>
<tr>
<td>Institutional policies</td>
<td>21 (72.4%)</td>
<td>8 (27.6%)</td>
<td></td>
</tr>
<tr>
<td>One’s training</td>
<td>21 (72.4%)</td>
<td>8 (27.6%)</td>
<td></td>
</tr>
</tbody>
</table>
Most of the midwives recognized the competencies required for midwifery practice. However, 27.6% did not recognize institutional policies and training as required competencies respectively; 24.1% did not recognize attitude as a competency for practice.

**Availability of clinical guidelines and standards of ANC**

The participants were required to indicate whether they had or did not have clinical guidelines and standards of antenatal care in their clinics/wards. Those who did not know or were not sure were provided with options to indicate so.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9</td>
<td>31</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>41.4</td>
</tr>
<tr>
<td>I do not know</td>
<td>4</td>
<td>13.8</td>
</tr>
<tr>
<td>I am not sure</td>
<td>4</td>
<td>13.8</td>
</tr>
</tbody>
</table>

Only 31% indicated availability of the guidelines and standards of antenatal care in their clinics, 41.4% clearly indicated that they were not there.

**Use of Clinical Guidelines and Standards of ANC**

Use was determined based on the availability. Only those who indicated availability of the clinical guidelines and standards of antenatal care were required to indicate how often they used them.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very often</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Often</td>
<td>6</td>
<td>66.7</td>
</tr>
<tr>
<td>Rarely</td>
<td>2</td>
<td>22.2</td>
</tr>
<tr>
<td>Not used at all</td>
<td>1</td>
<td>11.1</td>
</tr>
</tbody>
</table>

Most of the respondents (66.7%) indicated that the clinical guidelines and standards of antenatal care were being used often, and only 11.1% indicated that they were not being used at all as reflected in Table 9 above.

**Room for conducting specific sessions with identified women at risk of PTB**

Participants were asked whether there was room in the clinics/wards where they work for conducting specific sessions with identified mothers at risk of preterm births.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is always room</td>
<td>6</td>
<td>20.7</td>
</tr>
<tr>
<td>Sometimes there is room</td>
<td>8</td>
<td>27.6</td>
</tr>
<tr>
<td>There is rarely room</td>
<td>8</td>
<td>27.6</td>
</tr>
<tr>
<td>There no room at all</td>
<td>7</td>
<td>24.1</td>
</tr>
</tbody>
</table>

Only 20.7% reported availability of a room for specific sessions always and 24.1% reported no room at all, a possibility of having a challenge with space.

**Availability of specific information given to identified mothers at risk of PTB**

Participants were required to indicate if there was any specific information in the clinics/wards where they work given to mothers who are at risk of preterm birth with a ‘Yes’ and a ‘No’ if there wasn’t.
More than half (55.2%) indicated that there was no specific information given to mothers at risk of preterm births.

**Arrangement for follow of identified mothers at risk of preterm births**

Availability of a clearly stated arrangement for following up mothers at risk of preterm births was to be indicated by a ‘Yes’ and a ‘No’ if there was no clear arrangement.

<table>
<thead>
<tr>
<th>Availability of follow up arrangement</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>12</td>
<td>41.4</td>
</tr>
<tr>
<td>No</td>
<td>17</td>
<td>58.6</td>
</tr>
</tbody>
</table>

Almost 60% indicated that there was no clearly stated arrangement for following up women at risk of preterm births.

**Discussion**

**Knowledge on risk factors**

Majority of the midwives (96.6%) recognized that multiple pregnancies, history of previous preterm birth, and gestation hypertension are risk factors for preterm births. This is in contradiction with what was found in Quebec that nearly 50% of respondents did not recognize twin pregnancy and a previous history of preterm delivery as risk factors (Moutquin, 1999). Febrile disease during pregnancy and emotional stress were recognized by 93.1%; history of more than one abortion was recognized by 89.7%; and 72.4% recognized smoking as a risk factor. Additionally, 89.7% recognized that abnormal lie or presentation is not a risk factor for preterm births. Of all the 29 midwives, 65.5% had adequate knowledge on the risk factors of preterm births. However, the 34.5% who had inadequate knowledge in this area cannot be neglected although no other studies were identified for comparison.

**Approaches for preventing preterm births**

Regarding preventing preterm birth, there were two approaches that were known by most of the midwives: sensitizing mothers on the risk factors for PTB (100%); and avoiding intensive physical exercises (86.2%). Rating the overall adequate knowledge of the midwives on the approaches used in the prevention of premature births revealed that out of the 29 midwives, only 37.9% had adequate knowledge on the approaches used to prevent preterm births. The high percentage (62.1%) of inadequate knowledge on the approaches used in the prevention of preterm births may be associated with the lack of specific information about prevention of preterm births (55.2% said there was no specific information in the clinic) and lack of clinical guidelines and standards of ANC (41.4% clearly indicated that they were no guidelines) in the areas of practice or in the training curricula.

**Likely benefits for preventing preterm births**

Although 62.1% of the midwives had adequate knowledge on the likely benefits for preventing preterm births, the remaining percentage of 37.9% is quite large. If there is no perceived benefit for the action then the practice may be hindered (Pender’s Health Promotion Model, 2008). Conclusively, no similar study of knowledge, attitude and practices of midwives towards the prevention of preterm births was identified in Uganda, but studies that have assessed the knowledge of midwives or health workers like on HIV (Salyer, Walusimbi,
& Fitzpatrick, 2008); and cancer of the cervix (Malinga, 2006) have reported some knowledge gaps.

Knowledge gaps among health care providers are addressed by providing the necessary information if the practice is to improve (Stevens, 2013). Cross-tabulation of knowledge against education level revealed that the midwives knowledge increased with education level and working experience: 60% of the midwives with A ‘level had adequate knowledge on the prevention of preterm births compared to the 50% of O’level although the results were not statistically significant (Odds ratio 1.5 at 95% CI = 0.21- 10.62); and 58.8% of the midwives with 16 years and above working experience had adequate knowledge compared to 41.7% of those with working experience of less than 16 year (Odds ratio 2.0 at 95% CI of 0.45-8.96, still not statistically significant). This agreed with the findings of Gonzaga, Kiguli-Malwadde, Businge & Byanyima (2009) and Furber (2000) who found out that midwives with different academic levels and working experience had different knowledge bases and perceptions concerning health promotion programs.

What Attitude the Midwives Working in the Hospital have towards the Prevention of Preterm births

Competencies for midwifery practice

Ninety-three percent of the midwives recognized that standards of care and clinical guidelines together with midwifery guidelines are required competencies for midwifery practice. However, the fact that 27.6% did not recognize training as required competency for practice creates a question as to whether the knowledge and skills they use were from experience and sources other than training. Core competencies serve as guidelines for educators, students, health care professionals, consumers, employers, and policy-makers and constitute the basic requisites for graduates of all accredited nurse-midwifery and midwifery education programs (American College of Nurse-Midwives Core Competencies for Basic Midwifery Practice, 2003). It was also observed that 24.1% did not recognize attitude as a competency for practice. The training of midwives imparts knowledge, attitudes, and skills for practices. Non-recognition of training and attitude as core competencies for practice may be an indication of a gap in the practice.

Availability and use of clinical guidelines and standards of antenatal care

Out of the 29 participants only 31% indicated availability of the guidelines and standards of antenatal care in their clinics; 41.4% clearly indicated that they were not there. The remaining 27.6% either did not know (13.8%), or were not sure if the guidelines existed in their places of work (13.8%). However, of the 31% who indicated availability of the clinical guidelines, 66.7% said that they were often used. This means that if availability of and knowledge about the clinical guidelines are increased there may be a higher probability of increasing their use hence improving practice. Studies have shown that use of clinical guidelines enhances quality in practice (Tillett, 2009; Hanson, VandeVusse, Roberts & Forristal, 2009; ACNM, 2003; Sprague et al, 2002).

Room for conducting specific sessions with identified women at risk of PTB

Only 20.7% reported availability of room for specific sessions at all times and 24.1% reported no room at all for having specific sessions with identified mothers at risk of PTB, a possibility of having a challenge with space. The fact that there is a gap in recognizing the benefits for preventing preterm birth may lead to failure to identify a room. Studies have shown that information on health promotion should be given to the entire population of women during the prenatal period and not to target only those at risk (Furber, 2000; Moutquin, 1999). However, another approach of centering pregnancy has been recommended in the improvement of prenatal care and reduction of preterm births (Grady & Bloom, 2004). Availability of room would cater for the different mothers when grouped per age or similar health problems.
Availability of specific information on premature births and its prevention

More than half (55.2%) indicated that there was no specific information given to mothers at risk of preterm births. Since this study revealed that just a few midwives (31%) were aware of the availability of clinical guidelines and standards of antenatal care, it is not surprising to find that a larger percentage (55.2%) reported lack of specific information on preterm births.

Information giving has been advocated for in primary prevention because of its valuable impact on improving practice. A study carried out in Ottawa, Ontario, on community education on preterm births revealed that providing knowledge and standardized education materials to health care providers and mothers can improve preventive practice for preterm labour and educate women about it (Sprague et al, 2002).

Follow up of identified mothers at risk of PTB

The respondents were asked to indicate whether there was a clearly stated arrangement for following up mothers at risk of preterm births. Almost 60% indicated that there was no clearly stated arrangement for following up women at risk of preterm births. The antenatal guidelines specify the follow up of women depending on their health status. If the guidelines are not available in some of the clinics then it is possible that there is no clear arrangement for following women who are at risk of preterm birth. On the other hand, if some midwives did not know nor were not sure whether the guidelines existed in their places of work, then it was possible that they could not identify the stated arrangement for following up mothers at risk of PTB.

Conclusion

Although there was adequate knowledge about the risk factors for preterm births generally, there is need to emphasize smoking and alcohol intake during pregnancy, low socio-economic status, unstable marital relationship, young mothers of < 18 years and elderly mothers of > 35 years as prominent risks for preterm births. The results revealed inadequate knowledge on the approaches that may be used to prevent preterm births especially care of the genital area and folic acid administration. These areas should also be emphasized.

Practices thought to promote the prevention of preterm births were lacking namely: availability and use of clinical guidelines for antenatal care, vigilant screening of mothers, and availability of room for special sessions. It was reported that there was no specific information on premature prevention for mothers and the follow up process of identified women at risk of preterm birth was also not clear to many midwives. The limitation of the study was the few numbers of midwives working in antenatal clinics, compared to the big numbers of clients.

Recommendations

The teaching hospital should direct Interventions of preventing preterm birth towards increasing the knowledge and practices of the health care providers especially the midwives. Training curricula for midwives should include a section on prevention of preterm births. This should be accompanied by a clear outline of the content on premature babies including prevention and management. This will help to equip the trainees with the knowledge and skills required for practice. A similar study should focus at assessing all midwives on primary prevention of premature births, regardless of where they work. in order to get representative findings that can be generalized. On the other hand, there is need to establish the experience of mothers/caretakers of premature babies and establish their perspective on what would be the desired care and support for families with preterm babies.

Footnote

This study was a partial fulfillment for the requirement of Master Degree of Nursing. The entire study looked at the Knowledge, attitude and practices of midwives working in antenatal wards of a teaching hospital towards the primary prevention of Premature births. This article
focused on the Midwives’ knowledge and practices towards the primary prevention of Premature births

References


Project on Time Motion Study of Diabetes Mellitus in Pregnancy with Emphasis on Gestational Diabetes Mellitus

Article by Ebinyasi Virginia
RN-MSN, Texila American University, Nigeria
E-mail: virginia_purity@yahoo.com

Introduction

The University College Hospital was established by an Act of Parliament in 1952 in response to the need for the training of medical students following the establishment of a Faculty of Medicine at the University College, Ibadan in 1948.

The physical development was commenced in 1952 and clinical facilities were formally commissioned in November 1957. The naming of the Hospital, appointment of the Chairman of the Provisional Council of the University College Ibadan as the first Chairman of the Board of Management and the provision (physical facilities for students’ from its inception, were ample proof of the functions envisaged for the hospital though primarily concerned with teaching and research with service only at a level to ensure the satisfactory performance of these basic obligations.

The situation changed dramatically with the Nigerian Civil War. The well-regulated processes of referrals from General Practitioners, State Hospitals and Clinics and Selection at the General Out-Patient Clinics (GOPD) were modified with consequences for disproportionate service load.

In the ensuring years, the symbolic relationship between the hospital and the University was a success story not only in the quality of Health Care available and the medical education provided, but also in its research output. By the time the University College Hospital was 30 years old, nearly 10 million patients had been treated there, while thousands of clinical student nurses and midwives, laboratory technologists, radiographers, medical record officers and several cadres of health workers have passed through its portals. At least a quarter of all doctors in practice in Nigeria today trained, researched or taught at Ibadan at one time or other. In addition to the undergraduate medical programme (based in the College of Medicine of the University of Ibadan, the UCH also provides training facilities for:

Postgraduate Residency Programme in the specialties of Internal Medicine, Surgery, Obstetrics and Gynaecology, Paediatrics, Otorhinolaryngology, Ophthalmology, Anaesthesia, Laboratory Medicine, Psychiatry, Community Medicine, General Medical Practice, Radiology, Radiotherapy and Dentistry, Geriatric Centre, Palliative Care Hospice.

Schools Available are:
- Schools of Nursing
- School of Midwifery
- School of Medical Records
- School of Occupational Health Nursing (First in the Country)
- Environmental Health Tutors Course
- Primary Health Care Tutors Course
- Community Health Officers Tutors Course
- Continuing Education Programmes for Nurses and Midwives in Administration and Management (CEPNAM)

Outreach community based activities include two Rural Comprehensive Health Centres run in collaboration with Oyo and Osun State Government and the Local Governments in Sepeteri and Okuku. These are additional to smaller programmes in Abedo Village, Akinyele, Arere, Mele, Osun and Idi-Ikan areas of the Ibadan Metropolis.
The Hospital gives annual financial support to the Ibarapa Programme of the College of Medicine which is under the supervisory control of its Department of Community Medicine and provides staff and strong financial support endowed for the purpose.

With specific relevance to the Residency Training Programme, the Hospital offers Comprehensive facilities for training and clinical exposure at a level compatible with requisite skills in most discipline for specialization. As at today, there are almost 300 Residents undergoing training in the various specialties.

The Hospital has 53 service and clinical departments and runs 96 Consultative Outpatient Clinics, in a week 50 specialty and subspeciality disciplines. In addition to the College of Medicine, the Hospital “houses” a Virus Research Laboratory, a W.H.O. collaborating centre in immunology and an institute of Advance Medical Research and Training (IMRAT). The UCH also houses the special treatment clinics (S.T.C), a state-of-the-art clinic for research, training and treatment of sexually transmitted diseases. The Hospital has been collaborating with the International Atomic Energy Agency (IAEA) in the area of Radiotherapy, Nuclear Medicine and Nuclear Pharmacy. The Agency has also been assisting with capacity building in terms of staff development and equipment donations.

The number of beds has grown to about 1000 with the rapid expansion of the oncology section into a cancer treatment centre, with inpatient facilities. There has also been an update of the facilities in neonatology (The Special Care Baby Unit).

There are almost 200 Hospital Consultants and in-patient admissions exceed 10,000 annually while out-patient clinic attendances approximate to over 170,000. With the on-going rehabilitation this Premier Teaching Hospital as well on its way to redeeming its hard earned and longstanding reputation as Nigeria’s leading tertiary health care institution.

Recently, the Hospital decided on the provision of Private suites as a bold step in encouraging intramural private practice. This will stem the unwelcome tide of extramural private practice, and strengthen the revenue generation base of the Hospital. The resulting financial returns can thus be ploughed back into the institution so as to optimize the quality of health care, training and research.

Arrangements are on-going to commence full training in Cardio-thoracic surgery and in Nuclear Medicine. Sustained attempts are being made to upgrade the training potential by the acquisition of more modern technology such as the computerized tomography, computerized dosimetry for irradiation treatment, state-of-the-art angiographic equipment and biochemical auto analysers, etc.

Presently, the hospital has successfully carried out an open-heart surgery, procure state-of-the art equipment and installed the first cardiac Catheterization Unit which was inaugurated by the Minister of Health Professor Onyebuchi Chukwu in 2013.

The Hospital is a designated centre for the yearly conduct of professional Medical Doctors Exams in West Africa. The ultimate, however, is the establishment of the broad spectrum of clinical and diagnostic services for wide student and trainee exposure with appropriate qualities for patient management.

**UCH mission statement**

To render excellent and prompt care to clients in an atmosphere that ensures and promote hope and dignity irrespective of status while providing outstanding development of intellect, skill and character, in an environment that stimulates qualitative and relevant research (Relevant to our country).

**Goals and objectives**

1. To be better positioned to achieve our vision and mission.
2. To ensure value for efforts by the Government and Health Consumers.
3. To ensure excellence in Service, training and Research
4. To expand and promote necessary linkages to achieve our goals.
5. To maintain and improve on our social responsibilities to our immediate community and the Nigerian society at large.
Obstetrics and gynaecology department UCH

This is one of the departments in the hospital, it comprises of several wards such as:

- Labour Ward Complex
- Lying in Ward (obstetrics)
- Gynaecology ward and Gynaecology theatre

These are further divided into:

Labour Ward Complex
Here, we have the labour rooms for Stages 1, Stages II, III and fourth Stage of labour for normal deliveries with Operating theatres for Caesarean Sections and other obstetric procedures.

Lying-in-Ward (Obstetrics) have the following wards:
- i West 4
- ii South East 4
- iii West West 3

They are wards allocated for delivered mothers and sick prenatal patients.

Gynaecology Wards
Patients who are admitted here are cases such as vesicovaginal fistula, Rectovaginal fistula, Cancer of the cervix just to mention a few, with the following wards: C14th and SW4 (South West 4), Gynaecology theatre.

Procedures carried out include:
- Myomectomy
- Salpingectomy
- Oophorectomy
- Hysterectomy
- Laparotomy with removal of Abdominal mass (wherever located).

Most of the units in obstetrics and gynecology department are

1. FMM: FetoMaternal Unit
2. FRU: Fertility Research Unit
3. GUU: Genito Urinary Unit
4. GOU: Genito-Oncology Unit
5. ACU: Assisted Conception Unit

Some of the consultants and their units are

Unit consultants
FMM Prof. Olayemi, Dr. Fawole,
Dr. Adesina, Dr. Aimakhu
FRU Prof. Adekunle, Prof. Arowojolu,
Dr. Okunola, Dr. Roberts
GUU Prof. Ojengbede, Dr Nkwocha,
Dr. Mohasson Bello, Dr. Adekanbi
GOU Prof. Omigbodun, Prof. Adewole,
Dr. Odukogbe, Dr. Afolabi, Dr. Awolude.
ACU Prof. Ilesanmi, Dr. Oladokun, Dr. Bello,
Dr. Ogunbode, Dr. Obajimi
### Tabular representation of units, consultants, ward round, theatre (operation day) and clinic days

<table>
<thead>
<tr>
<th>UNIT</th>
<th>NAME OF CONSULTANT</th>
<th>WARD ROUND</th>
<th>CLINIC DAY</th>
<th>THEATRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMM</td>
<td>Prof. Olayemi, Dr. Fawole, Dr. Adesina, Dr. Aimakhu</td>
<td>Tuesdays</td>
<td>Tuesday- gynae clinic Thur – Clinic</td>
<td>Monday</td>
</tr>
<tr>
<td>FRU</td>
<td>Prof. Adekunle, Prof. Arowojolu, Dr. Okunola, Dr. Roberts</td>
<td>Thursday</td>
<td>Thursday-Gynae Clinic Tuesday – Clinic</td>
<td>Friday</td>
</tr>
<tr>
<td>GUU</td>
<td>Prof. Ojengbede, Dr. Nwocha, Dr. M.Bello, Dr. Adekanbi</td>
<td>Monday</td>
<td>Monday-Gynae Clinic Tuesday – Clinic</td>
<td>Friday</td>
</tr>
<tr>
<td>GOU</td>
<td>Prof. Omigbodun, Prof. Adewole, Dr. Afolabi, Dr. Odukogbe, Dr. Awolude</td>
<td>Thursday</td>
<td>Monday-Clinic Thursday – Gynae Clinic</td>
<td>Tuesday</td>
</tr>
<tr>
<td>ACU</td>
<td>Prof. Ilesanmi, Dr. Oladokun, Dr. Ogunbode, Dr. Obajimi</td>
<td>Tuesday</td>
<td>Monday – Clinic Tuesday – Gynaeclinik</td>
<td>Thursday</td>
</tr>
</tbody>
</table>

**West 4**

It is worthy of note to mention that the University College Hospital is a baby friendly Hospital. West 4 is one of the lying in wards, caring for delivered mothers either through normal delivery, Caesarean Section or forceps. Also, patients who are gravid with pregnancy complications are also taken care of.

Cases admitted into West 4 are:
1. Delivered Cases
2. Sick Prenatal Cases – including premature rupture of membrane, pre-eclampsia gestational diabetes, threatened abortion, reduced fetal movement, asthma in pregnancy, malaria in pregnancy, anaemia in pregnancy, delirium in pregnancy, depression in pregnancy, vaso-occlusive crisis in pregnancy and degenerating fibroid in pregnancy etc.

**Delivered cases**

1. Elective lower segment caesarean section
2. Emergency lower segment caesarean section
3. Spontaneous vertex delivery
4. Spontaneous vertex delivery with episiotomy
5. Spontaneous vertex delivery with first (1°) degree perineal laceration.
6. Spontaneous vertex delivery with second (2°) degree perineal laceration
7. Spontaneous vertex delivery with macerated still birth
8. Spontaneous vertex delivery with fresh still birth
10. Emergency lower segment caesarean section due to placenta previa type I, II, III
11. Emergency lower segment caesarean section due to poor progress in labour with previous caesarean section x 1.
12. Emergency lower segment caesarean sector due to cephalopelvic disproportion.
13. Emergency lower segment caesarean section due to fetal distress.
14. Emergency lower segment caesarean section due to fetal distress.
15. Emergency lower segment caesarean section due to previous vaginoplasty and premature rupture of membrane.
16. Emergency lower segment caesarean section due to multiple gestation.
17. Emergency lower segment caesarean section due to severe oligohydramnios.
18. Emergency lower segment caesarean section due to persistent fetal tachycardia.
19. Elective lower segment caesarean section due to maternal request
20. Elective lower segment caesarean section due to vasaprevia
21. Elective lower segment caesarean section due to Retroviral status
22. Elective lower segment caesarean section due to co-existing fibroid.
23. Elective lower segment caesarean section due to gestational diabetes mellitus.
24. Elective lower segment caesarean section due to previous vesicovaginal fistula repair with bad obstetric history
25. Elective lower segment caesarean section due to background infertility.
26. Elective lower segment caesarean section due to post datism
27. Elective lower segment caesarean section due to oblique lie
28. Elective lower segment caesarean section due to chronic hypertension.
29. Elective lower segment caesarean section due to short stature.

Sick prenatal cases
1. Acute exacerbation of asthma in pregnancy
2. Degenerating uterine fibroid in pregnancy
3. Major placenta previa Type III
4. Gestational Diabetes Mellitus
5. Malaria in pregnancy
6. Pre-eclampsia and severe pre-eclampsia
7. Pregnancy induced Hypertension
8. Spurious Labour
9. Cervical Incompetence
10. Preterm Contraction
11. Reduced fetal movement
12. Threatened abortion
13. Missed abortion
14. Inevitable abortion
15. Intraterterine growth retardation
16. Placenta Previa type I
17. Delirium in pregnancy due to Electrolyte derangement
18. Chronic hypertension with superimposed pre-eclampsia
19. Puerperal psychosis
20. Anaemia in pregnancy
21. Severe Anaemia due to haemolytic crisis
22. Pregnancy induced hypertension
23. Depression in pregnancy
24. Brochopneumonia in pregnancy
25. Deranged oral glucose tolerance test in pregnancy
26. Arrhythmia in pregnancy
27. Spotting per vagina
28. Acute exacerbation of peptic ulcer disease in pregnancy
29. Puerperal psychosis with puerperal sepsis

Other caring aspects include
1. Care of neonates with elevated serum bilirubin value been nursed under phototherapy.
2. Care of neonates whose mothers have psychotic background
3. Care of neonates whose mothers have spinal injury and are under admission.
4. Care of neonates whose mothers are not capable.
5. Care of neonates whose mothers are admitted in intensive care unit.

**Aims and objectives**

1. Wholistic care of both pregnant and delivered mothers.
2. Prevention of Nocosomal infection
3. Ensuring prompt care and quality services
4. Teaching and enlightening mothers on care of the new born
5. Ensuring immunization of all delivered babies.

**Routine/daily activities**

a. Doctors ward round
b. Paediatricians ward round
c. Patients transfer (in and out)
d. Wound dressing
e. Shaving of operation site
f. Bedmaking
g. Medication round
h. Vital signs monitoring
i. Commencement of post operative patients on graded oral sips
j. Catheterization
k. Admission and discharge

**Introduction to west 4**

West 4 is located on the West Wing of the Hospital. It is also named as such because it is on the 4th (fourth floor) of the hospital.

It can be accessed through the lift, staircase or ramp.
West 4 is a 27 bedded ward divided into:

i. General Ward
ii. Small Ward

It consists of 16 beds with 16 baby cots. At the end of the ward there is a sluice room toilet area and bathrooms. There is a store for baby cots and within the slice end are bedpans with bedpan washer and sinks.

**Small Ward**

It consists of 10 beds with a side room. At the end of the ward there is a bathtub, bathroom with shower, toilet area, sluice end with bedpan washer and bedpans.

Between the General Ward and Small ward are:

a. The nursery for babies bathing with 3 (three) bathing sinks
b. The major treatment room consisting:
   i. CTG monitoring machine
   ii. Emergency tray and cupboard
   iii. Examination couch
   iv. Huge boiler for hot water
   v. Oxygen cylinders
   vi. Medication trolleys

c. Minor treatment room consisting:
   i. Sterilizers
   ii. Cupboard with vomit bowls, dressing bowls, kidney dishes gallipots, and forceps.
d. Nurses break room
e. Linen room
f. Kitchenette
g. Doctors call room
h. Office of the Assistant Director of Nursing
i. Matrons Office with CDA (Controlled Drug Act) cupboard
j. Store

Drugs used

- Adrenalin
- Atropin
- Misoprostol 200μg (microgram)
- Dopamin
- Pentazocine 30mg
- Pethidine 50mg and 100mg
- Calcium gluconate
- Sodium bicarbonate
- Magnesium sulphate
- Water for injection
- Aminophylline
- Oxytocin
- Ergometrine
- Hydrocortisone
- Promethazine
- Lidocaine
- Syntocinon
- Fuisemide
- Vitamin K
- Diazepam
- Haloperidol
- Dexamethasone
- Hydralazine
- I.V Labetalol
- Chlorpromazine
- MetoChlopromide
- Opthalmoscope
- Cut down set
- 50% Dextrose saline
- 0.9% Normal Saline
- 19G Cannular size
- 21G Cannular size
- 4.3% Dextrose Saline
- 5% Dextrose Saline
- 23G Cannular size,
- 5ml needle and syringe
- 21G Cannular size,
- 2ml needle and syringe,
- 10ml needle and syringe
- 5ml needle and syringe
- 4.3% Dextrose Saline,
- 5% Dextrose saline
• Ringers lactate
• 20ml needle and syringe
• Full strength Darrows solution
• ½ Strength Darrows

**Equipment**

• Adult Beds (27)
• Baby’s Cot (16)
• Adult Weighing Scale (1)
• Baby weighing scale
• Stethoscope
• Sphygmomanometer
• Electrical suction machine
• Manual suction machine
• Adult ambu bag
• Paediatric ambu bag
• Medication Trolleys
• Trolleys
• Wheel Chair
• CTG machine
• Pinead fetoscope
• Oxygen gauge
• Oxygen cylinder
• Solar lamps
• Infusion stand
• Infusion giving set
• Sterile gloves size 7, size 8
• Elbow length gloves size 7,Size 8
• Drums

**Statistics for gestational diabetes**

**Statistics 2013**

Total Admission: 1200
Gestational diabetes Cases: 12

**Statistics 2014**

Total Admission: 1015
Gestational Diabetes Cases: 10

**Statistics 2015**

Total Admission: 645
Gestational Diabetes Cases: 6
### Tabular representation of cases in 2013

<table>
<thead>
<tr>
<th>MONTH</th>
<th>TOTAL PATIENT ADMISSION MONTHLY</th>
<th>TOTAL NUMBER OF CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>144</td>
<td>4</td>
</tr>
<tr>
<td>February</td>
<td>140</td>
<td>0</td>
</tr>
<tr>
<td>March</td>
<td>165</td>
<td>1</td>
</tr>
<tr>
<td>April</td>
<td>139</td>
<td>1</td>
</tr>
<tr>
<td>May</td>
<td>116</td>
<td>1</td>
</tr>
<tr>
<td>June</td>
<td>69</td>
<td>1</td>
</tr>
<tr>
<td>July</td>
<td>103</td>
<td>1</td>
</tr>
<tr>
<td>August</td>
<td>104</td>
<td>0</td>
</tr>
<tr>
<td>September</td>
<td>143</td>
<td>1</td>
</tr>
<tr>
<td>October</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>November</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>December</td>
<td>63</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1200</strong></td>
<td><strong>12</strong></td>
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### Tabular representation of cases in 2014

<table>
<thead>
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<th>MONTHLY</th>
<th>TOTAL PATIENT ADMISSION</th>
<th>TOTAL NUMBER OF CASES</th>
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</thead>
<tbody>
<tr>
<td>January</td>
<td>105</td>
<td>1</td>
</tr>
<tr>
<td>February</td>
<td>128</td>
<td>1</td>
</tr>
<tr>
<td>March</td>
<td>122</td>
<td>4</td>
</tr>
<tr>
<td>April</td>
<td>149</td>
<td>2</td>
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<tr>
<td>May</td>
<td>122</td>
<td>0</td>
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<tr>
<td>June</td>
<td>130</td>
<td>0</td>
</tr>
<tr>
<td>July</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>August</td>
<td>Nil</td>
<td>Nil</td>
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<tr>
<td>September</td>
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<td>1</td>
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<tr>
<td>October</td>
<td>145</td>
<td>1</td>
</tr>
<tr>
<td>November</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>December</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1015</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

### Tabular representation of cases in 2015

<table>
<thead>
<tr>
<th>MONTHLY</th>
<th>TOTAL PATIENT ADMISSION MONTHLY</th>
<th>TOTAL NUMBER OF CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
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<td>April</td>
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<td>May</td>
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<td>June</td>
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<td>July</td>
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<tr>
<td>August</td>
<td>134</td>
<td>0</td>
</tr>
<tr>
<td>September</td>
<td>140</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>645</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>
Diabetes in pregnancy

Diabetes Mellitus in pregnancy is one of the endocrine disorders in pregnancy: Other endocrine disorders include:
- Thyroid disorders in pregnancy
- Parathyroid disorders in pregnancy
- Adrenal disorders in pregnancy
- Pituitary disorders in pregnancy

Among these, gestational diabetes is the commonest among pregnancy women while others are less common.

Diabetes mellitus

Diabetes is the most common medical condition to affect pregnancy and occurs in approximately 4 per 1000 pregnancies in the UK. It complicates approximately 1% of all pregnancies in Caucasian populations, but a higher percentage of pregnancies in other ethnic groups. Recent audits undertaken identified persistently poorer outcomes in pregnant women with diabetes compared with the overall obstetric population. The aim of both the St. Vincent declaration of the European Association for the Study of Diabetes and of the UK Task Force is to achieve a pregnancy outcome for the diabetic mother equal to that of a non-diabetic mother.

The term ‘diabetes mellitus’ (DM) describes a metabolic disorder of multiple aetiology that affects the normal metabolism of carbohydrates, fats and protein. It is characterized by increasing levels of glucose in the blood (hyperglycaemia) and excretion of glucose in the urine (glycosuria) resulting from defects in insulin secretion, or insulin action, or both. The classic signs and symptoms are excessive thirst (polydipsia), excessive urinary excretion (polyuria) and unexplained weight loss. The long term effects of DM are reflected in the development of macrovascular and micro-vascular disease producing coronary heart disease, peripheral arterial disease, kidney disease (diabetic nephropathy), loss of vision (diabetic retinopathy) and nerve damage (diabetic neuropathy).

A normal fasting blood glucose of < 6.1 mmol/L is regulated by the pancreatic hormones insulin and glucagon. Following the ingestion of carbohydrates the rising blood glucose stimulates the pancreas to secrete insulin, which reduces blood glucose. Falling blood glucose levels induce glucagon production, which prevents further glucose reduction. The combined action of these two hormones maintains the blood glucose within normal limits.
Hyperglycaemia is usually the result of insulin deficiency when there is a high secretion of hormones antagonistic to insulin action; severe hyperglycaemia (blood glucose > 25.0mmol/L) may result in diabetic ketoacidosis, coma or death. Hypoglycaemia is defined as a blood glucose <2.2mmol/L. Symptoms of a falling blood glucose include tremor, sweating and tachycardia. Severe hypoglycaemia, particularly in neonates, can result in fits, coma and death. Repeated severe episodes of hypoglycaemia are associated with the risk of permanent brain damage.

**Classification**

**Type1DM.** This occurs when beta cells in the islets of Langerhans in the pancreas are destroyed, stopping insulin production. Insulin therapy is required in order to prevent the development of ketoacidosis, coma and death. It presents more commonly in childhood, but can occur at any age and in some cases is attributable to an autoimmune process.

**Type 2 DM.** This result from a defect(s) in insulin action and insulin secretion and insulin therapy is not needed to survive. The risk of developing this type of DM increases with age, obesity and lack of physical activity. It occurs more frequently in women with prior gestational diabetes mellitus and in individuals with hypertension. Its frequency varies between different racial or ethnic groups and there is some suggestion of a genetic predisposition.

Statistically, 87.5% of pregnancy have gestational diabetes, 7.5% have type I, Diabetes Mellitus 5% have type II, Diabetes Mellitus.

**Type II Diabetes Mellitus are increasing in minority ethnic groups.**

**Gestational diabetes mellitus (GDM).** This is defined as carbohydrate intolerance resulting in hyperglycaemia of variable severity, with its onset or first recognition during pregnancy.

Statistically, 87.5% of pregnancy have gestational diabetes 7.5% have type I, Diabetes Mellitus 7.5% have type II, Diabetes Mellitus.

**Type II Diabetes Mellitus are increasing in minority ethnic groups.**

**Impaired glucose regulation:** This include impaired glucose tolerance (IGT) and impaired fasting glycaemia (IFG), which are metabolic states intermediate between normal glucose homeostasis and diabetes. IGT is categorized as carbohydrate metabolism resulting in slightly raised postmeal blood glucose levels of> 7.8 mmol/L. IFG refers to fasting glucose concentrations that are lower than those required to diagnose DM but higher than the ‘normal’ reference range (i.e. > 6.1 mmol/L but < 7.0mmol/L). Individuals with impaired glucose regulation are at increased risk of developing DM and cardiovascular disease.

**Gestational diabetes**

The incidence of GDM varies widely across different ethnic groups. In Caucasians it is 1-2% in Afro-Caribbeans 2-3% and in Assians 4-5%. An agreement as to what is considered a ‘normal’ blood glucose levels in pregnancy and at what level maternal and fetal morbidity ensues remains illusive. Hence, the significance of GDM is difficult to determine. The strongest evidence suggests that fetal macrosomia and caesarean section rates are increased. In the longer term there appears to be an association between raised glucose levels in utero and the development of obesity and diabetes in later life. There is also evidence to suggest that women who develop GDM are at risk of developing type 2 DM. It was identified that some women are at high risk of developing GDM and there maybe some benefit in selective screening for GDM in women where the following risk factors are identified:

- maternal age > 25 years
- DM affecting a first degree relative
- High risk racial heritage e.g. Asian-Indian, Middle Eastern, Afro-Caribbean.
- BMI >27kg/M^2.
- Family history (Polyhydramnios)
- Previous baby > 4.5kg
- Previous unexplained still birth
• Glucosuria > ++  
• Multiparity greater than 4  
• Polycystic Ovarian Syndrome  
• Impaired Glucose tolerance test

The following guidance with regard to screening for GDM with the proviso that these are likely to alter as new information becomes available:

1. Urine should be tested for glucose at every antenatal visit.
2. Timed random laboratory plasma glucose measurements should be made whenever glycosuria (1 + or more) is detected, at the booking visit and 28 weeks gestation.
3. A 75g 2 hour OGGT should be performed if the random blood glucose concentrations are >6.1 mmol/L in the fasting state or > 2 hours of food, or > 7.0 mmol/L within 2 hours of food.

Diagnosis is based on the WHO (1999) recommendations; however, caution should be exercised if these occur in the third trimester when glucose tolerance is known to be impaired.

1. If the fasting venous plasma glucose is > 7.0 mmol/L, or
2. A fasting venous plasma glucose <7.0 mmol/L and a plasma glucose of > 7.8 mmol/L 2 hours after a 75g glucose load.

Monitoring diabetes

The main objective of diabetic therapy is to maintain blood glucose levels as near to normal as possible and to reduce the risk of long term complications. Diabetics are therefore encouraged to monitor their blood glucose concentration regularly by obtaining a finger-prick sample of capillary blood and using reagent test strips (e.g. BM test) with or without a reflectance glucose meter. Blood glucose can also be estimated by testing urine for glucose using reagent strips, although this is less accurate than the blood test and not recommended in pregnancy. Long term blood glucose control can be determined by undertaking a laboratory test to measure glycosylated haemoglobin (HbAlc). Five to eight percent of haemoglobin in the red blood cells carries a glucose molecule and is said to be glycosylated. The degree of haemoglobin glycosylation is dependent on the amount of glucose the red blood cells have been exposed to during their 120 day life. A random blood test measuring the percentage of haemoglobin that is glycosylated will reflect the average blood glucose during the preceding 1-2 months. The higher the HbAlc the poorer is the blood sugar control. Good diabetic control is defined as an HbA1c of < 6.5%.

Carbohydrate metabolism in pregnancy

Pregnancy is characterized by several factors that produce a diabeticogenic state so that insulin and carbohydrate metabolism is altered in order to make glucose more readily available to the fetus. Increasing levels of oestrogen, progesterone and prolactin produce progressive hyperplasia of the pancreatic beta cells resulting in the secretion of 50% more insulin (hyperinsulinaemia) by the third trimester. However, progesterone, human placental lactogen and cortisol are insulin antagonists and reduce the effectiveness of insulin. This is considered to be a glucose-sparing mechanism, which enables large quantities of glucose to be taken up by the maternal circulation and transferred to the fetus via the placenta by a process known as “facilitated diffusion”. After the placenta is delivered insulin resistance and requirements decrease rapidly and the prepregnancy sensitivity to insulin is restored. Gestational diabetes is most likely to emerge during the third trimester when the extra demands on the pancreatic beta cells precipitate glucose intolerance. Women with DM do not have the capacity to increase insulin secretion in response to the altered carbohydrate metabolism in pregnancy and therefore glucose accumulates in the maternal and fetal system leading to significant morbidity and mortality.

Pre-pregnancy care

The risk of the development of congenital malformations increases significantly in women with DM. The malformations associated with diabetes – cardiac, neutral tube defects and caudal regression
syndrome occur during the first trimester of pregnancy and are thought to be related to poor diabetic control at this time. It is important therefore that good metabolic control is established before pregnancy. Women should have access to a prepregnancy counseling service and ideally meet a diabetic specialist midwife/Doctor before becoming pregnant. Assessment is made of current diabetic control aiming for premeal glucose levels of < 6 mmol/L and HbA1c of ≤ 7%. Insulin dosage is reviewed and an explanation given of the adjustments that will be required during pregnancy. Women with type 2 DM on oral hypoglycaemics will need to transfer to insulin to prevent the possibility of teratogenesis. Pregnancy may lead to a deterioration of diabetes and for this reason the presence of renal, cardiovascular or retinal changes need to be assessed. Angiotensin-converting enzymes (ACE) inhibitors to control hypertension are widely used in women with diabetes. However, these drugs are contraindicated in pregnancy because of possible teratogenesis and therefore alternative therapy such as methldopa or nifedipine needs to be considered. Diet, including weight control and folic acid supplementation, and general health measures, including checking rubella status and smoking cessation, need to be discussed in addition to giving advice regarding the effect of diabetes on pregnancy and of pregnancy on diabetes.

Antenatal care

Women and their partners should ideally be seen in a combined clinic by a team that includes a physician, an obstetrician with a special interest in diabetes in pregnancy, a specialist diabetes nurse, a specialist midwife and dietician. The woman is seen as often as required in order to maintain good diabetic control, this may entail fortnightly visits until 28 weeks gestation and then weekly until term. Blood glucose levels should be monitored frequently (four times a day using a reflectance meter) and insulin levels adjusted to achieve premeal blood sugar level of 5.0 – 6.0 mmol/L and postmeal levels of < 7.8 mmol/L. Additional estimations of blood glucose control such as monthly HbA1c measurements are also recommended. Diabetic control is particularly difficult to maintain in early pregnancy owing to the effects of pregnancy on diabetes. This may be exacerbated by other pregnancy disorders such as nausea and vomiting. Women with DM are more likely to become hypoglycaemic at this time and loss of hypoglycaemic warning symptoms is common. Women and their relative need to be warned of this and advice should be given regarding the recognition, management and treatment of hypoglycaemia. A glucagon kit should be supplied and her partner and relatives instructed on how to use it. Dietary advice and monitoring is continued throughout pregnancy as the need for carbohydrate increases as the fetus grows. A diet that is high in fibre is beneficial as carbohydrates are released slowly and therefore a more constant blood glucose level can be achieved. Glycosuria is common in pregnancy owing to the increased glomerular filtration rate and decreased renal threshold. Women with DM have a predisposition to urinary and vaginal infections during pregnancy, these should be discussed with the midwife or doctor so women can recognize the signs and symptoms and seek treatment as soon as possible.

