Antenatal Care Services Utilization and Factors Influencing it Among Pregnant Women in a Teaching Hospital, Lagos, Nigeria.

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Abstract

Antenatal care (ANC) is the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and foetus during pregnancy. ANC services help pregnant women and care providers to identify early, complications associated with pregnancy. This study assessed level of utilization of ANC services and also identified factors influencing its utilization among Pregnant Women at Lagos University Teaching Hospital in Lagos, Nigeria .A descriptive cross-sectional study was conducted among 182 pregnant women attending antenatal clinic at Lagos University Teaching Hospital (LUTH) in Lagos, Nigeria. Data was collected using a structured self-administered questionnaire and analysed descriptively and inferentially using Statistical Package of Social Science SPSS version 20. Results showed that majority of the respondents (81.4%) had good level of utilization of ANC services. Availability of facilities (81.4%), affordability of ANC services (75.4%), waiting time (70.1%), attitude of the healthcare providers (59.9%), Schedule of ANC clinic (58.7%) and accessibility of ANC services (59.3%) were the factors influencing utilization of ANC services by the pregnant women. There was no statistically significant association between respondents' level of utilization of antenatal services and their socio-demographic characteristics (Age: x^2 = 10.719, *P* =0.153, educational qualification: x^2 = 0.735, *P* =0.692 and Income monthly: x^2 = 5.868, *P* =0.118. The study concluded that there was high level of utilization of ANC services among the women. Affordability and accessibility of ANC services were the major factors influencing utilization of ANC services among pregnant women. Therefore, the management should look into the cost of the services rendered and make the ANC services affordable and accessible.

Keywords: Utilization, Antenatal Care Services, Influencing Factors, Pregnant women.

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Introduction

Antenatal care(ANC) is an important component of reproductive health. ANC is the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy[1].The components of ANC include: risk identification; prevention and management of pregnancy-related or concurrent diseases; and health education and health promotion[1]. ANC reduces maternal and perinatal morbidity and mortality both directly, through detection and treatment of pregnancy-related complications, and indirectly, through the identification of women and girls at increased risk of developing complications during labour and delivery, thus ensuring referral to an appropriate level of care. Also, as indirect causes of maternal morbidity and mortality, such as HIV and malaria infections, contribute to approximately 25% of maternal deaths and near-misses, ANC also provides an important opportunity to prevent and manage concurrent diseases through integrated service delivery[1].

Antenatal care services help pregnant women by identifying complications associated with the pregnancy or diseases that might adversely affect the pregnancy. Some researchers identified socio-demographic characteristics, geographic area, attitudes towards pregnancy, and negative attitudes towards child immunization, language fluency, perceived cost of health services, transportation costs and efficiency, and childcare as factors and/or barriers related to the initiation of prenatal health services[2]. Almost 90% of maternal deaths occur in developing countries and over half a million women die each year due to pregnancy and childbirth related causes. Proper ANC is one of the important ways in reducing maternal and child morbidity and mortality[3].

Antenatal care is a very important strategy in decreasing maternal mortality in low income resource

settings and it is important to pregnant women as it helps prevent maternal and child mortality as well as pregnancy complications. Maternal health is the health of women during pregnancy, childbirth, and the postpartum period. It encompasses the healthcare dimensions of family planning, preconception, prenatal and postnatal care and these contribute to a reduction of maternal morbidity and mortality rates.[4]Despite documented improvements in maternal and infant mortality, some factors such as religion, cultural beliefs and poverty hinder women from using ANC Services.[5] Worldwide, approximately 800 women die every day from preventable causes related to pregnancy and childbirth.[6] In 2010, about 287,000 women died worldwide during and following pregnancy and childbirth.[6]It was also reported that in the year 2016, at the start of the sustainable development goals (SDGs) era, pregnancy-related preventable morbidity and mortality remained unacceptably high. [1]Sakeah et al reported in their study that professional ANC is crucial in tracking pregnancy to reduce the risks of complications, disability, and death in mothers and their infants.[7] The World Health Organization has advised pregnant women to attend ANC at least four times.[7] Appropriate use of ANC could significantly improve early identification and mitigation of risk factors in pregnancy. In contrast, failure to attend ANC or inadequate ANC attendance could lead to complications, exacerbate pre-existing conditions, or worsen the consequences of an unhealthy lifestyle during pregnancy.[8]

