Determinants of Utilization of Antenatal Health Care Services among Pregnant Women in Ekiti State, Nigeria

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Abstract

Low antenatal health care attendance was reported in some countries in sub-Saharan Africa. In most of these countries antenatal coverage was very low and a significant proportion of pregnant women received no care at all. It is against this background that the study investigated the determinants of utilization of antenatal health care services among pregnant women in Ekiti State, Nigeria. The study was a descriptive research design. A total of 561 pregnant women were randomly sampled from rural and urban health care centres using multi-stage sampling techniques. Data were collected with the use of a validated questionnaire with a reliability coefficient of 0.74. The data collected were analyzed using the descriptive statistics of frequency counts,simple percentages and inferential statistics of t-test and Multiple Regression. The findings of the study revealed that availability of health resources, knowledge of antenatal care services, attitudes of health workers and religion were the most factors that determined the utilization of antenatal health care services among the respondents. The level of utilization of antenatal health care services by the respondents was moderate. Also, the findings revealed that demographic variables such as age, birth order of foetus, religion and academic qualification significantly contributed to the utilization of antenatal health care services among the respondents. Academic qualification (B=0.94; p< 0.05) was the best single predictor of the utilization of antenatal health care services by the respondents. Based on the findings of the study, Ekiti State Government should embark on enlightenment campaign towards effective utilization of antenatal health care services.

Keywords: Utilization, Antenatal, Maternal, Birth Order, Religion

1.0   Introduction

Antenatal health care is one of the pillars of maternal and child health care programmes aimed at preventing and reducing maternal mortality and morbidity. It is the recognition of this fact that has made maternal and child health care one of the major focuses of health programmes, for the health needs of women during pregnancy, labour and at the time of delivery (World Health Organization, 2013). The future development of any nation depends largely on the well being and productivity of her citizens. Health care services are designed to improve the health status of the people especially maternal and child health care. It is specifically designed to cater for the health needs of mother and child. Maternal and child health care comprises antenatal health care, skilled birth attendance and postnatal health care.

Antenatal health care is the health care services that women receive during pregnancy and at the time of delivery. In its simplest meaning, is the care of a woman during pregnancy from the time that conception is confirmed until the postnatal period (Tayie & Laryey, 2008). As a preventive programme, it is designed to screen a population of pregnant women in order to detect those at risk of disease, prevent, treat or manage certain asymptomatic complications of pregnancy such as eclampsia or pregnancy induced hypertension (PIH).

Globally, there was an estimated 289,000 of maternal deaths in 2013 and 300 million women suffered from pregnancy-related mortality and disabilities such as anaemia, uterine prolapse, fistulae, pelvic infections and infertility (United Nations Funds for Population Activities, 2014). It may not be out of place to consider antenatal health care as one of the most cost-effective strategies for reducing maternal deaths in many developing countries because high utilization of antenatal health care services has made maternal death a rare event in developed countries.

Historically, the traditional antenatal health care service model was developed in the early 1900s. This model assumed that frequent visits and classifying pregnant women into low and high risk by predicting the complications ahead of time, is the best way to care for the mother and the foetus (Nwakoby, 1994). The standard recommended number of antenatal visits in Nigeria based on traditional model is a monthly visit up to 28 weeks of pregnancy, followed by bi-weekly visits to the 36th week of pregnancy and weekly afterwards to delivery. The traditional approach to antenatal health care was unable to identify accurately women who are 'at risk' of developing any of the life-threatening conditions. It identified some women as being 'low risk' who subsequently developed danger symptoms that needed urgent professional intervention.

The traditional approach was replaced by Focused Antenatal Health Care (FANHC) in 2001 and adopted by the World Health Organization in 2002 (Olusanya, Alakija and Inem 2010). The authors claimed that the traditional use of antenatal health care to identify risk factors (e.g. age and parity) associated with poor maternal

outcomes has limited benefit since the risk factors do not directly cause the poor outcome. However, focused antenatal health care, has been found to offer the opportunity for early detection and timely treatment of diseases which improves maternal outcomes. Focused antenatal health care, according to Iyaniwura and Yussuf (2009) is the best approach for resource-limited countries where health professionals are few and health infrastructures are limited. In particular, the majority of pregnant women cannot afford the cost incurred by the frequent antenatal visits required by the traditional antenatal health care approach. From the logistical and financial point of view, the traditional approach is not practical for the majority of pregnant women and is a burden on the healthcare system. As a result, many developing countries, including Nigeria, are adopting the focused antenatal health care approach.