Pre-existing vascular diseases will increase the risk of a woman with DM developing hypertensive disorders in pregnancy and will cause a deterioration of diabetic retinopathy.

In view of the increased risk of congenital malformations, anomaly ultrasound screening should be offered at 20 weeks gestation. It is also recommended that fetal echocardiography is undertaken at 20 – 22 weeks to detect cardiac abnormalities. Serum screening for Down syndrome is altered with maternal diabetes and care should be taken when interpreting the results.

Fetal growth must be observed carefully because of the risk of growth restriction due to maternal vascular disease, pre-eclampsia, or a combination of both. A baseline measurement of the fetal abdominal circumference is taken at 20 weeks. This is followed by serial measurement every 2-4 weeks commencing at 24 weeks. Serial ultrasound should also detect fetal macrosomia and whether polyhydramnios is present.

As far as possible the woman monitors her diabetes at home and diabetic care is provided on an outpatient basis. It is important that the midwife assesses the progress of the pregnancy in the normal
way in order to detect any complications. Hospital admission may be required because of poor diabetic control, a destabilizing illness or obstetric complications.

**Intrapartum care**

Ideally labours should be allowed to commence spontaneously at term for women with uncomplicated DM during pregnancy. Poor diabetic control or deterioration in the maternal or fetal condition may necessitate earlier, planned birth. Induction of labour may also be considered where the fetus is judged to be macrosomic. Routine induction of labour at 37-38 weeks gestation is no longer recommended as it does not reduce the perinatal mortality rate and is more likely to result in respiratory morbidity. It may also contribute to the high caesarean section rate for diabetic pregnancies compared with normal pregnancies. The St Vincent declaration states that caesarean sections are to be performed solely for obstetric indications. Fetal lungs mature more slowly when the mother is diabetic and it is important to take this into account if early induction of labour is planned. In addition, steroids such as dexamethasone, which may be used to aid lung maturation and surfactant production, will increase insulin requirements in women with DM.

The aim of intrapartum care is to maintain normoglycaemia in labour (i.e. < 7.0 mmol/L). Maternal hyperglycaemia leads to an increase in fetal insulin production, which will cause neonatal hypoglycaemia. The St Vincent declaration recommends that maternity units should aim to maintain a maternal blood glucose concentration of between 4 and 6 mmol/L. However, it was found there to be a wide variation within UK maternity units with 15% of units aiming to maintain a concentration of 8.0mmol/L or above. All units should have their own written guidelines for the management of diabetes in labour although regimens will vary. An example of such a regimen utilizing a sliding scale of insulin dosage depending on the maternal blood glucose concentration is outlined.

Fetal distress is more common as placental blood flow is reduced and glycosylated haemoglobin decreases oxygen carriage in diabetic pregnancies. In addition, maternal ketoacidosis may result from dehydration and unstable diabetes. If the mother becomes acidotic, ketones will cross the placenta and affect the fetal acid-base status. Continuous electronic fetal monitoring is recommended and fetal blood sampling should be utilized if acidosis is suspected. Adequate pain relief, such as epidural analgesia, assists in regulating the blood sugar levels and preventing the development of metabolic acidosis in women with DM. It is also useful if difficulties should arise with the birth of the shoulders or an operative birth is required.
Postpartum Care

Immediately after the third stage of labour the insulin requirements will fall rapidly to pregnancy levels. The insulin infusion rate should be reduced by at least 50%. Carbohydrate metabolism returns to normal very quickly and women can resume their pre-pregnancy insulin regimen. Women with type 2 DM who were previously on oral hypoglycaemics or dietary control need to be reviewed prior to recommencing therapy. Monitoring of blood glucose levels should continue during this interim period. Breastfeeding should be encouraged in all women with diabetes. An additional carbohydrate intake of 40-50g is recommended and insulin therapy may need to be adjusted accordingly. Operative birth, together with diabetes, predisposes these women to infection and delayed healing. The administration of antibiotics may be a useful preventive measure in this instance. All women should be offered contraceptive advice so that optimum metabolic control is achieved prior to planning the next pregnancy. The issues governing choice of contraception for women with DM are similar to those for non-diabetic women. All contraceptive methods are considered safe, acceptable and effective for diabetic women. Women with DM, gestational diabetes or IGT should be reviewed at 6 weeks, ideally at a combined diabetes clinic or alternatively by their GP (General practitioner).

Neonatal Care

The development of complications in the neonate is related to maternal hyperglycaemia during pregnancy leading to fetal hyperinsulinaemia. This will result in the following conditions: macrosomia, hypoglycaemia, polycythaemia and respiratory distress syndrome.

Macrosomia: This is defined as a fetal birth weight > 4500g. Maternal hyperglycaemia and consequently fetal hyperglycaemia induce fetal hyperinsulinaemia. This leads to an increase in the amount of fetal body fat and the enlargement of fetal organs such as the liver, heart, spleen, adrenals and the beta cells of the pancreas (beta cell hyperplasia). The increased fetal size may cause prolonged labour due to cephalopelvic disproportion. It also predisposes the infant to difficult deliveries, such as shoulder dystocia and birth injuries. As a consequence asphyxia is common and these infants are more likely than babies of normal weight to die from an intrapartum-related event.

Hypoglycaemia: Beta cell hyperplasia causes the baby to continue to produce more insulin than required for up to 24 hours following birth. The impaired metabolic response to this hyperinsulinaemia causes neonatal hypoglycaemia (blood glucose of < 1.9mmol/L in the term infant). To prevent this complication the neonatal blood glucose needs to be assessed 1-2 hours after birth and then every 4-6 hours for the first 24-48 hours. Regular feeding is encouraged to maintain a blood glucose of at least 2mmol/L.

Polycythaemia: Fetal hyperinsulinaemia during pregnancy also lead to an increase in red cell production resulting in polycythaemia (venous haematocrit > 65%). The rapid breakdown of the excess red blood liver in the newborn predisposes the baby to jaundice. This will be exacerbated if there is bruising as a result of birth trauma.

Respiratory distress syndrome: Hyperinsulinaemia is thought to impair the production of surfactant and delay lung maturation. Hence, babies born at term may display symptomatology of respiratory distress. Infants of diabetic mothers are not routinely admitted to a neonatal unit. A paediatrician should examine the baby carefully at birth, who should be allowed to say with his mother unless there are medical complications as outlined above. Observations of temperature, apex beat and respirations and monitoring of blood sugar levels are important in the first 24-48 hours. Clinical signs together with symptomatology such as respiratory distress, apnoea or tachypnoea, cyanosis, jitteriness, irritability, seizures, feeding intolerance and temperature instability may all be indicative of respiratory distress syndrome, polycythaemia and hypoglycaemia, which will required further investigation and treatment in a neonatal unit. Others could include miscarage, intrauterine growth retardation.
Gestational diabetes

The incidence of GDM varies widely across different ethnic groups. In Caucasians it is 1-2%, in Afro-Caribbeans 2-3% and in Asians 4-5% (Lowy 1997). An agreement as to what is considered a ‘normal’ blood glucose level in pregnancy and at what level maternal and fetal morbidity ensures remains illusive. Hence, the significance of GDM is difficult to determine. The strongest evidence suggests that fetal macrosomia and caesarean section rates are increased. In the longer term there appears to be an association between raised glucose levels in utero and the development of obesity and diabetes in later life. There is also evidence to suggest that women who develop GDM are at risk of developing type 2 DM. It was identified that some women are at high risk of developing GDM and there may be some benefit in selective screening for GDM in women where the following risk factors are identified.

- Maternal age > 25 years
- DM affecting a first degree relative
- High risk racial heritage e.g. Asian-Indian, Middle Eastern, Afro-caribbean
- BMI > 27kg/M²

The following guidance with regard to screening for GDM with the proviso that these are likely to alter as new information becomes available.

1. Urine should be tested for glucose at every antenatal visit.
2. Timed random laboratory plasma glucose measurements should be made whenever glycosuria (1+ or more) is detected, at the booking visit and 28 weeks’ gestation.
3. A 75g 2 hour OGTT should be performed if the random blood glucose concentrations are ≥6.1 mmol/L in the fasting state or > 2 hours after food, or ≥7.0mmol/L within 2 hours of food.

Diagnosis is based on the WHO (1999) recommendations, however, caution should be exercised if these occur in the third trimester when glucose tolerance is known to be impaired.

1. If the fasting venous plasma glucose is > 7.0mmol/L, or
2. A fasting venous plasma glucose < 7.0mmol/L and a plasma glucose of > 7.8mmol/L 2 hours after a 75g glucose load.

Conclusion

Treatment will depend on the blood glucose levels. The midwife should involve both the diabetic nurse specialist and dietician in dietary interventions to regulate carbohydrate intake and restrict fat and sugars. Advice regarding exercise in pregnancy will be of benefit and smoking cessation strategies may also need to be employed. Grossly abnormal results are likely to require insulin therapy. Blood glucose monitoring should continue on a regular basis throughout pregnancy in order to detect hyperglycaemia. Fetal macrosomia is the main complications and therefore fetal growth and well-being should be closely monitored for the remainder of the pregnancy. Decisions can then be made about the optimal mode and time of birth. Following birth the baby should be closely monitored for hypoglycaemia. If the woman is on insulin therapy this is withdrawn immediately after the birth of the baby.

Recommendation

It is recommendation that a postnatal OGTT is performed at 6 weeks; if the results are abnormal then appropriate referral should be made. Those with normal glucose levels require advice regarding the implications for future pregnancies and the development of type 1 or type 2 DM. If the woman adopts a healthy lifestyle and avoids obesity this risk may be reduced.

Conclusion and recommendation

Many patients do not seek medical attention on time, mostly due to cultural believe which negates the preference of Caesarean section as a choice of delivery to mothers in general, despite her status.
More so, there are no clinics or provision for Preconception Counselling either for couples or for intending mothers.

It is very imperative that the Government should institute such services within the existing hospitals and making it a form of legislation that all women who are married or unmarried that fall within the reproductive age should have their blood sugar check done routinely every 6 months.

Those in the rural area should also be taught to do same in the Primary Health Centres. This would help to pick mothers who are at risk early enough to ensure good reduction of maternal and infant mortality and morbidity.

The Public Health Service should be strengthened to disabuse the minds of people on ill cultural practices. Some patients belong to the sect that declines blood transfusion, which may be of great need to their survival in dare emergencies, this possesses a challenge for the health provider especially where autologous transfusion may not be possible and other alternatives are not readily available, this may cause delay or loss of life.

Therefore, the government has to ensure constant public enlightenment or set up a facility for such group where provision of other blood products can be made available at a cost affordable.
To Determine Awareness of Leadership Roles in Nursing Management among Nurses in Consolata Hospital Nkubu

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Abstract

The purpose of the study was to determine awareness of leadership roles in nursing management among nurses of all cadres in Consolata Hospital Nkubu. The study used descriptive cross sectional design, study area being Consolata Hospital Nkubu. The target population was a total of forty seven (47) nurses working in the hospital. Forty seven nurses were interviewed. Inclusion criteria were nurses who have worked at Consolata Hospital Nkubu for more than two months irrespective of the cadre. Census was used owing to the small number of nurses. Questionnaires were used to collect data. Data analysis was through descriptive statistics such as mean, media and percentage to describe results. Presentation of findings was done in form of tables, bar graphs and pie charts. All the cadres presented including; Bachelor of Science in nursing, Registered nurses at Diploma level and enrolled nurses at the Certificate level. Majority being registered nurses at Diploma level (58%), the nurses with formal education on leadership roles in nursing were on the lower boundary (15%). On the contrary, most of the respondents stated that they had adequate knowledge on leadership roles in nursing (85%), but had inadequate time to practice due to shortage of time as presented by 79% of the respondents. In conclusion it is evident that there is deficit in the knowledge of leadership roles in Consolata Hospital Nkubu. The researcher concluded there is need for further training of the nurses on leadership roles.

Keywords: Determine, awareness, leadership, roles, nursing, management

Introduction

Leadership fundamentally is about creating a long-term strategic vision enabling people to work towards change. It involves developing a shared sense of mission, tackling political, organizational and resources barriers, inspiring and motivating others (Kotter, 1996). Effective leadership management in complex environment requires management and leadership. In reality, leaders are not necessarily managers, but managers can be leaders. Management and leadership are taken as distinct concepts although in practice they significantly overlap and interconnect between management and leadership roles.

Nurses play an essential role of offering management which is centrally concerned with operational aspects of planning, organizing and motivating service delivery. Hersey & Blanchard, ((1982) argued that the first distinction between management and leadership was a broad concept and could occur anytime the behaviour of followers was influenced. Centering more on leadership roles in nursing management, the researcher will determine awareness roles of leadership in nursing management among Nurses in Consolata Hospital Nkubu.

The researcher will clear any doubts that might lead to fear of giving the information that could expose knowledge deficit on leadership roles in nursing management and a degree of malpractice. The researcher will assure and maintain confidentiality to the whole population under study.

This is specifically to; assess the awareness, practice and challenges on leadership roles in nursing management among Nurses at Consolata Hospital Nkubu. This knowledge will assist in answering study questions like; what is the knowledge, practice and challenges faced by nurses working in Consolata Hospital Nkubu, on leadership roles in Nursing Management?
Ethical consideration

Permission to carry out the study was sought from, and granted by the director of Consolata Nkubu Hospital through the Nursing Services Manager. An informed voluntary consent was obtained from the participants. Confidentiality of the information gathered from the subjects was maintained and no subject was required to give personal identity. Code numbers were used on the questionnaires instead of using the names of the respondents.

Summary

A total number of 47 nurses took part in the study and demographic data revealed that 15% of nurses were males and 85% were females (table 4.1). Age distribution showed that 21 years to 30 years were 36%, 31 years to 40 years were 43% and 41 years and above were 21% (table 4.2). 38% of the nurses were enrolled nurses, 58% were registered community health nurses while only 4% were BScN nurses (fig.4.1). This is in agreement with a study done by AMREF (2011) on community virtue training where they observed that enrolled nurses in many health institutions hold a big percentage of the nursing staff as compared to degree nurses.

The total percentage of the nurses in this study formally trained in leadership roles were only 15% with majority (85%) not having any formal training.

Nurse leadership can be powerful forces for shaping health policy. Nurse leaders can bring deep experience and understanding of the health care sector to their roles (Shariff 2014). It is essential that decision makers recognize the need for nursing expertise and nurse leadership roles at the health system levels, since failure to effectively utilize nurse leaders across the health system limited the system capacity to meet the demands for health care in future.

Nurse leadership is essential to securing an appropriately sized and skilled workforce, designing innovation models of care delivery, securing strong financial performance and ensuring that patients’ safety is embedded throughout the health system (Garling 2008). This concurred with the results in Consolata Hospital Nkubu, where by 85% of respondents admitted to get support from authority while only 15% did not get support from authority. It was also reported by many respondents (96%) that they are aware of leadership styles and only 4% did not respond to it.

Salanova et al., argued that transformational leadership in particular, tends to support nurses self-efficacy and sense of competence in the work place. However 21% of the nurses in Consolata Hospital Nkubu, felt the same, while the majority (42%) felt democratic leadership is better. Effective leadership styles have also been linked to lower patients mortality as well as shorter patients stay and higher patients satisfactory rates (Havig et al., 2011).

Importance/relevance of the study

Leadership roles and management is a process of social interest, which minimizes the effort of others to accomplish goals or working with others to accomplish goals. Although in practice there is significant overlapping, and interconnection between management and leadership roles, management is centrally connected with operational aspects of planning, organizing and monitoring service delivery (Kotter, 1996).

Nurses are responsible for implementing nursing services, which determines the quality of care offered to the patients.

The nurse training institutions, especially those training of certificate holders (Enrolled Community Health Nurses) do not include leadership in nursing management. This leaves them without knowledge of management, despite the fact that research studies on leadership began around the twentieth century (Marriner- Toney, 1993). Since that time many ideas have emerged regarding the concept of leadership.

According to Davidson et al., 2006; leadership roles are broadly accepted to be about influencing others to accomplish common goals. This provoked the researcher to determine the roles for nurses to improve nursing management among nurses in Consolata Hospital Nkubu.
Magnetic hospitals which adopted transformational leadership style reported decreased satisfaction among nurses (Kramer and Schmalenberg1991) and this is why the researcher was interested in determining nurses’ awareness of their leadership roles in nursing management.

**Background of the study**

Leadership roles existed since time immemorial; they can be traced back in 1950s during the time of Florence Nightingale who is a model of nurses. Fundamentally, leadership is about creating a long-term strategic vision enabling people to work towards change. It involves developing a shared sense of mission, tackling political, organizational and resources barriers inspiring and motivating others (Kotter, 1996). Effective leadership management in complex environment requires Management and leadership, but leaders are not necessarily managers, but managers can be leaders. Nurse leaders have a unique role in promoting patient safety because they lead and manage a workforce which has the highest level of contact and most diverse range of interactions with patients. Nurses are central to delivering high-quality patient care and securing positive patient outcomes. Strong leadership at all levels, Positive leadership styles have been directly correlated with patient outcomes and complications across range of clinical settings (Wong et al., 2007). Nursing units with strong leadership have also been shown to have lower rates of medication errors and patient falls (Houser 2003; Capuano et al. 2005). Nurses play an essential role of offering management which is centrally concerned with operational aspects of planning, organizing and motivating service delivery. In 2008, the Report into Acute Care Services in NSW Public Hospitals (the Garling Report) noted, with concern, that the importance of nurse leadership positions has been recognized internationally in a number of key documents including the Institute of Medicine’s report, The Future of Nursing and the report of the Mid Staffordshire NHS Foundation Trust Public Inquiry (the Francis report). Despite the recognition of the need for nurse leadership at the highest levels, nurse leadership positions are not always secure within health care organizations and the wider health system. Nurse leaders currently occupying formal leadership positions at all levels sometimes lack the resources, visibility or formal authority to be optimally effective. In the current economic climate, there is a risk that the redesign of health care organizations’ management structures may result in the removal of nurse leadership roles at the executive level, as happened in Canada in the mid-2000s (Storch et al., 2013). There must be organizational support for visible and influential nurse leadership roles at the level of the nursing unit, middle management and the executive leadership team. In a system that is facing workforce challenges, financial imperatives and questions, at times, on the quality of care, the key contribution that nurse leaders can make must not be ignored. For those in nurse leadership roles there are other threats that undermine their capacity to contribute to the fullest possible extent.

Centring more on leadership in nursing management the researcher will also integrate planning and staffing as key functions of management among others, in nursing management determining awareness roles of leadership in nursing management among nurses in Consolata hospital Nkubu.

**Study methodology**

**Study design**

A descriptive cross – sectional research design was used in this study. According to Mugenda and Mugenda (2008), the major purpose of descriptive research design is to describe the state of affair as it exist hence its most appropriate in determining the knowledge, practice challenges faced by Consolata Hospital Nkubu nurses in implementation of leadership roles in nursing management.
Study area

The study was carried out at Consolata Hospital Nkubu which is a Catholic Hospital situated in Imenti South district in Nkubu town along Meru – Nairobi highway about 14 km, from Meru town. The hospital has different departments and almost all receive patients who are in need of care. These departments include Out-patient, maternity department, Maternal Child Health (MCH), Medical department, surgical department, comprehensive care centre (CCC) department and Tuberculosis department.

Sampling design and procedure

Census was used where every member of the population was part of the sample. This was appropriate since the sample population is small. All forty seven (47) nurses were part of the sample size.

Inclusion criteria

All nurses on duty during the months of data collection irrespective of cadre, and who have worked in the hospital for more than two months.

Exclusion criteria

1. Any nurse irrespective of cadre who has worked in the hospital for a period of less than two months.
2. Any nurse who refuse to consent.
3. Any nurse not on duty during the month of data collection.

Study instruments

Self- administered questionnaires were used to collect data.

Pretesting of study instruments

The study which instrument was tested in Medical ward has many staffs with similar characteristics with the main research study site. The pre-testing involved 20% of the whole population was randomly selected who totaled 10 respondents.

Data collection

The prospective respondents were briefed about the purpose of the study and their informed written consent requested for participation. Those who consented were issued with numbered questionnaires. Data collection took one month and questionnaires were administered in the Continuing profession development seminars, morning and evening so as to capture nurses working during day shift and night shift.

Data analysis

Data was analyzed using computer application software, statistical package of social sciences (SPSS) version 2007, which entails data coding where the responses were given number codes for easy data entry followed by data input, analysis and report writing. Descriptive statistics such as percentages and fractions were used to describe the results. Presentation of the findings was done in form of tables, bar charts, pie charts and linear graphs as appropriate.

Table 1. Demographic Distribution

<table>
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<tr>
<th>Gender</th>
<th>N</th>
<th>%</th>
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<tbody>
<tr>
<td>male</td>
<td>7(n=7)</td>
<td>15%</td>
</tr>
<tr>
<td>Female</td>
<td>40(n=40)</td>
<td>85%</td>
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</table>

85% (n=40) of the respondents were females, while 15% (n=7) were male nurses.
Table 2. Age distribution

<table>
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<tr>
<th>Age</th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td>21 years – 30 years</td>
<td>17(n=17)</td>
<td>36%</td>
</tr>
<tr>
<td>31 years – 40 years</td>
<td>20(n=20)</td>
<td>43%</td>
</tr>
<tr>
<td>41 years and above</td>
<td>10(n=10)</td>
<td>21%</td>
</tr>
</tbody>
</table>

43% (n=20) of the respondents were between ages 31 to 40 years, 36% (n=17) aged between 21 to 30 years while 21% (n=10) aged between 41 years and above.

Figure 1.1. Distribution of Professional qualifications by category

1. Enrolled Community Health Nurses
2. Registered Community Health Nurses
3. Bachelor of Science Nurses

The qualifications of the respondents were as shown above out of the 47 respondents, 4% were BScN nurses, 58% KRCHN and 38% enrolled nurses.

Figure 1.2. Distribution of formal and non-formal education

1. No formal education on leadership roles in nursing management
2. Formal education on leadership roles in nursing management

85% (40) of the respondents had not received any formal education on leadership roles in nursing management while 15% (n=7) had received formal education on leadership roles in nursing management.

The respondents who had received formal education 70% (n=7) received from basic training in nursing college while 30% (n=3) received in seminars.

100% of the respondents had not attended any continuous profession development on Leadership roles during their work period at Consolata Hospital Nkubu.
91% of the respondents were faced by distressing situations where they knew what was supposed to be done in nursing management and were unable to do it. 9% of the respondents have never been in such a situation.

Of the 91% of the respondents who faced distressing situations 46% gave an example of the cause of distress being not given the authority. 41% gave an example of cause of distress as not having updates in management. 93% felt time shortage was the cause of distress due to workload in the ward. 53% gave an example of cause of distress being staffs not cooperating as presented below.

**Figure 1.3.** Continuing profession development

**Figure 1.4.** Distribution of distress in nursing management

1- Not given the authority
2- Staffs not cooperative
3- Time shortage in the ward
4- Shortage of staffs
1. Adequate knowledge in leadership roles
2. Little knowledge in leadership roles
3. Inadequate knowledge in leadership roles
Lack of knowledge in leadership roles
Awareness of leadership roles in nursing
85% (n=40) of the respondents cited adequate knowledge on nursing management
64% (n=30) cited little knowledge on nursing roles management, 43 % (n=20) cited inadequate knowledge while 43 % (n=20) cited lack of knowledge on nursing leadership roles.

Application of leadership roles in nursing management
Application of leadership roles in nursing management 79 % (n=37) of the respondents did not apply leadership roles appropriately while 21% (n= 10) reported that they are able to apply.
**Figure 1.7.** Reasons why there is no interaction while providing palliative care to patients and families

1. Lack of time due to work load
2. Shortage of staff in the unit
3. Do not find it part of their duty.

**Figure 1.8.** Support of leadership roles

1. Get support from authority
2. Do not get support

85% of the respondents admitted to get support from authority while 15% do not get support from authority.
Figure 1.9. Utilization of leadership

85% (n=40) of the respondents felt that leadership roles in nursing is well utilized, while 15% (n=7) of the respondents felt that it is not well utilized.

Figure 1.10. Challenges faced in leadership

78% (n=36) of the respondents reported that they face challenges in leadership, while 22% (n=11) did not have opinion.

Figure 1.12. Awareness of leadership styles used in nursing

Majority of the respondents 96% reported that they are aware of leadership styles while 4% did not respond as shown above. Majority 80% listed democratic while 20% listed dictatorial and Laissez-faire

Results

The study interviewed a total of 47 nurses from all cadres of nurses working in Consolata hospital. They included Bachelor of Science in nursing, Registered nurses at Diploma level and enrolled nurse. The entire targeted respondents filled the questionnaires after giving a written consent. The filled questionnaires were returned to the researcher making 100% return rate which the researcher found to be significant enough to assess the knowledge on leadership roles in nursing management and challenges faced by Consolata hospital nurses.

The study highlighted majority of the respondents to be female nurses (85%) while male respondents totals to 15%. A good numbers of participants were Registered Nurses, since 4% were BScN nurses, 58% Registered Community Health Nurses and 38% Enrolled Nurses. This clearly indicates that something needs to be done to uplift the professional standard to a level of managers and researchers. The professional qualifications of the respondents reviewed that, 4% were BScN nurses, 58% KRCHN and 38% enrolled nurses. The nurses
noted to have formal education on leadership roles in nursing management were only 15%. This was contradictory information since 85% (n=40) of the respondents cited that they had adequate knowledge on nursing management as presented by 64% of the respondents. On the other hand most of the nurses felt that they had inadequate application of the knowledge on management due to shortage of time as presented by 79% of the respondents. 95% (n=35) demonstrated that Democratic leadership was the most preferred in Consolata followed by Transformational leadership (80%)

Conclusion

A total number of 47 nurses took part in the study and demographic data revealed that 15% of nurses were males and 85% were females (table 4.1). Age distribution showed that 21 years to 30 years were 36%; 31 years to 40 years were 43% and 41 years and above were 21% (table 4.2). 38% of the nurses were enrolled nurses, 58% were registered community health nurses while only 4% were BSc nurses (fig.4.1). This is in agreement with a study done by AMREF (2011) on community virtue training where they observed that enrolled nurses in many health institutions hold a big percentage of the nursing staff as compared to degree nurses.

The total percentage of the nurses in this study formally trained in leadership roles are only 15% with majority (85%) not having any formal training. This result corresponds with Papadatou (2007) observation that lack of professional training and education is a big challenge facing nurses.

at the health system levels, since failure to effectively utilize nurse leaders across the health system will limit the system capacity to meet the demands for health care in future Nurse leadership is essential to securing an appropriately sized and skilled workforce, designing innovation models of care delivery, securing strong financial performance and ensuring that patients’ safety is embedded throughout the health system (Garling 2008). This concurred with the results in Consolata Hospital Nkubu, where by 85% of respondents admitted to get support from authority while only 15% did not get support from authority. It was also reported by many respondents (96%) that they are aware of leadership styles and only 4% did not respond to it.

Salanova et al., argued that transformational leadership in particular, tends to support nurses self-efficacy and sense of competence in the work place. However 21% of the nurses in CHN, felt the same, while the majority (42%) felt democratic leadership is better. Effective leadership styles have also been linked to lower patients’ mortality as well as shorten patients stay and higher patients’ satisfactory rates. Therefore management skills and leadership needs to be added in nurses’ curriculum especially at certificate level, where nurses are not taught management. All cadres of nurses should learn managerial/ leadership roles.

If nurses are equipped with the necessary knowledge on leadership roles in nursing management through continuous professional development upgrading courses from one cadre to a higher one, workload could be reduced since every nurse would understand their roles.

Future steps/recommendations

Compared to the current situation found from the study, the researcher recommends that;
1. Leadership in the Nursing be incorporated in the curriculum.
2. The administration to empower and encourage the nursing staff to achieve higher education which will raise their knowledge and skills in nursing leadership and management.
3. Consolata Hospital Nkubu nurses need to have self-motivation and initiative to upgrade through Continuous Professional Development as well as taking courses on leadership and management in nursing.
4. The nursing administrative nursing officers need to take every available opportunity for seminars and workshop on leadership to train nurses in order to ensure quality outcome in patient care and self-motivation to wards work.
5. The nursing administration needs to give staff nurses’ responsibilities, give them a chance to exercise their leadership roles and support them where necessary.

6. Induction of newly recruited nurses on leadership roles in nursing.

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Technology Assessment of Bachelor Nursing Science Staff Using the Technology Acceptance Model

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Abstract

Institutions of higher learning continue to transition from traditional classroom to eLearning, requiring users to develop the technical skills to adapt and cope with the trend. The learning management system (LMS) provides a platform in which are embedded software or computer programs used to create, manage, and deliver education courses and training programs and learning strategies to support eLearning. However, various features of the LMS are underutilized. This capstone project carried out at a university relatively new to LMS and distance education explored the nursing faculty’s behavioral intentions to accept, adopt, and use the LMS for their courses. The project assessed the concepts that are inherent to faculty as they cope with potential changes that are related to their perception and willingness to adopt new technology such as an LMS. Concepts such as technology self-efficacy and emerging informatics, and the application of theory into practice using the technology acceptance model (TAM) were used to frame the boundaries of the project. A quantitative questionnaire guided by constructs from the TAM to assess faculty’s perceived ease of use and usefulness, attitudes towards and behavioral intentions to use, and job relevance was disseminated electronically. The overall findings suggest a positive attitude and willingness of nursing faculty to accept and adopt the LMS. The TAM proved a reliable tool to assess behavioral intentions. A follow-up study will be conducted to introduce the LMS use and actual adoption by faculty.

Keywords: learning management system, e-learning platform, technology acceptance model, self-efficacy, behavioral intentions.

Introduction

The learning management system (LMS) is a systematic infrastructure that manages the learning process of an entire organization (Watson & Watson, 2007), and a platform in which software or computer program is used to create, manage, and deliver education courses or training programs to support eLearning (Ellis, 2009). Whereas, E-Learning is a form of flexible teaching and learning facilitated by the use of a computer to deliver part, or all of a course in a school, or remotely as in distance learning (Zakariah, Alias, Aziz, & Ismail, 2012). This paper presents a project carried out using the technology acceptance model to assess bachelor nursing science faculty behavioral intentions accepting and adopting the use of LMS in teaching and learning processes. UCU is a young university in Uganda that offers the bachelor of nursing science and masters of nursing science programs for the last ten years. The university, following the global trend in the integration of technology in its services, has acquired and installed the eLearning platform to enhance productivity. Despite the capacity to access the infrastructure and resources, the eLearning platform is underutilized.

The project explored the concepts taken from courses covered in the first three blocks of doctoral study that are inherent to individuals as they cope with potential change. The concepts of technology self-efficacy and emerging informatics, and the application of theory into practice using the technology acceptance model framed the boundaries of the proposed project. Additionally, all concepts related to the perception and willingness of faculty to adopt new technology such as an LMS.
The first concept inherent to the project was self-efficacy (from psychological aspects and human interactions). Self-efficacy as related to technology (technology self-efficacy, or TSE) is defined by McDonald and Seigal (1992) as “the belief in one’s ability to successfully perform a technologically sophisticated new task.” The self-efficacy of faculty was assessed.

A second concept inherent in the project was emerging informatics in healthcare (from healthcare delivery systems in developed, developing and underdeveloped countries). The university is a young university (chartered within the past decade), and technology is still fairly new all across Africa. However, the topic of technology is especially important to nursing faculty as nurses continually face the forced adoption of many new technologies. The project was conducted in an academic setting and incorporated concept development and measurement of clinical phenomena in nursing as a demonstration of the potential applications which can be implemented within the LMS.

**Purpose of the project**

The purpose of the project was to introduce the potential of faculty in the nursing department to adopt the Uganda Christian University (UCU) eLearning platform – a form of LMS - as a means of delivering teaching and learning materials.

**Literature review**

The emergence of the internet in the global society has brought about dramatic changes in healthcare delivery and education system. E-learning for example, in the education system especially has changed the method and manner in which course content is delivered. The learners are able to receive and interact with educational materials and resources available through the internet. In addition, students engage with educators and peers in ways that previously may have been impossible. The traditional method of course delivery in universities for a long time has been a classroom with a professor lecturing while the students listened and took notes (Harandi, 2015). University educators worldwide have transitioned to the modern-day use of the Internet and LMS technologies as teaching and learning methods as a result of the trend and style of providing education (Harandi, 2015). Most institutions of higher education have installed various forms of technology-mediated course delivery systems to cope with policy and the trend.

E-learning can be experienced in many formats, such as through the use of stand-alone computers, the Internet, and satellites with learning materials provided by an instructor, an animated intelligent agent, or through media such as text, images, sounds, and video. E-learning takes place in any location such as classrooms, homes, and in distant field settings, and may be synchronous or asynchronous. Additionally, the number of software learning tools available to faculty and students is countless.

The eLearning technologies offer learners the formal and informal learning that is delivered at anytime, anywhere and on any subject. Uganda Christian University installed an eLearning platform to support both synchronous and asynchronous programs. Despite there being an eLearning platform, the teaching is still primarily conducted using the traditional method.

**Learning management system (LMS)**

Learning Management System, is a software or computer program that is used to create, manage, and deliver education courses or training programs (Ellis, 2009; Watson & Watson, 2007). An LMS, alternatively called a learning platform, and is a wide range of systems and learning services that facilitate teachers and students in accessing online resources for teaching and learning. The platform only requires a computer (Watson & Watson, 2007) and Internet connection, and login information for approved users to access relevant course content, grades, email, and class discussion boards or forums.

An LMS is the "engine" that powers eLearning, and is comprised of a server component in which staff and faculty perform the fundamental functions. These functions include creating,
managing and delivering courses, authenticating users, and serving data and notifications among others (Ellis, 2009). Users must have an interface that runs inside the browser as a web that is used by administrators, instructors and students, typically known as the intranet of an organization. There, members often find shared folder. The LMS is not only used by learning institutions to deliver learning activities, but it's also an invaluable business tool, embraced by enterprises, organizations, governments and local governments to orient or train employees.

Technology adoption patterns

To understand whether an innovation will be adopted or not, Roger’s diffusion of innovations theory (1983) has been used to explain characteristics of adopters. Diffusion is the process by which an innovation is communicated through certain channels over a period of time among the members of a social system (Rogers, 1983 pp. 5). Innovation, an element of diffusion is an idea, practice, or object that is perceived to be new by an individual or other unit of adoption (Rogers, 1983, pp. 11). Innovativeness is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than the other members of a system, and Rogers, (1983), described five categories of adopters who are; innovators (2.5%), early adopters (13.5%), early majority (34%), late majority (34%), and laggards (16%).

In addition to the degree of innovativeness, there are other factors that influence adoption of technology. Although application of technology has been introduced in the classroom, and some teachers have positive perceptions towards its use studies show, teachers encounter difficulties implementing technology due to obstacles such as lack of training, time constraint, creative teaching practices and access to equipment (Chien, Wu, & Hsu, 2014; Nikian, Nor, & Aziz, 2013; Yang & Huang, 2008; Smarkola, 2008). Personality traits such as agreeableness, and neuroticism have also been found to influence acceptance positively or negatively (Özbek, Alınçık, Koc, Akkılıç, & Kaş, 2014).

Technology acceptance model

Adopting the LMS involves factors such as anxiety, personality traits, and cognitive engagement (Achim & Kassim, 2015; Saleem, Beaudry, & Croteau, 2011; Scott & Walczak, 2009) that determine the persons self-efficacy to use the technology. This project will focus on self-efficacy and acceptance as antecedents of adoption of a behavior. Self-efficacy is considered an important factor for learning, as it influences the choice of learning tasks, amount of efforts, emotions, goal setting, persistence, and achievement. Self-efficacy is a belief in one’s capabilities to perform the courses of action (Bandura, 1977) or a judgment of a person’s ability to organize and execute a course of action required to realize a designated assignment (Bandura, 1977). It is also defined as an individual’s judgment of how well one can accomplish courses of action required to handle the prospective situation. In this project, self-efficacy, is referred to as the person’s belief that they can adopt the LMS, and blend it with the traditional learning process.

Self-efficacy plays a central role in one’s acceptance and use of new information as individuals perceive themselves capable of adopting the technology. Previous research on technology acceptance and adoption is substantial. Researchers (Rahman, Ko, Warren, & Carpenter, 2016; Kher, Downey, & Monk, 2013; Tseng & Tsai, 2010) have established perceived self-efficacy as an important aspect influencing whether the user accepts information technologies or not. Self-efficacy represents the persons' judgments of their ability to use the LMS and their confidence in finding information and communicating with an instructor within the LMS. Acceptance in this project is referred to as the adoption and effective use of an LMS. To understand acceptance or adoption of technology, researchers have studied the notion using the technology acceptance model (TAM). The TAM as described by Davis (1985), has been demonstrated in several studies to help explain and predict human behavior for adopting the use of technology (Alharbi & Drew, 2014; Gagnon, Orruno, Asua, Abdeljelil, & Emparanza, 2012; Park, 2009; Saadé, Nebebe, & Tan, 2007; Davis et al., 1989).
The TAM, an extension of the Theory of Reasoned Action (Ajzen, 1991), postulates that acceptance of a new technology can be predicted based on users’ behavioral intention, attitude towards use, perceived belief of usefulness, and perceived ease of use (Davis et al., 1989). Davis (1989), introduced an adaptation model specifically meant to explain computer usage behavior. The model was used to specify the linkages between perceived usefulness (PU) and perceived ease of use (PEU), which are the key beliefs in adopting a behavior.

Davis (1989) defined perceived usefulness (PU) as "the degree to which a person believes that using a particular system would increase one’s job performance." Perceived ease of use (PEU) was defined as "the degree to which a person believes using a particular system would be free of effort.” Further clarification of the model’s verbiage describes useful as being the capability of being used advantageously and ease is freedom from difficulty or great effort.

The model is also used to explain a user’s attitudes, and the intention and actual adoption behaviors. According to Davis (1989), a person’s performance of a specific behavior is determined by an individual’s behavioral intention to perform the behavior (BI). Therefore, BI serves as an indicator of a person’s readiness of the person to perform a certain behavior, and is jointly determined by the person’s attitude (A). Behavioral intention is used to measure the capability of a person’s intention to perform an indicated behavior such as adopting the use of LMS on the job or in learning. Attitude is referred to as a person’s positive or negative feelings about performing a target behavior.

Methodology

Site

The project was carried out at a young university in Uganda, East Africa that has offered the bachelors of nursing science and masters of nursing science programs for the last ten years. The university, following the global trend in the integration of technology in its services, has acquired and installed the eLearning platform to enhance productivity especially for nurses.

Design

The study was quantitative in nature and non-experimental, and carried out using an electronic self-report questionnaire. It was cross-sectional owing to the short time available. It is purposed to assess staff behavioral intentions to adopt the LMS as an acceptable method of teaching and learning using the TAM.

Sampling

The nursing department at the university comprises of only four full time faculty and depends on part time staff. The faculties were considered for the project based on the key role they play in educating nurses and the potential for effective integration of technology such as use of the LMS for teaching and learning. They were selected using a non-probability, convenience sampling method (Polit & Beck, 2008. pp. 251), as they were readily available, and have access to the LMS, therefore possessing the characteristics necessary for participation in the study. The response rate was 65%.
The questionnaire

The 10 question survey was used with permission from Alharbi & Drew (2014) who used the TAM to predict the behavioral intention of faculty in universities to use the learning management systems (LMS). The tool was considered for use because of the similarity in the variables under study, and the high reliability ranging from 0.8-0.95 Cronbach Alpha scale, a measure of internal consistence (Polit & Beck, 2009. p. 455). Testing the minimally edited tool for validity and reliability returned a Cronbach Alpha that compared to that found by Alharbi and Drew (2014) which, consistent with research literature, deemed the survey components to demonstrate internal consistency and reliability when the Cronbach Alpha value exceeded 0.07 (see Table 7). The questionnaire was distributed in the English language as this is the primary language of instruction at the university.

The first five questions of the survey requested demographic data which has been used to describe the characteristics of the respondents. Data requested from the participant included gender, age, number of years in higher education, and academic rank. Additionally, respondents were asked to indicate their experience in years with using an LMS. Questions six through 10 specifically addressed the variables that were measured in the study through extended statements which focused on perceived ease of use, perceived usefulness, attitude towards use, behavioral intentions to use the university LMS, and the relevance of the LMS to their work. Specifically, question six listed seven statements regarding how the respondent used or intended to use the LMS, to which the respondent strongly agreed, agreed, disagreed, or strongly disagreed. Similarly, question seven addressed the respondent’s perceived usefulness of the LMS to their work and included five separate statements. Question eight included three statements that focused on the respondent’s attitude towards usage of the LMS in their university work. Question nine included two statements regarding the respondent’s intention to use the LMS for their university work. Last, question 10 included two statements which addressed the relevance of using the LMS for fulfilling university work.

