

## Effect of Nursing Intervention on the Utilization of Antenatal Care Services: Evidence from Ogun State, Nigeria

Article by Okueso Grace O<sup>1</sup>, Folami Florence<sup>2</sup>, Musah K. Toyin<sup>3</sup>, Sowunmi Christiana<sup>4</sup>, Kio Janet<sup>5</sup>, Owopetu Adetoun<sup>6</sup>

<sup>1,4,6</sup> School of Nursing Science, Department of Maternal & Child Health, Babcock University, Ilishan-Remo, Ogun State, Nigeria

<sup>2</sup> Department of Nursing, Faculty of Clinical Science, University of Lagos, Idi- Araba, Lagos, Nigeria

<sup>3</sup> School of Allied Health, Department of Community Health, Kwara State University, Malete, Nigeria

<sup>5</sup> School of Nursing Science, Department of Community Health, Babcock University, Ilishan-Remo, Ogun State, Nigeria

E-mail: okuesog@babcock.edu.ng<sup>1</sup>, flofolami@unilag.edu.ng<sup>2</sup>,

Khadijat.musah@kwasu.edu.ng<sup>3</sup>, Sowunmi@babcock.edu.ng<sup>4</sup>, janetkio@babcock.edu.ng<sup>5</sup>, owopetuc@babcock.edu.ng<sup>6</sup>

### Abstract

*The study assessed the effect of nursing intervention on the utilization of antenatal care services (ANCS) in Ogun state, Nigeria. A total of 75 pregnant women registered for antenatal care in 4 primary health care centers were selected using the total enumeration procedure. The women were further stratified into control (40) and experimental (35) groups. Structured questionnaire was used to gather data which were analyzed using descriptive statistics and logistic regression. All analyses were measured at  $p \leq 0.05$ . Results showed that most of the women were between 20 and 30 years old, had up to secondary education, were in their third trimester and had made below 2 antenatal visits to the healthcare centers. Most of the women have had up to 3 children. Monthly income was generally less than ₦20, 000 (<\$56). At baseline, the antenatal appointments were generally very poor. Parameters related to antenatal care such as checking of blood pressure, weight monitoring, malaria test and HIV counseling and testing also had low scores (<70%). However, at post-intervention, there were apparent improvements in the measured parameters in the experimental group (94%); whereas there were no changes in the control group. The overall utilization mean for the experimental group (baseline = 67%; end line = 97%) indicated that there was a considerable increase in the utilization of ANCS by pregnant women after exposure to intervention. The regression result affirmed that respondents' participation in the intervention was significant with a positive sign at  $p = 0.009$ . This implies that, exposure of pregnant women to educational intervention will significantly increase the probability of their utilization of ANCS. The study recommends among others, that, more attention should be given to antenatal education in the study area and Nigeria at large.*

**Keywords:** Antenatal Care Services, utilization, healthcare, pregnant women, intervention, Nigeria.

### Introduction

Antenatal care (ANC) is the care a pregnant women receive during her pregnancy through various contact with trained health personnel such as midwives, nurses and doctors who are trained in pregnancy and child birth, the care is centered on the woman by providing her with important information in order to make cognizant choice. Utilization of ANC services is associated with improved maternal and neonatal health outcome (Babalola & Fatusi, 2009; Marshall & Raynor, 2014). Adeniyi and Erhabor, 2015 documented that, the vital role of antenatal care is to give antenatal education, simple advice and services that can promote the health of pregnant mothers and their unborn children; protect against complications such as hypertension, anaemia, prolong labour, eclampsia, antepartum haemorrhage, and premature birth. The World Health Organization (WHO)

recommends at least four antenatal care visits when women are pregnant (Simkhada, Van Teijlingen, Porter & Simkhada, 2007).