Utilization, from the perspective of research paradigm, is meeting of supply and demand in the health services market (Busato & Kunzi, 2008).Utilization of antenatal health care services refers to the pregnant women patronage of the health care system to receive health care services in order to cater for the health needs of both mother and child. However, utilization of antenatal health care service is an important public health issue around the world especially in developing countries because it appears that low utilization is a leading cause of maternal mortality. The utilization of antenatal health care services seems to be very low in rural and urban areas in Africa as compared with developed countries (Kamal, 2009). The author also submitted that utilization of antenatal health care seems to be poor in most parts of Nigeria and majority of those who attend at all do so late.

Studies revealed that certain factors may determine the utilization of antenatal health care services once the need for care is perceived. Most likely, demographic variables such as age, academic qualification, religion and birth order of foetus might influence the utilization of antenatal health care services by pregnant women (Diro & Owoyokun, 2010 and Digambar & Harihar, 2011). Age plays an important role in patronizing health care services in time of illness. Chronological age refers to stage in the developmental ageing process. Naveneetham and Dharmalingam (2000) opined that age of woman is also an important indicator for the utilization of antenatal health care services. As people advance in age, there seems to be an increase in functional limitation and in the prevalence of chronic medical conditions because the ageing process takes its toll on them and they tend to use more hospital services.

Birth order of foetus is one of the key factors that may influence antenatal health care services utilization. Pregnant women were more likely to seek antenatal health care for first-order than higher-order birth. This means that pregnant women who have more children tend to attach less importance to pregnancy and delivery than lower-order pregnant women particularly if they have not experienced difficulties with previous pregnancies. Navaneetham and Dharmahingam (2000) claimed that the order of birth was found to be an important predictor of receiving antenatal health care at the maternal and child health care centres. Furthermore, the researchers also submitted that having a larger number of children may cause resource constraint, which has been found to be negatively associated with antenatal health care. Birth order has a strong negative effect on the use of the full antenatal health care (Digambar & Harihar, 2011). In modern times, there are three outlets of religious based healthcare; Christianity, Islam and traditional healing homes. The act of healing in spiritual churches encompasses such practices as the use of prayer of faith and fasting, pastoral counseling, impartation of laying of hands or anointed handkerchief by men of God for divine healing, evoking forgiveness and engaging the mystery of anointing oil. The observation holds good because pregnant women who attend churches for their antenatal treatment may prefer to give birth in the church because of their belief in God's miraculous healing power. This is probably because most Christians attend spiritual houses for care during pregnancy as most Christian organizations have spiritual houses that offer care for pregnant women especially their members (Diro & Owoyokun, 2010). Similarly, pregnant women of the Islamic faith that are strong spiritually may pray over their sickness and employ other members in the mosque to pray for them instead of going to the clinic for medical check-up and proper diagnosis of their health problems. Also, native doctors of the traditional belief invoke spirits to search for spiritual meaning of illness for patients and they also use herbs and sacrifices to heal their members.

It is not out of place to reason that the academic qualification of a pregnant woman may influence the utilization of health care services. It could be that more educated women are better able to comprehend the importance of receiving antenatal health care and are also more likely to know where to get it. Women with secondary school education would likely attend antenatal health care than women with primary school education or less. Ikeako, Onah and Iloabachie (2006) submitted that schooling enhances people's knowledge of health care services, improves their ability to communicate with health care providers, and increases the value they place on good health and results in heightened demand for health care services. It is one thing to invest in health resources for the provision of maternal health services but another thing for pregnant women to reciprocate by making a sustained and effective utilization of the services which may be vital to their health and that of their infants. A key objective of maternal healthcare programme has been to ensure that women attend antenatal clinic in order to allow time for essential diagnosis and treatment regimens.