Bachelor’s nursing faculty responded to each question and statement using the same Likert scale prescribed in the TAM, which asks the respondent to indicate agreement or disagreement as described above. The commercial survey program, Survey Monkey was used to distribute the questionnaire to the BNS faculty.

Data analysis

Descriptive statistics were used to describe the demographic data of the respondents, as well as the Likert rating options for each of the variables. The researcher hopes to demonstrate correlation have been demonstrated and subsequently the impact of the demographics on the significance. Correlation analysis of each of the perceptions has been used to demonstrate the overall intent of the BNS faculty to adopt the LMS (Alharbi & Drew, 2014). The data will subsequently guide the researcher on formulating a plan to hopefully assist the BNS faculty to readily adopt the LMS for their university work.

Ethical considerations

As the researcher, I was obliged to avoid, prevent, or minimize discomfort to the respondents by not subjecting them to the stress of self-disclosure that would arise as they filled in the questionnaire. I reassured them of strict confidentiality regarding the information they gave as no names were used so as not to trace the data back to the respondents. An electronic questionnaire was used, with no form of identity required of the respondents. Their selection into the study was based on the study requirements (Polit & Beck, 2009).

To gain participants’ confidence and trust, I explained the nature of the study as mainly for academic purposes and that any information given was going to be of great importance towards their intentions to adopt the LMS. The respondents benefitted by beginning to think about adopting the LMS as a mode of instruction and learning. Those who did not participate were not prejudiced as participation was purely voluntary. There were no potential risks involved in this study as the respondents only shared their perceptions of intentions to use the
LMS. Written permission to collect data was obtained from the Uganda Christian University Ethics Committee.

Findings

Demographic characteristics

The findings presented were from 13 (65%) of faculty in the nursing department. The survey site was open for only three days to allow a higher response rate. The majority of respondents were female (92%), whose age ranged from 30 to 62 years with majority (46.2%) between 40 and 49 age category. The teaching experience in years ranged from one to 11 and above with equal distribution (33.3%) in the three categories. Majority (69%) were teaching/tutorial assistants, and slightly less than half (46.2%) had not used the LMS before, while 38.46% had used LMS for period ranging between one and three years. The rest of the demographic characteristics are presented in Table 1.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>5</td>
</tr>
<tr>
<td>40-49</td>
<td>6</td>
</tr>
<tr>
<td>50 and above</td>
<td>2</td>
</tr>
<tr>
<td>Number of years of experience in higher education</td>
<td></td>
</tr>
<tr>
<td>1-5</td>
<td>4</td>
</tr>
<tr>
<td>6-10</td>
<td>4</td>
</tr>
<tr>
<td>11 and above</td>
<td>4</td>
</tr>
<tr>
<td>Academic rank</td>
<td></td>
</tr>
<tr>
<td>Lecturer</td>
<td>4</td>
</tr>
<tr>
<td>Assistant lecturer/Tutorial assistant</td>
<td>7</td>
</tr>
<tr>
<td>How long have you been using a learning management system (LMS)</td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td>6</td>
</tr>
<tr>
<td>Less than a year</td>
<td>1</td>
</tr>
<tr>
<td>One to three years</td>
<td>5</td>
</tr>
<tr>
<td>More than three years</td>
<td>1</td>
</tr>
</tbody>
</table>

Constructs from the TAM

Perceived ease of use (PEU)

The perceived ease of use of the LMS was measured and all respondents agreed to perceiving the ease of use if the LMS would be easy, clear and understandable, flexible, easy to operate, and do what they want to do. The majority (76.9%) felt their ability to determine ease of use was limited by their lack of experience, and 23.1% disagreed with the statement indicating a possibility of reasons other than lack of experience. See Table 2: Perceived ease of use.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>% Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1-A7: Perceived Ease of Use (PU)</td>
<td></td>
</tr>
<tr>
<td>1. I feel using an LMS would be easy for me</td>
<td>53.9</td>
</tr>
</tbody>
</table>

Table 1. Demographic characteristics

Table 2. Perceived ease of use
2. I feel that my interaction with LMS would be clear and understandable  
   33.3 66.67 0.00 0.00 1.67 0.47

3. I feel that it would be easy to become skillful at using LMS  
   61.54 38.46 0.00 0.00 1.38 0.49

4. I would find LMS to be flexible to interact with  
   58.33 41.67 0.00 0.00 1.42 0.49

5. Learning to operate LMS would be easy for me  
   61.54 38.46 0.00 0.00 1.38 0.49

6. It would be easy for me to get LMS to do what I want to do  
   58.33 41.67 0.00 0.00 1.42 0.49

7. I feel that my ability to determine LMS ease of use is limited by my lack of experience  
   23.08 53.85 15.38 0.00 2.15 0.95

**Perceived usefulness (PU)**

The perceived usefulness of the LMS was measured and all respondents (100%) agreed with the statement “LMS would improve my job performance” and “I would find LMS useful in my job”. A few (15.38%) however, disagreed with the statement “using LMS in my job would enable me accomplish tasks more quickly”. Consequently, 8.3% disagreed with the statements “using LMS would enhance my effectiveness on the job” and “using LMS would make it easier to do my job”. See more findings in Table 3.

**Table 3. Perceived usefulness**

<table>
<thead>
<tr>
<th>B1-B5: Perceived Usefulness (PU)</th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Using LMS in my job would enable me to accomplish tasks more quickly</td>
<td>61.54</td>
<td>23.08</td>
<td>15.38</td>
<td>0.00</td>
<td>1.54</td>
<td>0.75</td>
</tr>
<tr>
<td>2. Using LMS would improve my job performance</td>
<td>58.33</td>
<td>41.67</td>
<td>0.00</td>
<td>0.00</td>
<td>1.42</td>
<td>0.49</td>
</tr>
<tr>
<td>3. Using LMS would enhance my effectiveness on the job</td>
<td>66.67</td>
<td>25.08</td>
<td>8.33</td>
<td>0.00</td>
<td>1.42</td>
<td>0.64</td>
</tr>
<tr>
<td>4. Using LMS would make it easier to do my job</td>
<td>66.67</td>
<td>25.00</td>
<td>8.33</td>
<td>0.00</td>
<td>1.42</td>
<td>0.64</td>
</tr>
<tr>
<td>5. I would find LMS useful in my job</td>
<td>66.67</td>
<td>33.33</td>
<td>0.00</td>
<td>0.00</td>
<td>1.33</td>
<td>0.47</td>
</tr>
</tbody>
</table>

**Attitudes towards usage (ATU)**

The attitudes towards use of LMS were measured using statements whether respondents believed it was a good idea to use an LMS, whether they liked the idea and whether using LMS was a positive idea. All respondents (100%) agreed with the statements, reflecting a positive attitude towards use of an LMS. See Table 4.

**Table 4. Attitudes towards usage (ATU)**

<table>
<thead>
<tr>
<th>C1-C3: Attitude towards Usage (ATU)</th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I believe it is a good idea to use an LMS</td>
<td>75.00</td>
<td>25.00</td>
<td>0.00</td>
<td>0.00</td>
<td>1.25</td>
<td>0.43</td>
</tr>
<tr>
<td>2. I like the idea of using LMS</td>
<td>69.23</td>
<td>30.77</td>
<td>0.00</td>
<td>0.00</td>
<td>1.31</td>
<td>0.46</td>
</tr>
<tr>
<td>3. Using LMS is a positive idea.</td>
<td>76.92</td>
<td>23.08</td>
<td>0.00</td>
<td>0.00</td>
<td>1.23</td>
<td>0.42</td>
</tr>
</tbody>
</table>
Behavioral intentions to use (BIU)

The intentions to use an LMS were measured with statements that asked whether respondents planned to use an LMS in the future, and their intention to use if they had access, to which statements all (100%) agreed, reflecting their behavioral intentions to use an LMS. See Table 5.

<table>
<thead>
<tr>
<th>D1-D2: Behavioral Intention to Use (BIU)</th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I plan to use an LMS in the future</td>
<td>69.23</td>
<td>30.77</td>
<td>0.00</td>
<td>0.00</td>
<td>1.31</td>
<td>0.46</td>
</tr>
<tr>
<td>2. Assuming that I have access to an LMS, I intend to use it</td>
<td>76.92</td>
<td>23.08</td>
<td>0.00</td>
<td>0.00</td>
<td>1.23</td>
<td>0.42</td>
</tr>
</tbody>
</table>

Job relevance

The relevance of using an LMS on the job was measured in statements reflecting its importance and relevance. All respondents (100%) agreed to the importance and relevance of the use of an LMS in their job. See Table 6.

<table>
<thead>
<tr>
<th>E1-E2: Job Relevance (JR)</th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In my job, the usage of an LMS is important</td>
<td>69.23</td>
<td>30.77</td>
<td>0.00</td>
<td>0.00</td>
<td>1.31</td>
<td>0.46</td>
</tr>
<tr>
<td>2. In my job, the usage of an LMS is relevant</td>
<td>66.67</td>
<td>33.33</td>
<td>0.00</td>
<td>0.00</td>
<td>1.33</td>
<td>0.47</td>
</tr>
</tbody>
</table>

Instrument Reliability

The reliability of the subscales in the TAM were measured and the overall reliability according to Cronbach alpha is 0.8787, indicating the instruments high reliability to accurately measure faculty’s readiness and acceptance to use an LMS. See Table 7.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Number of items</th>
<th>Cronbach alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived ease of use (PEU)</td>
<td>7</td>
<td>0.7913</td>
</tr>
<tr>
<td>Perceived usefulness (PU)</td>
<td>5</td>
<td>0.8997</td>
</tr>
<tr>
<td>Attitude towards use (ATU)</td>
<td>3</td>
<td>0.9496</td>
</tr>
<tr>
<td>Behavioral intentions to use (BIU)</td>
<td>2</td>
<td>0.7784</td>
</tr>
<tr>
<td>Job relevance (JR)</td>
<td>2</td>
<td>0.9517</td>
</tr>
<tr>
<td>Overall reliability</td>
<td>19</td>
<td>0.8787</td>
</tr>
</tbody>
</table>

Demographic characteristics as it correlates with PEU, PU, and ATU

To determine behavioral intentions to accept, and adopt use of LMS, statistical analysis on demographic characteristics as it correlates with PEU, PU, and ATU were performed.

Perceived ease of use

Gender, age, and experience showed no statistically significant relationship with PEU, except academic rank, and use of LMS, $X^2$ (2, N=13) = 9.497, p = .009, and $X^2$ (3, N=13) = 9.497, p = .009 respectively. See Table 8.

<table>
<thead>
<tr>
<th>Items</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>A5</th>
<th>A6</th>
<th>A7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic Characteristics</td>
<td>p-value</td>
<td>p-value</td>
<td>p-value</td>
<td>p-value</td>
<td>p-value</td>
<td>p-value</td>
<td>p-value</td>
</tr>
</tbody>
</table>
Gender | .363 | .831 | .325 | .645 | .325 | .436 | .624
Experience in higher education | .401 | .293 | .710 | .740 | .710 | .615 | .316
Academic rank | .308 | .009 | .506 | .084 | .506 | .084 | .098
LMS Use | .301 | .350 | .009 | .855 | .136 | .253 | .269

## Perceived usefulness

A statistically significant relationship between gender and PU of LMS is demonstrated in Table 9. The other demographic characteristics did not reveal a significant relationship.

### Table 9. Demographic characteristics in relation to PU

<table>
<thead>
<tr>
<th>Items</th>
<th>Demographic Characteristics</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>p-value</td>
<td>.256</td>
<td>.008</td>
<td>.035</td>
<td>.035</td>
<td>.009</td>
</tr>
<tr>
<td>Age</td>
<td>p-value</td>
<td>.443</td>
<td>.468</td>
<td>.293</td>
<td>.565</td>
<td>.517</td>
</tr>
<tr>
<td>Experience in higher education</td>
<td>p-value</td>
<td>.723</td>
<td>.740</td>
<td>.591</td>
<td>.591</td>
<td>.723</td>
</tr>
<tr>
<td>Academic rank</td>
<td>p-value</td>
<td>.713</td>
<td>.550</td>
<td>.785</td>
<td>.785</td>
<td>.713</td>
</tr>
<tr>
<td>LMS Use</td>
<td>p-value</td>
<td>.715</td>
<td>.855</td>
<td>.253</td>
<td>.732</td>
<td>.735</td>
</tr>
</tbody>
</table>

## Attitudes towards use

A statistically significant relationship between academic rank and attitude towards use of LMS is revealed in Table 10.

### Table 10. Demographic characteristics in relation to ATU

<table>
<thead>
<tr>
<th>Items</th>
<th>Demographic Characteristics</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>p-value</td>
<td>902</td>
<td>591</td>
<td>701</td>
</tr>
<tr>
<td>Age</td>
<td>p-value</td>
<td>363</td>
<td>727</td>
<td>263</td>
</tr>
<tr>
<td>Experience in higher education</td>
<td>p-value</td>
<td>370</td>
<td>188</td>
<td>208</td>
</tr>
<tr>
<td>Academic rank</td>
<td>p-value</td>
<td>012</td>
<td>021</td>
<td>003</td>
</tr>
<tr>
<td>LMS Use</td>
<td>p-value</td>
<td>610</td>
<td>178</td>
<td>462</td>
</tr>
</tbody>
</table>

## The association of PEU, PU, and ATU with BIU, and JR

The association of PEU, PU, and ATU with BIU, and JR was tested using Chi-square test. A significant relationship is revealed between PEU and JR, specifically regarding the feeling that interacting with the LMS would be clear and understandable (A2) and job relevance, X² (4, N=13) =16.250, p = .003; flexibility of interacting with LMS (A4) and job relevance, X² (4, N=13) =15.971, p = .003; and easiness of getting the LMS to do what faculty want to do (A6) and job relevance, X² (4, N=13) =15.971, p = .003. Similarly, there is a significant relationship between easiness of learning to operate the LMS (A5), and the intention to use the LMS assuming it was accessible, X² (1, N=13) = 6.240, p = .012. See Table 11.

### Table 11. Perceived Ease of Use (A1-A7) as it Relates to BIU (D1-D2) and JR (E1-E2)

<table>
<thead>
<tr>
<th>Items</th>
<th>Perceived Ease of Use</th>
<th>D1</th>
<th>D2</th>
<th>E1</th>
<th>E2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>p-value</td>
<td>.164</td>
<td>.416</td>
<td>.139</td>
<td>.139</td>
</tr>
<tr>
<td>A2</td>
<td>p-value</td>
<td>.123</td>
<td>.103</td>
<td>.003</td>
<td>.003</td>
</tr>
<tr>
<td>A3</td>
<td>p-value</td>
<td>.569</td>
<td>.252</td>
<td>.296</td>
<td>.296</td>
</tr>
<tr>
<td>A4</td>
<td>p-value</td>
<td>.188</td>
<td>.044</td>
<td>.003</td>
<td>.003</td>
</tr>
</tbody>
</table>
The relationship between perceived use (B1-B5) and behavioral intention to use (D1-D2) and job relevance (E1-E2) was tested using Chi-square test. A significant relationship is revealed in aspects such as accomplishing tasks using LMS on the job (B1), using LMS to make it easier to do job (B4), and finding LMS useful in the job (B5), as it relates to access and intention to use (D2). The significance was $\chi^2 (2, N=13) = 8.775, p = .012$; $\chi^2 (3, N=13) = 9.244, p = .012$; and $\chi^2 (2, N=13) = 7.367, p = .025$, respectively. See Table 12.

Table 12. Perceived Usefulness (B1-B5) as it Relates to BIU (D1-D2) and JR (E1-E2)

<table>
<thead>
<tr>
<th>Items</th>
<th>D1 p-value</th>
<th>D2 p-value</th>
<th>E1 p-value</th>
<th>E2 p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Usefulness</td>
<td>.532</td>
<td>.012</td>
<td>.346</td>
<td>.346</td>
</tr>
<tr>
<td>B1</td>
<td>.719</td>
<td>.044</td>
<td>.234</td>
<td>.234</td>
</tr>
<tr>
<td>B2</td>
<td>.419</td>
<td>.229</td>
<td>.343</td>
<td>.343</td>
</tr>
<tr>
<td>B3</td>
<td>.419</td>
<td>.026</td>
<td>.091</td>
<td>.091</td>
</tr>
<tr>
<td>B4</td>
<td>.532</td>
<td>.025</td>
<td>.111</td>
<td>.111</td>
</tr>
</tbody>
</table>

Attitude towards use in relation to behavioral intentions to use and job relevance was tested and no statistically significant relationship was revealed. See Table 13.

Table 13. Attitude toward Use (C1-C3) in Relation to BIU (D1-D2) and JR (E1-E2)

<table>
<thead>
<tr>
<th>Items</th>
<th>D1 r-value</th>
<th>D1 p-value</th>
<th>D2 r-value</th>
<th>D2 p-value</th>
<th>E1 r-value</th>
<th>E1 p-value</th>
<th>E2 r-value</th>
<th>E2 p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATU</td>
<td>.481</td>
<td>.786</td>
<td>.481</td>
<td>.786</td>
<td>5.417</td>
<td>.247</td>
<td>5.417</td>
<td>.247</td>
</tr>
<tr>
<td>C1</td>
<td>.090</td>
<td>.764</td>
<td>.012</td>
<td>.913</td>
<td>4.198</td>
<td>.123</td>
<td>4.198</td>
<td>.123</td>
</tr>
</tbody>
</table>

Discussion

This project has made a unique contribution to identifying areas to be considered when introducing the innovation to faculty in the nursing department at UCU. Intended to study readiness and acceptance to adopt LMS using TAM, the study has been successful in highlighting factors to take into account. The tool has been utilized in research (Abu-Dalbouh, 2013; Park, 2009; & Saade et al., 2007) and is proving reliable to accurately reflect perceptions of faculty at the study site. The faculty have shown a positive attitude towards accepting to adopt the LMS, and the intention to use it in their job, as it can be noted from both previous users and non-users, by their being positive about becoming skillful in the use of LMS, $\chi^2 (2, N=13) = 9.479, p = .009$. In addition, faculty, regardless of academic rank, perceive the ease of interacting with LMS when it is made clear and understandable, which is a positive reflection of readiness to adopt. Although, faculty feel their ability to determine LMS ease of use is limited by their lack of experience, a few, feel there are other factors that are not included in the study. Attitude has been found an influential factor in accepting to adopt new technology (Kowitlawakul, Chan, Pulcini, & Wang, 2015). Gender, age, and experience in higher education have not provided statistically significant relationship with perceived ease of use, though they remain factors to describe the adoption behaviors of faculty in other aspects.

The relationship between gender and perceived usefulness was statistically significant for four constructs, namely; use of LMS to improve the job, enhancing effectiveness, making it easier to do the job, and finding it useful. This finding is a further reflection of acceptance and
readiness for faculty to adopt LMS. Learning to operate the UCU eLearning platform will enhance effectiveness, and strengthen the efficacy of use to improve performance on the job. Academic rank has a significant impact on attitude towards use of LMS. It should be noted, most of the faculty is part time, at the rank of assistant lecturer, and therefore, not readily available. Learning to use the platform will aid in filling the gap.

**PEU, PU, and ATU in relation to BUI, and JR**

The relationship of PEU with behavioral intentions to adopt LMS, and job relevance yielded significant relationship in only a few constructs. Faculty intend to adopt the LMS when they will find it flexible to use, and does what they want it to do, and because of its relevance in their job. Much as most staff perceived LMS enabling them to accomplish tasks more quickly, there were a few who felt otherwise. This fact may affect one’s decision whether to adopt the technology or not. Factors such as enhancing effectiveness, and easier to do the job were found statistically significant with perceived usefulness.

**Lesson Learnt**

The findings from the study have provided an insight into how to move to proceed with the project. The TAM has proven an invaluable tool in helping understand faculty behavioral intentions to adopting technology into their job. The finding is not different from others performed using a similar model. Though the study has been carried out on a small sample, it is assumed, the results will not alter greatly when conducted on a larger population as reflected in previous studies.

Several issues have risen out of the study that needs to be considered when introducing the LMS. Whereas faculty exhibited a positive attitude towards intentions to adopt the use LMS, there are factors that may impede their willingness to adopt. Most faculty plan to use the LMS in the future as long as they have access to the resource, meaning, the LMS can easily be accessed wherever the faculty is located. Majority deemed the LMS important and relevant in their job, and would find it easier to use if it is clear, and understandable. Bearing in mind this view point, the instructions need to be clear and tailor made for the population of interest during planning and implementation to facilitate adoption. Though findings in the study show most faculty felt their ability to determine LMS ease of use was limited by their lack of experience, a few felt otherwise. This indicates there are other factors besides lack of experience that need to be explores and addressed.

**Limitations**

The study though successful, it was not without limitations. First, the time frame for the study was very limited. Secondly, the sample size was very small and selected from only one department. In addition, a probability sampling procedure would have yielded a more representative view of the population; however, this was not possible considering the small number of staff in the department. Lastly, the findings cannot be generalized to all teaching staff unless an extensive study is undertaken.

**Conclusion**

The project has assessed staff technology acceptance behaviors basing on the concepts covered in the three blocks of doctoral study. The concept incorporated in the project are namely; self-efficacy as it relates to use of technology, emerging informatics in healthcare and the focus has been on adopting technology in nursing education as nurses are continually faced with adopting new technologies in their work, and lastly, application of theory into practice using TAM.

The purpose of the study was to use the TAM to assess faculty behavioral intentions to acceptance and adoption of the LMS in the university. Using a quantitative design, the study revealed a positive attitude towards adoption of the LMS in nursing education. Most faculty
perceived the ease of use, and usefulness of LMS and exhibited behavioral intentions to use considering its importance and relevance on the job.

References


Obesity in Childhood and Interventions

Article by Tshekoetsile Keesi
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E-mail: tshekokeesi@gmail.com

Abstract

Childhood obesity is a condition where excess body fat negatively affects the child’s health and well-being. Childhood obesity has become a global issue and may result in the decrease in the life expectancy. While obesity in children is increasing across the world, minority of children living in urban areas are at higher risk of developing the condition. Due to the rise in obesity prevalence in children and its many adverse health effects it is recognized as a serious public health concern.

This project consists of some short interventions aiming at reducing the obesity in children by educating the caregivers and the rest of the family. The project will be focusing on the interventions that can be implemented in the prevention of continued obesity in children. The purpose of the project is to review the pediatric obesity treatment and with the objectives of determining which treatment can be effective. Though studies I have released that psychotherapy is the primary intervention.

Cardiovascular diseases and diabetes are some of heart problems that affect children negatively, and there is evidence based intervention that can be used by the primary care givers to address the issue of obesity.

Psychotherapy, diet, physical activities and pharmacotherapy are all effective interventions in treating childhood obesity. I have selected this topic from the three blocks which are health assessment, health care delivery policy and quality outcomes and leadership and communication.

Keywords: Obesity, childhood, body mass index, interventions

Introduction

Childhood obesity is a serious medical condition that affects children and adolescent. Obesity occurs when the child’s weight for age and height is above the normal. Psychological problems could result from this, due to change of body that could lead to low self-esteem and depression.

To reduce childhood obesity several strategies could be used to improve the diet and exercise habit of the whole family. Treating and preventing obesity in children could protect the health of the child from getting diseases that are secondary to obesity.

The number of children with obesity continues to rise in the US; out of five children one is overweight. The Body Mass Index (BMI) is acceptable for determining obesity in children two year and older, a measure of weight in relation to the height, used to determine weight status. The normal range for BMI in children varies with age and sex. Overweight is defined as having BMI at or above 85th percentile but below the 95th percentile, a BMI greater than or equal to the 95th is defined as obesity by Centers for Disease Control and Prevention. The US Prevention Service Task Force reported that not all the children with high BMI need to lose weight though.

There are consequences that go with this issue. In addition, BMI may be mistaken, rule out some children who do have excess adipose.

“In 2013-2014, 33.4% of children aged 2 to 19 were overweight, and 17.4% of those were obese”, said the findings in the journal Obesity.
In 2007-2008 among children and adolescent aged 2 to 19 years old, 11.9% were at or above the 97th percentile and 16.9% were at or above the 95th percentile and 31.9% were at or above the 85th percentile for age and weight. (Ogden et al. 2010).

There are various reasons for childhood obesity. The most common causes of childhood obesity are genetic factors, unhealthy eating habits, lack of activity, eating fast foods or could be a combination of all these factors. Children whose parents or siblings are overweight may run an increased risk of becoming overweight themselves. There are consequences that go with obesity for an individual which could be psychological and physically on a social level. High numbers in obesity pose a great threat on the health care costs since chronic conditions associated with obesity will increased. These conditions include cardiovascular diseases and diabetes and many others, hypertension, dyslipidemia, fatty liver, metabolic syndrome, sleep apnea and other significant co-morbidities.

Treating obesity is a two-step process which consists of assessment followed by treatment management as defined by the NIHs clinical guidelines. (NHLBI obesity education initiative expert panel, 1998). The strategies for weight loss include dietary therapy, physical activity, behavioral therapy, and pharmacotherapy and surgery intervention. When choosing which intervention(s) to use, consideration has to be taken not to use pharmacotherapy or surgical intervention before other means have been exploited, more conservative treatments should be fully utilized. The rationale of this project is to develop an effective obesity prevention programs that provide parents with knowledge and skills for healthy living in areas of nutrition, physical activity, body image and family communication.

**Literature review**

**Dietary therapy overview**

It is very important for the family to be involved in changing healthy food intake. The food choices that we make while we buy food and the way they are cooked matters a lot. Altered attitudes to meal time may be required. Healthier food intake may include the following:
Not having soda and sweetened fruits drinks the fridge
Using low fat dairy product
Increasing amount of fruits and vegetables
Stocking a range of low fat snacks that the child can enjoy
Making time to eat breakfast
Eating meal together as a family
Drinking water with meals
Planning non-food rewards for e.g. - toys, CD, outing to the park
Taking packed lunch from home to school

Dietz suggest that “soda taxes should be increased so that people do not buy them to help them make healthier choices.” He also talks about “healthier choices easier choice”.

Dietary therapy implies a structured planned change in ones established meal pattern which include specific guideline for nutrient and energy intake. (Latzer 2008).

Physical activity overview

Interventions aimed at improving diet, increasing physical activity, and decreasing sedentary behavior form the foundation of childhood obesity prevention and management. Obesity result from an energy imbalance; that is energy intake exceeds expenditure. But the truth is there is no simple answer for treating obesity in youth. High level of physical activity could compensate for children’s excessive calorie or fat intake, but research has shown that there has been a marked reduction in levels of physical activity in children and adolescent. (Davison and Birch 2001). Higher level of physical activity and habitual exercise also has seen to reduce BMI in children.

Davison and Birch (2001) reviewed the complex factors involved in planning for children at risk for increases in weight status. They view this complex set of factors from an ecological systems theory perspective, which looks at their family, school and social context including society and community at large. The type of activity is also appears to be important for sustained weight loss. The time taken/spent on an exercise also counts for physical activity to be effective. While both forms of exercise helps to promote initial weight loss, the child or adolescent more likely to continue long term with the lifestyle form of activity. Walking, cycling, swimming, informal ball games and playing outside are the physical activities that the children could engage in to control weight. Obese children and their family should be encouraged to incorporate some opportunity for incidental activity into their everyday life style. Parents should be role models for their children, they should be involved too as a daily habit in the home, and they should be the social models for the children. Encouraging a decrease in sedentary behavior may be more effective than an increase in physical activity. Research shows that decrease in sedentary behaviors were associated with decrease in BMI (Davison and Birch 2001).

Changes in the school have negatively impacted activity levels in children, due to school budget physical education classes are not offered during school day.

In summary, these behavioral patterns including low levels of physical activity, high levels of sedentary behaviors and preferences for high fat, sugar foods together put weight gain in children. (Davison and Birch 2001). An increase in physical activity, decrease in sedentary behaviors while including child parents, school and community make the most effective intervention plan key elements in the fight against obesity in children. Parents and family involvement is crucial.

Psychotherapy treatment overview

The most studied intervention for childhood obesity is behavioral therapy.

The cornerstone in the management of an obese patient is therapeutic lifestyle intervention which includes restricting calories and simultaneously increasing physical activity. This combination has been known to produce a significant weight loss of up to 10% of the initial weight. To reinforce lifestyle changes, behavioral therapy (BT) has been incorporated into the
overall intervention in the belief that obesity is a result of maladaptive eating patterns and exercise habits. Behavior Therapy can help individuals who are predisposed to obesity to develop a set of skills that can help them to achieve a healthier. Some behavioral therapy used in weight loss includes the following: goal setting, self-monitoring, and stimulus control, problem solving and group interventions. Combined with behavioral therapy, low calorie diet and increased physical activity provide the most successful treatment for weight loss. Kalarchian et al found that family based behavioral weight control is effective for obese children. According to recent study published in quantity of life research, cognitive behavioral therapy can be effective in reducing obesity and increasing health related quality of life in children. Comprehensive behavioral treatments which focus on good eating patterns and physical activity have shown to be of great importance in weight control. Additionally, behavioral therapy is more effective when it uses such components as stimulus control, self-monitoring, and reinforcement of behavioral change ad modeling of healthy eating behaviors.

Pharmacotherapy overview

Pharmacotherapy should be used together with other interventions and should implemented fully, exploring the conservative treatment, lifestyle, behavioral and family based interventions. (NHLBI obesity education initiative expert panel, 1998). Pharmacotherapy methods are usually designed to do one of the three things, increase energy expenditure, suppress appetite and limit nutrient absorption (Latzer 2008). These medications are effective in reducing weight but are contraindicated in children. Pharmacology is an option available for extremely obese children older than 12 years of age who have not responded to 1 year dietary and lifestyle treatment as well as for those with impaired glucose intolerance or insulin resistance and a strong family history of diabetes, MI and stroke.

Surgical treatment overview

Bariatric surgery refers to surgical procedures performed with the intention of reducing weight. It can be performed by an open and a by a laparoscopic techniques, and the laparoscopic technique as currently become the more popular approach. The procedure has earned the reputation of being the gold standard, against which other procedures are compared. It has a restrictive and malabsorptive component. The main purpose of these surgeries is to reduce the size of the stomach either by implantation of a gastric band or removal of a portion of the stomach

The gastric bypass provides a substantial amount of dietary restriction and the malabsorptive element is a result of bypassing the distal stomach, the entire duodenum, and varying in the length of the jejunum. The extent of the bypass of the intestine determines the degree of macronutrients malabsorption. After the surgery the child will have a small stomach and feel full or satisfied with less food and will not be able to eat much as before.

Severely obese adolescent ranging from 12 to less than 18 of years of age are consider eligible for bariatric surgery according to the National Institute of Health Adult Criteria. Bariatric surgery has been found to safe in adolescence and has been associated with the significant results of weight loss, correction of obesity co morbidities and improved self-image and socialization (Sugerman et al, 2003).

Efficacious treatment defined

The efficacy of treatment must be demonstrated in controlled research in which it is reasonable to conclude that benefits observed are due to the effects of treatment and not to chance to confounding factors such as passage of time, the effects of psychological assessment, or the presence of different types of clients in the various treatment conditions. (Campbell and Stanley, 1963; Kazdin, 1992). The efficacy is best demonstrated in randomized clinical trials (RCTs), group designs in which patients are randomly assigned to the treatment of interest or one or more comparison conditions or carefully controlled single care experiments and their group analogues. This has gone unchallenged.
As is the case in research in general, replication is critical, particularly replication by an independent investigatory team. The requirement of replication helps to protect the field from drawing erroneous conclusions based on one aberrant finding. Replication by an independent team of investigators also provides some protection against investigator bias or reliance on findings that prove unique to a particular setting or group of therapists. Thus, only when a treatment has been found efficacious in at least two studies by independent research teams thus when its efficacy is considered to have been established and label it an efficacious treatment.

Methods used to conduct the treatment must be sufficiently sound, in order to justify reasonable confidence in the data. Finally, the treatment results must be of clinical significance, that is, the treatment condition must produce significantly greater effects than the comparison condition achieves (Chambliss & Holon, 1998). ESTs for treating pediatric obesity include nutritional education, increase in physical activity or decrease in sedentary behaviors, and support which involves both children and parents participating in group therapy (Herrera, Johnston, & Steele, 2004).

The purpose of the this project is to review pediatric obesity treatment that could be considered ESTs, with the objective of determining which treatments are effective and efficient, and the direction that future research could take, studies are grouped into sections based upon their primary interventions and all types of treatments. Methods included in this review are psychotherapy, dietary, physical activity and pharmacotherapy. Surgical interventions were also included for consideration but due to lack of ability to randomly assign participant and have a comparison group they were eliminated from the main portion of this review.

**Methods**

**Study selection**

I searched on internet explorer for childhood obesity and treatment. Studies concluded that the target population are overweight or obese children and adolescent and there are used interventions to aid them in losing weight. All articles selected for this review were required to report outcomes on at least one weight such as BMI, weight or percentage of body weight.

**Result**

**Dietary therapy**

The Traffic Light Diet was used to decrease energy intake and promote a balanced diet. Foods are categorized as red, yellow or green on the basis of their calorie and nutrient content. Green foods (e.g. fruit and vegetables) are very low in calories. Yellow foods (e.g. yogurt, 2% milk) are higher in calories and include the dietary staples needed for a balanced diet. Red foods (e.g. potato chips, candy) are foods higher in calories with low nutrient density. Children and parents were instructed to consume between 1000 and 1200 calories per day, and to maintain nutrient balance. When participants, weight decreased to the non-obese range, they were instructed to eat an additional 100 calories per day for a week at a time until weight gain occurred, and they should attempt to maintain the caloric values associated with weight maintenance. Non-overweight parents had no caloric restriction, but were asked to limit red foods. Families were provided with additional nutritional information, including reading food labels and shopping.

**Physical activity**

An increase in physical activity either programmed activity or lifestyle activity, done at moderate intensity or higher emphasized. Physical activities done as a required part of the work or school day were not included. Physical activity goals began at 30 min per week and increased by 30 min according to how the child could tolerate, and increased each time the
goals were met, with 180 min per week performed at moderate intensity or higher representing the highest activity goal.

**Psychotherapy**

Studies identified that psychotherapy is the main intervention for treating obesity. Doyle et al. (2008), randomized eighty adolescents aged 12 to 17 who were above the 85th percentile for BMI. Usual care participants received handouts containing basic information on nutrition and physical activity. There was a 16 week Internet delivered program using cognitive behavioral therapy to increase body image, basic health education, and guided behavioral modification. Participants were instructed to spend 1 to 2 hours per week on this Internet program, and adiposity measurements were taken at baseline, post intervention, and a 4-month follow up.

**Dietary therapy**

The Traffic Light Diet was used to decrease energy intake and promote a balanced diet. Foods are categorized as red, yellow or green on the basis of their calorie and nutrient content. Green foods (e.g. fruit and vegetables) are very low in calories. Yellow foods (e.g. yogurt, 2% milk) are higher in calories and include the dietary staples needed for a balanced diet. Red foods (e.g. potato chips, candy) are foods higher in calories with low nutrient density. Children and parents were instructed to consume between 1000 and 1200 calories per day, and to maintain nutrient balance. When participants, weight decreased to the non-obese range, they were instructed to eat an additional 100 calories per day for a week at a time until weight gain occurred, and they should attempt to maintain the caloric values associated with weight maintenance. Non-overweight parents had no caloric restriction, but were asked to limit red foods. Families were provided with additional nutritional information, including reading food labels and shopping.

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**Pharmacotherapy**

The usefulness of certain drugs depends upon the co morbidities present. The use of these drugs is not recommended due to potential side effects. However, people do occasionally use these drugs illegally; they buy them over the counter.

**Anthropometric measurements**

Body mass index was calculated using the subject height and weight (BMI=kg/m$^2$). BMI changes reliably with age during development, so that the raw BMI value must be compared to population standards to interpret changes. In addition, percentage overweight was calculated by BMI at the 50th BMI percentile for age and gender. Anthropometric data were collected pretreatment and at 6 and 12 months post randomization.

**Conclusion**

Obesity in children and adolescents has become a global epidemic, and it is an increasingly important issue is it poses major health risks of chronic diseases. Obese children are more likely to become obese adults and thus more likely to have health risks associated with obesity beginning in their youth and continuing on into their adulthood (Center for Disease Control and Prevention, 2011). Life expectancy trends of humans during the past thousand years have been characterized by a slow, steady increase (Olshansky et al., 2005). For the first
time our children, grandchildren, and young adults may have a shorter life expectancy than those adults today, reducing the length of life of severely obese by an estimated 5 to 20 years (Olshansky et al., 2005). There has been an increase in the prevalence rate of type II diabetes in children, which is a disease with complications that are both life threatening and life shortening by approximately 13 years (Olshansky et al., 2005). Overall psychotherapy, diet, physical activity, and pharmacotherapy are all effective interventions in treating youth obesity, when evaluated using established criteria for empirically Supported treatments (Chambliss & Holland, 1998).

A combination of all these factors could bring better results. Parents should take their children for child health days where they could screen and problems identified early. Parents should play a pivotal role in prevention of obesity in their children by carrying out interventions aiming at reducing weight. Parents should be role models and is them who provide for their children so they must know what to bring home as food and make sure they are cooked properly and eaten in a good manner. One lecturer has once said “people dig their own graves with their own teeth,” because of food choices.

Acknowledgements

I would like to thank the authors of all the articles that I have read and helped me compile my information.

References

Difference in Breastfeeding Practices among Urban and Rural Mothers in Lahore, Pakistan

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Abstract

The objective of the study was to assess the breastfeeding practices in rural and urban nursing mothers and to evaluate the determinants of selected key indicators of breastfeeding practices in both rural and urban setting in Lahore, Pakistan. There was a need to assess the breastfeeding practices, so that the appropriate measure could be taken in order to lessen the number of the children experiencing these illnesses. A cross-sectional descriptive study was carried out on 370 mothers having up to one year old children Frequencies and percentages were computed. Exclusive breastfeeding was reported by about 40.8% of the mothers. Mostly of them were self motivated. Most of them started breastfeeding on first day. Majority of the females (59.8%) were not giving breastfeeding, mostly of them belong to urban areas and were working females. As per the analysis, it has been found that 98.6% females were from their professional and marital life. Large number of females, living in the urban areas, working for 6-8 hours a day cannot manage breastfeeding along with the work. There is a strong need for the development of policies by the government agencies to allow mothers with infants avail maternity leaves in order to provide exclusive breastfeeding to the children. Since some private organizations do not allow for long maternity leaves. Awareness campaigns should be initiated to provide necessary information about the advantages of breastfeeding and effects of not breastfeeding to the children.

Introduction

Breastfeeding is the process of feeding the infant with mother’s milk, either by direct nipple-baby mouth contact or by expressed breast milk. During the first two or three days watery and yellowish fluid that comes from the mammary gland differs from the regular milk and is called Colostrum. It is secreted in small amount and rich in proteins and having less fat content. And the Mature milk is whitish milk that is effectively produced from about 10th day following delivery(Petit, 2010). Exclusive breast feeding (EBF) is the practice of feeding the infant for the first six months of life on breast milk only, without any other type of food and fluids, not even water. EBF is recommended as the best feeding alternative for infants up to six months and has a protective effect against mortality and morbidity.

Colostrum is important for the baby as it contains more protein, immunoglobulin’s (IgA), lactoferrin, white blood cells, vitamin A, zinc and less fat (Petit, 2010). These are important for an immune defense of the baby during the initial days of life. It also contains an Interferon like substances which possesses strong antiviral activity. EBF is associated with multiple advantages to both, the baby and the mother. On the baby’s side, there is acquisition of passive immunity against infection, nutrients for physical and mental development, emotional security and closeness to the mother. Being a dynamic and physiologically sensitive process, breast milk production is adjusted to suit the infant’s requirement according to environmental changes. For example, breast milk will contain more fat during cold seasons.

Material & methods

A descriptive cross-sectional design was used to conduct this study. A self-administered questionnaire was used to conduct this study. This study was conducted in ‘KAROL WAR’ rural areas/ villages besides capital of Punjab Lahore, and urban areas of all catchment of Shalamar Teaching Hospital, Lahore, Pakistan. All nursing mothers of above mentioned areas
were invited to be the part of the study completing inclusion criteria. Purposive/convenience sampling was be used for the selection of subjects. The sample size was 370 upon 95% of the confidence interval. The collected data base was created in Microsoft Excel 2013 and transferred to SPSS 20 computer software statistical program for further analysis to calculate the frequencies and percentages. The research study was conducted after the authorization of Ethical committee and advance research board. All of the ethical principles were obeyed according to the set parameters.

Results and discussion

30% (111) females belong to age group 20-25 years. 39.7% (146) females belong to age group 26-30, and the rest 30.3% (113) belong to age group 31-35. 88.4% (327) females are Muslims and 11.6% (43) are Christians. 20% (74) females are residents of rural areas, whereas most of the females 80% (327) are living in the urban areas of Lahore. 98.6% (365) females are currently married, 0.8% (3) females are widowed, whereas 0.5% (2) are recently divorced. Most of the females 60% (222) have 1-2 children, 30% (111) have 3-4 children and the rest 10% (37) females have 5 or more than 5-6 children. 0.8% (3) females did not receive any formal education at all. 0.3% (1) received education up to primary level, 1.1% (4) females received to middle level, 54.3% (201) females received up to higher secondary school level, whereas 43.5% (161) females are graduates. 30% (111) females are housewives, 30.8% (114) are working in the government setup, and 38.9% (144) are employed in private organizations, whereas 1 female is working as a maid. Out of 259 working females, 23 females perform their duties for 6 hours and the rest 236 females are working for 8 hours per day.

