



ISSN: 2476-8642 (Print)

ISSN: 2536-6149 (Online)

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Indexed in: African Index Medicus, Crossref,
Index Copernicus & Google Scholar

Listed on C.O.P.E & Directory of Open Access Journals

Annals of Health Research

IN THIS ISSUE



- Beta Lactamase-Producing Bacteria
- Insulin Resistance
- Cardiac Diseases in Pregnancy
- Antibiotic Prescription
- Antenatal Care Services
- Epithelial Ovarian Tumours
- Low Back Pain
- Regional Anaesthesia in Children
- Somatisation
- Nigella sativa and Essential Tremor
- Neonatal Conjunctivitis
- Long Term Non-Progressive HIV Infection

**PUBLISHED BY THE MEDICAL
AND DENTAL CONSULTANTS ASSOCIATION
OF NIGERIA, OOUTH, SAGAMU, NIGERIA.**

ORIGINAL RESEARCH

Knowledge, utilization and clients' satisfaction with antenatal care services in Primary Health Care Centres, in Ikenne Local Government Area, Ogun State, Nigeria

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Abstract

Background: Clients' satisfaction with the quality of care in an antenatal clinic is the extent to which the health care system meets the clients' expectations, aims and choices.

Objective: To assess the clients' knowledge and satisfaction with antenatal care (ANC) services in Primary Health Centres in Ikenne Local Government Area of Ogun State, Nigeria.

Methods: This descriptive cross-sectional study was conducted among 380 registered pregnant women who were selected using a multistage sampling method. The data were collected using a structured interviewer-administered questionnaire, constructed from a review of the Safe Motherhood Needs Assessment package and other available literature on antenatal care.

Results: The mean age of the respondents was 27.8±5.5 years. The majority were married (91.6%). Health education was the leading ANC activity recognized by 98.7% of the respondents. Knowledge was poor as only 46.1% had good knowledge of at least 50% of total knowledge score. Overall, satisfaction with the services was good as the majority (96.8%) of the respondents were satisfied with the services. Marital status, number of antenatal visits and level of education were statistically significantly associated with the level of satisfaction ($p < 0.001, 0.02$ and 0.007 respectively).

Conclusion: Though the knowledge of ANC was poor, overall satisfaction level was good. Programmes that improve maternal knowledge about ANC should be emphasized in PHCs.

Keywords: Antenatal Care, Client satisfaction, Health education, Knowledge, Nigeria.

Introduction

Antenatal Care (ANC) represents a window of opportunity for information, education and communication for pregnant women to enable them to make appropriate choices during pregnancy.^[1] During ANC, health workers support pregnant women to prepare for their unborn children and also mitigate any

complication that may arise.^[2] It has been shown that the number of ANC visits by pregnant women may not be adequate for optimum health outcomes among mothers and their newborns and that quality of the ANC services received is also very important.^[3] Administrative factors and poor problem identification and monitoring during ANC services have been described as notable

avoidable risk factors for maternal mortality.^[4]

According to the World Health Organization, "Quality health care is defined as that care which consists of the proper performance according to standards".^[5] There are three domains of assessing the quality of care: structure, process and outcome.^[6] The scope of maternal health care in the community include access to a maternal facility that is clean and well-resourced within the community. Others include the use of indigenous language offering well-timed treatment by health workers who show respect to their clients and traditional practices of the community.^[7]

Clients' satisfaction with the quality of care in ANC is the extent to which the health care system meets the clients' expectations, aims and choices.^[8] Women may show satisfaction with the quality of service even when the received care is below their expectations.^[9-11] Outcome assessment concerns the results of care on the health status of the clients, including changes in clients' knowledge, perception and behaviour, client satisfaction with health care, biologic changes in disease and reduction in complications of treatment, morbidity and mortality.^[6]

Despite the benefits of ANC in preventing maternal mortality, the services rendered are still under-utilized.^[12] The factors considered to be responsible for poor utilization of ANC services in Nigeria include poor male involvement since men are key decision-makers in matters relating to the health of their families.^[12] The age, level of education and place of residence of pregnant women have also been found to consistently determine the utilization of the services in the country.^[10] A study in Zimbabwe suggested that inconveniences such as long waiting time at the clinic, and distance of the health facility from places of abode will serve as barriers to the utilization of Focused Antenatal Care (FANC).^[13]

The reduction in maternal mortality in developing countries is only 2.3% yearly.^[14] Countries are now conscious of the fact that maternal deaths can be further reduced and have, therefore, combined efforts in achieving this goal. The Primary Health Centre (PHC) is the first tier of health services in Nigeria providing essential health care. It is the level of health care that has full community participation and includes a basic and ongoing health care process. Therefore, antenatal care at the PHC level must be given the utmost consideration.