Women die as a result of complications which are related to pregnancy and childbirth. Majority of these complications can be prevented or treated, every day about 830 women die from diseases related to pregnancy and childbirth and most of these maternal deaths are from developing countries (WHO, 2016). A total of 50,000 Nigeria women die every year from pregnancy-related diseases and complications with a maternal mortality ratio (MMR) of 840 per 100,000 live births. Every woman out of the population of 34 million women in their child bearing age face a 1 in 23 risk of maternal death (Erim, Resch, & Goldie, 2012). To ameliorate this situation and to achieve the Sustainable Development Goal (SDG) which highlighted reduction in maternal mortality, efforts have been made by the government and other Non-Governmental Organizations (NGOs) to providing free medical services to pregnant women, transferring over 4,000 skilled birth attendants (midwives) (Erim, Resch, & Goldie, 2012). However, studies have shown that over 35% of pregnant women still do not utilize the antenatal care and less than 40% of mothers of infant use the antenatal care services in Nigeria (Adeniyi & Erhabor, 2015).

Adeniji and Erhabor (2013) observed that countries with low antenatal care attendance and practice are the countries with very high Maternal Mortality Ratio (MMR). Nigeria's MMR, as earlier highlighted, is apparently above the African and world average of 500 and 210 respectively. The poor outcome of pregnancy and delivery in women in Nigeria could therefore be related to poor utilization of antenatal care services.

Besides non-utilization, late initiation of antenatal care is also common among pregnant women in Nigeria and this can lead to poor and inadequate knowledge on birth preparedness and complication readiness which is affecting their birth plan and preparation for complication. Women who are pregnant are advice to initiate ANC between 12<sup>th</sup> – 13<sup>th</sup> week of gestation and also attend at least four (4) antenatal care for uncomplicated cases but these women initiate ANC booking at 24 weeks to as late as 34 weeks gestation (Holmes and Baker, 2006). Often, the pregnant women who book for ANC do not use the health facility for delivery, they either deliver at home or visit the traditional birth attendants and some of them end up with birth complications.

Besides the challenge of low level of professionalism displayed by the birth attendants, the poor and inadequate use of ANC services by many Nigerian pregnant women has been attributed to inadequate knowledge or awareness of the importance of the antenatal care, birth preparedness and complication readiness, their beliefs and practices, distance to healthcare centres and low socioeconomic status of the women (Iyaniwura and Yusuf, 2009; Agbede et al., 2015; Onasoga, Afolayan and Oladimeji, 2012; Nwaeze, Enabor, Oluwasola, and Aimakhu, 2013). This study evaluated the effect of nursing intervention on the use of antenatal care services among selected pregnant women in Ikenne Local Government Area of Ogun State, Nigeria with the expectation that the intervention will improve the utilization of ANC services and contribute to reduction in birth related complications and death in Nigeria.

### **Empirical review of studies on utilization of antenatal care services**

The study of Osungbade & Ayinde (2011) on birth outcome among booked and unbooked women at a secondary health facility in southwest Nigeria showed that women who utilized antenatal care had lower still birth frequency (3%) and higher mean birth weight ( $3.02 \pm 0.49\text{kg}$ ) as compared to those who did not (18% still birth and  $2.95 \pm 0.53\text{kg}$  birth weight). A study carried out by Adeniyi & Erhabor (2015) on Nigerian pregnant women from the 36 states and federal capital territory revealed that most of the respondents from rural Nigeria did not use antenatal care services during the period covered. Among the determinants for poor utilization includes literacy and income level, spousal influence (especially in the northern regions) and distance to the healthcare facility played. Similar results were obtained by Obiyan & Kumar (2015). The study of Igberase & Ebeigbe (2007) on maternal mortality in a rural hospital in the Niger Delta, Nigeria also revealed that there is a significant association between maternal death and antenatal care attendance.