As far the breastfeeding practice is concerned, only 40.8% (151) females are giving breastfeeding to their children, and the rest 59.2% (219) were not giving breastfeed. As far the mother’s decision of giving breastfeed to their children is concerned, 23.5% (87) mothers are self motivated, 11.6% (43) mothers were influenced by their mothers or in laws to give breastfeed, whereas 2.7% (10) mothers were influenced by the baby’s father, 1.9% (7) mothers were motivated by the health care professionals, and the rest 59.2% (219) females are non-lactating. 60.8% (225) females did not plan to breastfeed, whereas 39.2% (145) mothers planned to give breastfeed for several months or more. 10% (37) females received help in breastfeeding from a nurse. 30% (111) mothers reported that they observe the change in colostrums in first 24 hours, 10% (37) stated that they observed this change after 24 hours, and the rest 60% don’t know at all.

As far the satisfaction with professional and marital life is concerned, 98.6% (365) mothers are satisfied with their professional and marital life, and 1.4% (5) mothers are found dissatisfied. 38.9% (144) mothers are able to manage breastfeeding, whereas the 61.1% (226) are not able to manage breastfeeding.

Exclusive breastfeeding must be the sole source of nutrition for infants up to six months of age, but only 40% of the mothers were observed to practice it. The difference observed between UNICEF data (16%) and our finding (40%) could be due to the difference in the study population. My study was a regional study, comprising of urban and semi-urban while UNICEFs finding is that from a national survey, where the rural population is of approximately 70%. A study conducted in Bahawalpur, Pakistan, found the exclusive breastfeeding rate to be 30%. While another study conducted in a military hospital in Multan found EBF to be even lower (16%) at 6 months of age. This may be because of the belief that there is not sufficient milk production to fulfill the requirement of the infant and therefore they have to start them on supplemental feed. This is a misconception which was observed, as milk production is dependent on the suckling reflex and does not decrease if mothers keep breastfeeding their infants. Another factor contributing to the difference observed could be the non-affordability of the prepared formula milk by the mothers in the rural areas. This fact is strengthened by the finding that mothers who practiced supplemental feeding gave Cow/Goat milk rather than formula milk, which is cheaper. It is a common cultural belief that the initial breast milk is dirty and not nutritious and therefore has to be supplemented with pre-lacteal
feeds like honey and ghutti. Findings were consistent with that of Ashraf et al. There is great potential for contamination with these practices and therefore are considered unsafe. Also early introduction of foods leads to various allergies in later life. This implies that breastfeeding promotion programs should be tailored to local cultural perspectives. The practice of pre-lacteal feeds was shown to be more common (79%) in another study conducted in Hyderabad Pakistan, by Memon et al in 2006. The practice of pre-lacteal feeds is not only common in Pakistan but is frequently observed in many Asian countries. WHO data shows that in rural India approximately 93% of the infants surveyed were given pre-lacteal feeds for the first two days of life. Infants in Bangladesh are reported to be fed honey or mustard oil for 3 days in combination with or followed by breastfeeding for a month. It is important to initiate early education to mothers who deliver at hospitals, regarding optimum breastfeeding by the hospital staff. 40% women in our study initiated breastfeeding within 1 hour of birth compared to 37% from the study by Memon et al. Umme kulsoom et al showed that 28% initiated breastfeeding within 4 hours while we observed the rate to be 2.5 times more.15 The knowledge of mothers regarding different aspects of breastfeeding was found to be deficient in the rural center as compared to the urban center. This dissimilarity can be explained by the lower literacy rate and the passing down of misconceptions and rigid opinions of elderly women of the society. The results of our study showed differing awareness of mothers about the possibility of breastfeeding leading to weakness. Lactating mothers should be as healthy and active as non-lactating. Breastfeeding mother needs to understand the "supply and demand concept” of milk production. A positive feedback loop stimulates the breast to create more milk. If this concept is understood by mothers, they may concentrate more on breastfeeding and stop the supplements. A mother's diet does not affect the concentrations of major nutrients in breast milk. Limitation of this work is that it is a cross-sectional study, conducted with convenient sampling; therefore the results cannot be generalized.

Health education programs addressing optimum breastfeeding practices have been ongoing but looking at the declining rates of breastfeeding I recommend that the focus be shifted towards dais (local birth attendants) that are present at the time of birth and so can utilize the opportunity to initiate breastfeeding early and avoid the use of pre-lacteal feeds. Also peer groups should be formed headed by those mothers who have exclusively breastfed and have healthy babies; this could help remove misconceptions associated with breastfeeding and thereby improve upon the existing practices. Lower rates of breastfeeding at tertiary care hospitals, in spite of Baby Friendly Initiative may be due to decrease keenness of health professionals to keep mothers motivated about breastfeeding. Initiatives should be taken to encourage mothers to deliver at hospitals as this was found to be a protective factor towards optimum breastfeeding practice.

Conclusion

This study is able to show the status of exclusive observed are influenced by factors like, education and employment status, affordability, etc. It can be concluded that a large number of females, living in the urban areas, working for 6-8 hours a day cannot manage breastfeeding along with the work. There is a strong need for the development of policies by the government agencies to allow mothers with infants avail maternity leaves in order to provide exclusive breastfeeding to the children. Since some private organizations do not allow for long maternity leaves. Awareness campaigns should be initiated to provide necessary information about the advantages of breastfeeding and effects of not breastfeeding to the children.

Implications of findings

Aforementioned results clearly shows that there are still large number of mothers specially living in the urban areas and working for 6-8 hours do not practice exclusive breastfeeding despite of massive awareness campaigns and so on. There is still need to develop policies to
facilitate mothers to practice exclusive breastfeeding. More awareness programs should be started at ground levels. Currently the condition is alarming.

Recommendations for further studies

More funded studies can be conducted with the help of some female co-researchers, since it is hard to collect such data by a male researcher due to cultural considerations.

Limitations of the study

Major limitations that were faced by me, while conducting this study were collecting data from only mothers who delivered a baby within last 1 year, after finding such mother collecting such information due to hesitation and cultural considerations. Another limitation of this study is generalization. Since the findings cannot be generalized on the entire population.

References

Influence of Knowledge, Attitude and Beliefs on Adolescent Contraceptive use in Benin City, Nigeria

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Abstract

Contraceptive use by adolescents has become a critical issue of concern to parents, educators and medical practitioners in recent years because of trends towards more widespread and early sexual activity of adolescents. This leads to devastating consequences of unprotected sexual activity at an early age such as unplanned pregnancy, unsafe abortion and sexually transmitted infection.

The study assessed the knowledge, attitudes, practices and beliefs about contraceptives use among secondary schools adolescents in benin city, edo state, Nigeria. Descriptive cross sectional design using both quantitative and qualitative methods was adopted for the study. Four hundred students from seven public secondary schools categorised into urban, peri-urban and rural were randomly selected and interviewed.

The result showed that contraceptives awareness level among the students was high but the use among the sexually active students was very low due to ignorance. The television was the main source of knowledge on contraceptive to adolescents. Only 23.3% of the boys and 11% of the girls of the sexually active students who claimed to use contraceptives used them consistently. The male condom was the commonest used method by both sexes. The main reasons given for non-use of contraceptives were ignorance and feeling shy buying contraceptives. There is the need for adolescents to be educated more on their sexuality to increase their awareness of the risks of pregnancy and STIs such as HIV.

Keywords: Contraceptive, Adolescents, Knowledge, Attitude, Practice.

Introduction

Adolescents engage in rather consistent aggression of sexual behaviour. The initial sexual intercourse occurs in the mid to late adolescent years for the majority of teenagers. More than one-half of 17 year olds have had sexual intercourse and by the end of adolescence, the majority of them have had sexual intercourse.

Contraceptive use by adolescents has become a critical issue of concern to parents, educators and medical practitioners in recent years, because of the trend towards more widespread and early sexual activity of young people. It is also because of the devastating consequences of unprotected sexual activity at an early age such as unwanted pregnancy, unsafe abortion and sexually transmitted infection (STIs) including HIV and AIDS.

Adolescents have to make effective decisions on contraceptive use once they become sexually active but this activity is usually affected by factors such as peer influence, knowledge about contraceptive methods, economic status, life goals of the individual, beliefs about contraceptive use as well as the role the media plays in the lives of adolescents. It has been realised that effective, accessible, affordable and acceptable health care services could help adolescents make good decisions on contraceptive use.

Adolescents need effective, affordable and comprehensive health care services to increase contraceptive use and enhance their general health status, they encounter many barriers to obtain contraceptive methods and these affect their decision to use contraceptives.
In some places, cultural pressures and practices related to adolescents and their sexuality (puberty or transitional rites, age of marriage, acceptance of premarital sex) may inhibit their decision on using contraceptive devices. Inaccurate information from rumour, myths and beliefs in their ability to successfully use condom to protect themselves against HIV may be factors for adolescents deciding not to use contraceptives.

**Problem statement**

Majority of adolescents throughout the world are sexually active by age 19 years with a mean age of sexual activity at 14.4 years for boys and 15.9 years for girls, but most of adolescents lack accurate knowledge about sexuality and reproduction, and have little access to reproductive health services including contraceptives. Premarital sexual intercourse is common, often impulsive and appears to be on the rise in all the regions of the world.

In Nigeria, 38% of girls and 19% of boys between the ages 15-19 years are sexually active but only 5% of adolescents of both sexes in the same age group use contraceptives. Adolescents have to face unplanned and unwanted sexual encounters as well as unwanted pregnancies and unsafe abortion with serious complications as a result of non-use of contraceptive methods.

Reports from West Regional Health Directorate indicated that from first January to 31 December, 2007, 14,139 teenagers aged between 10 and 19 years were pregnant, out of which 2,280 attempted abortions and ended up at various health facilities with complications. In university of benin Teaching Hospital, in Nigeria, abortions account for 25% of all adolescent maternal mortality. A further study showed that about 14% of all pregnant women are adolescents.

The prevalence rate of HIV among the adolescents between the ages of 15 and 19 years is 2.3%. Even though young people possess some basic information about STIs, HIV/AIDS and pregnancy prevention; overall they receive much inaccurate information from rumours and myths. Furthermore, some adolescents believed that they are too young to become pregnant and lack the ability to successfully use condoms to protect themselves from HIV.

Some factors which prevent adolescents from using contraceptives are prohibition or restrictive provision of reproductive services and supplies on the basis of age or marital status, provider bias or disapproval of adolescents' sexual activity and lack of confidentiality. However, in spite of all the issues raised, there is lack or insufficient data on the basis to address the raised issues. Further, it is apparent that current interventions are not based on local evidence but rather 'importation' of donor-driven policies and advice. Hence the need to carry out this research to provide high quality evidence based data to inform policy update, for effective programme design, implementation, monitoring and evaluation on the knowledge, attitudes and beliefs about contraceptives among adolescents.

**Objectives of the study**

- To assess adolescents' knowledge about contraceptives use
- To examine their attitude and practices of contraceptives
- To assess the beliefs about contraceptives use

**Significance of the study**

The findings of the study are expected to assist policy makers, healthcare providers, parents and adolescents to plan interventions that would:

- Contribute to better understanding of the factors that influence adolescents' decisions on contraceptive use from the perspective of policy makers, healthcare providers, parents and adolescents themselves.
- Help policy makers to formulate appropriate guidelines and policies which will improve contraceptive use among adolescents.
- Generate further questions for research.
Literature review

Knowledge

Information on contraceptives is very vital to adolescents in order to access family planning methods. The media have always played a key role in communicating family planning messages to the public. The sources of family planning information for young females include, radio (65.6%), television (64.5%), newspaper (25.9%), and posters (40.4%). The study of Zabin indicated that, acquiring knowledge or lack of it could influence contraceptive use among adolescents. They stated that lack of knowledge and access are important barriers to using contraception for most adolescents. According to them many teenagers are unwilling, unable or afraid to use the knowledge they have to make conscious decision about their sexual behaviour. According to a study done in Ecuador, with adolescents and youths, the respondents knew a lot about or heard about oral contraceptive pill, 14% of the women and 20% of the men indicated that they had good knowledge on it but 57% of the women and 45% of men had wrong knowledge or no knowledge on birth control methods. Other studies on adolescents have shown that many adolescents have very limited or often faulty information about when fertility begins, the time of fertility within the menstrual cycle, and the probability of conception. According to Rodrigo most of the adolescent boys believed that women are fertile during the menstrual period. Moreover, most adolescents are not informed on sexuality and reproductive health issues so are not aware of the time of fertility. Endemain reported that when adolescent women were asked the contraceptive method appropriate for adolescents, the majority, 43.9% responded 'I don't know." The next mentioned answers were condoms (31.1%), oral contraceptives (12%) and injectables (4%). Rodrigo recognized that some adolescents use oral contraceptive pill half an hour before having sexual intercourse. Adolescents' misinformation regarding contraceptive methods was consistently found in many countries. A study in Tanzania found that, most adolescents had heard from their friends or relatives that modern contraceptives have side effects. They were told that, using modern contraceptives might lead to infertility in nulli-gravid women.

This led to adolescents' refusal to use a method. Some adolescents have knowledge about local 'traditional' methods of contraception. Rodrigo in his study in Sierra Leone reported that some male adolescents of the coastal region expressed that they know various types of contraceptive methods and they use them occasionally. One of them mentioned local contraceptive method regarded as the best and most effective which was 'pineapple juice mixed with lemon, taken at least three times a day'. Survey results from Sub-Saharan Africa indicated that you people possess some basic knowledge about STIs, HIV/AIDS, and pregnancy prevention yet overall they receive much inaccurate information from rumours and myths. Furthermore, one study found that considerable proportion of youth have little belief in their ability to successfully use condom to protect themselves from HIV. Discussing sexuality and/or teaching children about reproductive health issues is a social taboo and this leave adolescents poorly prepared to protect themselves against STIs or unintended pregnancy.

Attitudes and practices

Ability to plan for sexual intercourse and use contraception is an important factor in the life of adolescents since many of them do not often plan for this activity. This was observed to be closely associated with failure to use an contraceptive method. According to demographic survey in Ecuador, the first reason given by adolescents 15 to 19 years of age for not using a contraceptive method a first sexual intercourse was 'I did not expect to have sex'. Most of the teenagers describe their first sexual encounter as something that just happened and explained their failure to use contraceptive by saying, 'I just didn't the around to it'. As Hewell and Andrews have noted, it is the adolescents' perception of risk rather than the actual risk itself that determines their use of contraceptives. Research in Kenya indicated that
contraception was viewed favourably by students of high socio-economic status\textsuperscript{24}, because of the adverse effects of early pregnancy on their academic success and economic security, together with affordability of contraceptives. Another study, among sexually active Jamaicans aged 15-24 years, found that 40\% of females and 50\% of males use some methods of contraception. Among both sexes, contraceptive use increased with age and educational level. It was highest among urban residents and those with medium to high socioeconomic status\textsuperscript{25}.

According to Keller\textsuperscript{26} many adolescents are afraid, embarrassed or unwilling to take the precaution against sexually transmitted diseases or to prevent unintended pregnancy. It stated that even though some adolescents have multiple sexual partners, yet they rarely use condom. These young people may be prone to such risk-taking because they do not have mature sense of the hazards involved or appreciate the long-term implications. Even when adolescents have better access to contraceptives, some may not take them because indulging in sexual activities. Landry observed that, adolescents in the U.S. dry of New Orleans were not likely to use contraception just because they knew about it and also knew where to get it. Of the 228 pregnant adolescent women, 86\% said they knew about contraception at the time they became pregnant, but did not use during sexual intercourse.

**Beliefs**

Taboos, traditional beliefs or customs regarding premarital sexual relations may inhibit young people from getting information on contraceptives. Adolescent girls especially, may be isolated from peers and from institutions where they could access information, counselling or service www.unfpa.org/adolescents/education.htm\textsuperscript{4}. Fear of future infertility was an overriding factor in adolescents' decision to rely on induced abortion rather than contraception. Many focus-group participants in Nigeria perceived adverse effects of modern contraceptives on fertility to be continuous and prolonged, while they saw abortion as an immediate solution to unplanned pregnancy and therefore, the one that would have a limited negative impact on future fertility. This belief was reflected in the view of a participant who drew a relationship between the ease of abortion and continuous use of oral contraceptives "one D and C is safer than 16 packs of daily pills.

Many adolescents also think that they are not at risk of getting pregnant. Zabin,\textsuperscript{13} also found that 10\% to 25\% of adolescents do not believe that pregnancy can occur the first time one has sexual intercourse. Another study done in Peru showed that 79\% of adolescents did not use contraceptives during their first sexual intercourse and 27\% of them believed that it is impossible to become pregnant during first intercourse\textsuperscript{29}.

Peers can have influential roles on the attitudes and beliefs of other members of the peer group. Adolescents tend to internalise the frequently negative attributes the ir peers attach to the contraceptive value of condoms and the notion that condoms are only necessary when one is already infected with STIs or HIV\textsuperscript{21}. Campbell\textsuperscript{12} realised that young men are particularly influenced by the dominant views of their peers and there were frequent references made to the ways in which those using condoms were jeered at and belittled by their friends. Many of the participants stated that they have been accused of being stupid after using condoms and had decided that they would not use them again. He also realised that men have the notion that indulging in flesh-to-flesh sex was as a result of influence from their peers.

**Methods**

**Study design and methods**

The study was cross sectional descriptive and exploratory study. The sampling frame for the study was the in-school adolescent population in public secondary schools in Benin City between the ages 15 and 19 years. All the schools in the region were categorised into urban, peri-urban, and rural.

The schools in the urban area were further categorised into boys only, gets only, and mixed schools. One boys' school, a girl school and a mixed school were selected randomly in the urban area. Two mixed schools from the peri-urban and two from the rural areas were also
randomly selected. In each, the participants were drawn from two units of classes comprising SS1 and 2 because the SS3 were writing their West Africa Secondary School Certificate therefore and were not included in the study. In the mixed school almost equal number of boys and girls were selected. For the selection of students from various classes, systematic sampling was adopted by selecting every other student in the class. When the required number of students was not acquired from a class, the researcher moved to the next class until the requisite number was reached. Seven schools were selected for the study.

Questionnaire was administered to obtain the information on contraceptive methods, source of knowledge, age at first sex, circumstance leading to first sex, contraceptive use at first and last sex, sentiment towards buying of contraceptives, and beliefs about sex and contraceptive use. A total of 400 students filled the questionnaires. The analysis of the data was done using SPSS version 15.

**Results**

**Table 1.** Socio-demographic characteristics of the students

<table>
<thead>
<tr>
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<th>Boys (n= 215)</th>
<th>Girls (n= 185)</th>
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<td>49.4</td>
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<td>Benin Academy</td>
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<td>Oredo Girls</td>
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<td>-</td>
<td>52</td>
</tr>
<tr>
<td>Idia College</td>
<td>35</td>
<td>50</td>
<td>35</td>
</tr>
<tr>
<td>Ghanatta</td>
<td>24</td>
<td>51.1</td>
<td>23</td>
</tr>
<tr>
<td>Amasaman</td>
<td>19</td>
<td>50</td>
<td>19</td>
</tr>
<tr>
<td>Osudoku</td>
<td>11</td>
<td>47.8</td>
<td>12</td>
</tr>
<tr>
<td><strong>Location of school</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>126</td>
<td>58.6</td>
<td>96</td>
</tr>
<tr>
<td>Peri-urban</td>
<td>59</td>
<td>27.4</td>
<td>58</td>
</tr>
<tr>
<td>Rural</td>
<td>30</td>
<td>14.0</td>
<td>31</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>16</td>
<td>7.4</td>
<td>26</td>
</tr>
<tr>
<td>16</td>
<td>80</td>
<td>37.3</td>
<td>79</td>
</tr>
<tr>
<td>17</td>
<td>59</td>
<td>27.4</td>
<td>55</td>
</tr>
<tr>
<td>18</td>
<td>29</td>
<td>13.5</td>
<td>18</td>
</tr>
<tr>
<td>19</td>
<td>31</td>
<td>14.4</td>
<td>07</td>
</tr>
<tr>
<td><strong>Educational Level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior High 1</td>
<td>94</td>
<td>43.7</td>
<td>100</td>
</tr>
<tr>
<td>Senior High 2</td>
<td>121</td>
<td>56.3</td>
<td>85</td>
</tr>
</tbody>
</table>
Knowledge about contraceptive

The study attempted to find out from the students what they understand by contraceptives. The results showed that 313 (78%) of the students understood contraceptive to be a device for the prevention of pregnancy while 14(4%) were ignorant about the meaning of contraceptives.

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>% (100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is a device to prevent pregnancy</td>
<td>313</td>
<td>78.0</td>
</tr>
<tr>
<td>Prevents sexually transmitted infections including HIV</td>
<td>35</td>
<td>9.0</td>
</tr>
<tr>
<td>It is to delay getting pregnant</td>
<td>24</td>
<td>6.0</td>
</tr>
<tr>
<td>It is to stop you from having children</td>
<td>12</td>
<td>3.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>14</td>
<td>4.0</td>
</tr>
</tbody>
</table>

The male condom was the commonest contraceptive method cited by both 176 (25.2%) males and 113(22.7%) females students however 5 (0.7%) of males and 11 (2.2%) of females did not know any contraceptive method. The students were asked about their sources of knowledge on contraceptives. Most 135 (62.8) of boys and 119 (64.3%) of the girls mentioned the media as the key source of knowledge on contraceptives. As to where the students could access contraceptives, more than half 52% (208) of the students mentioned the pharmacy/chemical shop as the place one could easily access contraceptives; only 15 (4%) did not know where they could access contraceptives.

Attitudes and practices concerning contraceptives

The ability to plan for sexual intercourse and for contraceptive use is very important in the lives of adolescents because many of them do not plan for these activities.

The study explored if students had a boy/girl friends. Ninety three (43.3%) of the boys and 83(44.9%) of the girls stated that they had boy/girl friends. Among those who had boyfriends 43 (46.2%) of the boys and 30 (34.9%) of the girls had sexual intercourse with their boy/girl friends. The highest proportion of 24 (46.2%) came from peri-urban schools and the lowest from 33 (37.5%) urban schools. The age at which the students first engaged in sexual intercourse was between 8 and 19 years. Fifteen (34.9%) of the boys and 11(36.7%) of the girls had their first sexual intercourse at 17 years and one boy had his first sexual intercourse at 8 years (Figure 1).
The circumstances that led to first sexual intercourse, the males 16 (37.2%) reported that pressure from their peers led to their first sex but for the females 16 (53.4%) the incidents just happened without any prior plan. Twenty one (48.8%) boys and 6 (20%) girls who had sex with their boy/girl friends used contraceptives during their first sexual intercourse. The commonest contraceptive method used by the students was the male condom and was used by more than half of the students. One-quarter, 9 (25.1%) of the students pointed out that they used the withdrawal method, and two (5.7%) used other methods which they did not disclose.

The students were also asked whether they used contraceptives the last time they had sexual intercourse. Twenty four (55.8%) of the boys used contraceptives compared to 10 (37.0%) of girls during their last sexual intercourse. Among the students who used contraceptives, all the 24(100%) boys and 8 (80%) girls used the male condoms. Regarding the frequency of contraceptives during sexual intercourse, 10 (23.3%) boys and 3 (11.1%) girls used contraceptives anytime they had sexual intercourse. Generally, of the 24 students who used contraceptives the majority 20 (83.3%) had their supplies from the pharmacy/chemical shops, 3 (12.5%) from their friends, only 1 (4.2%) of the boys and 2 (20%) of the girls obtained their supplies from a family planning clinic. When information was sought from the students on whether or not they felt embarrassed when buying contraceptives either from the pharmacy or family planning clinic, 12 (36.4%) said they did. Those who said they felt embarrassed were asked to give their reasons. About 7 (46.7%) acknowledged that they just felt shy to buy contraceptives, while 2 (13.3%) said the pharmacist would ask them what they were going to use the contraceptives for. Three (20%) said the provider would think they were bad boys/girls and 1 (6.7%) boy mentioned that the seller would turn him away.

Beliefs about contraceptives One's belief about contraceptive would be an indication of its use. If the adolescent believes that contraceptives are safe to use, this belief would encourage him/her to use them when the need arises. Of the 400 students 28 (45.9%) in the rural schools believed that sex was safe if contraceptive was used as compared to urban and urban students, Figure 2.

![Figure 2. Students who believed that sex is safe if contraceptive is used by school location](image)

Reasons students gave for their belief that sex was safe if contraceptives were used: 74 (57.8%) thought contraceptives prevent pregnancy, 52 (40.6%) said condoms protect you against sexually transmitted infections and 1 (0.8) said because of advertisement shown on TV. The students were asked whether they thought their peers could influence them to use contraceptives. Of the 229 students, 74 (34.9%) of boys and 37 (20.3%) of girls said that their peers could influence them to use contraceptives. When the students were asked to specify the reasons why the thought their peers could influence them use contraceptives, of 82 students 24 (29.3%) stated that they would tell them contraceptives prevent pregnancy so they should use them as in Table 3.

![Table 3](image)
Table 3. Students who believed that peers could influence them use contraceptives

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Frequency (N=82)</th>
<th>%(100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>They tell you that it prevents pregnancy so you should use it</td>
<td>24</td>
<td>29.3</td>
</tr>
<tr>
<td>By advising me to use it</td>
<td>21</td>
<td>25.6</td>
</tr>
<tr>
<td>By teasing you if you don’t use it</td>
<td>20</td>
<td>24.5</td>
</tr>
<tr>
<td>By teaching you how to use it</td>
<td>12</td>
<td>14.5</td>
</tr>
<tr>
<td>By telling you the implication of not using it</td>
<td>3</td>
<td>3.7</td>
</tr>
<tr>
<td>They pressurize you to use it/boosting your curiosity</td>
<td>2</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Other students thought their peers could not influence them to use contraceptives. Of the 400 students 96 (45.1%) of boys and 89(49.3%) of the girls said their peers could not influence them to use contraceptives. The students who believed that their peers could not influence them to use contraceptives gave their reasons as presented in Table 4.

Table 4. How peers could not influence students to use contraceptives

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Frequency (N=99)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>They will always tell you about the side effects of contraceptives</td>
<td>40</td>
<td>40.4</td>
</tr>
<tr>
<td>Using condom is like eating toffee with the wrapper on</td>
<td>31</td>
<td>31.4</td>
</tr>
<tr>
<td>Good friends will discourage you to avoid premarital sex</td>
<td>10</td>
<td>10.1</td>
</tr>
<tr>
<td>If your peers used it and know that it is not safe</td>
<td>8</td>
<td>8.1</td>
</tr>
<tr>
<td>They will tell you that you can't be pregnant at first sex</td>
<td>5</td>
<td>5.0</td>
</tr>
<tr>
<td>It is not good for people who are not married</td>
<td>3</td>
<td>3.0</td>
</tr>
<tr>
<td>They will tell you that it is a sin</td>
<td>2</td>
<td>2.0</td>
</tr>
</tbody>
</table>

The students were also asked whether they believed their partners suggestions to use condom during sexual intercourse to mean distrust. Of the 400 students, 31(14.4%) boys and 28(15.1%) girls answered in the affirmative. The students who believed that suggestion for condom use during sexual intercourse gave their reasons. About 12(37.5%) reported that their partners would think they were having sexually transmitted infections, 8(25.0%) said they may think you are cheating on them, 6(18.8%) wanted to have natural feeling for sex. Three (9.4%) would like to show their love to their lovers 2(6.3%) wanted to be faithful to their partners and 1(3.1%) said no one is trusted nowadays.

Discussion

The level of knowledge on contraceptives was found to be high for both boys and girls. The male condom was the commonest contraceptives method known and used by the students. This would help sexually active adolescents because condom is affordable and also the contraceptive method which could protect them against both pregnancy and sexually transmitted infections.
The media could have both positive and negative effects on adolescents. It was not surprising that, both boys and girls mentioned the media particularly the television as their key source of knowledge on contraceptives because adolescents like watching television, the television could be used as an effective method to educate adolescents on contraceptives. The self-reported mean age of first sex in this study was 17 years (both boys and girls) and this finding is in contrast with findings from other parts of Sub-Saharan Africa which has mean age at first sex at 14.4 years for boys and 15.9 for girls. The higher age at first sex indicates that with proper sexual and reproductive health education, adolescents can postpone sexual activities until later age. This will reduce the rate of adolescent pregnancies and sexually transmitted infections. Regarding the circumstances that led to the first sexual intercourse, the boys attributed it to peer pressure but for the girls, the incidents just happened without planning for them. This exhibited the unplanned nature of adolescents' sexual activities when it occurred which may be the main reasons why many of them do not use contraceptives. At first sexual intercourse, 80% of the sexual active girls did not use contraceptives. This is worrying because of the risk of unplanned pregnancies, unsafe abortions, contracting sexually transmitted infections or even death because of non-use of contraceptives.

Some of the students were of the notion that their peers could prevent them from using contraceptives by saying: Your peers will tell you that if it is your first time having sex you can never get pregnant. Such erroneous information need to be dispelled by educating adolescent girls on the menstrual cycle and the implication of having sexual intercourse during certain phases of the cycle. Other adolescents believed that one has to use condom only when one or his partner contracts sexually transmitted infections. Some of the students believed that, when their partners suggested the use of condom during sexual intercourse, this indicates that they suspected them of having sexually transmitted infections. Ignorance has been mentioned as the reason for non-use of contraceptives among adolescents. About 8% of the students indicated that contraceptives can cause harm to them in future so they would not like to use them. Some students were of the view that as adolescents were always in a hurry to have sex hence did not have time to use contraceptives.

Conclusion

It was concluded that contraceptives use among the sexually active adolescents was very low due to ignorance. Some of them also felt embarrassed buying contraceptives because of the attitudes of the providers. Sexually active adolescents need to be encouraged to use contraceptives to prevent the consequences of unprotected sex.

Recommendation

• Adolescents need to be educated on contraceptives and encouraged to use them especially condoms.
• Healthcare providers should treat adolescents with respect and provide them with contraceptives if they are sexually active.
• Girls need to have the skills to acquire contraceptives and should be able to communicate with their partners about contraceptives use.

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Application and Documentation of Theory in Nursing Management: A Tool for Quality Care and Identification of Clear Nursing Role among the Health Care Team

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Abstract

This paper discusses the need to encourage the use of theory in Nursing management for quality and holistic care and documentation of such care for identification of the specific role of the nurses among the health care team that have participated in the care of such patient.

- Vital to the nursing professional practice is the willingness of the nurse to document every care/activities carried out on a patient for identification of his/her role and for future record purposes/research
- One of the problems facing the nursing professional today in our environment is identification of our role among health care delivery team which the use of theory just like the nursing process and documentation can be used for such identification.
- Application of theory in nursing care management of our client/patient will enhance quality nursing care practice and give holistic care to the client/patient. Florence Nightingale the mother of modern nursing uses theory and collect data for documentation and use which help her to achieve the standard of the modern nursing we are practicing today.

Keywords: Application, Theory, Nursing Management, Identification, Clear Nursing role, Health Care.

Introduction

One of the reason of my chosen this topic is to remind ourselves at the high point or level of the nursing profession the important of the use of theory and documentation of client/patients in our clinical areas therefore at the end of this scientific workshop those of us in the clinical area will be able to implement various theories in managing our clients/patients

Theory is a formal set of ideas that is intended to explain why something happens or exist (Oxford Advance Learner Dictionary 2010)

Theories and nursing care plan are necessary tools for holistic client/patient nursing care. Therefore, one cannot be a competent and proficient nurse or Midwife unless he/she understands the concepts of the use of theories and nursing care plan for clients in the two areas. He will then therefore be able to meet the total needs of his/her clients physically, mentally and psychologically.

Nursing is –the profession of performing the function of a nurse-Bailliere’s Nursing dictionary (2009) A process of providing services that are essential to or helpful in the promotion, maintenance and restoration of health and well-being. While a nurse is a person who is qualified in the art and science of nursing and meets certain prescribed standards of education and clinical competence, and is registered with the nursing and midwifery council of her(or his)country. Bailliere’s nurses dictionary for nurses and health care workers (2009)

Documentation –in terms of job identification of the nurses from other health team workers, implementation of theory if well documented will show all the nurse has done to the patient that is clearly nursing care activities in nature, this will go a long way in identifying our role as nurses in patient care if only our nurses will change their attitude toward the implementation in their nursing practice.
Theories in nursing/midwifery practice

Theory is derived from the Greek word “Theoria” signifying a “Vision”. With the concept of nursing Herlinger views theories as a set of interrelated concepts that give a systematic view of phenomena they are observable fact of event that are explanatory and predictive in nature it can also be define as a systematic way of looking at the world in order to describe, explain, predict or control it.

Brief historical development of theories

According to Potter and Perry (1993) a review of the last 120 years has witnessed a demonstration of a growing body of knowledge in Nursing. The genesis need for theory in nursing can be traced to the mother of modern nursing Florence Nightingale (1860) who advocate for professional knowledge. Her practice was based on taking care of the environment while nature is allowed to look after the physiological processes in the clients. After her demise nursing lost the tempo and drive instilled by Nightingale until the mid-1950s. This was due to the 2nd word war and economic recession.

The drive for theory development was emphasized in the 1960 to 70s Nursing was further defined as a process rather than an end, an interaction, rather than content contents and a relationship between two human being rather than an interaction between unrelated nurse and patient. IN 1965 also American nurses association (ANA) position paper emphasized that the goal for nursing was theory development. In the USA, federal support was given for degrees in nursing. Series of symposia were also organized for theory development by National League for nurses between 1960 and 1970.

Elements of theories

- They can be describe, explain and predictive
- They are testable
- They are needed by all disciplines
- They are needed for research
- They are needed for practice

Basic characteristic of theories

Some of the characteristic of theories as an interrelated concepts are
- They are interrelating concepts to create a different view of the phenomena
- Theories must be logical in nature. This involves orderly reasoning and the inter-relationship between the concepts must be sequential
- Theories should be relatively simple yet generalizable
- Theories can be utilized by the practitioner to guide and improve practice
- Theories must be consistent with other theories

Role of theories in nursing/midwifery

- It is utilized in designing models for nursing practice
- It guides nursing practice either in health promotion maintenance or restoration
- It guides future direction for research for improvement of care
- It assists to identify domains and goals of nursing practice

Application of theories

The following nursing models are imperative in application of theory in Nursing/midwifery:

Theory of florence nightingale/ her life brief history date of last revision: january 31, 2012

- She was Born – 12 May 1820
- founder of modern nursing
The first nursing theorist
Also known as The lady with the Lamp
She explained her environmental theories in her famous book notes on nursing: What it is, what it is not.
She was the first to propose nursing required specific education and training.
her contribution during Crimean war is well-known
She was a statistician, using bar and pie charts, highlighting key point
International nurses day, May 12 is observed in respect to her contribution to Nursing
Died – 13 August 1910

Assumpations of nightingale’s theory
• Natural laws
• Mankind can achieve perfection
• Nursing is a calling
• Nursing is an art and a science
• Nursing is achieved through environmental alteration
• Nursing requires specific educational base
Nursing is distinct and separate from medicine

Nightingale’s canon’s major concepts
1. Ventilation and warming
2. Light, noise
3. Cleanliness of rooms/walls
4. Health of houses
5. Bed and bedding
6. Personal cleanliness
7. Variety
8. Chattering hopes and advices
9. Taking food, what food
10. Petty management/observation

Nursing paradigms
• Nightingale’s document contains her philosophical assumptions and beliefs regarding all elements found in the metaparadigm of nursing. These can be formed into a conceptual model that has great utility in the practice setting and offers a framework for research conceptualization. (Selanders LC, 2010)

Nursing
• Nursing is different from medicine and the goal of nursing is to place the patient in the best possible condition for natural to act.
• Nursing is the activities that promote health (as outlined in canons) which occur in any caregiving situation. They can be done by anyone.

Person
• People are multidimensional, composed of biological, psychological social and spiritual components

Health
• Health is not only to be well, but to be able to use well every power we have.
• Disease is considered as dys-ease or the absence of comfort.

Environment
• Poor or difficult environments led to poor health and disease
• Environment could be altered to improve conditions so that the natural laws would allow healing to occur.
Application of nightingale’s theory in practice

Patients are to be put in the best condition for nature to act on them, it is the responsibility of nurses to reduce noise, to relieve patients’ anxieties, and to help them sleep.
- As per most of the nursing theories environmental adaption remains the basis of holistic nursing care.

Criticisms
- She emphasized subservience to doctors
- She focused more on physical factors than on psychological needs of patient.
- Florence Nightingale provided a professional model for nursing organization
- She was the first to use a theoretical foundation to nursing
- Her thoughts have influenced nursing significantly

Steps to follow in application of theory:
- Define the theory
- List the steps or stages as stated by the theorist.
- Apply each step or stage to manage patient’s problems eg-

Question 1

In the care of a preterm baby there are four principal objectives which are:
1. The establishment and maintenance of temperature.
2. The prevention of infection.
3. The provision of the best environment, chiefly to maintain body temperature.
4. The provision of suitable diet.
Using the Florence Nightingale model how will you manage a preterm baby?

Answer

Management of a preterm baby using the Florence Nightingale theory.
Florence Nightingale theory is known as descriptive theory that provide nurses with a way to think about nursing or way of reference that focuses on patients and environment.
Nightingale letters and writing direct the nurse to act on the behalf of the client, therefore I am going to act on the behalf of this my preterm baby to enable her adapt to a normal life.
Nightingale view nursing as oriented toward providing fresh air, light, warm, cleanliness, quiet and adequate nutrition. Through observation and data collection she links the clients health with environmental factors.
Using the four principal objectives in managing a preterm baby as indicated in the above question I will:
1. ensure aseptic techniques in every procedure carried out in the care of the baby.
2. ensure personal hygiene of the baby by ensuring that the cord stump is not infected, change soil linens regularly, ensure the environmental hygiene, will not allow any staff with influenza infection to attend to the baby, feeding baby on EBM regularly to boost immunity.
3. Clear the baby airways to avoid mucus obstruction of air passage using suture machine, lie the baby side ways to avoid choke, ensure good ventilation to enable fresh air to circulate in the environment.
4. Keep the environment clean, ensure cross ventilation, and ensure normal room temperature and adequate light system.
5. As a preterm baby the diet she can take is breast milk, so EBM will be given in adequate quantity as demand by the baby.

With the above step of care of the baby based on the Nightingale model the preterm baby will receive adequate care to maintain her health.
Her concept of environment as the focus of nursing care and her view that nurses need not know all about the disease process are early attempts to differentiate between nursing and medicine.

Nightingale did not view nursing as limited merely to the administration of medication and treatments but rather as oriented towards providing fresh air, light, warmth, cleanliness, quiet and adequate nutrition. Through observation and data collection, she linked the client’s health status with environmental factors and as a result, initiated improved hygiene and sanitation conditions during the Crimean war there by reducing the mortality rate at barracks Hospital in Sentari Turkey from 42.7% to 2.2% in 6 months (woodham Smith, 1983).

Torres (1986) notes that Nightingale provided basic concepts and propositions that could be validated and used for practice in nursing. Her descriptive theory provides nurses with a way to think about nursing or a frame of reference that focuses on patients and environment. Her letters and writings direct the nurse to act on behalf of the client. Her principles encompass areas of practice, research and education. Most importantly, her concept and principles shaped and delineated nursing practice. Nightingale taught and used the nursing process, noting that “vital observation (assessment) is not for the sake of piling up miscellaneous information of curious facts but for the sake of saving lives and increasing health and comfort.

Criticisms

- She emphasized subservience to doctors
- She focused more on physical factors than on psychological needs of patient.

Conclusion

- Florence Nightingale provided a professional model for nursing organization
- She was the first to use a theoretical foundation to nursing
- Her thoughts have influenced nursing significantly

Question 2: Using H. peplaus theory

Mrs Dare a booked case gravida 4 para 3+o all alive came into your clinic with the history of full term pregnancy and that of labor which she said started about 5 hours ago. Apply H. Peplau’s theory in the management of the four stages of labour of Mrs Dare.

Answer

The management of Mrs Dare using Hildegard peplaus theory are as following:-

R. peplaus is a theory of therapeutic interpersonal relationship between nurse and patient.

It consist of 4 stage which are

1. Orientation stage
2. Identification stage
3. Exploitation and
4. Resolution phase

Mrs Dare has come to the ward with full-term pregnancy and now having labour pain which she said started 5hours ago. As a midwife for you to give normal adequate care to Mrs Dare she will have to pass through all the four phases of Paplau’s theory as stated above.

Phase 1:

Orientation stage: I will admit the patient, take the necessary data eg medical, surgical and obstetrical history, do physical examination do abdominal palpation to ascertain weeks of gestation, listing to the fetal heart and record all findings.

2. Identification phase: I will: do vaginal examination to confirm if in true labour and the stage of labor she is in ie if it is first or second stage of labour, to confirm also the nature of the cervix, membrane, presenting part, and the level of the presenting part. Monitor vital signs.
All these will enable me know if the patient is in true labour and whether the labour is normal through the level of cervical dilatation and I will document all findings. If in true labour and in first stage I will monitor her progress of labour.