Previous researches on antenatal health care utilization demonstrated that maternal deaths were higher for

unbooked than booked cases, hence effective antenatal health care services had been reported to improve maternal health, thus reducing maternal morbidity and mortality. However, hardly had researches been carried out to show that demographic variables might determine the utilization of antenatal health care services among pregnant women in Ekiti State, Nigeria. Studies conducted by few scholars in this area had been very limited in scope, and have been mostly restricted to few factors such as access to health care centre, availability of health resources, income, attitudes of health workers and cost of care. Additional studies needed to be carried out to ascertain if demographic variables such as age, religion, birth order of foetus and academic qualification determine the utilization of antenatal health care services in Ekiti State. Considering the gap created by previous researches, the current study was conceived.

2.0   Objectives of the Study
The specific objectives are to:
2.1   identify the factors that determine the utilization of antenatal health care services among the pregnant women;
2.2   find out the extent to which pregnant women utilize antenatal health care services;
2.3   investigate the joint contributions of demographic variables of age, religion, birth order and academic qualification to the utilization of antenatal health care services by pregnant women.

3.0   Research Questions
The following research questions guided the study:
3.1   What are the factors that may determine the utilization of antenatal health care services among pregnant women in Ekiti State?
3.2   To what extent do pregnant women utilize antenatal health care services in Ekiti State?

4.0   Research Hypotheses
The following hypotheses were tested at $p < 0.05$ level of significance:
4.1   Availability of health resources will not significantly determine the utilization of antenatal health care services among pregnant women in Ekiti State.
4.2   Accessibility to health care centres will not significantly determine the utilization of antenatal health care services among pregnant women in Ekiti State.
4.3   Cost of health care will not significantly determine the utilization of antenatal health care services among pregnant women in Ekiti State
4.4   Demographic variables of age, religion, birth order and academic qualification will not jointly contribute significantly to the utilization of antenatal health care services by pregnant women in Ekiti State.

5.0   Research Methods
The descriptive research design was used for the study. The population for the study comprised all women of reproductive age between 18 to 45 years attending antenatal clinics at different health care centres in the rural and urban areas in Ekiti State. The sample consisted of 561 pregnant women selected with the use of multi stage sampling techniques after they have indicated their consent to willingly participate in the study. Pregnant women that presented themselves at the clinics during the time of data collection for this study were sampled from each antenatal clinic in the urban and rural health care centres in the selected Local Government Areas.

The instrument used for data collection was constructed by the researchers titled "Determinants of Utilization of Antenatal Care Questionnaire" (DUACQ). The instrument has three sections; sections: A, B and C. Section A was designed to elicit information on demographic variables of the respondents, such as age, religion, birth order and educational background and location. Section B was designed to elicit information on the factors that may determine the utilization of antenatal health care services. The items were designed using a modified Likert-type three-point scale; *to a great extent-3, to some extent-2, and not at all-1*. The decision point was put as $\overline{X} = 2.0$. This therefore, implies that a Mean rating of less than 2.0 is not an accepted factor while a Mean rating of 2.0 and above is an accepted factor that may determine the utilization of antenatal health care services. The items in section C of the instrument dealt with utilization of antenatal health care services. The items in this section of the instrument were designed to ask the respondents on the extent to which they utilized the antenatal health care services. The items were designed using a modified Likert-type three point scale; *to a great extent=3, to some extent=2 and not at all=1* from which respondents could pick the option most appropriate to them.

The questionnaire was subjected to face and content validity procedures. This was achieved by presenting the questionnaire to three experts in the Departments of Human Kinetics and Health Education (1), Guidance & Counseling (1), Tests and Measurement (1) and an expert in College of Medicine (1). The reliability of the

instrument was determined by the use of test re-test method. The reliability coefficient of 0.74 was established. This was considered high enough for the study. Copies of the questionnaire were administered to 561 pregnant women in the sampled health care centres in Ekiti State after obtaining permission from the authority of health institutions involved in the study. The instrument was administered to the respondents through direct delivery technique during antenatal clinics at the different health institutions with the help of trained seven research assistants. The purpose of the study was explained to the respondents and they were given sufficient time (45mins) to answer the questions in the questionnaire. The research assistants helped the illiterates to interpret the questions in Yoruba language. Data collected were analyzed using descriptive and inferential statistics. Descriptive statistics of frequency counts, percentages, mean and standard deviation and inferential statistics of t-tests and Multiple Regression were employed. All the hypotheses were tested at 0.05 level of significance.