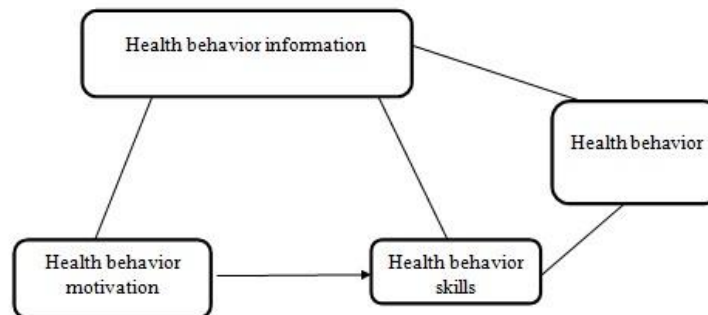
Osubor, Fatusi, and Chiwuzie (2006) in a study on maternal health-seeking behavior and associated factors in a rural Nigeria community observed that most of the respondents perceived that antenatal

care should start before or around the mid trimester (second trimester). Dahiru & Oche (2015) in their study on the determinants of antenatal care, institutional delivery and postnatal care services utilization in Nigeria observed that 54% of women had at least four antenatal care visits and only 37.3% delivered in the hospital despite their antenatal care visits. Their findings further showed that younger women between the ages of 15-24 years were more frequent at antenatal care visits than women in older age group. This study thus aimed at establishing a significant relationship between Socio-demographic characteristics of the selected women and antenatal care attendance.

## Theoretical model

### The information–motivation-behavioral skill model (IMB)

The theoretical model underpinning this study is the Information Motivation Behavioral Skill Model (IMB). IMB enhances the interpretation of empirical interventions. An empirical intervention is one that is focused on factually defined information, motivation, and behavioral skills requirement of a specific group that is in need of health improvement. The IMB Model states that health information and motivation are major defining elements that determine individual's health behaviors. Those who are not informed, unmotivated to do something and lack the behavioral ability to act are likely to go into risky health behaviour that will result in health outcomes that will predispose them to danger.



**Figure 1.** The information –motivation-behavioral skills of health behavior (Fisher, Fisher & Haman, 2009).

### Application of information- motivation- behavioral skill model to the study

Based on the IMB model, the study hypothesized that exposing pregnant women to educational information intervention will positively influence their behavioral skills concerning utilization of ANC services and thus increase the possibility of them initiating antenatal booking on time, attending ANC regularly and making use of the ANC services especially for delivery.

## Methodology

The study employed the quasi-experimental research designed to determine the effect of nursing intervention on the utilization of healthcare facility among pregnant women in Ikenne Local Government Area of Ogun State (LGA). The population of study comprised of pregnant women in their first to third trimester registered for antenatal care at the primary health care centers in four out of the five major towns in Ikenne LGA which includes Ikenne, Ilishan-Remo, Iperu, and Ogere. Ikenne LGA has an estimated population of about 202,980 (Adeleye & Okezie, 2012). The local government has its boundaries as follows: It is bounded in the East by Odogbolu Local Government, in the North by Remo North Local Government, in the South by Sagamu Local Government and in the West, by Obafemi Owode Local Government (Adeleye & Okezie, 2012).

Total enumeration sampling technique was used for this study, thus all the pregnant women who registered for the antenatal clinic at the time of survey for this study were involved in the study. The respondents were stratified into 2 strata i.e experimental and control groups. On the whole, 35 pregnant women were in the experimental group while 40 women were in the control group. The participants were from the various primary health care centers (PHC) in Ikenne local government area of Ogun State. Four (4) PHC were used; two for experimental and two for control. Structured

questionnaire adapted from Adeniji & Erhabor (2015); (Ekabua, Kutre, Ekabua, Odusola, Agan, Iklaki & Etokidem (2011) were used for data collection for this study. However, to ensure standardization, the questionnaire was subjected to validity and reliability tests (Cronbach's Alpha test). The value of the Cronbach's Alpha Coefficient was 0.80 which indicated that the instrument was adequately reliable. Consent of the participants was sought and ethical clearance was obtained from Babcock University Research Ethical Committee, permission was also granted from Ikenne Local Government for the primary health care centers.

Following the pretest the researcher introduced the nursing intervention to the participants. The nursing intervention comprised of teaching on antenatal care, booking/timing of antenatal visit, physical examination, investigations, birth preparedness and complication readiness etc. The researcher taught the participants on the above topics. The intervention was given to the experimental group only for a period of four weeks and two modules were used. Data gathered were analyzed using descriptive and inferential statistics i.e frequency distribution and the regression analysis. All analyses were done at 0.05% level of significance.