The next phase is the exploitation phase:
This phase has to do with second stage of labour so I will: Take the patient to the second stage room, place her on comfortable position of her choice, reassure her, ensure aseptic procedure for conducting delivery, monitor fetal heart rate, ensure normal temperature according to patient wish, ensure normal delivery of alive normal baby from alive normal mother, ensure effective management of third and fourth stage of labour, control bleeding, ensure the mother identify the sex of the baby and keep both of them warm. Baby will be examine later after an hour, birth, oil and kept warm.

Phase 4: The resolution phase:
This phase is within the one hour Lying-in ward in labour room before the patient is transferred into the postnatal ward for further management. Therefore here I will take the vital signs of the patient and record, check for bleeding from the mother per vaginal and check cord of the baby also for bleeding. So if the mother and child are ok I will transfer them to the postnatal ward for further management. This phase therefor is my last phase of care for the patient using the Peplau theory.

**PEPLAUS model** is a therapeutic Interpersonal relationship model: This model according to Peplau is concerned with therapeutic interpersonal relationship, which facilitates the growth of both client and nurse. This therapeutic relationship helps the client progress towards constructive, productive and creative living. According to Peplau, the interpersonal relationship between the nurse and the client promotes self-reliance and independent decision making on the part of the client until he/she assumes full responsibility of self-care. Using the four stages which he listed as—orientation stage, identification stage, exploitation stage and the resolution stage are used as a guide for the care plan.

**Conclusion**
Theories are patterns that guide the thinking about being and doing of nursing.
The day-to-day experience of nurses is a major source of nursing practice theory.
Nursing theory address the phenomena of interest to nursing, the focus of nursing, the person, or population nursed.
Nursing theory either implicit or explicit direct all avenues of nursing including nursing education and administration.
Nursing theories provide concepts and designs that define the place of nursing in health and illness care. Through theories nurses are offered perspectives for relating with professionals from other disciplines who join with nurses to provide human services.
The major reason for structuring and advancing nursing knowledge is for the sake of nursing practice.

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The Increased Nursing Workload and its Impact on Nursing Care

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Introduction

The heavy workload of hospital nurses is a major problem. Nurses are experiencing higher workloads than ever before due to some of the reasons which include increased demand for nurses, inadequate supply of nurses, reduced staffing and increased overtime, and reduction in patient length of stay. A heavy nursing workload adversely affects patient safety. This research study will seek to document the impact of nursing workload when staffing is reduced or seconded from other departments.

Objectives of the study

The main objectives of this research work were to assess the impact of care quality when staff is reduced and to identify the factors which lead to nursing workload.

Material & methods

The research study was carried for the period of July to October 2016. A quantitative Descriptive Cross Sectional Study design was used. Data was collected by a questionnaire, containing 20 questions, from 60 staff nurses of Shalamar Hospital Lahore, using a convenience sampling. The collected data was then analyzed.

Results

71.7% (43) RNs stated that the reduced staff, increased number of patients and outbreak of a disease is the major causes of workload. 28.3% (17) stated that the less number of staff is the cause of workload. 100% (60) RNs stated that errors occur in psychomotor skills, in documentation and during medication administration due to workload. 70% (42) RNs stated that workload affects mentally, whereas 30% (18) it affects physically. The problem of workload can be overcome by maintaining the Nurse-patient ratio in a standardized manner. This was suggested by 70% (42) RNs. 70% (42) stated that patients’ safety problems occur frequently due workload, whereas the rest 30% (18) said they will not be helpful. 63.3% (38) RNs were satisfied with their job, the rest 36.7% (22) were not satisfied. 100% (60) RNs agreed that increased workload affects patient satisfaction.

Discussion

Results suggest that in Shalamar hospital, nurses face workload when staff is reduced or seconded from other department, they also effect on patient care by workload. Shalamar hospital staff nurses are satisfied by their job but they suggest maintaining nurse patient ratio equal. From their suggestion it can be conclude that workload should be reduced when proper staff available or the patient ratio is balanced with nurse ratio.

Conclusion

It can be concluded that the workload increases due to the reduction of staff nurses and due to this workload the quality care of nursing decline. Because of this reason the satisfactory level of patient and family member also compromised. Increased workload also affects many procedures for ex, medications, documentations and psychomotor skills. The increase
workload also effect nurses mentally and physically. And seeking help from other department is not a solution to this problem.

**Recommendations**

After our research we recommend that Hospital nursing management must arrange enough staff when patient ratio exceed from nurses ratio. Maintain nurse patient ratio in balance. Hospital should make a policy to manage the workload when there is an outbreak.

**Limitations**

The limitations of study include, relatively small sample size. All surveys were not completed due to lack of time, lack of money and due to increased workload most of the nurses refused to fill questionnaires. Limitations are the restrictions in a study, as the study is confined to Shalamar Hospital so finding cannot be generalized equally to others Hospitals.

**References**

Knowledge and Practice of Hand Hygiene and Hand Washing among Medical Students and other Health Care Professionals in Hospital Setting

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Introduction
Introduction and background

Hand washing dates back to biblical times and the early days of medicine. This simple task is the most important way to prevent infection resulting from pathogenic microorganisms found in all healthcare environments. Not only does hand washing prevent the spread of potentially deadly nosocomial infection, it also saves money. Hospital acquired infections may result in millions of dollars in costs to the healthcare (Cooper, Wisenor, & Roberts, 2005). Hand washing is recognized as the leading measure to prevent cross-transmission of microorganisms and to reduce the incidence of health care associated infections. Despite the relative simplicity of this procedure, compliance with hand washing among health care providers is as low as 40% (Nair, Hanumantappa, Hiremath, Siraj, & Raghunath, 2014).

Health care-associated infections are a serious problem in health care services as they may cause prolonged hospital stays, high mortality, long-term disability, and excess health care costs. Most health care-associated infections can be transmitted from patient to patient via the hands of health care workers. In other words, health care workers’ hands due to poor hand washing are the most usual type of vehicle for the transmission of health care-associated infections (Nabavi, Alavi-Moghaddam, Gachkar, & Moeinian, 2015).

Infection caused due to hospital acquired microbes is an evolving problem worldwide, and horizontal transmission of bacterial organisms continues to cause a high nosocomial infection rate in health care settings. Nosocomial infections due to poor hand washing are a major cause of increasing morbidity, mortality and health care costs among hospitalized patients worldwide (Maheshwari, 2014). The high prevalence of these infections, as high as 19%, in developing countries poses a challenge to health care providers. Hand washing is considered the single most cost-effective public health measure for preventing health care associated infection (HCAI) (Maheshwari, 2014).

Over 95% of neonatal deaths occur in developing countries with about half of them occurring at home. In Africa, diarrheal disease is the single largest cause of death among children under-five and a major cause of childhood illness. Some of the risk factors for death from diarrhea in children in sub-Saharan Africa are poor nutrition, early introduction of complementary foods and poor hygiene at the household level (Nabavi et al., 2015). Little is known about the relative contributions of different diarrhea-causing pathogens to diarrheal deaths. Unfortunately, there is a paucity of information on the impact of hand washing practices by birth attendants or caretakers on neonatal mortality (Aigbiremolen et al., 2015).

Hand washing is the simplest, most effective measure for preventing nosocomial infections. Despite advances in infection control and hospital epidemiology, Semmelweis’ message is not consistently translated into clinical practice, and health-care workers’ adherence to recommended hand washing practices is unacceptably low (Pittet, 2001). Numerous studies document the pivotal role of healthcare workers’ (HCWs) hands in the propagation of microorganisms within the healthcare environment and ultimately to patients (Allegranzi & Pittet, 2009).

To address this problem, continuous efforts are being made to identify effective and sustainable strategies. One of such efforts is the introduction of an evidence-based concept of
“My five moments for hand washing” by World Health Organization. These five moments that call for the use of hand washing include the moment before touching a patient, before performing aseptic and clean procedures, after being at risk of exposure to body fluids, after touching a patient, and after touching patient surroundings. This concept has been aptly used to improve understanding, training, monitoring, and reporting hand washing among healthcare workers (Nair et al., 2014).

Hence the WHO’s concept was made the basis of the present study to evaluate hand washing awareness and compliance among undergraduate medical students of the numerous medical and nursing colleges around the globe. This study is the first of its kind in this institute and is expected to inspire further projects in other medical institutions and in the long run promote the concept of proper hand washing among trainee medical students (Al Kadi & Salati, 2012).

Objectives of the study

The objectives of my study was:

- To estimate the knowledge about hand hygiene and hand washing among medical students and other health care professionals in a hospital setting
- To estimate the practice of hand hygiene and hand washing among medical students and other health care professionals in a hospital setting

Literature review

Healthcare-associated infections pose a continuing threat for mortality and morbidity among hospitalized patients. Hospital-acquired infections mainly draw attention because of the growing awareness that most of them are preventable. Evidence suggests that proper hand washing practice is regarded as the single most effective and simple inexpensive strategy for reducing the prevalence of hospital-acquired infections. However, adherence to good hand washing practice remains consistently poor in the clinical setting. The hygiene adherence by healthcare professionals has been described previously, whereas compliance of medical students has rarely been examined (Herbert, Schlumm, Kessler, & Frings, 2013).

Studies indicate that healthcare workers’ adherence to hand washing guidelines is poor (~40%) and that physician status is a risk factor for non-adherence. Disciplinary differences in hand washing education and assessment during undergraduate training may impact on graduate’s behavior upon entering the workforce (Van De Mortel et al, 2012). Healthcare worker compliance with hand hygiene remains a pervasive problem in medicine. Physicians have notoriously poor compliance. The lack of hand hygiene compliance results in transmission of community-acquired and hospital acquired microorganisms between both patients and providers, which can lead to nosocomial infections. Unfortunately, compliance remains stubbornly low despite efforts to change. While poor hand hygiene is prevalent in the hospital, these behaviors may also be similar among pre-hospital providers. However, hygienic behavior has been infrequently studied in the pre-hospital healthcare worker population despite the fact that it is a key part of the healthcare system (Bucher et al., 2015).

Assessment and raising awareness of hygiene standards during undergraduate education may affect the behavior of graduate students upon entering professional life and contribute to the reduction of nosocomial infection rates. Hence, the present study was performed to examine the knowledge on and the adherence to hygiene guidelines among medical students after completion of the first year of medical studies, with special emphasis on gender differences (Herbert et al., 2013).

One of the key components for limiting spread of healthcare-associated infectious disease is adequate infection control practice. A cornerstone of infection control is ensuring that health-care workers wash their hands at appropriate times. The Association for Professionals in Infection Control and Epidemiology (APIC), the Guidelines for Handwashing and Hospital Environmental Control (1985, 2001) from the Centers for Disease Control and Prevention
(CDC), and the Hospital Infection Control Practices Advisory Committee each highlight specific indications for handwashing compliance (Lankford et al., 2003).

The World Health Organization (WHO) has issued guidelines for procedural hand washing in order to reduce the prevalence of hospital associated infections but lack of knowledge amongst health care workers is associated with poor compliance. An alarming revelation was that compliance was found to be worst before high risk procedures. Despite evidence and expert opinion that hand hygiene reduces transmission of potential pathogens or antimicrobial-resistant organisms, sustained improvements in adherence to hand hygiene recommendations and proper hand washing technique among health care workers are uncommon, even after educational efforts (Maheshwari, 2014).

Although CDC guidelines state that handwashing is the single most important procedure to prevent nosocomial infection, studies continue to report unacceptable health-care worker hand-hygiene compliance rates. Efforts to improve hand-hygiene behavior that have focused on broad-based educational and motivational programs have had minimal sustained success (Lankford et al., 2003).

A heightened understanding of transmission of blood-borne diseases in the mid-1980s to healthcare workers (HCWs), including surgeons, physicians, and residents in training, and the importance of adherence to standard precautions (SP) is well accepted. Adherence to standard precaution is even more important with the emergence of infectious diseases, such as avian influenza, severe acute respiratory syndrome, and the threat of bioterrorism (Askarian et al., 2007).

Medical students are key players in any healthcare teams and are greatly involved in the delivery of patient care. Moreover, during their clinical training, they rotate in infection-sensitive floors, such as: labor and delivery, intensive care units, neonatal intensive care units, and operating rooms, where greater requirements of sterility and infection control are highly demanded. Despite the significant impact of HAI's on the safety and cost of healthcare systems, priority consideration of HAI's education in pre-clerkship and clerkship medical curricula has yet to be reinforced. As a result, largely due to lack of knowledge and skills, clerkship students entering clinical training are at a greater risk of causing HAI's to the patients (Hamadah et al., 2015).

It has been known for many years that HCWs encounter difficulties in complying with hand hygiene indications at different levels. Insufficient or very low compliance rates have been reported from both developed and developing countries. Reasons which explain suboptimal practices are multiple and may vary according to the setting and the resources available. For example, the lack of appropriate infrastructure and equipment to enable hand hygiene performance, the cultural background, and even religious beliefs can play an important role in hindering good practices (Askarian et al., 2007). The most frequently observed factors determining poor hand hygiene compliance are: (i) belonging to a certain professional category (i.e. doctor, nursing assistant, physiotherapist, and technician); (ii) working in specific care areas (i.e. intensive care, surgery, anesthesiology, emergency medicine); (iii) understaffing and overcrowding; and (iv) wearing gowns and/or gloves. Unfortunately, hand hygiene indications at higher risk of being neglected are the ones that prevent pathogen transmission to the patient (i.e. before patient contact and clean/aseptic procedures) (Nabavi et al., 2015).

Therefore, hand hygiene behavior appears not to be homogeneous and can be classified into at least two types of practice. Inherent hand hygiene practice, which drives most community and HCW hand hygiene actions, occurs when hands are visibly soiled, sticky or gritty. On the other hand, elective hand hygiene practice represents those opportunities for hand cleansing not encompassed in the inherent category. Among HCWs, this component of hand hygiene behavior is similar to many common social interactions, such as shaking hands (Al Kadi & Salati, 2012). During healthcare, it would include touching a patient (e.g. taking a pulse or blood pressure) or having contact with an inanimate object in the patient’s surroundings. As they recall a common social behavior, these contacts do not necessarily
trigger an intrinsic need to cleanse hands, although they do involve the risk of cross-transmission. According to behavioral theories, this is the component of hand hygiene most likely to be omitted by busy HCWs and it has been repeatedly confirmed by field observations (Aigbiremolen et al., 2015).

Factors perceived as contributing to poor hand-hygiene compliance include unavailability of handwashing sinks, time required to perform hand hygiene, patient’s condition, effect of hand-hygiene products on the skin, and inadequate knowledge of the guidelines. In addition, some reports suggest that role models, group behavior, and the level of managerial support influence reported levels of compliance. One measure recommended to improve the hand-hygiene rate is enhanced access to hand-hygiene facilities (Lankford et al., 2003).

The WHO Guidelines on Hand Hygiene in Health Care have been conceived to catalyze hand hygiene improvement in any setting regardless of the resources available and the cultural background. Since there is a strong emphasis in the Guidelines and in their implementation tools on the availability of alcohol-based hand rubs as a key factor for hand hygiene improvement, the issue of the procurement and cost of these products, especially in developing countries, challenges the recommendation feasibility. Indeed, global sales of commercially produced, alcohol based hand rubs in 2007 were as high as US $3 billion, corresponding to 295 million L in volume, with an overall 16.3% increase compared with 2003 (WHO, unpublished data), mostly observed in Europe and North America (27% and 23% increase, respectively). Looking at procurement opportunities, these products are available only in South Africa in the African continent and in China, India, and Japan in the Asia Pacific region (WHO unpublished data). The most important issue curbing the purchasing power in these regions is the high cost of these products. Market prices vary from US $2.50 to 8.40 per 100 mL dispenser and are clearly unaffordable for many developing countries. The WHO multimodal hand hygiene improvement strategy offers a possible solution to this obstacle: the local production of either of two WHO-recommended hand rub formulations. The implementation toolkit accompanying the WHO Guidelines on Hand Hygiene in Health Care includes a Guide to Local Production to manufacture alcohol-based hand rubs in hospital pharmacies or other facilities for local use. Two formulations are proposed: one based on ethanol 80% v/v, and one based on isopropyl alcohol 75% v/v; both include hydrogen peroxide 0.125% v/v and glycerol 1.45% v/v. Local production has been carried out in many healthcare settings worldwide and was carefully monitored and evaluated by WHO in several sites (WHO unpublished data). No major procurement, production, and storage obstacles were encountered and long-term stability at tropical temperatures was shown (up to 19 months). The final products complied with quality control standards and had good skin tolerability at very low cost (less than US $0.50 per 100 mL).

HAIs (health-care associated infections) are associated with lengthy hospitalization, long-term disability, higher microbial drug resistance, increased morbidity, greater mortality, and extra healthcare-related costs. Compliance of all healthcare workers (nurses, physicians, residents, and students) to the universally agreed standard infection control precautions is identified as an effective measure to control and prevent the occurrence of HAIs. These measures not merely protect patients, but the healthcare workers, too (Hamadah et al., 2015). Medical students like other health workers are being part of the health care delivery system are exposed to the same size of risk as other health care workers when they come in contact with patients and contaminated instruments. They are the first level of contact between patients and medical care. They are expected to undertake activities related to patient care with the beginning of their clinical years. They are involved in blood transfusion, injections and surgical operations in their practices. They should have awareness about the risk factors and appropriate precautionary measures especially hand washing to avoid these infections in handling these patients (Nabavi et al., 2015).

The complexity of hand hygiene behavior and the influence of numerous external factors, promotion of good practices is complex and its potential for success depends on the delicate balance between evaluation of benefits and existent barriers. Demonstration of the
Effectiveness of recommendations and strategies to improve hand hygiene on the ultimate outcome, i.e. the HCAI rate, is crucial in both motivating HCWs’ behavioral change and securing an investment in this preventive measure by policy-makers and healthcare managers. However, research in this field represents a very challenging activity since methodological and ethical concerns make it difficult to conduct randomized controlled trials with appropriate sample sizes that could establish the relative importance of hand hygiene in the prevention of HCAI.

Little is known about the clerkship students’ knowledge of hand hygiene as one of the infection control measures. Exploring medical students’ knowledge of, and attitudes towards, hand hygiene are of high importance to public health policy makers and medical educators. Such exploration is expected to identify the curricular needs and, therefore, can be appropriately incorporated into the pre-clerkship and clerkship medical curricula to equip students with satisfactory knowledge and skills. In the short- and long-term, such curricular incorporation is expected to decrease the rate of nosocomial HAIs that could be caused by clerkship medical students (Hamadah et al., 2015).

**Material and methods**

**Study setting**

This study was conducted among the medical College students and other health care professionals in the tertiary care hospital setting.

**Study design**

A descriptive cross-sectional epidemiological study design was adopted to carry out this research study.

**Study duration**

The study was compiled in nearly three months from 1st of January 2016 to 31st of March 2016.

**Sample size estimation**

All of the conveniently available and willing medical students and other health care professionals in a tertiary care hospital were enrolled as participant in the study.

**Sample technique**

Non–probability purposive / Convenient Sampling

**Confidence level: 95%**

**Sampling size**

| Sample Size for Frequency in a Population |  |
| Population size(for finite population correction factor or fpc)(N): | 300 |
| Hypothesized % frequency of outcome factor in the population (p): | 50% +/- 5 |
| Confidence limits as % of 100(absolute +/- %)(d): | 5% |
| Design effect (for cluster surveys-DEFF): | 1 |

<p>| Sample Size(n) for Various Confidence Levels |</p>
<table>
<thead>
<tr>
<th>Confidence Level (%)</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>95%</td>
<td>152</td>
</tr>
<tr>
<td>80%</td>
<td>100</td>
</tr>
<tr>
<td>90%</td>
<td>131</td>
</tr>
<tr>
<td>97%</td>
<td>164</td>
</tr>
<tr>
<td>99%</td>
<td>182</td>
</tr>
</tbody>
</table>
Study factors

Basic demographics, socio-economic status, hand washing practice, antiseptic solution utilization for hand hygiene will be the focusing points in this study.

Data analysis

All of the data was compiled, entered manually on the Microsoft Excel 2013 and entered in the statistical packages of social sciences (SPSS 20.0) for the further data analysis and interpretation. Frequency tables were generated. Frequency and ratio was calculated by using SPSS.

The estimation of hand washing and hygiene practice were calculated by descriptive statistics using SPSS. Cross tabulation for comparison of different variables were done and chi-square value was calculated to find out the association of various study factors. The association was calculated upon the p-value which was taken as 0.05.

Hypothesis

“A better understanding of knowledge and practice concerning hand washing and hand hygiene and of obstacles and encouragements with compliance to practice recommendations will assist in the development of effective and efficient hand hygiene programs for healthcare professionals”.

Ethical approval

The research study was conducted after the authorization of Ethical committee and institutional review board. Each study participant were given a consent form to be a part if this study. Confidentiality and other ethical principles were maintained during the analysis.

Results

The study was undertaken in the well-known tertiary care hospital with the medical students and other health care providers in the hospital regarding the hand washing knowledge and practices. There were 152 students and other health care providers in the hospital who participated in this study on the basis of convince sampling. The frequencies and other result are given below.

Part 1: Demographic profile of the study participants

Gender differences in the study participants

There were 152 health care providers and medical students of a tertiary care hospital who participated in the study. There were 59% of the male study participants (n = 91) participated in the study. The amount of the female study participants was 41% (n = 61) from all study participants.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>91</td>
<td>59</td>
</tr>
<tr>
<td>Female</td>
<td>61</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Age distribution of the study participants

From all of the 152 study participants who participated in this study was calculated upon their living age. Three groups were made to estimate the age group of all of the study participants. The first group was made from 18 – 24 years of age. There were 79 number of study participants (62.2%) who were from the 18 – 24 years of the age. The second group was from 25 – 30 years of the age that had 31.5 percent of the study participants (n = 48) from all. The third group was from 31 years to 35 years of the age. In this group there were 25 study participants (16.4 %) who participated in this research study. The following figure is given to illustrate the age distribution of the participants.
Educational status of the study participants

Upon the educational status of the study participants it was revealed from results that there were 47 medical students (31.0 %) from the whole study population. The other study group was the rest of the health care professional working in the hospital setting which was 105 in numbers (69 %) from all of the study population. To illustrate it the following figure 3.3 is designed below.
The other than medical students there were 105 health care professionals selected from the hospital setting as a study participant. The highest proportion was seen from the nurse which was 55.24 % (n = 58) from all health care professionals. The following table and figure 3.4 is showing all the domains

<table>
<thead>
<tr>
<th>Health Care Professionals</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor</td>
<td>27</td>
<td>25.7</td>
</tr>
<tr>
<td>Nurse</td>
<td>58</td>
<td>55.2</td>
</tr>
<tr>
<td>Health Care Assistant</td>
<td>20</td>
<td>19.0</td>
</tr>
<tr>
<td>Total</td>
<td>105</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Health care professional under study**

The other than medical students there were 105 health care professionals selected from the hospital setting as a study participant. The highest proportion was seen from the nurse which was 55.24 % (n = 58) from all health care professionals. The following table and figure 3.4 is showing all the domains.
Area of residence of the study participants

The study participants were analyzed upon their area of residence. There were two groups made with respect to the area of residence. One in which the residents belong to the city of Lahore where this study was conducted and the second was any city other than Lahore. The diagrammatic presentation of the result is given below:

Part 2. Knowledge regarding hand washing

Knowledge of advantages of hand washing

All of the 152 participants were asked about the knowledge of advantages of the hand washing. Surprisingly all of the study participants were aware about the advantages of hand washing. All of the medical students from first year selected the correct option about having the knowledge of hand washing.

Table 3.4. Knowledge of Advantages of Hand Washing

<table>
<thead>
<tr>
<th>Study Participants</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>152</td>
<td>100.0</td>
</tr>
<tr>
<td>No</td>
<td>00</td>
<td>00</td>
</tr>
</tbody>
</table>

Advantages of hand washing

The study participants were asked about the advantages they know of hand washing. The query was about if they know there are advantages than what are the advantages they know are of hand washing. There were five frequently answered options of this question. These were divided into five advantages the students know of hand washing as shown in the table below:
Table 3.5. Advantages of Hand Washing

<table>
<thead>
<tr>
<th>Advantages of Hand Washing</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention from Disease</td>
<td>65</td>
<td>42.8</td>
</tr>
<tr>
<td>Remove Germs</td>
<td>44</td>
<td>28.9</td>
</tr>
<tr>
<td>Sunnah</td>
<td>21</td>
<td>13.8</td>
</tr>
<tr>
<td>Clean Hands</td>
<td>12</td>
<td>7.9</td>
</tr>
<tr>
<td>Don't Know</td>
<td>10</td>
<td>6.6</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From all of the study participants 42.8 percent of the study participants (n = 65) answered that it prevents from the diseases. It was the highest number of the study participants from all of the members. The second most chosen advantage was the removing the germs from hands if it will be hand washing. 44 study participants (28.9 %) selected this option while 21 of the students (13.8 %) assumed that washing hands is essential because it is Sunnah. While 12(7.9 %) and 10(6.6 %) students from all of the study participants thought that hand washing is necessary because it cleans the hands and other did not know what are the advantages of hand washing respectively.

The whole diagrammatic figure is shown as below:

Figure 3.5. Advantages of Hand Washing
Disadvantages of not practicing hand washing

When study participants were asked about the various disadvantages of not practicing hand washing they answered in different aspects. 17 of the participants (11.2%) was the lowest numbers of the study participants who did not know about the disadvantages of not practicing hand washing. The major part of the participants 41.4 percent (n = 63) believed that the disadvantage is risk of germs transmission from one person to another. 45 of the participants (29.6%) assumed that it may lead to poor hygiene. 27 students (17.8%) were those who thought that by not practicing hand washing may cause the hand to get dirty. Following table shows the whole calculation.

<table>
<thead>
<tr>
<th>Disadvantages of not Practicing Hand Washing</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dirty Hands</td>
<td>27</td>
<td>17.8</td>
</tr>
<tr>
<td>Risk of Germs Transmission</td>
<td>63</td>
<td>41.4</td>
</tr>
<tr>
<td>Lead to Poor Hygiene</td>
<td>45</td>
<td>29.6</td>
</tr>
<tr>
<td>Don't Know</td>
<td>17</td>
<td>11.2</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Hand washing per day

Study participants were asked about how many times should hands be washed in one day. The answers were ambiguous due to that four classes were made of all of the answers. 17.1% of the participants (n = 26) students answered that it should be from 2 – 3 times a day while 38.8% of the participants (n = 59) proposed that it should be from 4 – 5 times a day. 55 students (36.1%) supposed that it is 5 – 6 times a day and 7.8 percent (n = 12) declared that it should be as whenever needed.

Figure 3.7. Hand Washing per Day
Conditions that need must hand washing

Table 3.8 Conditions that Need must Hand Washing

<table>
<thead>
<tr>
<th>Conditions that Need must Hand washing</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before &amp; After meal</td>
<td>37</td>
<td>24.3</td>
</tr>
<tr>
<td>After using toilet</td>
<td>61</td>
<td>40.1</td>
</tr>
<tr>
<td>Before &amp; After contact with patient</td>
<td>38</td>
<td>25.0</td>
</tr>
<tr>
<td>Don't Know</td>
<td>16</td>
<td>10.5</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Study participants proposed some of the conditions which are essential in washing hands and hand hygiene. 40.1 percent of the population (n = 61) advocated that it should be done after every time using toilet. It was the highest number of participants.

While the lowest number of participants were 16 in numbers (10.5 %) who did not know the conditions that need must hand washing. 37 were those (24.3 %) who anticipated that it should be done before and after taking meal.

While only 25.0 percent (n = 38) suggested that it should be done before and after having a contact with patient.

Following figure illustrate the whole calculation

Knowledge of any specific technique of hand washing

Study participants were asked about the knowledge of any of the specific technique of hand washing. There were 122 study participants (80 %) who had the knowledge of any of the technique of hand washing proposed by any health agency. Unfortunatly there were 30 study participants (20 %) who were not aware of any of the specific hand washing technique.
Part 3. Practice of hand washing by study participants

Hand washing practice by study participants

For the purpose of getting information regarding hand washing practice, all of the participants were asked about how many times they wash their hands per day in the normal routine. Most of the participants i.e. 46.7 percent (n = 42) answered that they wash their hands whenever it is needed. While 27 out of from all study population responded that it is 5 – 6 times a day they wash their hands. The least number of participants were 21 (23.3 %) who replied with the answer of washing hands 3 – 4 times per day. The table is given below for this calculation:

<table>
<thead>
<tr>
<th>Hand washing Practice per Day</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-4 times</td>
<td>28</td>
<td>18.4</td>
</tr>
<tr>
<td>5-6 times</td>
<td>45</td>
<td>29.6</td>
</tr>
<tr>
<td>when needed</td>
<td>79</td>
<td>52.0</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Need of hand washing of study participants

With regard to hand washing practice the respondents were asked that what are the condition in which hand washing practice should do necessarily. They were asked by their own perspective that what are the conditions in which they are washing their hands. 18.4 percent of the participants (n = 28) which was the least number of the participants replied that they are suggesting that there should be 3 – 4 time the hand washing done whereas 29.6 percent of the population (n = 45) responded that they wash their hands 5 – 6 time in a day. 79 participants (51.9 %) were those who told that they wash their hands whenever it is needed they are having the practice of hand washing. The illustration is given below
Hand washing material

From the practice part of the questionnaire respondents were inquired about the washing material they are using for hand washing in their daily routine. 85 of the participants (55.9 %) replied that they are using hand wash gel for their daily routine hand washing. Whereas 34 respondents (22.4 %) replied that they were using hand sanitizer for their hand hygiene. 33 participants (21.7 %) where those using antiseptic soap for washing their hands. The table and figure about this is given below:

<table>
<thead>
<tr>
<th>Hand Washing Material</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand wash gel</td>
<td>85</td>
<td>55.9</td>
</tr>
<tr>
<td>Hand sanitizer</td>
<td>34</td>
<td>22.4</td>
</tr>
<tr>
<td>Antiseptic soap</td>
<td>33</td>
<td>21.7</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 3.11. Need of Hand Washing of Study Participants
Hand wash material of choice

In context of hand washing material study participants were asked that either they are using soap every time or the martial of choice for hand washing. 64.44 percent of the respondents (n = 98) replied with the yes answer which indicate that they were using soap for hand washing. Whereas 35.5 percent of the study participants (n=54) responded with the answer no indicating that they were not using soap for the hand washing. The diagrammatic figure is given below:
Participants inquired about the time duration they are using for hand washing. 69 of the participants (45.3%) answered that they are taking 15 – 30 seconds for washing their hands while 27 of the respondents (17.7%) out of them told it is 31 – 45 seconds they take for washing their hands. There were 36 study participants (23.6%) those replied that they are taking 40 – 60 seconds and 20 respondents (13.1%) were those who told that they are taking more than one minute for washing their hands. The figure below illustrate this all:
How they dry hands after hand washing

It is important to know that with what our study participants were using to dry their hands after hand washing. They were asked about material they were using for drying of hands and 43.4 percent (n = 66) of the respondents replied that they were not using anything to dry hands as they let it dry itself. While there were 38 number of study participants i.e 25 % were using tissue paper to dry their hands whereas 31 respondents (20.3 %) using towel to dry their hands. Only 11.1 percent (n=17) were those who were using air warmer to dry their hands. The figure is given below about this calculation:
Gender wise knowledge of hand washing techniques

The gender wise knowledge of the participants were find out and their association were checked by cross tabulation and chi – square value were determind to seee the association by keeping in consideration of p – value.

Table 3.16. Gender wise Knowledge of Hand Washing Techniques

<table>
<thead>
<tr>
<th>Gender of the Participants</th>
<th>Knowledge of any specific technique of Hand Washing</th>
<th>Total</th>
<th>Chi–Square</th>
<th>p–Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>35</td>
<td>55</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>13</td>
<td>49</td>
<td>62</td>
<td>7.031</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td>104</td>
<td>152</td>
<td></td>
</tr>
</tbody>
</table>

Results showed that female students were had more knowledge about the various techniques of hand washing regardless of the male students. The p – value 0.007 indicated the association between these two factors which was less than 0.05.

Genderwise practice of hand washing

Hand washing practice was seen in both gender and the association was find out by using chi-square analysis and p-value was calculated from it.
From results it was seen that the handwashing practice in males were more upon the basis of whenever need of hand hand washing. While in the females the practice was seen more for 5 – 6 times a day.

Table 3.17. Genderwise Practice of Hand Washing

<table>
<thead>
<tr>
<th>Gender of the Participants</th>
<th>How often Participant wash hands per day</th>
<th>Total</th>
<th>Chi-Square</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3-4 times</td>
<td>5-6 times</td>
<td>When Needed</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>22</td>
<td>28</td>
<td>45</td>
<td>95</td>
</tr>
<tr>
<td>Female</td>
<td>12</td>
<td>18</td>
<td>27</td>
<td>57</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>46</td>
<td>72</td>
<td>152</td>
</tr>
</tbody>
</table>

Gender distribution and use of hand washing material

The use of various types of hand washing materials were analyzed in context of gender wise usage. There was a mixed result taken from the calculations which showed a positive association of the two study variables on each other.

It was described upon the evidence of p–value which was 0.035 indicating a positive association of the two study variables. The statistical test used for this calculation was chi–square showing a value of 6.725.

The most used hand wash material was hand wash gel by male and female study participants which was 42 and 43 respectively. The following table 3.18 describes the all calculation about this cross tabulation,

Table 3.18. Gender Distribution and Use of Hand Washing Material

<table>
<thead>
<tr>
<th>Gender</th>
<th>Hand Washing Material</th>
<th>Total</th>
<th>Chi-Square</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hand wash gel</td>
<td>Hand sanitizer</td>
<td>Antiseptic soap</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>42</td>
<td>19</td>
<td>25</td>
<td>86</td>
</tr>
<tr>
<td>Female</td>
<td>43</td>
<td>15</td>
<td>8</td>
<td>66</td>
</tr>
<tr>
<td>Total</td>
<td>85</td>
<td>34</td>
<td>33</td>
<td>152</td>
</tr>
</tbody>
</table>

Discussion

The knowledge about good hand washing practices and compliance of the its practice according to WHO guidelines amongst health care workers is essential for lowering the health care associated infections, nosocomial infections, cross–transferring and contagious infections. Although hand washing is a very simple procedure and has long been deemed one of the most important infection control measures, the compliance rates by health care workers are generally reported to be low.

Health-care workers were much less likely to perform hand hygiene if a peer or a higher ranking person in the room did not perform hand hygiene. Compared to health-care workers who entered a room alone, group behavior did not seem to improve if the higher ranking person or peer did wash their hands. Although these findings suggest that hand-hygiene
behaviors can be affected by role model or peer hand-hygiene compliance, learned behaviors or time constraints may negatively influence group compliance with hand-hygiene procedures.

The results of this study revealed that most of the medical students and other health care providers are aware about the benefits of hand washing and hand hygiene. This finding is lower than that reported in other studies done via a similar method in other medical institutions because of the sample size variations and most particularly we selected some of the students of MBBS which were not in the hospital clinical practice.

According to CDC guidelines on hand hygiene, washing hands with water and regular soap is the best available method to decrease the number of microbes on them in the vast majority of circumstances (Hamadah et al., 2015). In our study, 85 study participants (55.9 %) correctly answered about the use of the hand washing gel they were using for antisepsis as compared to the other group who were using hand sanitizer which was 34 (22.4 %). When water and soap are unavailable, which can be the case in several occasions in healthcare settings, health care workers in hospital settings should look for an alternative, such as hand sanitizers. Study participants exhibited several major misconceptions regarding the use of hand sanitizers.

This can generally be attributed to the health care professional’s lack of knowledge regarding various hand washing materials now available and using in so many developed systems. In addition, health care providers in the hospital setting should be aware that traditional hand washing (water, plus regular soap) has been demonstrated to be more effective at inactivating and eliminating particular kinds of germs, such as clostridium difficile-associated infections in suspected individuals or the patients.

This is a piece of information that can be easily missed by physicians, nurses, and medical students. As in our study when health care providers and medical students were asked about the usage of soap for hand washing only 64.4 percent (n = 98) revealed that they were using soap for washing their hands however 54 of the study participants (35.6 %) were not using soap anymore for washing their hands. Likewise, in a Chinese study conducted by Won et al., 2004 in which only 23.5% of the study participants responded correctly.

The study participants showed appropriate awareness of hand hygiene in terms of indications and techniques. Hand hygiene should be performed before and after each patient encounter (regardless of performing physical examination), and 122 respondents (80%) answered this question correctly as they knew the any of the specific techniques of hand washing according to the parameters and considerations while 20 percent of the study participants (n = 30) were unaware about any of the hand washing technique.

In our study, all of the health care providers along with the medical students showed positive attitudes towards hand hygiene to control and eliminate the health care associated infections, nosocomial infections, cross-transferring and contagious infections. More than 90% of the study participants agreed that "Proper hand hygiene is an important matter to be emphasized in medical curricula and healthcare centers to control and eliminate health care associated infections, nosocomial infections, cross-transferring and contagious infections" and that "Improper hand hygiene significantly contributes to a patient’s morbidity and mortality and causing a significant increase in the burden of the disease".

The statistical calculations revealed that there were more female study participants (79.9 %) who have had a better knowledge and understandings of any of the specific technique of hand hygien and hand washing practices as compared to male members of the study (61.1 %) which were have a less knowledge of hand hygiene and hand washing practices. It was seen that the most used material by both male and female study participants was hand wash gel which was 48.8 percent and 65.1 percent respectively from all of the used hand wash materials.

It showed a positive association (p-value = 0.035) indicating that most of the health care providers are practicing a proper way to save contaminated and communicable infections to the patients and other health care providers. Same likely most of the study participants (47.3
suggested that hand washing should be done whenever it is needed. Similarly the answer for this question from female participants (47.3 %) were in the favor of hand washing whenever it is neede in the taking care of the patients and dealing with other co–workers and health clients.

It is of high significance to spread the awareness about hygiene among undergraduate clerkship medical students as this will be reflected on their behaviors later on when they become professional healthcare providers.

Conclusions

The health care providers from all department working in the hospital setting along with the medical students have misconceptions regarding hand washing, hand hygiene, its pros and cons due to inappropriate knowledge.

The doctors, nurses, managers, and medical teachers should include hand hygiene and hand washing in their subjective operating protocols (SOP’s), curricula and some sessions and continue clinical education programs for the sake of sharing knowledge about hand washing and hand hygiene along with infection or disease control.

Public responsiveness by campaigns bout hand hygiene must be encouraged. With all awareness about hand washing the focus on practice should be make possible to be operated by health care professionals and medical students. The more adheanrce to the practice of hand hygeine and hand washing there will be the more prevention from the repeated infections to the health care professionals, workers and most important to the patients.

References


Breast Cancer and Management

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Abstract

Amongst the leading cause of death for women, breast cancer is the second leading cause of death and most commonly diagnosed. But good news to the world because in the recent times or lately, death rate has decreased as a result of health education and tools put in place to detect it early. This write up will show us the preventive and therapeutic management that have given rise to an impressive figure of survivors of breast cancer in different countries most especially the USA which has a survivor of 2.5 million.

Going through recent studies, the assessment carried out by the primary care provider regarding screening for breast cancer was geared towards decisions about when to initiate mammography—the process of using low energy x-ray to examine the human breast. Emphasis was made on early diagnosis as the best protection against breast cancer morbidity.

However, there have been recent developments in the ability to predict and modify breast cancer risk. It is therefore important for the health care provider to be able to recognize women at higher risk for breast cancer and be familiar with issues regarding screening and reduction of risk. Recent data regarding the evaluation of breast cancer risk, newer screening strategies for high-risk women, and medical and surgical intervention to minimize breast cancer and its risk, are presented in the project.

Every year 170,000 women are diagnosed with breast cancer; screening for breast cancer is one of the topics that primary care providers should address with their patients. Screening for breast cancer has been extensively endorsed and most women in the United States more than 40 years old participate in screening activities. In the community mammography remains the main screening tool. However, there have been several important developments in the ability to predict and modify breast cancer risk. Recently, data have become available regarding the evaluation of risk, screening strategies for high-risk women, and medical and surgical approaches that can decrease breast cancer risk. Women who are concerned about their risk for breast cancer and should be counseled and managed appropriately. It is important for primary care providers to be conversant with these issues. In my first three blocks which are health education, nursing informatics and ethical issues in nursing, the practice of health education, counseling, electronic health records were discovered to prevent diseases and decrease high mortality and morbidity rate. It is on this ground that I chose the topic breast cancer in women and management, sighting different methods from research by which breast cancer can be prevented, the role of the nurse in the stated aspect so that breast could be a thing of past in the nearest future. With the knowledge of nursing informatics, data analysis with tables, bar charts and pie charts were used to illustrate the results in this project.

