

## 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 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, Ogbaku (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 Co- efficient 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

S/No	Patients' level of satisfaction with food served in IMSUTH wards	f	%
1	High (very satisfied)	8	5.3
2	Moderate/fair (satisfied)	5	3.3
3	Poor (dissatisfied)	67	44.7
4	Very poor (very dissatisfied)	70	46.7

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

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

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?

**Table3.** Patients’ suggested ways of improving their satisfaction with food served in IMSUTH wards.  
N = 150

S/N	Ways of improving satisfaction with food served in IMSUTH wards	f	%
1	Foods should be served at appropriate time	70	46.7
2	Foods should be well presented	74	49.3
3	Serve food with good plates and spoons	70	46.7
4	Serve fruits after meal	58	38.7
5	Meal options should be introduced	71	47.3
6	Serve food warm or hot	95	63.3
7	Garnish and serve food in an a attractive way	86	57.3
8	Environment where foods are served should be neat and clean	56	37.3

NB: Multiple Responses were allowed

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 plate 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 out 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, also 56 (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

- [1]. Adeak, I. (2011). Food satisfaction. *Health Service Research* 43 (5): 1752-1758
- [2]. Anna, G. (2008). *Nutrition and huntington disease*. Edinburgh Printing Press. Accessed on May 20, 2014, from <http://myspace.com>
- [3]. Anne, C & Allison, O. (2006). *The hustle of urban high life*. Accessed June 2, 2014 from <http://en.wikipedia.com>.
- [4]. American Diet Association (2011). Gap analysis of patient meal service perception *International Journal of Health care quality assurance*. 6(3): 143-153.
- [5]. BMC Health Service Research (2011). The immune system cure. *American Journal of Clinical nutrition*. 87 (3): 539-547.
- [6]. Bjerrum, R. (2012). Nutrition and immunity in cancer. *British Journal of Nutrition* 98 (1): 5127-5132.
- [7]. Calder, C. & Kew, J. (2008). *Nutrition immunity and infection* (6<sup>th</sup> edition). Philadelphia: Elsevier/Churchil Livingstone.
- [8]. Chinweuba, A., Iheanacho, P., & Agbapuonwu, N. (2013). *Research & statistics in nursing & related professions: beginners guide*. Enugu: El' Demark.
- [9]. Clarkson, R. (2014). *Causes of low patients' satisfaction*. London: Edinburgh Printing Press.
- [10]. Corilee, A. & Watters, M. (2013). Exploring patients' satisfaction with food service. *Journal of the American Dietetic Association*.. 103 (10): 1347 – 1349.
- [11]. David, G. (2008). *The hustle of urban high life*. Accessed June 2, 2014 from <http://en.wikipedia.com>.
- [12]. Ejifugha, A. (2006). *Fundamentals of research in health education*. Owerri: Barloz Publisher Limited.
- [13]. Grant, C. & Kennedy, O. (2013). Feeding beliefs of certified nurse assistance on the nursing home: a factor influencing practice. *Journal of Gerontological Nursing*. 3(7): 5-10.
- [14]. Grimble, B. (2014). Primary immune deficiency among patients with recurrent infections. *Ceylin Medical Journal*. 52 (3): 83-86.
- [15]. Jacob, K. (2013). Diets and its modification. *New England Journal of Medicine*. 353 (13): 674-681.
- [16]. Jesse, F. (2007). *Nutrition and Huntington disease*. Edinburgh Printing Press. Accessed on May 20, 2014, from <http://myspace.com>.
- [17]. Kozier, B. & Erb, G. (2008). *Fundamentals of nursing*. New Jersey: Pearson Education Inc.
- [18]. Li-Jen, H. & Anita, E. (2013). Gap analysis of patient meal service perception. *International Journal of Health Care Quality Assurance*. 6(3): 143-153.

- [19]. NHS (2011). Primary immune deficiency among patients with recurrent infections. *Ceylin Medical Journal*. 52(3): 83-86.
- [20]. Nworgu, B.G. (2006). *Education research: basic issues and methodology*. Ibadan: Wisdom publisher's ltd.
- [21]. Patrick, B. (2013). The immune system cure. *American journal of clinical nutrition*. 87 (3): 539-547.
- [22]. Stanga, Z. & Tanner, B. (2010). *Hospital food: a survey of patient's perception*. Accessed September 22, 2014 from <http://www.journals.elsevier.com>.
- [23]. Sue, H. (2005). *Fundamentals of research*. New York: Edinburgh Printing Press.
- [24]. Valentine, C. (2010). Patient's level of satisfaction with food. *International Journal of Nursing*. 97 (4): 647-648.
- [25]. Waitzberg, D. (2007). *Efficacy of nutritional support*. New York: Mc Graw, Hill medical.
- [26]. Wikipedia Enclopedia (2009). *The hustle of urban high life*. Accessed June 2, 2014 from <http://en.wikipedia.com>.
- [27]. WHO (2012). Diets and its modification. *New England Journal of Medicine*. 353(13): 674-681.