6.0   Results
Research Questions:
6.1   Research Question 1: What are the factors that may determine the utilization of antenatal health care services among pregnant women in Ekiti State?
Table 1 shows the factors that determined the utilization of antenatal health care services among the respondents. The results are presented in table 1.
Table 1: Summary of Percentages and Mean scores of respondents on factors that determine the utilization of antenatal health care services among the respondents

S/N	ITEMS	To a great extent		To some extent		Not at all		$\overline{X}$
		N	%	N	%	N	%	
1	Availability of health resources	244	43.5	231	41.1	86	15.3	2.28
2	Accessibility to health care centre	214	38.1	156	27.9	191	34.0	2.04
3	Cost of antenatal health care	169	30.1	242	43.2	150	26.7	2.03
4	Local (Rural/Urban)	252	44.9	141	25.1	160	30.1	2.14
5	Knowledge of ANC services	181	32.8	155	29.1	215	38.1	2.28
6	Religion	254	45.2	133	23.6	175	31.1	2.14
7	Attitudes of health workers	193	34.5	259	46.2	109	19.5	2.15

Table 1 revealed the factors that determined the utilization of antenatal health care services among the respondents. The mean scores vary for each area of antenatal health care services. The mean scores are consistently higher than 2.0 in all the areas of antenatal health care services measured.

Using a cutoff mean of 2.00 for the rating scale, the findings shows that all the items have mean scores above the cutoff mean i.e. availability of health resources ($\overline{X}$ =2.28) accessibility of health care centre ($\overline{X}$ = 2.04), cost of antenatal health centre ($\overline{X}$ =2.03), location ($\overline{X}$ = 2.14), knowledge of antenatal care ($\overline{X}$ =2.28), religion ($\overline{X}$ =2.14) and attitude of health workers ($\overline{X}$ =2.15). This implies that availability of health resources, accessibility of health care centre, cost antenatal health care, location, pregnant women knowledge of ANC services, religion and attitude of health workers are factors that determined the utilization of antenatal health care services among pregnant women in Ekiti State, Nigeria.

6.2   Research Question 2: To what extent do pregnant women utilize antenatal health care services in Ekiti State?
The mean scores and standard deviation were used to categorize the respondents into 'Low', 'Moderate' and 'High' levels of utilization of antenatal health care services. The low level of utilization of antenatal health care services was determined by subtracting the standard deviation score from the mean score (25.72 - 5.96 = 19.76). The moderate level of utilization of antenatal health care services was determined by the mean score of the responses (25.72) while high level was determined by adding the mean score and the standard deviation score of the responses (25.72 + 5.96 = 31.68). Therefore, the low level of utilization of antenatal health care services starts from 14.00 to 19.76; the moderate level starts from 19.77 to 31.67 and the high level is from 31.68-42.00. The extent of pregnant women utilization of antenatal health care services in Ekiti State is presented in Table 2.
Table 2: Extent of utilization of antenatal health care services among the respondents

Extent of utilization of antenatal health care services	Frequency	Relative Percentage
Low (14.00 – 19.76)	72	12.8
Moderate (19.77 – 31.67)	394	70.2
High (31.68 – 42.00)	95	16.9
Total	**561**	**100.0**

The results showed that 72(12.8%) out of the respondents indicated low level of utilization. Those with

moderate level were 394 (70.2%) while those with high level were 95 (16.9%). This showed that the level of utilization of antenatal health care services by the respondents was moderate.

6.3   Hypotheses Testing
6.3.1   Hypothesis 1: Availability of health resources will not significantly determine utilization of antenatal health care services among pregnant women in Ekiti State.

Table 3 presents the results of t-test on the availability of health resources and utilization of antenatal health care services.

Table 3:   Summary of t-test on availability of health resources and utilization of antenatal health care services

Source	N	Mean	SD	df	t_{cal}	t_{table}
Availability of health resources	561	9.13	1.82	560	66.433*	1.960
Utilization of Antenatal Health Care Services	561	25.72	5.96			

*P<0.05

Table 3 showed that t_{cal}(66.433) is greater t_{table}(1.960) at 0.05 level of significance. The null hypothesis was rejected. This implies that availability of health resources significantly determined utilization of antenatal health care services among the respondents.