Introduction

Breast cancer is the most common cancer and the diagnosis of breast cancer is most times delayed, leading to initial presentation with already advanced disease condition. The most common invasive cancer in women globally is breast cancer and it is also the second leading cause of death from cancer amongst women. What is breast cancer? A malignant tumor that starts in the cells of the breast is called breast cancer. Malignant tumor is a group of cancer cells that can grow to invade the surrounding tissues or metastasize (spread) to other distant body parts. This disease occurs almost entirely in women, but can occur in men also. In the United States, About 11,000 women aged lesser
than 40 years are diagnosed yearly in the United States with invasive breast cancer, which is accounting for 4.7% to 4.9% of all patients diagnosed of breast cancer. Chung M, Chang HR, Cancer 1996. In Western women, lesser than 4% of breast cancer patients are aged below 35 years. While the mean age at diagnosis is about 10 years lower in Korea, as in other Asian countries, and the proportion of patients with young aged breast cancer is higher in Asian than in Western countries. According to the 2011 Annual Report of the Korea Central Cancer Registry, 13.2% of women diagnosed with breast cancer were aged below 40 years, and 4.7% were aged below 35 years. Han V, Kans SY. Korean Breast Cancer Society (Breast Cancer Res Treat 2010)

Current guidelines for breast cancer screening recommend mammograms for women above 40 or above 50 years of age. In addition, mammograms in young women have a markedly lower sensitivity for breast cancer due to higher incidence of dense breasts in this age group. Diagnosis is also complicated by the various physiological changes and parenchyma development occurring in the time of pregnancy and breastfeeding. 163 breast carcinomas occurring in women aged between 26 and 44 years were examined for pathological features, estrogen and progesterone receptor status, proliferation as determined by Ki-67 labeling and the presence of c-erbB-2 and p53 protein, and were compared with a control group of carcinomas from women in the 50-67 years age group. Carcinomas occurring in women aged lesser than 35 years had a significantly high incidence of being poorly differentiated and of having high proliferation rates.

This group also had a significantly high incidence of p53 protein staining. Carcinomas in the under 30 years age group had a lower incidence of estrogen and progesterone receptor positivity. No differences were found in c-erbB-2-positive staining between the groups. Infiltrating lobular carcinomas were only identified in women aged 40 years and above. There was a higher incidence of a family history in the 35-44 years age group 18 percent than in the under 35 years age group 11 percent. Breast cancer occurring in women aged below 35 years are highly aggressive. An important discovering is the high level of p53 positivity, which could mean genetic instability. Eur. J Public Health 2014

Breast cancer commonly starts off in the inner lining of milk ducts or the lobules that supply them with milk. A malignant tumor can spread to other parts of the body. A breast cancer that began in the lobules is called lobular carcinoma, and one that began from the ducts is called ductile carcinoma. Breast cancer is the most common invasive cancer in females in whole world. In general, it accounts for 16 percent of all female cancers and 22.9 percent of invasive cancers in women. 18.2 percent of all cancer deaths worldwide According to the National Cancer Institute, 232,340 female breast cancers are reported in the USA each year, as well as about 39,620 deaths caused by the disease.

Causes of breast cancer?

The cause of breast cancer is definitely not known. It is difficult to say the reason some persons develops the disease while others do not. We know that some risk factors can impact on a woman's likelihood of developing breast cancer. They are: Getting older – the age of a woman is a risk factor, the older a woman gets, the higher is her risk of developing breast cancer; Over 80 percentage of all women’s breast cancers occur among women aged 50years and above beyond the menopause. Genetics - women who have a close relative who has had breast or ovarian cancer, are more likely to develop breast cancer. But majority of breast cancers are not hereditary. The women who carry the BRCA1 and BRCA2 genes have a higher risk of developing breast and ovarian cancer. These genes can be inherited. TP53, another gene, is also linked to greater breast cancer risk.

A history of breast cancer - women who have had breast cancer, even non-invasive cancer, are more likely to develop the disease again, compared to women who have no history of the disease.

Having had certain types of breast lumps - women who have had some types of benign (a non-cancerous) breast lumps are more likely to develop cancer later in life. Such as atypical ductile hyperplasia or lobular carcinoma.
Dense (thick) breast tissue - women with dense breast tissue have a higher chance of developing breast cancer.

Estrogen exposure - women who started menstruating earlier or delayed menopause than usual have a greater risk of developing cancer of the breast. The reason is due to the fact their bodies have been exposed to estrogen for a longer time. The exposure to estrogen begins when menses start, same also drops dramatically at the period of menopause.

Obesity - the women who become obese and overweight post menopausal may have a higher risk of developing breast cancer. Experts say that there are higher levels of estrogen in the obese menopausal women, which may be the cause of the higher risk. Obesity causes about 5% cancer in UK.

Height – taller than average women have a slightly greater likelihood of developing breast cancer than shorter than average women. Experts are not sure why. A woman's height has been associated with breast cancer risk in many studies. Taller women (5 feet 9 inches or taller) have a small increase in risk of both premenopausal and postmenopausal breast cancer compared to shorter women (5 feet 3 inches or shorter). About 17% of cancer could be caused by height.

A person's height is determined by the interaction of genetics, nutrition and hormone levels. How these three factors might affect breast cancer risk is unclear. One possible explanation suggests that the hormones that affect women's height may also cause an increase in the amount of milk duct tissue in the breast. Most breast tumors arise from this tissue and more breast ducts would lead to increased susceptibility to breast cancer.

Alcoholism – women who take alcohol the more regularly have higher risk of developing cancer of the breast. The Mayo Clinic says that if a woman wants to drink, she should not exceed one alcoholic beverage per day. Researchers said alcoholism caused about 106% of cancer.

Smoking - Researchers at the American Cancer Society have found an increased breast cancer risk among women who smoke, especially those who start smoking before they have their first child. The risk of invasive breast cancer was highest in women who began smoking at an earlier age. When compared to women who never smoked, those who started smoking before their first menstrual cycle had a 61% higher risk, while those who started smoking after their first cycle, but 11 or more years before having a child, had a 45% higher risk.

The researchers also found that these results were supported by the findings of earlier cohort studies. When combining the results of 9 studies (including this one), they found a 12% increase in breast cancer risk amongst women who began smoking at a younger age, and a 21% increase in risk among women who started before the birth of their first child.

Mia Gaudet, PhD, American Cancer Society director of genetic epidemiology, said breast tissue is not fully developed until after a woman has her first child, and that makes it more sensitive to the harmful effects of tobacco. Gaudet said, “The key message from this study should be additional motivation to young women not to start smoking.” The risk of invasive breast cancer was highest in women who began smoking at an earlier age. When compared to women who never smoked, those who started smoking before their first menstrual cycle had a 61% higher risk, while those who started smoking after their first cycle, but 11 or more years before having a child, had a 45% higher risk.

Radiation exposure - exposure to X-rays and CT scans may raise a woman's risk of developing breast cancer slightly. The scientists at the Memorial Sloan-Kettering Cancer Center discovered that...
women who had been treated with radiation to the chest for a childhood cancer have a higher risk of developing breast cancer.

**Hormone replacement therapy** whether combined or estrogen only HRT therapies can increase a woman's risk of developing breast cancer. About 26% of breast cancer is caused by this hormonal use.

**Certain jobs** - French researchers found that women who worked at night prior to a first pregnancy had a higher risk of eventually developing breast cancer. Melatonin is a mammalian hormone involved in circadian rhythms and sleep and potentially in restraining tumor growth.

The synthesis and release of melatonin occur in a dose–response-like manner that is stimulated by darkness and inhibited by light through photic information from the retina. Peak melatonin levels normally occur during sleep in the middle of the night. Several experimental studies have provided evidence of an association between melatonin levels and risk of cancer. For example, evidence from rodent studies found that pinealectomy increased tumor growth, that administration of melatonin inhibited the promotion of chemically induced mammary tumors and that constant light exposure had a growth-promoting effect on chemically induced tumors. About 60% of breast cancer is by night duty Canadian researchers found that certain jobs, especially those that bring the human body into contact with possible carcinogens and endocrine disruptors are linked to a higher risk of developing breast cancer. Such as bar/gambling, manufacturing of automotive plastics, metal-working, food canning and agriculture. They reported their findings in the November 2012 issue of Environmental Health. Cosmetic implants may undermine breast cancer survival - women who have cosmetic implants in their breasts and develop breast cancer may have a higher risk of dying prematurely from the disease compared to other women, researchers from Canada reported in the BMJ (British Medical Journal) (May 2013 issue).
The anatomy of a female breast


A mature human female's breast comprises of fat, connective tissue and thousands of lobules – tiny glands which produce milk. The milk of a breastfeeding mother goes through tiny ducts (tubes) and is delivered through the nipple.

The breast is made up of billions of microscopic cells. These cells multiply in an orderly manner and new cells are made to replace the ones that have died. When there is cancer, these cells multiply uncontrollably, and there are too many cells, progressively more and more than there should be naturally.

Cancer that begins in the lactiferous duct (milk duct), is called ductile carcinoma, it is the most common type. Cancer that begins in the lobules is known as lobular carcinoma and it is much less common. Managing breast cancer involves simple examination of breast for early detection of lump,
screening for women with high risk, prophylactic mastectomy, lumpectomy and therapeutic mastectomy.

This project is to create awareness amongst women and in the countries where screening for high risk for breast cancer and its management is not yet popular so that affected women can live much more longer than expected.

Some of the possible early signs of breast cancer Wikimedia Commons

A symptom is only felt by the patient, and is described to the doctor or nurse, as a headache or pain while a sign is something the patient and others can detect, for example, a rash or swelling. The very first symptoms of breast cancer are usually an area of thickened tissue in the woman's breast, or a lump. Most of the lumps are not cancerous; however, I see it as important for women to get them checked by a health care professional

Women who detect any of the following signs or symptoms should tell their doctor (NHS, UK) lump in a breast pain in the armpits or breast that does not occur with the woman's menstrual period Pitting or redness of the skin of the breast appears like the skin of an orange A rash around or on one of the nipples A swelling in one of the armpits An area of dense tissue in a breast One of the nipples is discharging sometimes the discharge may contain blood The nipple changes in appearance; it may become sunken or inverted When there is changes in the size and shape of the breast When there is scaling, peeling or flaking of the skin of the nipple and breast. The management of breast cancer in
women is in preventive which can be done by starting from simple examination of the breast, screening with mammogram, risk assessment- involving family history and using magnetic resonance imaging, to carrying out risk reducing management like non pharmacological management, hormonal preventive therapy and surgical management according to National Cancer Institute, J. AM Board FAM 2009. The objective of this project is to enhance a vibrant health education that will create awareness to all classes of women globally of the availability of screening tools and the same time lay much emphasis on the use of these tools and also inform people of a better lifestyle. These will go a long way to prevent the disease called breast cancer and women will live a healthy and a prolonged live. After all, according to an adage, prevention is better than cure.

**Literature review**

Before the implementation of the preventive management of breast cancer, women who were diagnosed of breast cancer in USA in 2007 were 202,964 and women who lost their lives as a result of breast cancer were 40,598. In 2005, women of 40 to 64 years accounted for 61% of in situ cases, 54% of invasive breast cancer cases, and 40% of breast cancer deaths. A combined exposition (1971-1980) and probable (1981-1990) study of the epidemiology, clinical characteristics and pathology of breast cancer in a black African population was carried out. There were 1946 biopsy-proven cases, with a rate frequency of 33.6 per 100,000 patients per year. The age range was 14-96 years but 70 per cent of patients were between 26 and 50 years old. The cumulative frequency of cancer was 0.8 per cent at age < 20 years and 3.3 per cent at age < 25 years; the peak age range for disease was 36-45 years. Of 1842 evaluable patients, 17.2 per cent presented with stages I or II cancer and 73.8 per cent with stage III disease. The dominant histopathological type was infiltrating ductal cancer (49.2 per cent), followed by undifferentiated anaplastic carcinoma (33.3 per cent). Burkitt's lymphoma occurred in five patients and developed concurrently and rapidly during lactation in four. The prospective study did not demonstrate that age at menarche or first full-term pregnancy, duration of breast feeding or parity were risk factors in black women. Breast cancer in Nigerian women. [Br J Surg. 1992].

In recent times, the word ‘Cancer’ has become synonymous amongst Nigerians. While late presentation of patients at advanced stages of breast cancer is becoming a common trend in Nigeria, global statistics reveal that rising global incidence of breast cancer is occurring at a faster rate in populations of developing nations, with Nigeria included. A publication on Fri, Jul 10th, 2015 Lagos Nigeria, The Medical Director in Optimal Cancer Care Foundation, Dr Femi Olaleye, said breast cancer killed 1: 25 Nigerian women. Here in Nigeria like in some of the developing countries, most people present late and as such, diagnoses are made when it is too late, thereby leading to several needless and painful deaths of our beloved moms, sisters, aunts, friends, colleagues.“ this condition Breast cancer is at present the most common cancer in Nigeria. Olaleye said that screening was the process of looking for early signs of a disease in a healthy population. He explained that while other cancers could be detected through proper medical tools, they could not be screened for in such a cost effectual manner. Olaleye said that the screening was just a five to 10 minutes procedure that medical practitioners in the primary healthcare centers could be trained to do. He said that the main aim of the foundation was to make screening accessible to communities from corner to corner in the country.

“Rather than locating a cancer foundation in your church, you just invite us to come and screen your women every year. People who love to be part of public campaign can organize this project in their own communities as their own charity to impact on the lives of their people.” Olaleye said that annual screening would not only boost a woman’s chance of early detection and survival but also expose her to information she could adopt on preventive measures. He said that information on lifestyle including eating habits, exercise practice and stress level often came during counseling. (NAN)

**Preventive management for breast cancer overview**

Life-style is now recognized as a main determinant of cancer risk. Public education is an important component of cancer control programmes and has been shown to be effective in leading to life-style
changes. Four fundamental types of education programmes are reviewed: for increasing the public's awareness of cancer, for changing particular risk behaviour like stopping smoking, breast self-examination, and promoting early cancer detection in the community.

To change human behavior it is best to approach the risk habit through the same forces that develop and sustain the habit. Simply giving information of an association between specific habits and cancer, even if repeated several times, will lead to increased public awareness and encourage some to make a minimal effort to change their behavior, but in general the new habit does not persist and continuing and intensifying this approach are ineffective. An alternative strategy utilizes socially active forces to support the prevention practice and remove possible barriers to action. For example, an antismoking program should create a favorable social image of the non-smoker. Although a culturally and socially relevant mass media campaign can influence knowledge and beliefs and induce people to participate in a screening activity, this needs to be supplemented over a period of time by personal contact methods, such as group discussions, telephone conversations and home visits, in order to promote a regular screening habit. Contrary to popular opinion, mass communication methods can be expensive on a per person cost-effectiveness basis because of low participation rates and weakness in sustaining healthy behavior.

**Breast exam** - the physician will check both the patient's breasts, looking out for lumps and other possible abnormalities, such as inverted nipples, nipple discharge, or change in breast shape. The patient will be asked to sit/stand with her arms in different positions, such as above her head and by her sides. Also added by the researchers is breast awareness.

Breast awareness has been advocated in the UK since the early 1990s, but while it is now generally established as a method of self-care there is still uncertainty about what it is among health professionals and the universal public. Austoker (2003) claims that much of this confusion has existed since its beginning in the 1990s. several women confuse breast awareness with breast self-examination and often believe they are the same thing. However, breast awareness advocates that women no longer need to be anxious on how to examine their breasts in a specific way or to remember to do it at an exact time, as it is directed with breast self-examination. Rather it focuses on breast awareness becoming a normal part of caring for their bodies.

In breast awareness women are encouraged to become familiar with what is normal for them through looking at and feeling their breasts. Most women will know how their breasts look and feel simply by carrying out daily activities such as washing and dressing, though this knowledge and awareness may be unintentional. Austoker (1994) reports that 90 per cent of breast cancers are found by women themselves or their partners. This reinforces the subjective evidence that women know what is normal for them. Breast awareness is not about searching for cancer, it is part of general body awareness, ensuring everything remains the same. It does involve looking at and feeling the breasts from time to time but not in any taught way or at a set time. By being breast aware women become confident in knowing what is normal for them so they are more able to recognize when something is not the same and can report these changes to their doctor. (CRUK, 2004).

**X-ray (mammogram)** - commonly used for breast cancer screening. If anything unusual is found, the doctor may order a diagnostic mammogram. Breast cancer screening has become a controversial subject over the last few years. Experts, professional bodies, and patient groups cannot currently agree on when mammography screening should start and how often it should occur. Some say routine screening should start when the woman is 40 years old, others insist on 50 as the best age, and a few believe that only high-risk groups should have routine screening.

**Evaluation of breast cancer risk**

**Average risk**

The National Cancer Institute's Surveillance, Epidemiology, and End Results program estimates that, based on breast cancer statistics from 2001 through 2003, 12.7% of women born in the United States today will develop breast cancer sometime during their lifetime. This average risk of
approximately 12% is often expressed as "1 in 8," whereas the chance that a woman will never have breast cancer is 87.3%, or "7 in 8" women.

Identification of women at higher risk for breast cancer

Several approaches are available for identifying women with a higher than average risk of breast cancer. These include an assessment of family history with genetic testing consideration; a review of clinical history, including prior breast biopsies; and the evaluation of mammographic density. Family History. Many women will have a family history of breast cancer but, among the majority of these women, the risk does not increase substantially and is associated with, at the most, a doubling of the lifetime risk. Only 1% to 2% of breast cancer cases are caused by the inheritance of an auto-soma dominant, high-pen trance gene, conferring up to an 85% lifetime risk of breast cancer. Features of the family history that suggest cancer may be caused by such a high-pen trance gene include. Two or more first-degree that is parent, sibling, or child or second-degree that is grandmother, granddaughter, aunt, niece, half-sibling relatives with breast cancer. Breast cancer occurring before the age of 50 -premenopausal in a close relative. Family history of both breast and ovarian cancer. One or more relatives with 2 cancers (breast and ovarian cancer or 2 independent breast cancers). Breast cancer in male relatives.

Two breast cancer susceptibility genes (BRCA1 and BRCA2), have recently been identified; these genes are responsible for up to about 40% of cases of inherited breast cancer. In patients with BRCA1 mutations, the average cumulative risk of developing cancer by the age of 70 ranges between 55% and 85% for breast cancer and between 16%. In BRCA 2-mutation carriers, the risks range between 37% and 85% for breast cancer Clinical History and Significance of Previous Breast Biopsies. Studies have shown an increased cancer risk in young survivors after radiation treatment. Among women with Hodgkin's disease who received mantle field radiation treatment, the risk of breast cancer increases significantly 15 to 30 years after radiation therapy. The best-characterized premalignant lesions are atypical ductile hyperplasia -ADH, atypical lobular hyperplasia -ALH, and lobular carcinoma in situ -LCIS. LCIS and ALH, together described as lobular neoplasia, are associated with substantially increased risk of subsequent breast cancer, with lifetime risk estimates ranging from 10% to 20%. ADH is part of the continuum of ductile proliferative breast diseases, ranging from usual ductile hyperplasia to ductile carcinoma in situ -DCIS. The literature review by Arpino et al suggests a 4- to 5-fold increased risk of invasive breast cancer in women with atypical ductile hyperplasia at a median follow-up of 17 years, which is doubled if the woman has an associated family history of breast cancer.

Once thought to be a precursor to invasive carcinoma, lobular carcinoma in situ is now considered to be a marker of increased risk for breast cancer. In most cases it is characteristically multifocal and bilateral. More than 50% of patients with lobular carcinoma in situ have multiple foci in the ipsilateral breast, and approximately 30% of patients have lobular carcinoma in situ in the contra lateral breast. Lobular carcinoma in situ is considered a marker of increased risk of cancer in either breast. In contrast, ductile carcinoma in situ also called intra ductile carcinoma represents the stage of breast cancer development in which most of the molecular changes that characterize invasive breast cancer are already present even though the lesion has not assumed a fully malignant phenotype. DCIS is a precursor to invasive cancer and is therefore not discussed in this review. A systematic review of published studies done by the Agency for Health care Research and Quality revealed that within 5 years after LCIS diagnosis, 4.2% to 9.3% of patients were diagnosed with breast cancer. In studies that followed patients for more than 5 years, the incidence of cancer was 7.7% to 26.3%.

Mammographic Density. Extensive mammographic density is strongly associated with the risk of breast cancer, with age and mutations in the breast cancer gene being the only other factors associated with a greater risk. A meta-analysis of 42 studies showed that women in the highest quartile of mammographic density have a risk of breast cancer that is approximately 4 to 6 times higher than that of women of similar age in the lowest quartile. In a recent study, Boyd et al also reported an
association between breast cancer and extensive mammographic density even when the density was observed as much as 8 years before a breast cancer diagnosis. This finding indicates that the association between extensive mammographic density and an increased risk of breast cancer is not only because of a masking effect of the breast density, which could obscure a cancer, but also because of a biologic connection between breast density and breast cancer.

Breast density is not currently used routinely when assessing breast cancer risk. In the future, however, measures of mammographic density could be useful in assessing the risk of breast cancer and in guiding measures to prevent breast cancer.

Risk assessment tools

The use of breast cancer risk assessment tools in the evaluation of risk is a good way for physicians to engage their patients in a discussion of factors that may contribute to their increased risk. These models incorporate family history, which is the main determinant of risk, but some of these models incorporate other risk factors, such as previous abnormal breast biopsies and reproductive history; these are discussed below. Women who are assessed in primary care settings as being high risk by the use of any one of these models should be offered a referral to centers that have expertise in high-risk breast cancer for genetic counseling and a more definitive assessment of risk.

Breast cancer risk assessment tool

It is an interactive tool made by the National Cancer Institute and the National Surgical Adjuvant Breast and Bowel Project (NSABP) to estimate a woman's risk of developing invasive breast cancer. This is available on the National Cancer Institute's Web site (http://www.cancer.gov/bcrisktool/).

This tool was developed from the original Gail model and includes the following risk factors: current age, race, age at menarche, age at first live birth, the number of first-degree relatives with breast cancer, the number of previous breast biopsy examinations, and presence of atypical hyperplasia. The model predicts a woman's likelihood of having a breast cancer diagnosis within the next 5 years and within her lifetime up to the age of 90. Although this prediction model has been validated in large populations, one of the limitations of this model is that it is not good at predicting individual risk. In addition, this model does not take into consideration the paternal family history, second-degree relatives, or the age at onset in affected relatives. Both of these factors are significant in predicting hereditary breast cancer risk.

Claus model

The Claus model (http://www4.utsouthwestern.edu/breasthealth/cagene/default.asp) estimates the probability that a woman will develop breast cancer based on her family history of cancer; it incorporates more extensive family history but excludes other risk factors. Risk tables have been published by Claus et al and the risks can be calculated as lifetime probabilities of developing cancer or an estimated risk that a woman will develop cancer over 10-year intervals. It should be emphasized that the Claus model may be used only for women with at least one female first- or second-degree relative with breast cancer; this model does not take into account other risk factors that have been associated with breast cancer, such as age of menarche, age at first live birth, or a family history of ovarian cancer.

Genetic testing and brcapro

Although less than 10% of all breast cancers are linked to genetic mutations, such as BRCA-1 and BRCA-2, women who carry these mutations are at very high risk for breast cancer. The information provided by genetic testing is invaluable when making informed decisions related to breast cancer risk management. Universal genetic testing has some major drawbacks, namely the high cost and the frequency of mutations of uncertain clinical significance that occur in unselected families. The American Society of Clinical Oncology has devised guidelines suggesting that it is reasonable to consider testing of women whose mutation probability is greater than 10%. The BRCAPRO is a
program that calculates the probability that a particular family member carries a germ-line mutation of the BRCA1 and BRCA2 genes (http://www4.utsouthwestern.edu/breasthealth/cagene/default.asp). The calculations are based on Bayes' rules of determination of the probability of a mutation, given family history. Women who are identified in primary care settings to be at high risk should be referred to genetic counseling for a more definitive risk assessment. Risk assessment tools are recommended as an adjuvant to genetic counseling. Genetic counseling is recommended before mutation testing. Data are not available to determine the optimal age to test.

**Screening strategies in high-risk women**

Mammography has been proven to detect breast cancer at an early stage. However, for women with an increased risk of breast cancer, newer screening technologies are available for earlier detection, particularly in women below the age 40 years for whom mammography is less sensitive. Contrast-enhanced magnetic resonance imaging - MRI has been shown to have a high sensitivity (86% to 100%) for detecting breast cancer in high-risk asymptomatic and symptomatic women, although reports of specificity have been more variable (37% to 97%). The American Cancer Society now recommends MRI screening in addition to mammograms for women who meet at least one of the following conditions; They have a BRCA1 or BRCA2 mutation They have a first-degree relative (parent, sibling, child) with a BRCA1 or BRCA2 mutation (even if they have not been tested themselves)

Their lifetime risk of breast cancer has been scored at 20% to 25% or greater (as defined by BRCA2 or other accepted risk assessment tools that look at family history and other factors); They had radiation exposure to the chest between the ages of 10 and 30; or They have clinical syndromes that place them at high risk, like Li-Fraumeni syndrome, Cowden syndrome, or Bannayan-Riley-Ruvalcaba syndrome; or if they may have at least one of these syndromes based on a history in a first-degree relative.

There is still not enough evidence for or against recommending MRI screening in women who have a 15% to 20% lifetime risk of breast cancer based on one of several accepted risk assessment tools that look at family history and other factors like LCIS or ALH, ADH, ‘having very dense breasts or unevenly dense breasts on a mammogram; or have already had breast cancer, including ductal carcinoma in situ Screening MRIs are not recommended for women with a lifetime risk of breast cancer below 15%. Although an MRI is a more sensitive test, it may still miss some cancers that a mammogram would detect. An MRI should therefore be used in addition to, not instead of, a screening mammogram.

For most high-risk women, screening with MRI and mammograms should begin at the age of 30 and continue for as long as the woman is in good health. Because evidence is limited regarding the best age at which to start screening, this decision should be based on shared decision-making between patients and their health care providers, taking into account individual patient circumstances and preferences.

**Reducing risk of breast cancer**

**Non pharmacological interventions (life style)**

Studies have been made about several of them such as regular exercise which may reduce breast cancer risk, although the mechanism is not known. Reduction in body weight and reducing or stopping alcohol intake may reduce breast cancer risk in postmenopausal women. Interventions You've heard of antioxidants, such as vitamin C, lycopene, and beta-carotene, which are in many fruits and vegetables. Studies suggest that people who eat meals that are rich in fruits and vegetables have a lower risk of cancer. A variety of chemicals from plants known as phytochemicals also seem to protect cells from harmful compounds in food and in the environment, as well as prevent cell damage and mutations, according to Jed W. Fahey, ScD, MS, a faculty research associate at Johns Hopkins University School of Medicine. HE studied how cruciferous vegetables can help protect against...
disease. A diet that could shield off cancer does not really look that different from the healthy foods you should be eating anyway according to Wendy Demark-Wahnefried, PhD, RD, a professor of behavioral sciences at the University of Texas M.D. Anderson Cancer Center in Houston. This means that much of fruits and vegetables, in addiction to whole grains and lean meat or fish should be encouraged. Dietary folate seems to protect against the increased risk of breast cancer caused by alcohol intake. interventions Although it is not statistically significant, according to the Women's Health Initiative it was found that a low-fat diet was associated with a 9% reduction in the risk of breast cancer. Observational studies also suggest that vitamin D and calcium might be involved in the development of breast cancer. Of the 13 studies of breast cancer, 9 reported a favorable association of vitamin D markers or sunlight with cancer risk, including one where the association was limited to premenopausal women; 1 study reported a favorable trend of borderline statistical significance and 3 found no association. None reported adverse effects.

However, there are no data from randomized controlled trials ensuring adequate vitamin D intake could reduce the risk of breast cancer. It is important to discuss these with women, but they need to be aware that lifestyle changes alone should not be relied on as the only risk reduction strategies.

**Hormonal interventions**

**Use of selective estrogen receptor modulators**

The links between hormones and breast cancer has long been recognized. The identification of the estrogen receptor provided a successful target for the treatment and prevention of breast cancer. Selective estrogen receptor modulators (SERMs), which antagonize estrogens in some tissues and mimic their action in others, play a key role in chemoprevention. Tamoxifen acts as an estrogen antagonist in breast tissue and as an estrogen agonist in the endometrium. Conversely, raloxifene behaves as an estrogen antagonist in both the breast and the endometrium. Differences in their molecular and 3-dimensional structures affect the transcriptional activity of the activated estrogen receptor. The National Surgical Adjuvant Breast and Bowel Project (NSABP P-1) Breast Cancer Prevention Trial evaluated the use of tamoxifen for the prevention of breast cancer in high-risk women who were either pre or postmenopausal. The study found that tamoxifen, when given for 5 years, decreased the risk for developing invasive breast cancer by 49% in women who were at an increased risk for developing breast cancer. Those with atypical hyperplasia derived the largest risk reduction: 85%. Tamoxifen can cause significant adverse effects, including hot flashes, endometrial cancer, and venous thromboembolism. Women may opt out not to take tamoxifen due the risk that out weighs its potential benefits. Tamoxifen happens to be the first drug which was approved for the chemoprevention of breast cancer.

Recent evidence suggests a similar magnitude of benefit from the related drug raloxifene. In the NSABP P-2 Study of Tamoxifen and Raloxifene trial, tamoxifen and raloxifene had equivalent effects in reducing risk of invasive breast cancer in all examined high-risk women who were postmenopausal, including women with a history of atypical hyperplasia or LCIS, who had the highest annual rates of invasive breast cancer. There were fewer noninvasive cancers in the women who took tamoxifen, although this was not statistically significant. Comparisons of raloxifene with tamoxifen show equal efficacy as a chemo preventive agent for breast cancer, but there were fewer thromboembolic disorders, endometrial cancers, hysterectomies, cataracts, and cataract surgeries in women taking raloxifene. Raloxifene was approved for the prevention of invasive breast cancer in high-risk postmenopausal women in 2007.

Women should be offered chemoprevention with SERMs only after a shared decision-making process that involves careful consideration of the risks and benefits. Data are currently needed regarding the optimal time to initiate chemoprevention in women identified as high risk.
Aromatase inhibitors

The aromatase enzyme is required for the last step in estrogen biosynthesis. The third-generation aromatase inhibitors, which include exemestane, anastrozole, and letrozole, are potent and selective inhibitors of aromatase activity. The effect of aromatase inhibitors, as measured by the degree of aromatase inhibition, is approximately 98% for each of the third-generation agents. Interest in the use of the drugs for chemoprevention developed from the findings of the Anastrozole, Tamoxifen Alone and in Combination trial. Postmenopausal women with early-stage breast cancer who were using anastrozole alone had a 58% reduction in contralateral invasive breast cancer. The second International Breast Cancer Intervention prevention trial began in 2003 and compares anastrozole to placebo in 6000 postmenopausal women with an increased risk of breast cancer as well as women with mammographic density covering at least 50% of the breast.

Surgical preventive management

Cancer prediction models work well for populations but are not good at predicting individual risk. In a patient who has no evidence of breast cancer but who is at high risk, bilateral mastectomy is an option for risk reduction. Bilateral prophylactic mastectomy has been reported to reduce breast cancer incidence more than 95%. A recent position statement by the American Society of Surgical Oncology suggests bilateral prophylactic mastectomy may be considered in the following patients without a cancer diagnosis who are at high risk because of; The presence of BRCA mutations or other genetic susceptibility genes; A strong family history of breast cancer; cancer in multiple first-degree relatives and/or multiple successive generations of family members with breast and/or ovarian cancer; Histology risk factors: atypical ductile hyperplasia, atypical lobular hyperplasia or lobular carcinoma in situ confirmed on biopsy. These changes are especially significant when they are present in a patient who has a strong family history of cancer of the breast or Difficult surveillance; a clinically and mammographically dense breast may make surveillance difficult.

Patients considering prophylactic mastectomy should also be informed about the potential benefits and risks of immediate reconstruction. The position statement recommended that these patients are best evaluated by a multidisciplinary team, which may include a surgeon, a medical oncologist, a pathologist, and a genetic counselor. It is important for these patients to be aware of potential risks and benefits of prophylactic mastectomy as well as the fact that the procedure does not provide 100% protection against the development of breast cancer. Other factors to consider is patient’s age and other co morbidity

The nurses role in health education on prevention of breast cancer

Having made known the different method by which breast cancer can be prevented, it will be of importance to briefly discuss the role of the nurse in the preventive methods.

ICN Position: While helping to prevent cancer is an important role of many health care professionals and consumer groups, nurses are in a key position to directly affect people’s health. therefore, the International Council of Nurses (ICN) strongly advocates that nurses: Contribute to the primary prevention of cancer through helping individuals adopt healthy living lifestyle. Carry out secondary prevention and early detection activities by providing information about the importance of screening programs and facilities; encouraging high risk individuals or families to undertake screening; and participating in screening activities, particularly at the primary health care level. National Nurses Associations (NNAs) have an essential role to play. ICN urges NNAs to: Lobby for nursing research that addresses the potential improvement in the approaches and strategies of cancer prevention and early discovery, as well as Nurses’ roles in this. Advocate for inclusion of new knowledge and new technology about cancer prevention and early detection in basic, post-basic and continuing education programs of nursing. Support and become involved in public awareness raising, government and other initiatives aimed at prevention and early detection. Promote the participation of
the national cancer nursing organization in international exchange activities on cancer prevention and early detection. Lobby for inclusion of human papillomavirus vaccine (HPV) in national immunization program

Work together with other health professionals and government bodies for total ban of tobacco use and smoking in public places. Encourage nurses’ involvement in cancer prevention activities and strategies, including involvement in national and international activities. Lobby for changes in environmental health policy such as smoke-free public places and healthy public policy that addresses the broader social determinants of health. The Nurse plays considerable roles in primary and secondary deterrence of breast cancer because their holistic perception and advanced practice skills enable them to get involved for clients at every levels of health care. Nurses are knowledgeable of not only assessing the health of their female clients, but also the organization that serves client needs. They use their advanced knowledge and practice skills to educate women about cancer risk factors, and to initiate screening programs aimed at early detection and intervention. The Nurse Practitioner observe screening and treatment services extended to women clients, and promote high excellence care by enlightening both professional and non-professional care givers to health care needs.

Advocacy on behalf of women's health issues impacting breast cancer screening and care is an additional part of the Nurses role. Nurses’ Role in Prevention of Cancer. Date Posted: 29/Jan/2013

**Role of the nurse in promoting health of the breast**

In order to help promote the government's program, it is vital that the nurse has an adequate knowledge of these plans so that she can raise awareness of health benefits, offer advice and educate patients about all the strategies that they can do to help promote a healthier life. It is very significant to become familiar with how the breasts look and feel at different times of the month. The breast awareness 5-point code was introduced as a way of caring for your body and being able to notice any odd changes in your breasts (Breast Cancer care 2007). The practice nurse will offer guidance to show patients how to examine their breasts or offer a leaflet which contains all the necessary information. School nurses are also helping to promote breast health and breast cancer prevention to young girls across the nation in schools where they give health talk openly to girls about breast development and the complex health and emotional issues and problems that may occur. The health promotion enables the young girls to face the future with assurance and with facts of breast cancer. (Breast cancer 2008).

Breast screening is offered to all women between the ages of 50-70 years and they will receive an appointment by letter to attend for breast screening, however, if any unusual changes in the breast are noticed, it is essential that an appointment to see a doctor or the practice nurse is made, where a complete examination of the breasts will be given. Reassurance and support will be given by the nurse or doctor and they will try to alleviate some embarrassment by maintaining privacy and dignity by locking the door and by pulling the curtains around (NMC 2008). If the nurse or doctor is uncertain about the problem, or they think that cancer may be present then a referral to a breast specialist for advice or treatment will be given. The patients that are referred to a specialist with breast symptoms, even if breast cancer is not suspected should be seen within two weeks of the referral (DH 2007). Diagnosis in the breast clinic at the hospital is made by a triple assessment (clinical assessment, mammography and/ or ultrasound imaging, core biopsy and/ or fine needle aspiration cytology (NICE 2009). The breast cancer nurse will introduce herself and she will explain everything fully to the patient before gaining important historical information off them, the nurse will also ask the patient if they have any questions before asking the patient to put on a gown. Dignity and privacy is maintained throughout. The nurse must use sensitivity, empathy and understanding as this can often be emotionally upsetting and distressing for women. The nurse will ensure that prior consent is always gained from the patient (NMC 2008).

**Nurses role in evaluation of breast cancer risk**

Nurses have an important role in early detection of breast cancer. So, when the role of the nurse is explicitly identified, further studies can begin to determine the effectiveness of nursing practice in
terms of women health regarding early detection through screening practices. the setting for conducting mammography should be peaceful with some manner of beauty. It should be welcoming and warm. Each woman should feel that she is unique and important as a member of our family. It should be emphasized that peace of mind will be granted to the women who have abnormal mammography. Women should be informed that health care providers are not just looking for early lesions, but providing peace of mind to the women with a benign mammography. The has to be attentive and gentle to the women, and answer carefully all their questions intelligently. http://www.mcgrathfoundation.com.au/

Therapeutic surgery overview

Lumpectomy - surgically removing the tumor and a small portion of healthy tissue around it. This is mostly called breast-sparing surgery in breast cancer. It is preferred if the tumor is small and the surgeon has ascertain it will be easy to separate from the tissue around it. British researchers noted and reported that about one fifth of patients with breast cancer who chose breast-conserving surgery instead of mastectomy eventually need a reoperation. Mastectomy - surgically removing the breast. Simple mastectomy involves removing the lobules, ducts, fatty tissue, nipple, areola, and some skin. Radical mastectomy means also removing muscle of the chest wall and the lymph nodes in the armpit. According to a study carried out at the Dana-Faber Cancer Institute and published in Annals of Internal Medicine, it was found out that many young women choose to have their healthy breast removed after being diagnosed with cancer in one breast. Unfortunately, doing so does not improve survival rates and this of course is pointless, the authors explained. Sentinel node biopsy - one lymph node is surgically removed. If the breast cancer has reached a lymph node it can spread further through the lymphatic system into other parts of the body. Axillary lymph node dissection - if the sentinel node was found to have cancer cells, several lymph nodes will be recommended to be removed from the armpits by the surgeon. Breast reconstruction surgery - a series of surgical procedures aimed at recreating a breast so that it looks as much as possible like the other breast. This procedure may be carried out at the same time as a mastectomy. The surgeon may use a breast implant, or tissue from another part of the patient's body.

Methods

Study selection

The search on this project was conducted using Mozilla Firefox and Google search using key words as “women, breast cancer, high risk” management. Studies is geared towards using preventive management to hinder the occurrence of breast cancer among women and the use of therapeutic surgery to prevent spread of cancer cells should in case cancer occur. Moreover, the articles selected for this review are expected to report outcomes.

Results

Statistics on preventing breast cancer

The countries with the top 21 highest occurrence of breast cancer in 2012 are specified in the table below.

Belgium had the maximum rate of breast cancer, followed by Denmark and France. faintly more cases of breast cancer were diagnosed in less developed countries (53%). The highest incidence of breast cancer was in Northern America and Oceania.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Age-Standardized Rate per 100,000 (World)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Belgium</td>
<td>111.9</td>
</tr>
<tr>
<td>2</td>
<td>Denmark</td>
<td>105.0</td>
</tr>
</tbody>
</table>
Statistics on breast cancer survivors

The top 20 countries with the most breast cancer survivors are provided in the table below. The statistics are for 2012 and show the number of breast cancer survivors who were alive five years after diagnosis. The order in which the countries are ranked is based on the number of breast cancer survivors per 100,000 adult women in each country. Belgium had the highest fraction of breast cancer survivors still alive five years after their diagnosis, followed by Denmark and France. In more developed countries, there were 3.2 million women who had survived breast cancer for at least 5 years; the figure for less developed countries was 3.0 million. The maximum fraction of breast cancer survivors still alive five years after their diagnosis was in Northern America and Europe; and the lowest occurrence in Africa and Asia.

### Table 2

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Number of women still alive five years after a breast cancer diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Belgium</td>
<td>41,418</td>
</tr>
<tr>
<td>2</td>
<td>Denmark</td>
<td>20,714</td>
</tr>
<tr>
<td>3</td>
<td>France (metropolitan)</td>
<td>230,385</td>
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<tr>
<td>4</td>
<td>The Netherlands</td>
<td>57,493</td>
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<tr>
<td>5</td>
<td>Finland</td>
<td>18,722</td>
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<tr>
<td>6</td>
<td>Italy</td>
<td>209,048</td>
</tr>
<tr>
<td>7</td>
<td>Germany</td>
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<tr>
<td>8</td>
<td>United Kingdom</td>
<td>200,286</td>
</tr>
<tr>
<td></td>
<td>Country</td>
<td>Incidence</td>
</tr>
<tr>
<td>---</td>
<td>----------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>9</td>
<td>United States America</td>
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<tr>
<td>16</td>
<td>Barbados</td>
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<td>Australia</td>
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<tr>
<td>20</td>
<td>Norway</td>
<td>11,926</td>
</tr>
</tbody>
</table>


**Bar chart showing the incidence of cancer in listed countries in 2012**

**Bar chart showing the incidence of cancer survivors in listed countries five years after diagnosis**
Pie chart showing the incidence of cancer in listed countries in 2012

Pie chart showing the incidence of cancer survivors in listed countries five years after diagnosis
Barchart representing the incidence of breast cancer in smoking, alcoholism, night job, obesity etc.