Nigeria's estimated maternal mortality ratio was over 800 maternal deaths per 100,000 live births, with approximately 58,000 maternal deaths during that year. [8] In comparison, the total number of maternal deaths in 2015 in the 46 most developed countries was 1700, resulting in a maternal mortality ratio of 12 maternal deaths per 100,000 live births.[8] It was stated that a Nigerian woman has a 1 in 22 lifetime risk of dying during pregnancy, childbirth or postpartum/post-abortion; whereas in the most developed countries, the lifetime risk is in 4900.[8] In low- and middle-income countries (LMICs), ANC utilization has increased since the introduction in 2002 of the WHO ANC model, known as focused ANC (FANC) or basic ANC, which is a goal orientated approach to delivering evidence-based interventions carried out at four critical times during pregnancy. [1] However, it was observed globally, during the period 2007–2014, that only 64% of pregnant women had the WHO-recommended minimum four contacts for ANC, suggesting that much more work needs to be done to address ANC utilization and quality.[1]

ANC attendance of the recommended minimum of four times remains low in Nigeria, despite its numerous benefits. The report of the 2013 Nigeria Demographic and Health Survey (NDHS) indicates that in the five years preceding the survey, only 51.1% of women had four or more ANC attendance in the country.[9] This ANC prevalence is far below the recommended target of 90% attendance and comparatively lower than the case in similar developing countries like Cameroon (62.9%), Ghana (87%), and Peru (94.4%).[9] Linking to the above discussion and given the importance of ANC's - dual role of protecting against maternal and neonatal mortality, evidence-based knowledge on factors associated with antenatal care utilization is crucial to the speedy realization of SDG 3 in Nigeria.[9] In view of the above the study assessed utilization of and factors influencing uptake of ANC services among pregnant women attending Lagos University Teaching Hospital, Idi – Araba, Lagos, Nigeria.

Methods and Materials:

The study adopted a descriptive cross-sectional research design and it was conducted among 182 pregnant women attending antenatal clinic at Lagos University Teaching Hospital (LUTH), Idi – Araba, Lagos, Nigeria. LUTH was founded and established in the year 1912 in the outskirts of Surulere, Lagos in Mushin Local Government Area. The hospital has a total of 761 beds and 28 wards. The study population was pregnant women attending ANC in the above hospital. The antenatal unit of the hospital has four clinic days a week with about 70 pregnant women attending the clinic in a week. The estimated number of pregnant women attending the antenatal clinic in a month is about two hundred and eighty (280). (LUTH, ANC register (2020).

The minimum sample size was determined by using Yamane formula.[10]

$n= N/1+N (e)^2$, Where; N= population size= 280,

e= level of precision expected data 95% confidence level = 0.05,n= required sample size,

given n=165 and with 10% attrition rate, it gives = 181.5 approximately 182.

A convenience sampling technique was used to select the respondents until the desired sample size was achieved. A structured self- administered questionnaire was used for data collection. The questionnaire was adapted from a previous study by, Onasoga et al[11]on factors influencing utilization of antenatal care services among pregnant women in Ife Central Local government area, Osun State Nigeria. A pre-test was carried out on 18 pregnant women at the antenatal clinic in Lagos State University Teaching Hospital (LASUTH), with the Cronbach's alpha of 0.74. Measurement error was eliminated to ensure reliability of the instrument.

Ethical approval was obtained from the Human Research Ethical Committee of LUTH (ADM/DCST/HREC/AFP/3460). Informed consent was obtained, and respondents were reassured of the

privacy and confidentiality of the information obtained. Participation in this study was made voluntary among the respondents

A total number of 182 questionnaires were distributed to pregnant women, 167 questionnaires were adequately filled and returned giving a response rate of 91.8%.

Data were collected using a structured self-administered questionnaire and analysed with the Statistical Package of Social Science SPSS version 20.A total of six items were contained in the section on utilization. A score of 1 was awarded to every correct answer while a score of 0 was awarded to every wrong answer; this gives a maximum score of six. Scores were then graded as 3-6 (good level of utilization) and 0-2 (poor level of utilization). Descriptive (frequency table, means and standard deviation)and inferential statistics (Chi-square test) were used for analysis and level of significance was set at $P<0.05$.

Results

Half of the respondents (50.3%) were within the age range 20-29years of age. Majority of the respondents (74.3%) had tertiary level of education and more than (56.9%) were self-employed. Most of the respondents, (85.6%) were married while (13.8%) were single. More than half of the respondents (58.1%) were from Yoruba ethnic group. Majority of the respondents, (78.4%) were Christians (Table 1).