6.3.2   Hypothesis 2: Accessibility to health care centres will not significantly determine the utilization of antenatal health care services among pregnant women in Ekiti State.

Table 4 presents the results of t-test on accessibility to health care centres and utilization of antenatal health care services.

Table 4:   Summary of t-test on accessibility to health care centres and utilization of antenatal health care services

Source	N	Mean	SD	df	t_{cal}	t_{table}
Accessibility to health care centres	561	7.76	2.12	560	75.289*	1.960
Utilization of Antenatal Health Care Services	561	25.72	5.96			

*P<0.05

Table 4 showed that t_{cal}(75.289) is greater t_{table}(1.960) at 0.05 level of significance. The null hypothesis was rejected. This implies that accessibility to health care centres significantly determined utilization of antenatal health care services among the respondents.

6.3.3   Hypothesis 3: Cost of health care will not significantly determine the utilization of antenatal health care services among pregnant women in Ekiti State.

Table 5 presents the results of t-test on cost of health care and utilization of antenatal health care services.

Table 5:   Summary of t-test on cost of health care and utilization of antenatal health care services

Source	N	Mean	SD	df	t_{cal}	t_{table}
Cost of health care	561	8.14	1.97	560	72.300*	1.960
Utilization of Antenatal Health Care Services	561	25.72	5.96			

*P<0.05

Table 5 showed that t_{cal}(72.300) is greater t_{table}(1.960) at 0.05 level of significance. The null hypothesis was rejected. This is an indication that the cost of health care significantly determined utilization of antenatal health care services among the respondents.

6.3.4   Hypothesis 4: Demographic variables of age, religion, birth order and academic qualification will not jointly contribute significantly to the utilization of antenatal health care services by pregnant women in Ekiti State.

Data collected for this hypothesis were subjected to statistical analysis involving Multiple Regression Analysis at 0.05 level of significance.

Table 6:   Summary of Multiple Regression Analysis on demographic variables and utilization of antenatal health care services

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	23.656	1.238		19.112	.000
Highest Academic Qualification	.350	.163	.094	2.146	.032
Religion	.921	.646	.063	1.427	.154
Birth Order of Foetus	.219	.303	.031	.721	.471
Age	-.094	.161	-.026	-.585	.559

p<0.05 Dependent Variable: utilization of antenatal health care services

Multiple R=0.133

Multiple R^2=0.018

Adjusted R^2=0.011

F=2.496

Probability = $P<0.05$

Table 6 showed that the null hypothesis was rejected which indicated that demographic variables of age, religion, birth order and academic qualification jointly contributed significantly to the utilization of antenatal health care services among the respondents ($F_{4,556}$=2.496, $P<0.05$). The value of coefficient of determination (R^2= 0.018) indicated that the predictor variables jointly accounted for 1.8% of the total variance in the utilization of antenatal health care services while the remaining 98.2% unexplained variation was largely due to other variables that could account for variation in the utilization of antenatal health care services among the respondents. The regression result in the table revealed that the best predictor variable that contributed to the total variance in utilization of antenatal health care services was academic qualification ($\beta = 0.094$). This was closely followed by religion ($\beta = 0.063$) and birth order ($\beta = 0.031$). The variable with the least contribution to utilization of antenatal health care services among the respondents was age ($\beta = -0.026$). The calculated F-ratio (2.496) was significant at 0.05 level of significance. This implied that the predictor variables jointly provided a significant explanation for the variation in the utilization of antenatal health care services among the respondents.

7.0   Discussion

The findings showed that availability of health resources, accessibility to health care centre, cost of antenatal health care, location, pregnant women knowledge of antenatal health care services, level of income, religion, and attitude of health workers were factors that determined the utilization of antenatal health care services among the respondents. The finding was in consonance with the studies of Chandhiok, (2006); Olusanya, Alakija and Inem (2010) and Alade (2013) who reported that the utilization of antenatal health care services could be influenced by factors such as accessibility to health care centres, availability of health resources, pregnant women knowledge of antenatal health care, level of income, attitude of health personnel, local (rural/urban) and cost of antenatal health care services.