Piechart representing the incidence of breast cancer in smoking, alcoholism, night job, obesity etc.
Evaluation of breast cancer risk

Mammography test in the US, according to the 2013 National Health Interview Survey (NHIS), 51.3% of women 40 years of age and older reported having a mammogram within the past year. The fraction of women 40 years of age and older receiving mammography within the past two years was higher (65.9%). The fraction of women 40 years of age and older who reported having a mammogram within the past years increased from 29% in 1987 to 70% in 2000, although this percentage declined by 3.4% between 2000 and 2005 and has remained reasonably stable since then. While mammography predominance has improved over time in all racial and ethnic groups, they remained steadily low in uninsured women. In 2013, the predominance of a mammogram in the past two years was similar among non-Hispanic black, white, and Asian women (66-67%), but was faintly lower in Hispanic (61.6%) and the American Indian/Alaskan indigenous women (63.0%).

The lowest predominance of mammography make use of in the past two years was reported among uninsured women (38.0%), followed by recent immigrants living in the US less than 10 years (39.9%). Mammography is underutilized in our environment due to lack of facilities and awareness. In 2009/2010, majority (95.4%) came for mammography for the first time, this implies that women are more interested in breast health than previously reported but the low rate of mammography in Nigeria may be due to lack of access to diagnostic units and the cost. We believe that by reducing the cost to 13 dollars (2000 Naira), the economic power to conduct the test was now within the reach of most of our women. Three hundred and five women were involved in the study; the mean age was 49 years ± 7.2. Majority of the women (95.4%) have never had a previous mammogram, only 10 women have had a mammogram in the last two years. The following types of breast density were noted, Type 1 and 2 comprise (63.5%); Type 4 was noted in thirteen patients (4.3%). The most common mammographic lesions were masses, which were bilateral in 6 women and unilateral in 19. In 5 women the breast masses were in grouping with other pathologies. Calcifications alone were present in 10 subjects.
Hormonal preventive therapy of breast cancer in women at high risk: primary prevention

While the oldest form of hormonal therapy, tamoxifen, and its newer cousin, raloxifene are the only drugs approved to prevent breast cancer in women who’ve never had the disease but are at high risk, early results from long-term studies suggest that aromatase inhibitors are also effective at preventing breast cancer in postmenopausal women. Studies are underway to see if aromatase inhibitors can be used to prevent breast cancer in premenopausal women as well, but it is likely that they would have to be used in combination with other drugs to temporarily stop ovarian function.

Hormonal preventive therapy for women with early-stage breast cancer

Tamoxifen. A study in print in 2013 in *Lancet* revealed that taking tamoxifen for 10 years results in faintly lower reappearance rates and slightly better survival rate, compared to taking it for 5 years. This study, which followed breast cancer patients taking tamoxifen for longer than other studies, establish that 25% of the women who took tamoxifen for 5 years had their cancer come back within 15 years of surgery, whereas 21% of women who took tamoxifen for 10 years had a breast cancer recurrence within 15 years. Survival was also slightly better: over 81% of women who took tamoxifen for 10 years were living 15 years after surgery compared to just under 79% of the women who took tamoxifen for only 5 years. While longer treatment with tamoxifen resulted in 2.5% more patients surviving for 15 years. Tamoxifen is the only hormonal therapy approved for use in women with ductile carcinoma in situ. It decreases a woman’s risk of getting ductile carcinoma in situ again or emergent of breast cancer in both breast. According to a 2011 study in print in the *Journal of the National Cancer Institute*, 10% of women treated with lumpectomy and radiation had a return of ductile carcinoma in situ or developed cancer in the same breast within 15 years of operation, as compared with 8.5% in the women who as well took tamoxifen. Among the women who took tamoxifen, only 7.3% developed ductile carcinoma in situ or cancer in the other breast. Although rates of smoking, a major cause of cancer, have declined, the U.S. population is aging, and cancer rates increase with age. Obesity, another risk factor for cancer, is also increasing.

Surgical preventive management

Bilateral prophylactic mastectomy has been shown to reduce the risk of breast cancer by at least 95 percent in women who have a deadly mutation in the BRCA1 gene or the BRCA2 gene and by up to 90 percent in women who have strong family history of breast cancer.

Lifestyle

Preventability estimates confirm that about 22% of cases of breast cancer in Brazil can be prevented by not ingesting alcohol, being physically active and maintaining a healthy weight. The World Cancer Research Fund/American Institute for Cancer Research (WCRF/AICR) has predicted that over 40% of breast cancer post menopausal could be prevented by reductions in alcohol, surplus body weight, and inactivity. Proper lifestyle throughout the lifespan and the challenge of finding ways to support women to achieve healthy ways of life is important. In the Iowa Women’s Health Study, constant weight reduction of 5% of body weight decreased the risk of post-menopausal breast cancer by 25% to 40% compared with the women who continued to increase in weight. The Nurses Health Study pointed out that post-menopausal women who did not take hormonal reduction therapy but maintained a body weight reduction of 10 kg or more had a 50% reduction in the risk of breast cancer. There is a number of proof from the National Surgical Adjuvant Breast Project P-I and STAR SERM trials that weight reduction after the age of 35 is also effective. It is of utmost important to stress the other well-known positive effects of weight control. Sticking to types of diet may also affect risk. According to the California Teachers Study, data from 91,779 women were analyzed according to major dietary pattern by using primary constituent factor study. A greater eating of plant-based foods was connected with a 15% reduction in breast cancer risk (85% CI 0.76 to 0.95).
A systematic review of dietary patterns and breast cancer was carried out by Albuquerque and colleagues, who concluded that a Mediterranean dietary pattern and diets consist greatly of vegetables, fruit, fish, and soy are associated with a reduced risk of cancer of the breast. You can help to reduce risk by intake of appropriate dietary fiber, fruit, and vegetables.

These studies put forward that women who want to lessen their breast cancer risk should not be drinking alcohol more than one unit daily and probably have at least two alcohol-free days weekly. J. Nati Cancer Institute (2009)

**Table 3.** Showing percentage of women who have utilized mammography

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<tr>
<td>USA (insured women)</td>
<td>29%-70%</td>
<td>70%-66.6%</td>
<td>51.3%-65.9%</td>
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<tr>
<td>USA (uninsured women)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>38%</td>
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<tr>
<td>USA (immigration)</td>
<td>-</td>
<td>-</td>
<td>39.9%</td>
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<tr>
<td>NIGERIA</td>
<td>-</td>
<td>-</td>
<td>95.4%</td>
<td>-</td>
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<tr>
<td>ASIAN WOMEN</td>
<td>-</td>
<td>-</td>
<td>66-67%</td>
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<tr>
<td>HISPANIC WOMEN</td>
<td>-</td>
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<td>61.6%</td>
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<td>American Indian/Alaskanindige</td>
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<td>Nous women</td>
<td>-</td>
<td>-</td>
<td>63%</td>
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**Table 4.** Showing percentage of effect from use of tamoxen

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<tr>
<th></th>
<th>Tamoxen for 10yrs</th>
<th>Reoccurrence in 15yrs = 21%</th>
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<td>Tamoxen for 5yrs</td>
<td>Reoccurrence in 15yrs = 25%</td>
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**SURVIVAL RATE**

| Tamoxen 10yrs | 81% |
| Tamoxen 5yrs  | 79% |

**Conclusions**

Most women will not develop breast cancer during their life span. Nevertheless modern data can help recognize the subset of women who are at higher risk for breast cancer. In addition, improved test strategies and management options are now accessible that could reduce the risk for these women JAM Board FAM MED 2009. True advancement against breast cancer and advancement that is measured not only by the number of months of survival but also by the frequency of cancer-free life span. Thus, prevention become a much superior priority. We all have a function to play, whether as individuals, clinicians, researchers, funders, community planners, educators or parents. New cancer treatments are rightfully cheered at medical meetings and in the press, but the cure of advanced breast cancer continues to be an obscure goal. Moreover, access to expensive tests and treatments may be limited in developing countries that are experiencing rising rates of breast cancer. According to what Vogelstein et al spotted out, “Plan A must involve prevention and early detection, with “Plan B” (treatment of advanced cancer) being necessary only when Plan A fails”

Prevention is feasible. Truly all the answers are yet not available, but that should not impede us from acting on what we already know. Prevention strategies such as radical health education, weight control may be more difficult to stick to than screening strategies such as mammography, but the added benefit is significant and extends well further than breast cancer. According the statistics of survivors of breast cancer stated above in table 2, the USA has the highest rate followed by few other countries and in table 3, it shows that the USA started the utilization of mammography earlier than other countries. This was feasible only as a result of awareness created on breast examination, mammogram on early detection of breast cancer and advocating of positive lifestyle. This step called awareness campaign should also be intensely done in developing countries of Africa and other
countries that also far behind in making breast cancer a thing of the past. One conclusion of this review is that the application of measures that are already available, such as hormonal prevention and lifestyle change, would result in considerable reductions in breast cancer risk. A second ending is that the speed of advance of our understanding of the biology of breast cancer risk and development is greatly likely to give rise to fresh avenues for prevention over the next decade. A major difficulty is applying what we before now know concerning the effectiveness of prevention to the correct populations of women. To apply hormonal prevention, we need to have measures in place to review risk and to explain the advantage and disadvantage of treatment and for prescription of suitable therapies. Lifestyle change is a population problem which involves media hype concerning its risks and benefits of change and providing mechanisms to sustain women in their choices throughout all societies as stated by the US Institute of Medicine Cancer Treat Res 2014.

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Factors Influencing the Participation of Mothers of Mothers in the Expanded Programme on Immunization, in the Nkoranza South Municipality, Ghana

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Abstract

The WHO, in 1974, proposed and launched the Expanded Programme on Immunization to immunize children against 6 childhood killer and other diseases, aimed at achieving and maintaining more than 90% coverage with all the vaccines. However this has not been achieved.

The purpose of the study was to determine the factors influencing the participation of mothers of mothers in the Expanded Programme on Immunization, in the Nkoranza South Municipality.

Study Population: The study population comprised of mothers with children less than five years who are attendants at St. Theresa’s Hospital, Nkoranza Municipality. Study Design: A descriptive study with cross-sectional design was carried out to evaluate knowledge of mothers’ on the importance. It was conducted over a six weeks period. Sampling Method: Purposive sampling was used to select 150 respondents for this study. It enabled the selection of unique cases in which the result may or could be extended to the whole population. The units or respondents were intentionally picked for the study because of their characteristics or qualities which are not randomly distributed among the general population but they exhibit most of the characteristics of interest of the study. Sample Size: A sample size of 150 was chosen out of convenience from the municipality. It comprised of mothers of children less than five years. Data Collection: A questionnaire comprising both closed and open ended questions were administered to respondents. The questionnaire was pre-tested on randomly selected mothers awaiting consultation in the OPD. Both English and Twi languages were used in the administration of the questionnaire. Data Analysis: The data gathered was analyzed both manually and using Microsoft Excel and the results were expressed in percentages using charts and tables. The results obtained showed that the most popular reason for defaulting was that the mother travelled at the time the child was to be immunized (36.36%). This shows absence of knowledge that in so far as the mother is in possession of the child’s Road To Health Chart, the child will be immunized. The results also revealed that most of the mothers had heard about immunization (98%) and believed it cured disease (42.6%). The smaller proportion who knew it prevented disease (24.7%), were knowledgeable about the diseases it prevented. Just over half the children in the study were fully immunized (55.3%) and almost a quarter of the children had either defaulted or never been immunized. Presence of side effects, The mothers who said their children experienced side effects were asked to specify what kind of side effects the children had. Over half the mothers (56.25%) complained of fever, 35.4% of the mothers complained that the vaccination site got swollen. Other mothers with complaints (8.3%) complained of things like excessive crying and other non specific symptoms. This study revealed that the more than half (55.3%) of the children were fully immunized. the proportion of those who had not been fully immunized (22%) and those whose immunization was up to date (21.3%) was about the same. The lowest percentage was recorded for those who had received no vaccinations at all (1.3%). The main conclusions drawn The most common reason was that the mother travelled long distance (36.36%) at the time the child was due to receive the next vaccination and did not take the child when she returned because the time had passed. the next reason was that the child was ill (15.15%) at the time he/she was supposed to receive the vaccination and was not taken to the
immunization centre upon recovery. the ill child tied with mother being too busy with work (15.15%) to take the child to the immunization point. also tying, were the mother being ill, so she was unable to take the child and postponing the immunizations for social functions etcetera with 12.12%. and also that mothers did not have sufficient knowledge about vaccine preventable diseases, also a little than half of the people surveyed had fully immunized their children.

Keywords: Distance travel, sufficient knowledge, cure disease, defaulted immunization, bibliographic data, and side effects.

Introduction

When the Expanded Program on Immunization (EPI) was launched in 1974, less than five per cent of the world's children were immunized during their first year of life against six killer diseases polio, diphtheria, tuberculosis, pertussis (whooping cough), measles and tetanus. Today, nearly 75 per cent of children receive these life-saving vaccinations and increasing numbers are also protected by new and under-used vaccines, like Hepatitis B. However, a quarter of the world’s children – about 34 million infants – are not immunized against these killer diseases. While globally rates have risen, immunization levels have actually decreased in some countries (UNICEF 2001). Measles re-emerged in some countries in Germany in 2005, despite increasing vaccination coverage rates in children at school entry in recent years, which had led to decreasing incidences (with the lowest incidence ever recorded, 0.2 cases per 100 000 inhabitants in 2004). Immunization coverage in sub-Saharan Africa had dropped to just above 50 per cent in 2000, and in 12 of the poorest countries rates are below 35 per cent (UNICEF 2001). In developing countries it is not enough to implement good programs. One must make sure that everything needed to make it successful is in place. So long as the caregivers fail to send their wards to be immunized the EPI cannot be a success.

Ghana has adopted an integrated approach to Disease Surveillance and Response. The diseases targeted are those for elimination, eradication, of epidemic potential and special diseases of public health concern. Of particular concern are the Vaccine Preventable Diseases. The aim of a national childhood immunization program is to cover as many children as possible thus protecting them from the most dangerous killer diseases and increasing their likelihood of survival (Ministry of Health, Ghana 1999). Unfortunately, some infants do not complete this potentially lifesaving program. Data on awareness of mother’s knowledge of the importance of Expanded Programme on Immunization and the reasons they default which will inform the Health Sector to plan strategies to combat these and further the coverage of Expanded Programme on Immunization is lacking. In 1853 the English Government passed an act making vaccination compulsory across the United Kingdom, however, not everyone liked the idea of exposing oneself to 'such filth'. In 1898 another act was produced which recognized the right of the 'conscientious objector', meaning vaccination was encouraged but not compulsory. Since the first discovery of the smallpox vaccine by Jenner many vaccines have been produced. In the late 1800's Louis Pasteur established the germ theory and developed the vaccine against rabies, whilst Emil von Behring and Shibasaburo Kitasato discovered the antitoxins of diphtheria and tetanus leading to the production of vaccines for both diseases. By the end of the 1920s, vaccines for diphtheria, tetanus, pertussis (whooping cough) and tuberculosis (BCG) were all available. In developing countries it is not enough to implement good programs. One must make sure that everything needed to make it successful is in place. So long as the caregivers fail to send their wards to be immunized the EPI cannot be a success.

In a case-control analysis of cross-sectional data, 328 children aged 12–35 months and their mothers were studied to identify the factors associated with delayed or non-immunization of their children. Delayed or non-immunization was associated with low socioeconomic status, maternal illiteracy, and lack of mothers' knowledge on vaccine preventable diseases as recommended by the Expanded Programme on Immunization (EPI). The association of this lack of mother's knowledge with no or delayed immunisation persisted
after adjusting the effects of others in logistic regression analysis. The results indicate that even in the presence of maternal illiteracy, educating mothers about the vaccines and vaccine preventable diseases may be highly effective in increasing the immunization coverage (Smith et al; oxford journals).  

Singh et al in a study carried out in BIMARU States in 2001 on Reasons for Non-Immunization: found that "Obstacles" was the most often mentioned reason for non-immunization, 38.8% of the mothers reported. 25.2% had misconceptions/beliefs about immunization such as fever after immunization for a healthy child might be harmful, too many doses, elders believed that vaccines are not needed etc. 7.8% reported that the child was sick at the scheduled time and 9.7% lacked information about the program. 18.5% said some non-specific reason such as "were lazy, forgot, lost the card etc. 

By contrast, medical officers rarely undertake immunization in Ghana. Community health nurses who mostly actually administer vaccines may not be well vested with knowledge in the field and are thereby often found preaching handed down oral “wisdom” to mothers.

Material illiteracy was thought to have an overwhelming effect on immunization coverage rate. In a study in Natal and KwaZulu townships in South Africa, the notion was disproved as thorough education of predominantly illiterate mothers on the importance and benefits of immunization was reported to have led to a significant rise of coverage rates in the townships (Taylor 2000). A similar study in Bangladesh indicated that, even in the presence of maternal illiteracy, educating mothers on immunization and vaccine-preventable diseases is highly effective in increasing immunization coverage (Rahaman et al 2000). Resources for the study were limited because the researcher has to buy needed things for the research without sponsorship, time constraint also a big factor due to the fact that the researcher was not able collect data continuously within a short period. Source of information regarding EPI is important to establish authenticity of information received by mothers. Deborah A. Gust et al carried out a study in the USA on Developing tailored immunization materials for concerned mothers (August 2007). Comments on the revised educational materials (brochures) were generally positive, with many mothers noting that the new brochures provided more relevant information and conveyed it in a respectful way. Science-based tailored immunization materials may assist health care providers in addressing unique information needs and may improve vaccine acceptance among specific types of mothers.

Methods

Study area was the St Theresa’s hospital is situated in the middle of Nkoranza Township. It was built by the Roman Catholic Church in 1973. The hospital has Medicine and Therapeutics, Obstetrics and Gynaecology, Surgery, Paediatrics, Occupational and primary health care. The Hospital has 43 Nurses, 7 Doctors, and 6 Medical Assistants, 2015 during the survey. The facility is headed by the hospital management team consisting of five (5) members with the administrator being the head of the team. The hospital serves the whole Nkoranza municipality. The St. Theresa’s Hospital was the study area for this research because of its proximity and its easy accessibility to the research. Study design: descriptive study with cross-sectional design was carried out to evaluate knowledge of mothers’ on the importance of Expanded Programme on Immunization in the Nkoranza South Municipality in the Brong Ahafo Region of Ghana. It was conducted over a six weeks period. Study population: The study population comprised of mothers with children less than five years who are attendants at St. Theresa’s Hospital, Nkoranza Municipality. Sampling technique:

Purposive sampling was used to select 150 respondents for this study. It enabled the selection of unique cases in which the result may or could be extended to the whole population. The units or respondents were selected not by a random procedure but they would be intentionally picked for the study because of their characteristics or qualities which are not randomly distributed among the general population but they exhibit most of the characteristics of interest of the study. **Sample size:** A sample size of 150 was chosen out of convenience from the municipality. It comprised of mothers of children less than five years. **Data collection:** A questionnaire comprising both closed and open ended questions were administered to respondents. The questionnaire was pre-tested on randomly selected mothers awaiting consultation in the Out Patient Department. Both English and Twi (one of Ghanaian local dialect) languages were used in the administration of the questionnaire. **Data analysis:** The data gathered was analyzed both manually and using Microsoft Excel and the results were expressed in percentages using charts and tables.

**Results**

The biographic data of the respondents yielded the following, Most of the mothers fell in the 26-30 age range (32%), and only 2% were in the 41-45 range. The age of the mothers had no bearing on the immunization status of the children. More than half the mothers (59.3%) had no formal education. A good percentage (28.7%) had primary education; a smaller percentage (10%) had achieved secondary education to the Junior High School level whilst only 2% made their way to tertiary institutions. Majority of the mothers interviewed were Christians (84%) a small proportion were Muslim (14%) whilst only 2% professed no faith at all. With the level of education the results are not surprising. Of the 150 mothers interviewed 32.7% (the highest percentage) were housewives. Petty trading had the highest percentage for working mothers (27.3%) whilst farming had the least percentage with 11.3%. The Other occupations not included in the questionnaire cumulatively exceeded petty trading with 28.7% and this included seamstresses, hairdressers and factory workers. Regarding perception and knowledge of the importance of expanded programme on immunization, Majority of the mothers (98%) have heard about immunization, only 2% of the mothers had never heard about immunization. Of the 98 % that had heard, 92 % said they knew what it could do for their children and 8% didn’t know what it could do for their children. Further questioning revealed that 42.6 % which was most of the mothers thought immunization could cure disease. 24.7% of the mothers knew immunization could prevent disease. About 6% were not sure what benefit immunization gave their children though they knew it was good for them.26.7% of the mothers had other opinions of what immunization could do for their children some of these were that it gave strength and it made the children healthy. They were asked to specify the diseases it could prevent. Polio recorded the highest percentage with 85%. Measles and Whooping cough came up next in frequency with a percentage of 82.5%. Tetanus also had a high percentage (70%). Tuberculosis recorded a percentage of 37.5, convulsion following with 27.5% and worms 20%. The least percentages were recorded for childbirth and AIDS with 7.5% and 5% respectively. Majority of the mothers (68%) received the information from health workers during Antenatal Care visits and outreaches from community health workers.21.3% said they received the information from their friends. 8.7% said they had heard from radio talk shows and two percent received the information from other sources which included husbands, co-workers and wives. Presence of side effects, The mothers who said their children experienced side effects were asked to specify what kind of side effects the children had. Over half the mothers (56.25%) complained of fever , 35.4% of the mothers complain that the vaccination site got swollen. Other mothers with complaints(8.3%) complained of things like excessive crying and other non specific symptoms

The questionnaire on immunization status of the children, majority of children (62%) who defaulted stopped after receiving Penta 3 and OPV3 and were not taken to receive their vaccinations against Measles and Yellow fever.
Discussion

On socio-demographic characteristics of respondents: More than half the mothers (59.3%) had no formal education. A good percentage (28.7%) had primary education; a smaller percentage (10%) had achieved secondary education to the Junior High School level whilst only 2% made their way to tertiary institutions. The literacy level of the mothers did not show any effect on the immunization status of the children. Corresponding with studies by Taylor et al (2000) and Rahaman et al (2000) which showed that education of illiterate mothers on immunization significantly improved coverage rates. The majority of the mothers interviewed were Christians (84%) a small proportion were Muslim (14%) whilst only 2% professed no faith at all. Religion had no effect on immunization status of the children unlike the study done by professor M. Kabir et al in 2006 in which their religion being against immunization was the reason for not vaccinating their child.

On perception and level of knowledge of mothers of the importance of expanded programme on immunization: The study showed that majority of the mothers (98%) had heard about immunization, only 2% of the mothers had never heard about immunization. Of the 98% that had heard, 92% said they knew what it could do for their children and 8% didn’t know what it could do for their children. This corresponds with a study done in Dominica republic which showed that although it is highly desirable that mothers have good knowledge about the diseases, the lack of this knowledge does not appear to influence their seeking immunizations for their children. They consider immunizations to be very important and understand that they protect against very serious diseases. It does not appear, therefore, that the program should give much priority to addressing mothers’ lack of knowledge regarding the diseases.

The immunization coverage of children under 5years: This study revealed that the more than half (55.3%) of the children were fully immunized. The proportion of those who had not been fully immunized (22%) and those whose immunization was up to date (21.3%) was about the same. The lowest percentage was recorded for those who had received no vaccinations at all (1.3%). This is not comparable to rates recorded in Rwanda which has an astonishing 96% immunization coverage for children less than one year of age. That is even higher than the 95% rate reported for the industrialized countries. However the rates are similar to those in the Manjunath et al study on maternal knowledge and perceptions about the routine immunization programme in a semi-urban area in Rajasthan (January 2003) which revealed that 83 out of 166 children in the study (50.0%) were fully immunized, 52 (31.3%) were partially immunized and 31 (18.7%) were not at all immunized.

The source of information of mothers on immunization: Majority of the mothers (68%) received the information from health workers during antenatal care visits and outreaches from community health workers. 21.3% said they received the information from their friends. 8.7% said they had heard from radio talk shows and two percent received the information from other sources which included husbands, co-workers and senior wives. Brochures, which were cited in Deborah A. Gust et al study (August 2007) in the USA on developing tailored immunization materials for concerned mothers, were not a source of information for these mothers.

Reasons mothers default from the expanded programme on immunization: The most common reason was that the mother travelled (36.36%) at the time the child was due to receive the next vaccination and did not take the child when she returned because the time had passed. The next reason was that the child was ill (15.15%) at the time he/she was supposed to receive the vaccination and was not taken to the immunization centre upon recovery. The ill child tied with mother being too busy with work (15.15%) to take the child to the immunization point. Also tying, were the mother being ill, so she was unable to take the child and postponing the immunizations for social functions etcetera with 12.12%. Occurring less frequently were problems with the health facility (9.09%) such as unfriendly staff and far distance of health facility. None of the mothers gave a religious reason for defaulting and this recorded a zero percentage. The reasons for defaulting differ from those given by Singh et al in
their study on reasons for non-immunization in which "obstacles" was the most often mentioned reason for non-immunization, 38.8% of the mothers reported. 25.2% had misconceptions/beliefs about immunization such as fever after immunization for a healthy child might be harmful, too many doses, elders believed that vaccines are not needed etc. 7.8% reported that the child was sick at the scheduled time and 9.7% lacked information about the programme. 18.5% said some non-specific reason such as "were lazy, forgot, lost the card etc." another revelation by the study was that 32% of the mothers complained about side-effects following immunization and these formed 24.24% of the children whose mothers had defaulted from the programme even though none of them gave this as a reason. Further research on the knowledge on immunization by parents. Many of the mothers do not really value immunization so important for their children especially in developing countries

**Conclusion**

It is noted from the results that a significant proportion of the major factors influencing mothers participation were long travel distance as in developing countries most people are cut off from the city due to bad roads. Lack of requisite information on immunization is a factor that reduces participation level. Most importantly only 55.3% were fully immunized according to the study. A lot still need to be done on immunization in developing countries and Africa. **Perception and knowledge of the importance of Expanded Programme on Immunization:** The conclusion drawn from this objective was that most of the mothers (98%) in Nkoranza South municipality had heard about immunization. **Source of information about Expanded Programme on Immunization:** Most of the mothers received their information (68%) from health workers. **Reasons Mothers default from the Expanded Programme on Immunization:** The most commonly occurring reason for defaulting from the EPI was that the mother had travelled at the time for the child’s vaccination. Knowledge about the usefulness and nature of vaccines is limited in the Nkoranza South Municipality as almost half (42.6%) of the mothers hold the belief that it cures disease. **Immunization coverage of children under 5years:** Estimation of the immunization coverage of children under 5 years revealed that just over half (55.3%) were fully immunized. The study incidentally revealed adverse effects following immunization as an important reason for defaulting from the programme that was not directly conveyed by the mothers. Based on the conclusions drawn from the study the following recommendations are being made to improve on the Expanded Programme on Immunization in the Nkoranza South Municipality. The Regional Health Directorate and Municipal Health Management Team should facilitate the training more public health nurses to help in the Expanded Programme on Immunization program since most respondents acquired the knowledge they had on the Expanded Programme on Immunization through them. Mothers should also be educated by health workers on the timing, number of doses and vaccine preventable diseases during Antenatal Clinic talks about immunization as well as outreach programmes by community Health workers. Mothers should also be informed that wherever they find themselves, they should report at immunization point with the child’s Road To Health chart and have the child immunized with the record registered in the chart. The municipality should sponsor the dissemination of information through mass media. Information could take the form of radio shows and or posters which can be used to educate mothers on adverse effects following immunization to enable them learn what to do about them and act accordingly thereby reducing the number of children who default on account of side-effects. Parents and Guardians should make every attempt to ensure their children and wards fully participate in the Expanded Programme on Immunization. This will improve their chances of survival when exposed to the Vaccine preventable diseases.
## Figures and tables

### Table 1.0. Socio-demographic characteristics of respondents

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<tr>
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<th>Number of Mothers</th>
<th>Percentage of Respondents (%)</th>
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**Figure 1.0.** have you heard about immunization
**Figure 1.1.** do you know what immunization can do for your child

**Figure 1.2.** what can immunization do

**Figure 1.3.** diseases vaccines are thought to prevent
Figure 1.4. Source of information on immunization

Figure 1.5. Problems of immunization reasons mothers' default from expanded programme on immunization

Figure 1.6. Presence of side effects following immunization
Figure 1.7. side effects following immunization

Figure 1.8. immunization coverage of children under 5 years of age distribution

Figure 1.9. gender distributions of the children
Acknowledgement

Inexpressible gratitude to God for the abundant grace he has granted that have taken me this far. I acknowledge the effort my lecturers School of Nursing at Texila American University especially Dr. C Sussila who taught me on research in nursing.

References

A Comparative Study of Nurses’ Perception on Safety and injury at Work in Delta State, Nigeria

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Abstract

Considering the nature of the work of nurses in the hospitals and other health-related facilities, it is pertinent to discuss workplace-induced injuries and illnesses encountered while caring for the patients and how the patients themselves are exposed to such risks while receiving treatment in the health care facilities. Needless to mention that so many workplace stressors that are capable of causing diseases and injuries are ubiquitous in the work environments. Nurses are often stressed up physically and psychologically, in addition to their constant exposure to a harsh workplace safety climate.

A cross-sectional research design was used and questionnaires were distributed for data collection. The study showed that, injuries are most sustained by the nurses in the government-owned hospitals with a score of 43.5%, followed by the private hospitals maintaining her second position with a score of 31.7%, while the mission hospitals scored 24.8%. It was also found that unsafe acts are most common in general hospitals, followed by private hospitals, and with the lowest score in Mission Hospitals, because the Mission hospitals were found to be more safety conscious among the three groups of hospitals under review. In Delta State, 98% of nurses run shift in the hospital, out of which 60% admitted having some health problems whenever subjected to shift work and long work hours. 2% of nurses do straight morning duty. Mission Hospitals have the greatest challenges of managing and coping with injuries and illnesses at work (35.6%), most probably due to their lean financial resources. This study also showed that the professional nurses are significantly aware of the ways to prevent or mitigate injuries and illnesses at work. However, majority of them experience these problems because of their non-adherence to safety rules and their constant tendencies to follow short cuts.

Introduction

The awareness of safety and injury at work is an important factor that needs adequate attention in the health care delivery system. This generally involves all members of the health team. However, this article is centered on Nurses. According to the report by the institute of medicine (IOM) in 1999, it is estimated that 70% of safety errors are preventable. However, if a safety error occurs, it is considered to be the fault of the individual’s healthcare professional. On the other hand, it should be blamed on the healthcare system. Punishment is not the solution for safety errors.

Now, it is more focused on improving the safety environment at a hospital, creating an open organizational culture, and improving the health care delivery system (Abbott, 2003). Thus, in developed countries they are trying to improve the awareness on nurses safety so that they could be more educated on work place safety. In order to create nurses safety culture in the hospital, there has to be adequate communication, appropriate staffing, procedure compliance, environmentalsafety and security, culture, leadership, orientation and training, and open communication on safety errors (Joint Commission Resources: 2007). Many researchers thought that safety errors occurred in the incomplete system, and thus focused on preventing safety errors (Bates and Gawande: 2000, Institute of Medicine: 2001). As a way of ensuring consistent and increasing safety culture in the healthcare industry, some private hospitals in Nigeria are already working towards acceditation. This is a welcome development that all government-owned healthcare institutions must embrace.

In recent years, since the implementation of the healthcare accreditation, the interest in nurses safety increased. However, much is still left to be desired in terms of safety awareness in the healthcare settings in Delta State.
In view of the above challenges in nurse’s safety at work, the author is stimulated to explore the safety awareness levels of professional nurses while at work, so as to be more safety-conscious in order to mitigate incidents and accidents as much as possible.

**Background of study**

Health and safety are twin sisters that depend on each other to protect and sustain life. In the absence of safety, injury, accident and near-miss knock at the door of health. If no timely action is taken to mitigate such incidents, especially in the healthcare industry, injuries which may range from mild to severe, and even lead to fatality, may result.

To properly work on this survey, some hospitals where nurses carry out various procedures that require safety measures were selected. This helped the author to make his comparative studies, where appropriate, on the nurses’ perception on safety and injury at work.

A Hospital is an institution devoted to the care of the individuals who have physical, mental and/or social challenges. In other words, a Hospital is the center for promotion of health, prevention of illness, restoration of health, rehabilitation and research. The hospitals in Delta state from where this study was carried out are hospitals approved by the ministry of health and commissioned to care for the sick and to promote health.

**Statement of the problem**

The author discovered from the literatures studied that most injuries sustained in the hospitals are almost always attributed to nurses’ negligence. Therefore, it is pertinent to ascertain the nurses’ awareness level of safety and injury at work. The challenges facing the professional health team members and the need for the individuals themselves to take ownership of maintaining and sustaining safety culture in and around the hospital motivated the author to embark on this study.

**Purpose/aim of study**

- To measure the level of perception of nurses on safety and injury at work in Delta State of Nigeria.
- To examine their general attitudes towards injury and safety.
- To make a comparative study on the potential problems of safety hazards, near misses and at-risk behaviour among practicing nurses.
- To explore the various forms of safety awareness in the hospitals and offer useful recommendations.

**Broad objective of the study**

To understand the concept of safety and injury in clinical practice among professional nurses in Delta state, in order to bring useful recommendations aimed at reducing injury at work and increasing safety awareness.

**Specific objectives of the study**

- To understand the various causes of injury and illnesses at work.
- To explore the potential dangers of at-risk behaviours during nursing procedures.
- To understand the safety issues surrounding the use of hazardous substances in the healthcare industry and make useful recommendations.
- To serve as a guide to the nurses-in-training who wish to further research on the subject.
- To create adequate awareness among nurses on the importance of safe work practices and procedures through health educational programs.

**Significance of the study**

- This article will serve as an eye opener to the health professionals on the attitudes of nurses towards safety at work in the hospitals.
- The study will also enlighten the nurses further on the subject and to make the best decisions while performing their duties.
The study will also provide a quick reference guide for trained nurses on maintenance of safety throughout their duty periods in the hospital.

Research questions

1. What safety hazards are nurses exposed to in your health facility?
2. Which behaviours are associated with injury/illness in the work place?
3. What injuries or illnesses do nurses usually encounter at work?
4. How are such situations managed in your work place?
5. What are your challenges in dealing with such situations?
6. How can such challenges be overcome?
7. How can these situations be prevented?

Scope and limitations of the study

The research project would have been extended to all hospitals in Delta state, in order to obtain more accurate data for better comparative studies. However, due to logistic problems and other unforeseen circumstances encountered in the process, the researcher unavoidably decided to limit his study to a few hospitals (including mission, private and government-owned hospitals) in the three senatorial districts of the state.

Review of literature

The importance of safety at work cannot be over-emphasized, especially in the healthcare settings. This study is aimed at focusing on the perception of professional nurses towards safety and injury at work. This, no doubt, will bring nurses to the realities of following safe work practices and procedures and the potential dangers of non-compliance. There is nothing as good as going to work safely and coming back safely. Therefore, this study is not only going to be helpful to the professional nurses, it is equally important to all patients and the entire work force in the healthcare industry. Meanwhile, much emphasis will be laid on the professional Nurses.

There are so many areas of concern in terms of safety at work, but due to time limits, this article is limited to three major areas. These include:

- Work Hours
- Nurses’ Injuries and illnesses at work and
- Mental Health Effects Of Nursing

Work hours

Shift work and long work hours

The relationship between work schedules and health and safety is complex and is influenced by characteristics of the work schedule (time of shift, direction and speed of rotation, pattern of days off, shift length, rest breaks), as well as characteristics of the job, the worker, and the work environment (Barton, 1995).

While the focus is on potential negative aspects, some workers experience benefits from shift work and prefer it (e.g., incentive pay, reduced volume of activities and personnel when compared with day shift). Researchers theorize that shift work exerts adverse effects by disturbing circadian rhythms, sleep, and family and social life (Barton et al. 1995; Monk et al., 2000).

Risks associated with shift work

a. Sleep, sleepiness, performance, safety

Drake and coworkers indicated that 32 percent of night workers (majority of shift hours between 9 p.m. and 8 a.m.) and 26 percent of rotating shift workers (shifts that change periodically from days to evenings or nights) experienced long-term insomnia and excessive sleepiness and were unable to adapt their sleep adequately on these shifts. Lack of sleep at the right time usually makes people look fatigued, sleepier and less safety-conscious. Their level of performance also decreases to an unacceptable level.
b. Social and familial disruptions

Due to frequent periods of working at night more than the periods spent on day, most nurses are deprived of family and social activities in the day time. Thus adequate and sufficient interpersonal relationships with family members, among nurses and between nurses and members of other social classes become a scarce commodity. To make the situation worse, many nurses also prefer to sell out their public holidays weekends, and annual vacations for money in place of adequate rest and sleep. The extent to which such disruptions occur depends both on the worker’s schedule, type of family, gender, presence of children, and the degree of flexibility in the worker’s social contacts and leisure pursuits (Walker 1985; Colligan et al, 1990; Presser HB 2003). For families, shift work often conflicts with school activities and the times when formal child care services are available, making arrangements for the care of children more challenging (Presser HB 2003), affecting both the worker and the family’s social adjustments.

c. Long-term effects and vulnerable groups

Although the specific contribution of shift work to other illnesses is not clear, several diseases have been associated with these work schedules. Gastrointestinal (GI) complaints are common in shift workers and could be due to changes in circadian rhythms of GI function, sleep deprivation leading to stress response and changes in immune function, or the types of foods that are available during these shifts (Knutsson. 2003; Caruso, 2004).

The authors hypothesized that exposure to light at night reduces melatonin levels, increasing risks for cancer

Shift work also may exacerbate preexisting chronic diseases, making it difficult to control symptoms and disease progression. Shift work interferes with treatment regimens that involve regular sleep times, avoiding sleep deprivation, controlling amounts and times of meals and exercise, or careful timing of medications that have circadian variations in effectiveness. Sood (2003), suggests several conditions that may be exacerbated by shift work: unstable angina or history of myocardial infarction, hypertension, insulin-dependent diabetes, asthma, psychiatric illnesses, substance abuse, GI diseases, sleep disorders, and epilepsy requiring medication. Costa(2003) adds to this list chronic renal impairment, thyroid and suprarenal pathologies, malignant tumors, and pregnancy. Aging is also associated with less tolerance of shift work, which may be due to age-related changes in sleep that may make it more difficult for older people to initiate and maintain sleep at different times of the day (Duffy, 2003). These sleep changes may begin as early as the 30s and 40s, so some workers who initially adapted well to shift work during their younger years may show more symptoms as they grow older.

Risks associated with long work hours

The number of studies examining long work hours is less extensive, but a growing number of findings suggest possible adverse effects. A meta-analysis by Sparks et al, 1997. reports that overtime was associated with small but significant increases in adverse physical and psychological outcomes. A review by Spurgeon et al (1997) concluded that the adverse overtime effects were associated with greater than 50 hours of work per week, but little data are available about schedules with fewer than 50 hours. An integrative review by Caruso et al 2004 reported that overtime was associated with poorer perceived general health, increased injury rates, more illnesses, or increased mortality in 16 of 22 recently published studies. Dembe et al 2005, examining data from the National Longitudinal Survey of Youth, found a dose-response relationship, such that as the number of work hours increased, injury rates increased correspondingly. Trinkoff et al (2006and 2007) found that long work hours were related to the incidence of musculoskeletal injuries and needlesticks in nurses. In a summary, these studies indicate that caution is needed in implementing schedules with extended work hours. Determining the number of work hours critically associated with risk for a specific job would require examining how extended hours interact with other factors contributing to fatigue, such as work load, competing responsibilities, and opportunities for rest and recovery.
Nurses’ injury at work

Musculoskeletal injuries

Definitions for MSD vary, though most include pain in the affected body region (e.g., back or neck) for a specified duration or frequency (Bernard et al 1997). Researchers are careful to rule out nonwork-related Musculoskeletal Disorders (MSD) from their studies.

Health care workers are at extremely high risk of MSD, especially for back injuries. Health care workers are also overrepresented for upper extremity MSDs among workers’ compensation (WC) claims (Silverstein 2002). In 2001, U.S. registered nurses (RNs) had 108,000 work-related MSDs involving lost work time, a rate similar to construction workers. In 2003, the incidence rate for nonfatal occupational injuries, many of which were MSDs, was 7.9 per 100 full time equivalents (FTEs) for hospital workers (Bureau of Labor and Statistics 2004). Tasks requiring heavy lifting, bending and twisting, and other manual handling have been implicated in health care worker back injuries (Smedley, et al 1995); (Trinkoff, et al 2003; Kant, de Jong, et al 1992; Trinkoff, Storr et al 2001).

In one study, nurses were found to be at particular risk of back injury during patient transfers, which require sudden movements in nonneutral postures (Collins, et al 1996; Engkvist, et al, 1998). Patient transfers also require flexion and rotation, increasing the injury risk due to a combination of compression, rotation, and shear forces (Forde, et al 2002; Hoozemans et al 1998; Marras et al 1999).

As physical/postural demands on the job increased for nurses, the likelihood of inadequate sleep also significantly increased. Workers on schedules requiring frequent shift rotation and long hours may also be at higher risk for MSD. In a survey of 1,428 RNs, more than one-third had extended work schedules, and such schedules were associated with an increased likelihood of MSD (Lipscomb, 2002). A later study found that long work hours were related to incident musculoskeletal injuries in nurses (Trinkoff et al 2006).