Quality should always be put into consideration during the provision of health care services.^[15] Investigations of the quality of ANC services is not given predominance, especially in many settings where they are needed.^[16] In Nigeria, the quality of ANC has mostly been studied in private and referral or tertiary health institutions.^[16]

The primary health facility is one of the most accessible public health facilities. Therefore, there is a need to investigate the factors contributing to clients' satisfaction among pregnant women accessing ANC services in the PHCs within the LGA.

Methods

This cross-sectional descriptive study was carried out at Ikenne LGA in the east senatorial district of Ogun State, located about 55km south of Lagos, the commercial capital of Nigeria. The population of the LGA is 202,980. The indigenes of the LGA are mainly of the Remo stock of the Yoruba ethnic group.^[17] Ikenne LGA is a semi-urban area having the characteristics of both urban and rural settlements. There are three (3) health posts, two (2) health clinics, five (5) primary health centres, twelve (12) private hospitals, three (3) public secondary health facilities and one (1) private tertiary health facility in the LGA. The

health cadres in the health centres include nurses, senior and junior community health extension workers, pharmacists and pharmacy technicians, medical laboratory technicians, health educators and health attendants. Each centre conducts organized ANC services every Monday. Some agencies supervise and contribute to Maternal and Child Health services in the state. These agencies include the WHO, United Nations Children's Fund (UNICEF) and the United States Agency for International Development (USAID), all in collaboration with the State Government.

The participants in the study included pregnant women who were registered for ANC in Primary Health Centres in the LGA and who were visiting the facilities for at least the second time. The minimum sample size was determined using the standard formula for the determination of sample size for descriptive studies. A standard normal deviate of 1.96, a prevalence of 68.2% from a similar Nigerian study,^[18] and a margin of error of 5% were entered into the formula to give a minimum sample size of 333. This was increased to 380 to give account for possible non-responses.

Multistage probability sampling method was used to select the participants. At the first stage of sampling, five health centres were selected out of the existing ten health centres by simple random sampling. Total attendance of the selected health centres was gotten from the Medical Officer of Health in the LGA. These health centres included Ikenne-1, Ikenne-2, Ogere, Iperu-1 and Ilisan. In the next stage, the proportionate allocation was used to select the appropriate number of respondents in each facility based on the estimated number of clients accessing ANC in each facility. Therefore, 90 pregnant women each were interviewed at Ikenne-1, Ikenne-2 and Iperu-1 and 55 each at Ogere and Ilisan. This gave a total of 380 respondents. In each facility, consecutive patients were recruited to

participate in the study until the total number allocated to each hospital was attained.

A semi-structured, interviewer-administered questionnaire was used to elicit data from the respondents. The instrument was designed from a review of the Safe Motherhood Needs Assessment package and other available literature on antenatal care.^[10, 19-21] The questionnaire sought information on respondents' sociodemographic and pregnancy-related characteristics; knowledge of pregnant women on antenatal care services, utilization of antenatal care by pregnant women and clients satisfaction about ANC. The questionnaire was pre-tested among 30 pregnant women registered in Primary Health Centres in Remo North LGA which forms the northern boundary of the Ikenne LGA. Thereafter, appropriate adjustments were made to the questionnaire.

The filled questionnaires were crosschecked for errors and cleaned. Information from the questionnaire was entered into Statistical Package for Social Sciences (SPSS) version 20.0 for analysis. Composite variables (aggregate scores) for knowledge, were computed from the items on the questionnaire. Every correct answer to the question on knowledge was scored 1 and wrong answers were scored 0 each. Average knowledge of at least 50% was considered as good knowledge of antenatal care services while scores below 50% were considered as poor knowledge. Overall satisfaction was assessed by providing the options "satisfied" and "not- satisfied" to specific items.

The analyzed data were summarized using mean, standard deviation and proportions. Chi-Square was used to test for associations between the categorical variables with the level of satisfaction considered as the dependent variable. The level of significance was set at 95% confidence interval with *P* value less than 0.05.

Results

Table I shows the socio-demographic and pregnancy-related characteristics of the respondents. Many (57.6%) of the respondents were within the age group 20-29 years. Most of the participants, (348; 91.6%) were married while only 14 (3.7%) were single. About half, (204; 53.7%) of the respondents had secondary education as the highest academic attainment while only 85 (22.4%) had tertiary education. Eighteen (4.7%) had no form of formal education. About half (51.9%) of the respondents were traders.

Many (228; 60.0%) of the respondents registered for ANC during the second trimester (14-26 weeks) while a few (11; 2.9%) registered in the third trimester. Half (190; 50.0%) of the respondents were interviewed in the second trimester and only 173 (45.5%) have had at least four visits at the time of the interview. Churches (66; 17.4%) and private hospitals (46; 12.1%) were the commonest alternate sources of ANC.