Table2shows that (29.3%) of the respondents learnt about antenatal clinic services from friends while more than half of the respondents learnt about it from family members. Majority of the respondents reported to have attended antenatal clinic during their previous pregnancy and most of the respondents attended more than four antenatal clinics. More than half of the respondents 96(57.5%) reported to book in their second trimester in the index pregnancy. Majority of the respondents reported that they attended antenatal clinic because they knew it was the right thing to do.

Majority of the respondents (81.4%) had good level of utilization of antenatal care services while only 18.6% had poor utilization level as seen in Figure 1.

Table 3 presents factors influencing utilization of antenatal care services in LUTH. The results revealed that availability of equipment (81.4%) seemed to be a very strong factor influencing ANC utilization while affordability of ANC services (75.4%), waiting

Table1: Socio-demographic data of respondents

Variables	Frequency (N=167)	Percentage %
Age (years)		
18-19	11	6.6
20-29	84	50.3
30-39	68	40.7
40-49	4	2.4
Mean age: 29±6.4		
Educational qualification		
Primary School certificate	11	6.6
Secondary Schoolcertificate	32	19.2
Tertiary education	124	74.3
Occupation		
Self Employed	95	56.9
Civil Servant	34	20.4
Trader	11	6.6
House wife	7	4.2
Others	20	12.0
Marital status		
Single	23	13.8
Married	143	85.6
Divorced	1	0.6
Ethnicity		
Yoruba	97	58.1
Igbo	52	31.1
Hausa	3	1.8
Others	15	9.0
Religion		
Christianity	131	78.4
Islam	36	21.6
Average income per month (Naira)		
Less than 20000	28	16.8
20000-50000	56	33.5
50000-1000000	52	31.1
Above 100000	31	18.6

Table 2: Level of utilization of antenatal clinic services

Variables	Frequency (N=167)	Percentage %
How did you learn about antenatal clinic services?		
Friends	49	29.3
Family	97	58.1
Radio	4	2.4
Television	3	1.8
Newspaper	1	0.6
Can't remember	13	7.8
During your previous pregnancy, did you attend antenatal clinic		
Yes	84	50.3
No	3	1.8
No response	80	47.9
At what month did you do your booking?		
1-3 months (First trimester)	67	40.1
4-6 months (Second trimester)	96	57.5
7-9 months (third trimester)	4	2.4
How many ANC visits did you make in your previous pregnancy?		
One	1	0.6
Two	3	1.8
Three	1	0.6
Four	9	5.4
More than four	72	43.1
None	81	48.5
When did you attend your first antenatal clinic in this pregnancy?		
1st trimester (whenyou were about1-3 months pregnant	64	38.3
2nd trimester (4 6 months pregnant?)	97	58.1
3rd trimester (79 months pregnant)	5	3.0
I don't know	1	0.6
Why did you attend antenatal clinic?		
Because it was my first pregnancy	15	9.0
Because I was scared of complications	19	11.4
Because I know it is the right thing to do	133	79.6

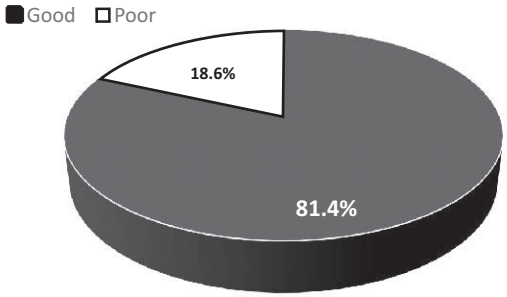

Figure 1: Overall level of utilization of antenatal clinic services

Table 3: Factors influencing utilization of antenatal care services

S/N	Factors	Yes (%)	No (%)
1.	Availability of equipment	136(81.4)	31(18.6)
2.	Affordability of ANC services	16(75.4)	41(24.6)
3.	Waiting Time	117(70.1)	50(29.9)
4.	Attitude of the healthcare providers	100(59.9)	67(40.1)
5.	Accessibilityof ANC services	99(59.3)	67(40.1)
6.	Schedule of ANC clinic	98(58.7)	69(41.3)
7.	Work schedule	79(47.3)	88(52.7)
8.	Husband acceptance of ANC services	53(31.7)	114(68.3)
9.	Cultural acceptance	51(30.5)	116(69.5)
10.	Lack of knowledge about ANC services	51(30.5)	115(68.9)
11.	Language barrier	29(17.4)	138(82.6)

Decision Rule: Any parameter above 50% is a major factor for "YES" option

Table 4: Associationbetween socio-demographic characteristics and the utilization of antenatal clinic service