Work schedules and MSD

The work schedule can affect the sleep–wake cycle, and working extended hours, such as 12+ hour shifts, can lead to MSD due to extended exposure to physical/postural risk factors and insufficient recovery time (Waersted 1991; Larese et al 1994). As physical/postural demands on the job increased for nurses, the likelihood of inadequate sleep also significantly increased. Workers on schedules requiring frequent shift rotation and long hours may also be at higher risk for MSD. In a survey of 1,428 RNs, more than one-third had extended work schedules, and such schedules were associated with an increased likelihood of MSD (Lipscomb, 2002). A later study found that long work hours were related to incident musculoskeletal injuries in nurses (Trinkoff et al 2006; www.ahrq.gov).

In workers with employment-related myalgia, symptoms increased with each successive workday, and remitted only by the second day off (Lundberg et al 1999). These workers had shorter periods of muscle rest, suggesting that continuous muscle tension was associated with musculoskeletal symptoms. In a British study of doctors-in-training, the fewer hours they slept and the more hours they worked, the more somatic symptoms, including MSD, they reported (Baldwin 1997; www.ahrq.gov).

Schedule components significantly related to MSD include long work hours, mandatory overtime, working while sick or on days off, and having fewer than 10 hours between shifts (Trinkoff 2006). The new Institute of Medicine report, Keeping Patients Safe: Transforming the Work Environment of Nurses (2004), incorporated Wave 1 findings on nurse scheduling. More than one-third of staff nurses typically worked 12 or more hours per day. Among those working 12 hours or more, 37 percent rotated shifts. On-call requirements were also very common (41 percent of the sample). Despite the long hours, few nurses took breaks; two-thirds typically took one or no breaks during their shift (www.ahrq.gov)

A. Coping strategies during shift work

Application of coping strategies during shift work is an accepted practice in some Asian countries. More research is needed to determine the optimum length and timing of the nap and a practical environment at work to take a nap. Empirical evaluations and applications of the other techniques
have begun and will be useful for some workers, but more research is needed to develop strategies that can be easily applied by workers in a wide range of demanding work schedule situations. Another type of strategy are work hour limits such as the recent Institute of Medicine recommendation, 2004 (p. 13) that work hours for nurses be limited to 60 hours per 7-day period and 12 hours per day.

B. Mitigating MSD risks

Although two decades of research have demonstrated the work-relatedness of MSD, use of single-approach intervention methods to reduce MSD exposures (e.g., engineering controls, administrative changes, or worker training only) has shown inconsistent outcomes (Silverstein et al 2004). This is likely due to the combination of factors related to MSD and the need for broad organizational involvement to mitigate MSD problems (Warren 2001). Despite these concerns, important evidence-based successes have been demonstrated in reducing MSD, especially during patient lifting and transfer (Collins et al, 2005; Nelson, et al 2005). Interventions incorporating participatory ergonomics have been found to improve upon previous approaches by allowing for extensive worker input into the design and adoption of preventive practices. In a participatory ergonomics approach, employees participate in the identification of ergonomic risk factors, brainstorm alternatives and solutions, handle implementation of controls, and assess control effectiveness along with symptom identification, ultimately becoming champions for ergonomics change. Participatory ergonomics also has the potential for changing the culture of health care organizations, as employees begin to use ergonomic principles to improve jobs and the workplace. Because participatory interventions incorporate both management commitments to reducing injuries, along with workers who are involved in developing solutions, positive and effective workplace changes can occur (Anema JR et al 2003).

C. Interventions for MSD

Three common interventions used to prevent work-related musculoskeletal injuries associated with patient handling are (1) classes in body mechanics, (2) training in safe lifting techniques, and (3) back belts. Despite their wide spread use, these strategies are based on tradition rather than scientific evidence; there is in fact strong evidence these strategies are not effective. Recently there has been a major paradigm shift away from these approaches toward the following evidence-based practices: (1) patient handling equipment/devices, (2) no-lift policies, (3) training on proper use of patient handling equipment/devices, and (4) patient lift teams.

Given the complexity of this high-risk, high-volume, high-cost problem, multifaceted programs are more likely to be effective than any single intervention, indicating the need to build a culture/climate of safety into the organization and employ more than one evidence-based approach. A culture of safety in terms of worker injury prevention is defined somewhat differently from patient safety culture, though there is some overlap between the terms. Safety culture is considered to be the product of multiple goal-directed actions to improve safety in an organization (Cooper. 2000). Nonetheless, empirical data supporting the impact of culture alone on reducing worker injuries are limited.

Common injuries and safety at work

a. Needlesticks

The exposure of nurses to needle stick injuries in the health care settings as become a serious concern, considering the grave health effects it has on the health care professionals, subjecting them to serious complications. Besides several studies carried out on disease transmission through needle stick injuries, many nurses are still nonchalant, over compliance with safety measures while at work. This is further placing the nurses at higher risk of developing blood-borne diseases. An estimated 600,000 to 800,000 needlestick injuries occur annually (EPINet 2004; Henry 1995), about half of which go unreported.

As such, it is imperative that all health care workers, not only those working in the acute care setting or those who traditionally handle needles on a regular basis, receive every available protection from occupational exposure to blood and body fluids.
The passage of the Federal Needlestick Safety and Prevention Act in 2000 has begun to afford health care workers better protection from this unnecessary and deadly hazard in the United States. Not only does the act amend the 1991 BBP standard to require that safer needles be made available, it also requires employers to solicit the input of front-line health care workers when making safe needle purchasing decisions (www.ahrq.gov). However, in the present day health care facilities, many employers, despite their high safety awareness levels, decide to procure medical equipment, including needles, that are below standard in an attempt to save costs and acquire much gain. This is especially unprofessional and unsafe act capable of ruining the lives of the people. In various hospitals within Delta state, I have also seen and witnessed nurses still recapping needles after injection. Further inquiries showed non-compliance with safety measures rather than lack of awareness.

b. Chemical occupational exposures

There are thousands of chemicals and other toxic substances to which nurses are exposed in practice. Hazardous chemical exposures can occur in a variety of forms—including aerosols, gases, and skin contaminants—from medications used in practice. Exposures can occur on an acute basis, up to chronic long-term exposures, depending upon practice sites and compounds administered; primary exposure routes are pulmonary and dermal (www.ahrq.gov) While caring for patients, nurses have also been observed reacting to certain aerosols and gases used for one procedure or the other on the ward. For example, Anti-neoplastic medications, when nurses are exposed to them, are capable of causing skin irritations, respiratory symptoms, etc.

c. Volatile organic compounds

Volatile organic compounds (VOCs) are chemicals that readily evaporate at room temperature, thus allowing the chemicals to be easily inhaled. Formaldehyde and artificial fragrances are two such sources that have a ubiquitous presence in hospitals. A study of occupational exposure to artificial fragrances found that health care workers had the highest rate of allergic sensitivity (Buckley. et al 2002). It is also important to note that the rate at which individuals react to chemical exposures varies from person to person, due to certain biochemical factors and genetic make-up of individuals. Certain chemicals used to fumigate the hospitals also fall under this category. This was especially observed among the health care workers in some of the hospitals I visited in Delta State.

d. Sterilants

As an example, ethylene oxide (EtO) and glutaraldehyde are commonly used in medical settings for sterilization. Nurses and other medical staff are exposed while cleaning equipment and work surfaces. Although both of these chemicals are powerful and effective, they are associated with serious human health risks. Glutaraldehyde is associated with respiratory irritation including asthma, skin irritation and dermatitis, and eye irritation and conjunctivitis (Takigawa et al, 2006). Although, there are no such recorded health effects of EtO on nurses exposed to it in some of the hospitals visited, one case was reported in two hospitals under review.

e. Medications

Many medications and compounds in use in personal care products have known toxic effects. These have been comprehensively reviewed with a detailed summary of the evidence of environmental and personal hazards associated with these compounds by Daughton and Ternes (Buckley, Rycroft 2002). Although many medications can be hazardous to workers, those most commonly identified as hazardous to health care workers include antineoplastics and anesthesia. Anesthetic gases have been identified as particularly problematic, as gases escape into the air and can be inhaled by workers. There are also data to support the deleterious effects of exposure to antineoplastic drugs, especially an increased risk of spontaneous abortions among health care workers (Dranitsaris et al 2005; www.ahrq.gov).

One very noticeable problem here is also adherence to the medication guidelines to avoid its adverse effects during exposure. It is one thing to understand the guidelines, it is another thing to
comply with the rules. This is where the problem also lies with the nurses who are involved in the administration.

f. Pesticides

Pesticide use, both inside and outside of hospitals and health facilities, is another cause for concern. Because of the special vulnerabilities of children and pregnant women to pesticide exposures, control of pesticide use in health care settings is particularly important. In a survey conducted by Health Care Without Harm, all hospitals surveyed reported some regular applications of pesticides inside the hospital building, outside on the grounds, or both (Owens et al 2003). This report, *Healthy Hospitals: Controlling Pests Without Harmful Pesticides*, offers guidance on reducing pesticides and implementing safer integrated pest management techniques. Integrated pest management is a comprehensive approach to pest management that employs nontoxic and least-toxic products and processes to control pests. Beyond Pesticides, a 25-year-old organization that has been working with Health Care Without Harm on pesticide issues in the United States, is currently orchestrating several hospital-based pilot programs in Maryland (Beyond Pesticides 2007; www.ncbi.nlm.nih.gov).

g. Latex exposure

Latex allergy due to exposure to natural proteins in rubber latex is also a serious problem in health care workers. Diepgen, et al (1999) estimated that the annual incidence rate among all workers is 0.5 to 1.9 cases per 1,000 full-time workers per year. Symptoms may start with contact dermatitis located in the glove area, and symptoms can become more severe, such as asthma or anaphylaxis. The course of latex allergy as described by Amr and Bollinger (2004) involves progressive impairment of nurses from continued exposure to latex, leading to an inability to continue working as nurses. In fact, the hazard from aerosolizing of latex particles attached to powder in latex gloves or from latex balloons bursting is of great concern, as these exposures can lead to occupational asthma (Kujala, et al 2002). The American Nurses Association has issued a position statement to suggest actions to protect patients and nurses from latex allergy in all health care settings. These include use of low-allergen powder-free gloves and removal of latex-containing products from the worksite throughout the facility to reduce the exposure at that institution. Hospital environments that have gone latex-free need to ensure that they are not allowing balloons into the facility. As balloons break they can contribute latex into the air that remains for up to 5 hours (Kelly 1996; www.ahrq.gov). There is presently no way to escape using gloves during nursing procedures requiring medical or surgical asepsis if contact with the patient cannot be avoided. Therefore research into the problems and prospects of latex exposure is very timely, as done above.

Mental health effects of nursing work

Working in nursing increases the risk of experiencing both minor and major psychiatric morbidity (Wieclaw et al 2005; Chen, et al 2005), with job strain contributing to this outcome (*Student Paper, Universiti Technologi, MARA*). Minor psychiatric morbidities include feelings of tension, anger, anxiety, depressed mood, mental fatigue, and sleep disturbance. (Van der Klink, et al 2001; *Student Paper, Australian Catholic University*); these are classified variously as burnout, subthreshold depression, or adjustment disorders. Mental disorders such as major depression, anxiety disorders, and psychotic disorders are less common, but they can be induced or exacerbated by work stress. A variety of exposure types are associated with psychiatric morbidity.

Allostatic load is a theoretical concept whereby excessive demands and a persistent sympathetic (adrenergic) load on the body produce changes in neuronal, immune, and cardiovascular system structure and function, thus having a detrimental impact on bodily processes. Changes in neuronal function are associated with anxiety and depression. Several types of psychosocial risk factors can contribute to this overall allostatic burden. High physical demands, fast-paced work, adverse work schedules, role stressors, career insecurity, difficult interpersonal relationships, nonstimulating jobs, and lack of autonomy have been associated with symptoms of anxiety and depression, several psychoses, and with substance use disorders. Some studies have even provided longitudinal evidence linking job demands, lack of autonomy, and monotony at work to affective and substance use
disorders (Muntaner et al. 1998; Muntaner et al. 1991; Muntaner C 2015). Mental disorders in the workplace—depression in particular—have important consequences for quality of life, the costs and utilization of health care, safety, and productivity (www.ahrq.gov).

Extended work schedules have been associated with a variety of mental health indicators in nursing and in other occupations where these schedules are common. Proctor and colleagues (1996) found that both the number of overtime hours and the number of cumulative days worked by automotive workers were associated with changes in mood States such as depression and tension (www.ahrq.gov).

It is a well-established fact that prolonged stress at work over a considerable length of time predisposes an individual to mental health challenges. This is particularly common among the nurses in Delta state due to increased workload per nurse in the hospital. This is worsened when the salaries are not commensurate with the assigned jobs. More so, other stress-induced factors, causing the nurse to work under tension, often subject her to develop mental health challenges as well, which could range from minor to severe mental health disorders.

**Interventions to reduce mental changes**

Interventions to reduce work-related mental changes have focused on either changing the organization of work to reduce the stressors, or changing the workers’ ability to cope with stress by providing cognitive-behavioral interventions, relaxation techniques of various types, or multimodal strategies (Mimura, et al 2003; Student Paper, Australian Catholic University). Although several nationwide initiatives on the prevention of mental disorders have emphasized the importance of addressing work organization factors, only a small number of studies have evaluated this approach, and results have not shown an overall strong relationship (McEwen et al. 2003). In nursing, Mimura and Griffiths (2003) conducted a systematic review of interventions for nurses to reduce their work stress. Two of the reviewed studies used organizational interventions (changing to individualized nursing care and primary nursing), and only one of the two was deemed “potentially effective.” Seven studies of strategies to help nurses manage their stress were presented; music, relaxation, exercise, humor, role-playing assertiveness, social support education, and cognitive techniques were among the stress-reducing strategies studied. The authors stated that no recommendations on the most effective approach were possible due to the small number of studies (www.ahrq.gov).

**Violence**

From 1993 to 1999, 1.7 million incidents of workplace violence occurred annually in the United States, with 12 percent of all victims reporting physical injuries (Duhart et al 2001). Six percent of the workplace crimes resulted in injury that required medical treatment. Yet, only about half (46 percent) of all incidents were reported to the police. The health care sector leads all other industries, with 45 percent of all nonfatal assaults against workers resulting in lost workdays in the United States, according to the U.S. Bureau of Labor Statistics (BLS). The BLS rate of nonfatal assaults to workers in “nursing and personal care facilities” was 31.1 per 10,000, vs. only 2.8 per 10,000 in the private sector as a whole. (Arnetz et al 2000; www.ahrq.gov).

Emergency department personnel also face a significant risk of injuries from assaults by patients or their families. Those carrying weapons in emergency departments create the opportunity for severe or fatal injuries. California and Washington State have enacted standards requiring safeguards for emergency department workers. Although mental health and emergency departments have been the focus of attention and research on the subject, no department within a health care setting is immune from workplace violence. Consequently, violence prevention programs would be useful for all departments.

The first report to the Nation on workplace violence underscores the lack of systematic national data collection on workplace assaults, the paucity of data evaluating violence prevention strategies, and the methodological flaws in published intervention research to date. As background to this report, Runyan and colleagues (2000) reviewed the violence prevention intervention literature and found five studies that evaluated violence prevention training interventions, (Carmel et al 1990; Parkes, 1996; www.ncbi.nlm.nih.gov) two that examined postincident psychological debriefing programs, (Lipscomb et al, 2009; Flannery et al, 1998; Matthews, 1998) and two that evaluated
administrative controls to prevent violence (Drummond et al, 1989; Hunter et al, 1996). Findings from the studies were mixed, with six reporting a positive impact and three reporting no or a negative impact. All were quasi-experimental and without a formal control group. Runyan and colleagues criticized the design of published violence prevention interventions to date because of their lack of systematic rigor in the evaluation. She calls for greater reliance on conceptual and theoretical models to guide research as well as stronger evaluation designs. She further suggests that studies must evaluate “process, impact and outcome measures.” (Runyan et al, 2000)

There is no Federal standard that requires workplace violence protections. California and Washington State both have legislation addressing workplace violence in health care settings. In 1996, OSHA published *Guidelines for Preventing Workplace Violence for Health Care and Social Service Workers*. The 1996 Federal guidelines provide a framework for addressing the problem of workplace violence and include the basic elements of any proactive health and safety program: management commitment and employee involvement, worksite analysis, hazard prevention and control, and training and education. The OSHA guidelines provide an outline for developing a violence prevention program, but since they are “performance based,” the challenge of developing a specific process for implementing the guidelines in a manner that will yield results is left to the employer.

Between 2000 and 2004, Lipscomb and colleagues (Lipscomb et al, 2006) conducted an intervention effectiveness study to describe a comprehensive process for implementing the OSHA Violence Prevention Guidelines and evaluate its impact in the mental health setting. Program impact was evaluated by a combination of quantitative and qualitative assessments. A comparison of pre- and postintervention survey data indicated an improvement in staff perception of the quality of the facility’s violence prevention program as defined by the OSHA elements in both intervention and comparison facilities over the course of the project. Results of the comparison of the change in staff-reported physical assaults were equivocal.

Many psychiatric settings now require that all patient care providers receive annual training in the management of aggressive patients, but few studies have examined the effectiveness of such training. Those investigators that have done so have generally found improvement in nurses’ knowledge, confidence, and safety after taking an aggressive behavior management program. However, implementation of comprehensive violence prevention programs that go beyond staff training will improve safety of the health care workplace for all workers. These advanced programs include the use of currently available engineering and administrative controls such as security alarm systems, adequate staffing, and training (www.ncbi.nlm.nih.gov).

**Results and data analysis**

**Data analysis**

This section describes the presentation, findings, analysis and interpretations of the study. A comparative study on Nurses’ perception on safety and injury among professional nurses was gathered among respondents from Private, Government-owned and Mission hospitals in Delta State to make up a total of one hundred (100) participants. The data were organized in a MYSTAT Statistical Package and summarized, using the formula F/T x 100, where F = Frequency of variables and T = total number of variables.

Analysis of variance (ANOVA) tests were also carried out between and within samples using SPSS version 20.
Results presentations, findings and discussion

Table 1. Demographic Data

<table>
<thead>
<tr>
<th>AGE</th>
<th>PRIVATE</th>
<th>GOVT</th>
<th>MISSION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-25YRS</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>26-30 YRS</td>
<td>7</td>
<td>8</td>
<td>5</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>31-40 YRS</td>
<td>8</td>
<td>10</td>
<td>11</td>
<td>29</td>
<td>29%</td>
</tr>
<tr>
<td>41-50 YRS</td>
<td>12</td>
<td>5</td>
<td>5</td>
<td>22</td>
<td>22%</td>
</tr>
<tr>
<td>51 YRS +</td>
<td>10</td>
<td>6</td>
<td>5</td>
<td>21</td>
<td>21%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>40</td>
<td>30</td>
<td>30</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Figure 1. Statistical Representation

From Table 1 above, The dermographical data represent the study population, stating their age brackets, and comparative analysis of the various participants across the private, government-owned and mission hospitals in the state. Only 8% of nurses within the 20 – 25 yrs age group participated in the research. 26 – 30 years age group that took part in this exercise form 20% of the population, while 29% of the 31-40 year age bracket participated. 41 – 50 years age group constitute 22% of the population, while 51 years and above made up 21% of the sample population. A total of one hundred (100) nurses participated in this exercise as stated above.
Common safety hazards nurses and patients are exposed to at work

Table 2. Common Safety Hazards Nurses and patients are Exposed to at work

<table>
<thead>
<tr>
<th>S/N</th>
<th>Variables (x)</th>
<th>Private Hospitals</th>
<th>Govt. Hospitals</th>
<th>Mission Hospitals</th>
<th>Frequency (fx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Slippery Walking Surfaces</td>
<td>25 (42.4%)</td>
<td>24 (40.7%)</td>
<td>10 (16.9%)</td>
<td>59</td>
</tr>
<tr>
<td>b</td>
<td>Poor Housekeeping</td>
<td>14 (35%)</td>
<td>12 (30%)</td>
<td>14 (35%)</td>
<td>40</td>
</tr>
<tr>
<td>c</td>
<td>Poor Illumination or Lighting System</td>
<td>12 (26.1%)</td>
<td>18 (39.1%)</td>
<td>16 (34.7%)</td>
<td>46</td>
</tr>
<tr>
<td>d</td>
<td>Lack of, or non-functional Smoke Detectors</td>
<td>12 (25.5%)</td>
<td>20 (42.6%)</td>
<td>15 (31.9%)</td>
<td>47</td>
</tr>
<tr>
<td>e</td>
<td>Nursing unconscious and/or elderly patients on high beds without side rails</td>
<td>10 (17.9%)</td>
<td>30 (53.6%)</td>
<td>16 (28.6%)</td>
<td>56</td>
</tr>
<tr>
<td>f</td>
<td>Flammable Liquids</td>
<td>11 (34.4%)</td>
<td>11 (34.4%)</td>
<td>10 (31.3%)</td>
<td>32</td>
</tr>
<tr>
<td>g</td>
<td>Radiation Energy</td>
<td>13 (39.4%)</td>
<td>10 (30.3%)</td>
<td>10 (30.3%)</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>97 (31.0%)</td>
<td>125 (40.0%)</td>
<td>91 (29.1%)</td>
<td>313</td>
</tr>
</tbody>
</table>

Figure 2. Statistical Representation
From Table 2 above, 59% of the sample population saw slippery walking surfaces as safety hazards in the workplace. 56% believed Nursing unconscious and elderly patients on a high bed without side rails as unsafe as well. The least common safety hazard identified was exposure to flammable liquid with 32%.

**Behaviours associated with injury or illness in the workplace**

**Table 3. Behaviours Associated With Injury or Illness in the Workplace**

<table>
<thead>
<tr>
<th>S/N</th>
<th>Variables (x)</th>
<th>Private Hospitals</th>
<th>Govt. Hospitals</th>
<th>Mission Hospitals</th>
<th>Frequency (fx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Re-capping Injection Needles after use</td>
<td>18 (30.0%)</td>
<td>25 (41.7%)</td>
<td>17 (28.3%)</td>
<td>60</td>
</tr>
<tr>
<td>b</td>
<td>Doing Procedures Without Appropriate PPE’s</td>
<td>17 (34.7%)</td>
<td>22 (44.9%)</td>
<td>10 (20.4%)</td>
<td>49</td>
</tr>
<tr>
<td>c</td>
<td>Giving Medications without following the seven (7) “Rights”</td>
<td>16 (35.6%)</td>
<td>18 (40.0%)</td>
<td>10 (22.2%)</td>
<td>45</td>
</tr>
<tr>
<td>d</td>
<td>Not Maintining appropriate Lifting Techniques</td>
<td>16 (38.1%)</td>
<td>16 (38.1%)</td>
<td>10 (23.8%)</td>
<td>42</td>
</tr>
<tr>
<td>E</td>
<td>Assuming an Awkward Posture During Nursing Care</td>
<td>18 (36.0%)</td>
<td>20 (40.0%)</td>
<td>12 (24.0%)</td>
<td>50</td>
</tr>
<tr>
<td>f</td>
<td>Inappropriate Disposal of Sharps or Biomedical Wastes</td>
<td>15 (35.7%)</td>
<td>16 (38.2%)</td>
<td>11(26.2%)</td>
<td>42</td>
</tr>
<tr>
<td>g</td>
<td>Walking Past an Unsafe Act without Correcting it</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>110 (34.3%)</td>
<td>131 (40.8%)</td>
<td>80 (24.9%)</td>
<td>321</td>
</tr>
</tbody>
</table>

**Figure 3. Statistical Representation**
From table 3 above

- Re-capping injection needles after use was most identified as an unsafe act common among practicing nurses, which commonly exposes nurses to the risk of injury at work and subsequent disease transmission. It is also sad to note that majority of these incidents were not reported appropriately for fear of being punished, whereas, reporting it would have helped to prevent potential spread of any implicating blood-borne diseases.
- Giving Medications without following the seven (7) “Rights” was also identified as an unsafe act, scoring 45% of the total sample population.
- Assuming an Awkward Posture during Nursing Care was also found as the second leading unsafe act among nurses at work, bringing about musculoskeletal disorders (MSD).

Injuries or illnesses usually encountered by the nurses at work

<table>
<thead>
<tr>
<th>S/N</th>
<th>Variables (x)</th>
<th>Private Hospitals</th>
<th>Govt. Hospitals</th>
<th>Mission Hospitals</th>
<th>Frequency (fx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Needle Stick Injury</td>
<td>12 (27.9%)</td>
<td>20 (46.5%)</td>
<td>11 (25.6%)</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Slip, Trip and Fall Injury</td>
<td>14 (33.3%)</td>
<td>14 (33.3%)</td>
<td>14 (33.3%)</td>
<td>42</td>
</tr>
<tr>
<td>B</td>
<td>Allergic Reactions/Contact Dermatitis, etc</td>
<td>17 (32.1%)</td>
<td>24 (45.3%)</td>
<td>12 (22.6%)</td>
<td>53</td>
</tr>
<tr>
<td>C</td>
<td>Repetitive Stress Injury (RSI)</td>
<td>20 (37.7%)</td>
<td>18 (34.0%)</td>
<td>15 (28.3%)</td>
<td>53</td>
</tr>
<tr>
<td>D</td>
<td>Burns From Explosives</td>
<td>10 (32.3%)</td>
<td>14 (45.2%)</td>
<td>5 (17.2%)</td>
<td>29</td>
</tr>
<tr>
<td>E</td>
<td>TOTAL</td>
<td>17 (32.1%)</td>
<td>100 (43.5%)</td>
<td>57 (24.8%)</td>
<td>230</td>
</tr>
</tbody>
</table>

Using the analysis of Injuries or Illnesses Usually Encountered by the Nurse While or after Performing Her Duty

- Allergic reactions and Repetitive Stress Injury are both identified as most prevailing injuries encountered by nurses in the course of delivering their duties in the hospitals, with both scoring 53% each among other injuries sustained by the nurses.
From the overall rating, however, injuries are most sustained by the nurses in the government owned hospitals with a score of 43.5%, followed by the private hospitals maintaining her second position with a score of 31.7%, while the mission hospitals scored 24.8%.

**How such injuries/illnesses are managed in the health facilities**

**Table 5. How Such Injuries/Illnesses are managed in the health facilities?**

<table>
<thead>
<tr>
<th>S/N</th>
<th>Variables (x)</th>
<th>Private Hospitals</th>
<th>Govt. Hospitals</th>
<th>Mission Hospitals</th>
<th>Frequency (fx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Strictly Observe Med-Surgical Asepsis</td>
<td>15 (28.3%)</td>
<td>18 (34.0%)</td>
<td>20 (37.7%)</td>
<td>53</td>
</tr>
<tr>
<td>b</td>
<td>Do not Re-cap Needles</td>
<td>16 (29.6%)</td>
<td>23 (42.6%)</td>
<td>15 (27.8%)</td>
<td>54</td>
</tr>
<tr>
<td>c</td>
<td>Maintain Good Housekeeping</td>
<td>19 (40.4%)</td>
<td>14 (29.8%)</td>
<td>14 (29.8%)</td>
<td>47</td>
</tr>
<tr>
<td>d</td>
<td>Always keep the floors and Walk ways clean and dry</td>
<td>20 (37.7%)</td>
<td>17 (32.1%)</td>
<td>16 (30.2%)</td>
<td>53</td>
</tr>
<tr>
<td>e</td>
<td>Discourage use of smooth tiles to make floors and walk ways</td>
<td>15 (32.7%)</td>
<td>14 (30.4%)</td>
<td>17 (37.0%)</td>
<td>46</td>
</tr>
<tr>
<td>f</td>
<td>Wear appropriate PPE’s before handling corrosives or any procedure</td>
<td>20 (40.0%)</td>
<td>16 (32.0%)</td>
<td>14 (28%)</td>
<td>50</td>
</tr>
<tr>
<td>g</td>
<td>Taking Short Cuts saves time, money and energy</td>
<td>20 (29.4%)</td>
<td>25 (36.8)</td>
<td>23 (33.8%)</td>
<td>68</td>
</tr>
<tr>
<td>h</td>
<td>Following the tenets of operational excellence in all you do</td>
<td>17 (30.4%)</td>
<td>22 (39.3%)</td>
<td>17 (30.4%)</td>
<td>56</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>142 (33.3%)</td>
<td>149 (34.9%)</td>
<td>136 (31.9%)</td>
<td>427</td>
</tr>
</tbody>
</table>

**Figure 5. Statistical Representation**
Reviewing How Such Injuries/Illnesses are managed in the health facilities

- Strictly observing Med-Surgical Asepsis (53%), always keeping the floors and Walk ways clean and dry (53%) and following all the tenets of operational excellence in all you do (56%) were highly emphasized.
- Much emphasis is being laid on refusing to take short cuts with a score of 68%, which has been identified to have had the potential to cut lives short.
- From the overall rating too, the government-owned hospitals are also doing much more to manage these incidents by 34.9%. This is a reactive rather than proactive measure.

Challenges in managing injuries and illnesses at work

**Table 6. Challenges in Managing Injuries and Illnesses at work**

<table>
<thead>
<tr>
<th>S/N</th>
<th>Variables (x)</th>
<th>Private Hospitals</th>
<th>Govt. Hospitals</th>
<th>Mission Hospitals</th>
<th>Frequency (fx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Non-availability of right materials for use</td>
<td>12 (24.0%)</td>
<td>20 (40.0%)</td>
<td>18 (36.0%)</td>
<td>50</td>
</tr>
<tr>
<td>b</td>
<td>Limited supply of right materials for use</td>
<td>10 (21.7%)</td>
<td>20 (43.5%)</td>
<td>16 (34.8%)</td>
<td>46</td>
</tr>
<tr>
<td>c</td>
<td>Too much work load and little or no time to rest.</td>
<td>17 (30.4%)</td>
<td>19 (33.9%)</td>
<td>20 (35.7%)</td>
<td>56</td>
</tr>
<tr>
<td>d</td>
<td>Too expensive to maintain safety</td>
<td>10 (31.3%)</td>
<td>11 (34.4%)</td>
<td>11 (34.4%)</td>
<td>32</td>
</tr>
<tr>
<td>e</td>
<td>Non-compliance with all applicable rules and regulations</td>
<td>14 (25.9%)</td>
<td>16 (29.6%)</td>
<td>24 (44.4%)</td>
<td>54</td>
</tr>
<tr>
<td>f</td>
<td>Not following micro pause and work pace breaks on PCs</td>
<td>21 (39.6)</td>
<td>11 (20.8%)</td>
<td>11 (20.8%)</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>84 (29.9%)</td>
<td>97 (34.5%)</td>
<td>100 (35.6%)</td>
<td>281</td>
</tr>
</tbody>
</table>
As touching the Challenges in Managing Injuries and Illnesses at work

- The following challenges facing the professional nurses are quite obvious. Meanwhile, the greatest challenge identified by the respondents is “Too much work load and little or no time to rest (56%).” Others “Non-compliance with all applicable rules and regulations (54%)” and “Not following Micro pause and Work Pace breaks (54%)” amongst others.
- From the overall rating, Mission Hospitals have the greatest challenges of managing and coping with injuries and illnesses at work (35.6%).
- 32% of the total sample population also complained that safety is too expensive to maintain.

Overcoming such challenges

<table>
<thead>
<tr>
<th>S/N</th>
<th>Variables (x)</th>
<th>Private Hospitals</th>
<th>Govt. Hospitals</th>
<th>Mission Hospitals</th>
<th>Frequency (fx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Staff Training</td>
<td>19 (31.7%)</td>
<td>23 (38.3%)</td>
<td>18 (30%)</td>
<td>60</td>
</tr>
<tr>
<td>b</td>
<td>Observe Break Times to Rest</td>
<td>21 (40.4%)</td>
<td>17 (32.7%)</td>
<td>14 (26.9%)</td>
<td>52</td>
</tr>
<tr>
<td>c</td>
<td>Adequate Supply of the right Materials to use</td>
<td>18 (28.1%)</td>
<td>25 (39.1%)</td>
<td>21 (32.8%)</td>
<td>64</td>
</tr>
<tr>
<td>d</td>
<td>Compliance With Safe Work Practices and Procedures</td>
<td>18 (31.6%)</td>
<td>22 (38.6%)</td>
<td>17 (29.8%)</td>
<td>57</td>
</tr>
<tr>
<td>e</td>
<td>Avoid taking Short Cuts</td>
<td>15 (28.9%)</td>
<td>17 (32.7%)</td>
<td>20 (38.5%)</td>
<td>52</td>
</tr>
<tr>
<td>f</td>
<td>Always Address Abnormal Condition</td>
<td>24 (46.2%)</td>
<td>14 (26.9%)</td>
<td>14 (26.9%)</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>115 (34.1%)</td>
<td>118 (35.0%)</td>
<td>104 (30.9%)</td>
<td>337</td>
</tr>
</tbody>
</table>
Looking at Overcoming Such Challenges

- Much emphasis is placed on adequate supply of the right materials to be made readily available for use (64%) and Staff training to be instituted as soon as possible. (60%).
- From the overall rating, the Mission hospitals are also on the downward trend in terms of meeting up with the ways to overcome the challenges facing them (30.9%). 60% of the total sample population advocate for regular staff training.

How to prevent injuries and illnesses at work

Table 8. How to Prevent Injuries and Illnesses at Work

<table>
<thead>
<tr>
<th>S/N</th>
<th>Variables (x)</th>
<th>Private Hospitals</th>
<th>Govt. Hospitals</th>
<th>Mission Hospitals</th>
<th>Frequency (fx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Always avoid use of smooth tiles for floors and walk ways</td>
<td>23 (32.4%)</td>
<td>26 (46.6%)</td>
<td>22 (31.0%)</td>
<td>71</td>
</tr>
<tr>
<td>b</td>
<td>Always observe work pace breaks and Micropause to reduce RSI</td>
<td>23 (35.4%)</td>
<td>26 (40.0%)</td>
<td>16 (24.6%)</td>
<td>65</td>
</tr>
<tr>
<td>c</td>
<td>Always maintain correct posture during procedures</td>
<td>20 (30.3%)</td>
<td>28 (42.4%)</td>
<td>18 (27.3%)</td>
<td>66</td>
</tr>
<tr>
<td>d</td>
<td>Always follow safe work practices and procedures</td>
<td>29 (41.4%)</td>
<td>22 (31.4%)</td>
<td>19 (27.1%)</td>
<td>70</td>
</tr>
<tr>
<td>e</td>
<td>Always comply with all applicable Rules and Regulations</td>
<td>30 (37.0%)</td>
<td>26 (32.1%)</td>
<td>25 (30.9%)</td>
<td>81</td>
</tr>
<tr>
<td>f</td>
<td>Always ensure safety devices are in place and functioning</td>
<td>27 (33.8%)</td>
<td>28 (35.0%)</td>
<td>25 (31.3%)</td>
<td>80</td>
</tr>
<tr>
<td>g</td>
<td>Always work within design and environmental limits</td>
<td>28 (36.4%)</td>
<td>25 (32.5%)</td>
<td>24 (31.2%)</td>
<td>77</td>
</tr>
</tbody>
</table>
### Considering how to prevent injuries and illnesses at work

- It is clear that the professional nurses are obviously aware of the ways to prevent or mitigate injuries and illnesses at work, as the various ratings were above average.
- However, the major problem is their inability to deliberately take the decision to always follow all the tenets of operational excellence in all they do, so as to do them in the right way all the time.
- Concerning the areas in which the nurses are not fully knowledgeable, they should make themselves available for training in order to update themselves on the recent trends in safe work practices and procedures.

### Summary, implications and recommendations

**Introduction**

In this chapter, the researcher will reflect back at the entire research process in order to pursue his findings to a logical conclusion, and possibly offer recommendations aimed at assisting the nurses to be more focused on safety at work and to prevent injury as much as possible while carrying out their duties in the hospitals or elsewhere.

---

**Figure 8. Statistical Representation**

<table>
<thead>
<tr>
<th>h</th>
<th>Always address abnormal condition</th>
<th>30 (39.0%)</th>
<th>25 (32.5%)</th>
<th>22 (28.6%)</th>
<th>77</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Always follow written procedures for high risk or unusual situations (EDMC)</td>
<td>30 (37.5%)</td>
<td>26 (32.5%)</td>
<td>24 (30.0%)</td>
<td>80</td>
</tr>
<tr>
<td>j</td>
<td>Always involve the right people in decisions that affect procedures and equipment (EDMC)</td>
<td>28 (35.9%)</td>
<td>27 (34.6%)</td>
<td>23 (29.5%)</td>
<td>78</td>
</tr>
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<td></td>
<td></td>
<td>143 (24.4%)</td>
<td>224 (38.3%)</td>
<td>218 (37.3%)</td>
<td>585</td>
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</tbody>
</table>
From table 2 above

Slippery walking surfaces are most frequently identified as the leading safety hazards in the various hospitals with an overall rating of 59% (fifty-nine out of one hundred respondents); followed by nursing unconscious and/or elderly patients on high beds without side rails, as the second leading safety hazard to the patients rated 56%.

- From the comparative studies among the various hospitals under review, 40.0% of safety hazards were identified in government-owned hospitals, taking the lead, and followed by Private hospitals with a score of 31.0%. However, 29.1% of safety hazards were found in the mission hospitals.
- Meanwhile, failing to identify others well does not mean those hazards are not present in the hospital environments. However, it means more work needs to be done by nurses to identify these hazards adequately through safety training and conscious maintenance of safety culture and health education.

From table 3 above

The researcher also discovered that Re-capping injection needles after use was most identified as an unsafe act common among practicing nurses, which commonly exposes nurses to the risk of injury at work and subsequent disease transmission. It is also sad to note that majority of these incidents were not reported appropriately for fear of being punished, whereas, reporting it would have helped to prevent potential spread of any implicating blood-borne diseases.

From table 4 above

- Allergic reactions and Repetitive Stress Injury are both identified as most prevailing injuries encountered by nurses in the course delivering their duties in the hospitals, with both scoring 53% each among other injuries sustained by the nurses.
- From the overall rating, however, injuries are most sustained by the nurses in the government owned hospitals with a score of 43.5%, followed by the private hospitals maintaining her second position with a score of 31.7%, while the mission hospitals scored 24.8%.

From table 5 above

- Much emphasis is being laid on refusing to take short cuts with a score of 68%, which has been identified to have had the potential to cut lives short.
- From the overall rating too, the government-owned hospitals are also doing much more to manage these incidents by 34.9%. This is a reactive rather than proactive measure.

From table 6 above

The following challenges facing the professional nurses are quite obvious. Meanwhile, the greatest challenge identified by the respondents is “Too much work load and little or no time to rest (56%). Others “Non-compliance with all applicable rules and regulations (54%)” and “Not following Micro pause and Work Pace breaks (54%)” amongst others.

- From the overall rating, Mission Hospitals have the greatest challenges of managing and coping with injuries and illnesses at work (35.6%).

From table 7 above

- Much emphasis is placed on adequate supply of the right materials to be made readily available for use (64%) and Staff training to be instituted as soon as possible. (60%).
- From the overall rating, the Mission hospitals are also on the downward trend in terms of meeting up with the ways to overcome the challenges facing them.

From table 8 above

- Professional nurses are obviously aware of the ways to prevent or mitigate injuries and illnesses at work.
However, the major problem is their inability to deliberately take the decision to always follow all the tenets of operational excellence in all they do, so as to do them in the right way all the time.

Concerning the areas in which the nurses are not fully knowledgeable, they should make themselves available to for learning in order to update themselves on the recent trends in safe work practices and procedures.

Summary of findings

In Delta State, 98% of nurses run shift in the hospital, out of which 60% admitted having had one form of health problems or the other. 2% of nurses do straight morning duty. into the main safety challenges facing the professional nurses in Delta state of Nigeria. Thus compromising safety has almost become a norm in some of the facilities in the state. It is a forum for organizing staff training on general safety. This will, no doubt, serve as an eye opener to the professional nurses to acquaint themselves with the recent trends on safety. This will re-direct the minds of the nurses towards following all the tenets of operational excellence, as we cannot afford to continue taking shortcuts.

The comparative studies on Private, Government-owned and Mission hospitals also enabled the researcher to explore successfully the various areas and track each individual variable to ascertain each of their safety implications towards nurses’ performance.

Recommendations

The State and local Governments should work together to screen for nurses at high risk of developing work-induced musculoskeletal disorders (MSD).

- The hospital management should step up the standards of their health educational facilities with the view to emphasizing the importance of safety at work. Recreational facilities should be strategically established and made readily available and accessible to the individuals for appropriate forms and levels of exercises aimed at maintaining a healthy weight, thus preventing easy breakdown while at work in the hospitals.
- The government should pay adequate attention to the welfare of nurses and provide relevant materials required to maintain safety adequately at work.
- Hospitals should be devoid of slippery materials on the walk ways and floors, as this will continue to pose safety hazards to the nurses at work.
- This research project should serve as a stepping stone for further research on the subject to ensure a more accurate result and more fruitful contributions to Nursing profession.
- The professional nurses also need to follow all the tenets of operational excellence as follows:
  - Always operate within design and environmental limits
  - Always operate in a safe and controlled condition.
  - Always ensure safety devices are in place and functioning.
  - Always follow safe work practices and procedures
  - Always meet or exceed customers’ requirements
  - Always maintain integrity of dedicated systems
  - Always comply with all applicable rules and regulations
  - Always address abnormal conditions
  - Always follow written procedures for high risk and unusual situations
  - Always involve the right people in decisions that affect procedures and equipment.

(Lifted from the Student Paper, University Putra, Malaysia)

References