## Results and discussion

### Respondents' personal characteristics

Respondents' personal characteristics analyzed included age, marital status, ethnicity, religion, family type, occupation, educational attainment, income, number of delivery, number of children, gestational age and ANC visits. Results as presented in Table 1 showed that most of the respondents were between 20 and 30 years old in both experimental and control groups (60% and 38% respectively) and mostly married. Most of respondents had relatively good level of education with majority having up to secondary education (69% and 55% for experimental and control groups respectively).

**Table 1.** Participants' personal characteristics

Variable		Experimental (N = 35)		Control (N = 40)	
		Freq.	%	Freq	%
Age:	< 20 years	1	2.9	4	10.0
	20-30years	21	60.0	15	37.5
	31-40years	12	34.3	12	30.0
	> 40 years	1	2.9	8	20.0
Marital Status:	Single	-	-	1	2.5
	Married	35	100	39	97.5
Ethnicity:	Yoruba	21	60.0	26	65.0
	Hausa	10	28.6	7	17.5
	Others	4	11.4	7	17.5
Religion:	Christianity	26	74.3	26	65.0
	Islam	9	25.7	14	35.0
Family Type:	Monogamous	14	40.0	27	67.5
	Polygamous	21	60.0	13	32.5
Level of Education:	Primary school	-	-	8	20.0
	Secondary school	24	68.6	22	55.0
	Tertiary	11	31.4	3	7.5
Occupation:	Civil service	4	11.4	3	7.5
	Self employed	28	80.0	24	60.0
	Unemployed	3	8.6	13	32.5
Average Income ( Monthly)	18,000±7300			16,000±9120	
No of delivery:	Primigravida	2	5.7	1	2.5
	1	4	11.4	5	12.5

	2	12	34.3	6	15.0
	3	13	37.1	10	25.0
	4	3	8.6	6	15.0
	5	1	2.9	10	25.0
	6	-	-	2	5.0
No of children	0	2	5.7	1	2.5
alive:	1	4	11.4	7	17.5
	2	13	37.1	7	17.5
	3	15	42.9	13	32.5
	4	1	2.9	8	20.0
	5	-	-	4	10.0
Gestational	4 -6 months	5	12.3	8	20.0
age:	7- 9 months	30	85.7	29	72.5
Pregnancy age	3 months	-	-	5	12.5
when	4 months	2	5.7	5	12.5
registered for	5 months	31	88.6	12	30.0
antenatal care:	6 months	1	2.9	15	37.5
	7 months	1	2.9	3	7.5
Antenatal	1 visit	-	-	8	20.0
visits made:	2 visits	33	94.3	21	52.5
	3 visits	2	5.7	4	10.0
	4 visits	-	-	2	5.0
	Above 4 visits	-	-	5	12.5

Source: Computed from field survey, 2017

The nexus between education and response to interventions for behavioral change has been detailed in previous studies (Babalola et al., 2013; Omeonu et al., 2014; Agbede, Omeonu and Kio, 2015). Thus education is expected to influence utilization of ANC services. Average monthly income earned by the women was below ₦20, 000 (<\$56) which is clearly below 2 dollars per day. This implies that although, most of these women may depend on their husbands for household financial sustenance, poverty level is likely high among the women. This may pose a challenge to the women's' ability to afford necessary healthcare services. Most of the women are self-employed most probably involved in petty trading (80% and 60% for experimental and control groups respectively) this may be the reason why their income is low. The results of the respondents based on their ethnicity showed that the majority of the respondents (experimental and control groups) were Yorubas. Most of the respondents were Christians (74% and 65% for experimental and control groups respectively). Majority of the respondents in the experimental group (60%) practiced polygamy, while the majority (68%) in the control group practiced monogamy.

Further results in Table 1 showed that the majority of the respondents (43% and 32% for experimental and control groups respectively) previously had up to 3 children, thus they are expected to have certain knowledge about the benefit of utilizing ANC services and using healthcare services for delivery. Results of antenatal visits showed that most of the women (70%) had their first visit to the healthcare center after the 4<sup>th</sup> month of pregnancy (95% and 76% for experimental and control groups respectively). Also, the majority of the respondents (94% and 53% for experimental and control groups respectively) visited the healthcare only 2 times during ANC despite the fact that most of them are between 7<sup>th</sup> and 9<sup>th</sup> month of gestational age (86% and 73% for experimental and control groups respectively). This is likely to adversely impact utilization of the healthcare facility especially for delivery.