Variables	Overall Utilization	Good (n=	Poor (n=	Total(n=	X^2	df	p-value
Age (years)							
18-19	8(72.7%)	3(27.3%)	11(100.0)		**5.267**	**3**	**0.153**
20-29	64(76.2%)	20(23.8%)	84(100.0)				
30-39	61(89.7%)	7(10.3%)	68(100.0)				
40-49	3(75.0%)	1(25.0)	4(100.0)				
Educational qualification							
Primary school	8(72.7%)	3(27.3%)	11(100.0)		**0.735**	**2**	**0.693**
Secondary school	27(84.4%)	5(15.6%)	32(100.0)				
Tertiary education	101(81.5%)	23(18.5%)	124(100.0)				
Monthly income in Naira							
Less than 20,000	25(89.3%)	3(10.7%)	28(100.0)		**5.868**	**3**	**0.118**
20,000-50,000		40(71.4%)	16(28.6%)	56(100.0)			
50,000-100,000	45(86.5%)	7(13.5%)	52(100.0)				

Significant level at=0.05

time (70.1%), attitude of the healthcare providers (59.9%), accessibility of ANC services (59.3%)and schedule of ANC clinic (58.7%) had progressively lower scores. Other parameters evaluated are as shown in Table 3.

There was no significant association between respondents' level of utilization of antenatal care services and their socio-demographic characteristics (Age: $x^2 = 10.719$, $P = 0.153$, educational qualification: $x^2 = 0.735$, $P = 0.692$ and Income monthly: $x^2 = 5.868$, $P = 0.118$, (Table 4).

Discussion

The findings of this study show that respondents were within the age range of 20-29 years of age with the mean age of 29.2 ± 6.4. This finding is in agreement with a study conducted on Clients' knowledge, perception and satisfaction with quality of maternal health care services at the primary health care level in Nnewi, Nigeria[12]in which the authors observed a similar mean age of respondents(29.2 ± 5.9 years) and that majority of the women were married [12].The findings of this study also revealed that majority of respondents had tertiary education and more than half were self –employed. This is similar to a study conducted by Nnebue, et al, Ademuyiwa, et al [12, 13] reported that, majority of their respondents were married, had tertiary education and were self-employed. These studies were carried out in Anambra and Lagos states respectively.

The findings of the current study also revealed that majority of respondents had a high level of utilization of antenatal care services. This agrees with findings by other researchers [14,15]. The study by

Emelumadu, et al [16]however observed that most of the pregnant women they studied did not utilize antenatal care services due to inadequate attention from health care providers. This current study further revealed that majority of the respondents reported to have attended antenatal clinic during their previous pregnancy and most of the respondents attended more than the four recommended antenatal visits. This agrees with the findings of Jubril, [15]who observed that 86% of participants had attended ANC at least four times during their previous pregnancy. This is also in agreement with the findings from inner-city Johannesburg, [17]. In the South African study, it was observed that majority of parturients (88.7%) had attended ANC.

Other findings from the current study show that major factors influencing utilization of ANC services include availability of equipment, affordability of ANC services, waiting time, attitude of the healthcare provider, schedule of ANC clinic and accessibility of ANC. These finding are consistent with findings from a study on Utilization of Antenatal Care Services as determinants of satisfaction and its challenges in Lagos, Nigeria, in which the authors reported that long clinic waiting hours, financial constraints/high cost of service, distance/, lack of time to attend ANC and attitude of health providers were the major factors affecting utilization of ANC services by respondents in Lagos State[13].This is also similar to the findings from other studies which showed that majority of the respondents identified affordability of antenatal clinic services, waiting time, healthcare attitude and problem of getting money to use for ANC services as factors influencing utilization of ANC services[11,18,19].

A further analysis revealed that there is no statistically significant association between respondents' level of utilization of ANC services and their socio-demographic characteristics (age, educational qualification and income) with p-values >0.05. This is also consistent with findings from Nnewi, Nigeria, which did not find any significant association between the womens' socio demographic variables (age and educational level) and their level of utilization of maternal health care services[12].

Conclusion

This study concludes that the level of utilization of ANC services was high among the respondents. Factors observed to influence this were availability of equipment, affordability of services, waiting time, attitude of the healthcare provider, accessibility of ANC services and schedule of ANC clinic. In order to sustain this high level of utilization, it is recommended that midwives should create effective awareness and adequate health education on utilization of ANC services during Antenatal visit among pregnant women. The hospital management should also consistently provide adequate number of staff, supplies, equipment and drugs for providing ANC. Management should also organize in house training and workshop on therapeutic relationship and attitude for healthcare providers.

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