The findings of the study revealed that the level of utilization of antenatal health care services by the respondents was moderate. This was at variance with the views of previous researchers such as Kamal (2009) and; Overbosc et. al, (2012) who posited that the utilization of antenatal health care services was very low in Africa compared with developed countries. The authors further stressed that utilization of antenatal health care seemed to be poor in most parts of Nigeria and majority of those who attended at all did so late. Similarly, Jimoh, (2013) submitted that there was low attendance at antenatal health care centres in the first trimester in some countries in the sub-Saharan Africa such as Zimbabwe, Angola, Burund, Malawi, Liberia, Tanzania, Uganda and Nigeria.

The findings revealed that health care resources were available for the utilization of antenatal health services by the respondents. This finding was in line with the studies of Kabir, Abubakar and Sani (2005) who asserted that availability of resources was an important factor that determined the use of antenatal health care services, and good health resources and the improvement of health status of the people.

The findings revealed that accessibility to health care centre was a significant determinant of the utilization of antenatal health care services among pregnant women in Ekiti State. This was in line with Mooney, Zwanziger, Phibs and Schmitt (2000) who reported that increased distance between pregnant women residence and health care provider decreased utilization of antenatal health care services at primary health care and other health centres. Also, Awusi, Anyanwu and Okeleke (2009) claimed that non-accessibility of health care facilities affected utilization of modern health care services by the vast majority of the people in Bayelsa State who depended on traditional medical care and self-medication. Reason given for non-utilization of antenatal health care services in some studied population was non-accessibility to health facilities (World Health Organisation, 2001).

Another key finding showed that cost of health care was a significant determinant of the utilization of antenatal health care services among pregnant women in Ekiti State. The findings agreed with the studies of Kabir, Iliyasu, Abubakar and Sani (2005) who asserted that the use of antenatal health care services was related to the cost of services in most developing countries. However, the Federal Office of Statistics (FOS, 2000) revealed that 26% of those surveyed in Lagos State were not satisfied with the health care services. The main reasons advanced for non-satisfaction by 56%, were high cost of treatment. It is worthy of note that high medical charges have become a significant barrier to primary health care access. Also, Majumder (2006) claimed that the cost of treatment seemed to affect utilization of primary health care.

The findings showed that demographic variables of age, religion, birth order of foetus and academic qualification jointly contributed significantly to the utilization of antenatal health care services by pregnant women in Ekiti State. This was supported by the assertion of Oladapo and Osiberu (2009) that demographic factors such as age, sex, income, education and occupation influenced the utilization of health services. In the same vein, Naveneetham and Dharmalingam (2000) pointed out that age of woman was also an important

predicator for use of antenatal health care services. Women's current age according to Chakraphorty et. al, (2003) had a significant role to play in the utilization of antenatal health care services. Elo, (1992) reported that pregnant women were more likely to seek antenatal health care services for first-order than higher-order birth. This means that pregnant women who have more children tend to attach less importance to pregnancy and delivery than other pregnant women particularly if they have not experienced difficulties with previous pregnancies.

8.0   Conclusion and Recommendations

Based on the findings of this study, it was concluded that availability of health resources, accessibility to health centres, cost of antenatal health care, location, knowledge of antenatal care, religion and attitudes of health workers were the factors that determined the utilization of antenatal health care services among the pregnant women in Ekiti State. Similarly, demographic variables such as age, birth order of foetus, religion and academic qualification significantly contributed to the utilization of antenatal health care services among pregnant women in Ekiti State. However, academic qualification was the best single predictor of the utilization of antenatal health care services. In view of the findings of this study, Ekiti State Government in Nigeria should embark on enlightenment campaign geared towards improving the knowledge, attitude and practices of pregnant women towards effective utilization of antenatal health care services. Also, conferences and workshops that focus on effective utilization of antenatal services should be organized for health workers to improve on their relationship with pregnant women in implementing relevant programmes that will encourage accessibility of antenatal health care services in Ekiti State, Nigeria.

9.0   Acknowledgements

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