### Utilization of ANC services by pregnant women

The descriptive analysis of the utilization of ANC services by the respondents is presented in Table 2 for both control and experimental groups at base-line (pre-intervention) and end-line (post-intervention). Several utilization parameters were measured to obtain mean scores for both control

and experimental groups. Following the Ashur (1977) measurement scale, proportion or scores greater than 70% is considered as high and adequate level with respect to the variable being measured.

The parameter with the lowest utilization score is the response of the women to keeping antenatal appointment. At baseline, judging by the scores, the response of the respondents to antenatal appointments is very poor and there is no apparent difference in the scores of the control group (35%) and the experimental group (37%). It is interesting to note that other parameters related to antenatal care such as checking of blood pressure, weight monitoring, malaria and HIV counseling and testing also had low scores (<70%). This has a lot of implication on the preparedness of the women for parturition and the care of their pregnancy against probability of complications. However, at post-intervention, there was apparent improvement in the attitude of the respondents towards antenatal appointments in the experimental group (94%) whereas there is no apparent change in the control group. Similar results were obtained for the other parameters in the experimental group at post intervention. The overall utilization mean score at base-line for both the control and experimental groups and at end-line for the control group is less than 70% indicating low utilization of ANC services. However, at post-intervention for the experimental group, a mean score of 97% was obtained indicating that there was a considerable increase in the utilization of ANC service by pregnant women after exposure to intervention.

**Table 2.** Descriptive analysis of utilization of ANC services by the pregnant women (control and experimental group)

Utilization of ANC Services	Control Group				Experimental Group			
	Pre-intervention		Post-intervention		Pre-intervention		Post-intervention	
	scores		scores		scores		scores	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Keep to antenatal appointments	14	35.0	13	32.5	13	37.1	33	94.3
Received Tetanus Toxoid	32	80.0	27	71.1	26	74.3	35	100.0
Received Iron supplement	34	85.0	32	80.0	28	80.0	35	100.0
Physical Examination (palpation and auscultation)	36	90.0	34	85.0	31	88.6	35	100.0
Checking of blood pressure	21	52.5	22	57.9	20	57.1	34	97.1
Checking of weight, height	22	55.0	23	60.5	22	62.9	35	100.0
Prevention of malaria with sulphadoxine pyrimethamine (SP)	24	60.0	21	55.3	22	62.9	33	94.3
HIV testing and counseling	22	55.0	22	57.9	19	54.3	32	91.4
Prevention of malaria with insecticide treated net	35	87.5	35	87.5	29	82.9	34	97.1

Source: Computed from field survey, 2017

This finding is consistent with the submission of Nwaeze, Enabor, Oluwasola, and Aimakhu (2013) that the utilization of antenatal care services is below expectation in Nigeria. The findings of this study is also in agreement with chrysan, Cajetan, Ignatius and Chinagorom (2015) in their study on the utilization of ANC services among women of child-bearing age in Nigeria which revealed low utilization of ANC services related to HIV/AIDs and STI voluntary testing and counseling.

The logistic regression analysis was further conducted to determine the factors which significantly influence respondents' utilization ANC facility and the results presented in Table 3.

Results showed that respondents' participation in the intervention was significant with a positive sign at  $p = 0.009$ . This implies that exposure of pregnant women to educational intervention will significantly increase the probability of their utilization of ANC services. Agbede et al. (2015); Lund et al. (2009); Samai and Sengeh (1997) reported similar results of the significance of intervention to

maternal healthcare. Other factors which positively and significantly increased respondents' utilization of ANC services at  $p \leq 0.05$  included respondents' literacy level, respondents' satisfaction rating of healthcare workers at the healthcare centers, respondents' monthly income and spousal influence.

**Table 3.** Factors influencing respondents' utilization of ANC facility

Independent Variables	Beta coefficient	S.E.	Sig.
Constant	-7.380*	1.773	0.010
Participation in the intervention (dummy: no = 0; yes = 1)	0.217*	0.0510	0.009
Literacy level (dummy: below sec = 0; sec & above = 1)	0.318*	0.079	0.006
Satisfaction rating of health care workers	2.359*	0.783	0.003
Number of previous births	-0.103	0.172	0.550
Proximity to health care facility (dummy: no = 0; yes = 1)	0.424	0.387	0.273
Monthly Income (in naira)	0.130*	0.060	0.042
spouse influence (dummy: no = 0; yes = 1)	0.289*	0.124	0.047

Dependent variable is the actual utilization of healthcare facility (utilization =1; otherwise = 0); -2 Log likelihood = 122.504; Nagelkerke  $R^2 = 0.482$ ; \*sig  $\leq 5\%$

Source: Computed from field survey (2017)

## Conclusion and recommendations

This study assessed the factors influencing the utilization of Antenatal care (ANC) services among pregnant women in Ogun state, Nigeria. The participants were selected from among pregnant women in their first to third trimester registered for antenatal care at the primary health care centers in four out of the five major towns in Ikenne LGA of Ogun state. These women were divided into the experimental and control groups and nursing education intervention was given to the experimental group. The investigation concluded by affirming significant impact of the intervention on the utilization of ANC services. Similarly, respondents' literacy level, their satisfaction rating for of healthcare workers at the healthcare centers, their monthly income and spousal influence positively influenced utilization of ANC services. Based on the findings of the study, it is recommended that more attention should be given to antenatal education in Nigeria and highlighting its benefits. Creating more awareness that will facilitate improvement in the utilization of ANC services by pregnant women is imperative. Furthermore, careful considerations should be given to subsidizing maternal healthcare cost, conducting periodic appraisal of the quality of ANC education delivery and family ties when formulating policies or initiating programmes targeting maternal healthcare and utilization of ANC services.

## References

- [1]. Adeleye, O. & Okezie (2012). Non- Timber forest products and poverty reduction policy framework in Ikenne Local Government area of Ogun State. *International Journal of Asian Social Science*.
- [2]. Adeniji, F., & Erhabor, S. (2013). Barrier to antenatal care in Nigeria; evidences from non user and implication for maternal health programming. *Reproductive Health Journal*.
- [3]. Adeniji, F., & Erhabor, S. (2015) Assessment of quality of antenatal care services in Nigeria: evidence from population-based survey. *Reproductive Health Journal*.
- [4]. Agbede CO, Omeonu PE and Kio JO (2015). Influence of clinic-based health education on pregnant women's knowledge and attitudes in relation to pregnancy management: Evidence from Ogun state, Nigeria *Global J. of Medical Research: Gynecology and Obstetrics*, 15 (1):28-34.

- [5]. Ashur, SS. *An evaluation plan for the development of updating of Nutrition Curriculum at Upper Elementary and Preparatory levels in Jordan*. IVES/UNESCO International conference in Nutrition Education NE (Oxford), 1977; 207(2): 67-74.
- [6]. Babalola, D A, Olarewaju M, Omeonu PE, Adefelu A O & Okeowo, R (2013). Assessing the adoption of Roll Back Malaria Programme (RBMP) among women farmers in Ikorodu Local government area of Lagos state. *Canadian Journal of Pure and Applied Science*. SENRA Academic Publishers, British Columbia. 7(2): 2375-2379.
- [7]. Babalola, S & Fatusi A. (2009) Determinants of use of maternal health services in Nigeria looking beyond individual and household factors. <http://www.biomedcentral.com/1471-2393/9/43>.
- [8]. Dahiru, T., & Oche, O. (2015). Determinant of antenatal care, institutional delivery and postnatal care services utilization in Nigeria. *The Pan African Medical Journal*.
- [9]. Ekabua, J., Kutre, J., Odusolu, p., Agan, T., Iklaki, C., & Etokidem, A. (2011). Awareness of Birth Preparation and Complication Readiness in South East Nigeria. *Journal of Obstetrics & Gynaecology*.
- [10]. Erim, D., Resch, S., & Goldie, S. (2013). Assessing health and economic outcomes of interventions to reduce pregnancy - related mortality in Nigeria. *Public Health Journal*, 1471-2458.
- [11]. Fisher William A., Jeffrey D. Fisher & Jennifer Harman (2009). The Information-Motivation-Behavioral Skills Model: A General Social Psychological Approach to Understanding and Promoting Health Behavior Blackwell Publishing Ltd, DOI: 10.1002/9780470753552.ch4.
- [12]. Holmes, D., & Baker, P. (2006). *Midwifery by Ten Teachers*. London: Hodder Arnold.
- [13]. Igberase, G., & Ebeigbe, P. (2007). Maternal Mortality in a rural referral hospital in the Niger Delta, Nigeria. *Journal of Obstetric and Gynaecology*, 275-278.
- [14]. Iyaniwura and Yussuf (2009) Utilization of Antenatal Care and Delivery services in Sagamu, South western Nigeria Department of Community Health Care, Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State Nigeria.
- [15]. London, M. L., Ladewig, P., Ball, J. W., & Bindler, R. C. (2007). *Maternal & Child Health Nursing Care*. United State of America: Pearson education inc. Upper Saddle River.
- [16]. Lund Stine, Hemed Maryam, Said Khadija S., Kombo Rashid, Azzah, Makundu Mkoko, Rasch Vibeke, Nielsen Birgitte Bruun (2009) Wired Mothers – use of mobile phones to improve maternal and neonatal health in Zanzibar.
- [17]. Marshall, J.E & Raynor, M.A, (2014). *Myles Textbook for Midwives*. London: Harcourt Churchill Livingstone, Elsevier. P 179-187.
- [18]. Nwaeze, O. O., Enabor, T. A., Oluwasola, C. O., & Aimakhu. (2013). Perception & Satisfaction with Quality of Antenatal Care Services Among Pregnant Women at the University College Hospital, Ibadan. Nigeria. *Annals of Ibadan Postgraduate Medicine*.
- [19]. Obiyan, A., & Kumar, A. (2015). Socioeconomic Inequalities in the Use of Maternal Health Care Services in Nigeria: Trends between 1990 And 2008. *SAGE Open Journal*, p.1-11.
- [20]. Omeonu PE; Babalola DA and Agbede OC (2014). Qualitative Analysis of Adolescents' Sexual Behaviour in Ogun State, Nigeria: Implication for HIV/AIDS Policy. *Journal of Biology, Agriculture and Healthcare*, 4 (24): 162-166.
- [21]. Onasoga, O., Afolayan, J., & Oladimeji, B. (2012). Factors Influencing Utilization of Antenatal Care Services Among Pregnant Women in Ife Central, Osun State, Nigeria. *Pelagia Research Library. Advances in Applied Sciences*, p.1309-1315.
- [22]. Osubor, K., Fatusi, A., & Chiwuzie, J. (2006). Maternal Health Seeking Behaviour and Associated Factors in a Rural Nigeria Community. *Maternal And Child Health Journal*.
- [23]. Osungbade KO & Ayinde OO (2011). Birth outcomes among booked and unbooked women at a secondary health facility in southwest Nigeria: implications for strengthening perinatal health services. *J. Child Health Care* 5(4):320-8. doi: 10.1177/1367493511406569.
- [24]. Samai O & Sengh P (1997) Facilitating emergency obstetric care through transportation and communication, Bo, Sierra Leone. International; *Journal of Gynecology & Obstetrics* 59: 157–164.
- [25]. Simkhada, B., VanTeijlingen, E., Porter, M., & Simkhada, P. (2007). Factors affecting the utilization of antenatal care in developing countries; Systematic review of the literatures. *Journal of Advance Nursing*, p. 1365-2648.
- [26]. WHO (2016) Maternal Mortality Fact Sheet. [www.who.int/mediacentre/factsheets/fs348/en/](http://www.who.int/mediacentre/factsheets/fs348/en/).