Table II shows the knowledge of ANC among the respondents. The majority, (369; 97.1%), of the respondents, defined ANC as service that ensures safe delivery of healthy babies, 372 (97.9%) defined it as service that ensures mother is healthy throughout pregnancy, 375 (98.7%) defined it as service that ensures good health education to mothers in pregnancy while 358 (94.2%) defined it as services that ensure prompt attention is given to mothers in pregnancy. The majority (373; 98.2%) of the respondents knew tetanus toxoid injection should be given in pregnancy and most of them agreed that mothers should get 2 to 3 doses of the toxoid during each pregnancy (80.7%) and that it was for the protection of both mother and child (81.5%). However, the overall knowledge of the respondent about ANC was low as 46.1% had good knowledge and 53.9% had poor knowledge. The commonest known health topics taught during ANC were nutrition during pregnancy

(84.5%), hygiene (81.8%) and child spacing (75.3%). The least known topic was another STIs apart from HIV (34.5%). The commonest known danger signs in pregnancy were abdominal pain (76.6%) and weak or no movement of the foetus (75.5%). Two hundred and five (53.9%) had knowledge scores below 50% (poor knowledge) while 46.9% of the respondents had knowledge scores of at least 50% (good knowledge).

Table III shows the level of information and education received by pregnant women. Concerning their health generally, 91.8% of them agreed that the information they received was as much as desired, 5.0% opined that the information was not enough while 0.5% claimed they did not receive information about their general health during ANC.

As regards other health topics, the benefit of delivery in the health facility (79.7%) and development of babies (78.4%) were rated as meeting the desired level by the least number of respondents. Nineteen (5.0%) of the respondents said they never enjoyed any information on HIV/AIDS.

Table IV reveals that one-third (33.9%) of the respondents were very satisfied with health education while about two-thirds (65.3%) were satisfied. Similarly, almost all (98.4%) the respondents were either very satisfied or satisfied with clinical consultations. On the other hand, only four-fifth (81.3%) were either very satisfied or satisfied with the cost of service and just three-quarters (74.8%) were either very satisfied or satisfied with the waiting time.

Table V shows that health talks (44.5%), physical examination (18.5%) and clinical consultations (13.9%) were the services the women were most satisfied with while timeliness of service delivery (30.0%) and cost of service (22.1%) were the qualities they were most dissatisfied with.

Table I: Socio-demographic and pregnancy-related characteristics of the respondents

Characteristics	Frequency (n=380)	Percentage
Age Group (Years)		
<20	23	6.1
20-29	219	57.6
30-39	130	34.2
40-49	8	2.1
Marital Status		
Single	14	3.7
Married	348	91.6
Separated	7	1.8
Divorced	5	1.3
Widow	6	1.6
Educational Status		
No formal education	18	4.7
Primary	73	19.2
Secondary	204	53.7
Tertiary	85	22.4
Occupation		
Unemployed	48	12.6
Trading	197	51.9
Agricultural Worker	30	7.9
Semi-Skilled	44	11.6
Professional	15	3.9
Civil Servant	46	12.1
Parity		
≤ 5	372	97.9
≥ 6	8	2.1
Gestational Age at First ANC Visit (Weeks)		
First Trimester (≤ 13)	141	37.1
Second Trimester (14-26)	228	60.0
Third Trimester (≥ 27)	11	2.9
Duration of Pregnancy at Interview (Weeks)		
≤ 13	5	1.3
14-26	190	50.0
> 26	185	48.7
Number of Antenatal Visits		
≤ 3	207	54.5
≥ 4	173	45.5
Other Sources of Antenatal Care		
Private Hospitals	46	12.1
Secondary Health Facilities	19	5.0
Tertiary Health Facilities	17	4.5
Mission Homes	66	17.4
Traditional Caregivers	32	8.4
None	200	52.6

Mean Age: 27.8 ± 5.5

Table II: Knowledge of respondents about the scope of ANC services

Variable	Frequency	Percentage
ANC is services that ensure the safe delivery of healthy babies	369	97.1
ANC is services that ensure the mother is healthy throughout pregnancy	372	97.9
ANC services ensure good health education to mothers in pregnancy	375	98.7
ANC is services that ensure prompt attention to mothers in pregnancy	358	94.2
Iron supplement should be given in pregnancy	367	96.6
Folic acid should be given in pregnancy	357	93.9
Tetanus Toxoid should be given in pregnancy	373	98.2
Minimum dose of Tetanus Toxoid (n=373)		
1	32	8.6
2	154	41.3
3	147	39.4
4	23	6.2
Reason for Tetanus Toxoid injection (n=373)		
To prevent children from tetanus	37	9.9
To prevent mothers from tetanus	20	5.4
To prevent both mother and child from tetanus	304	81.5
Changes in dietary intake during pregnancy		
Increase	343	90.3
Decrease	13	3.4
No change	24	6.3
Changes in fruit intake		
Increase	356	93.7
Decrease	1	0.3
No change	23	6.1
Health Education Topics		
Nutrition in Pregnancy	321	84.5
Child Spacing	286	75.3
Hygiene	311	81.8
HIV	208	54.7
Other STIs	131	34.5
Malaria	215	56.6
Danger signs in pregnancy		
Convulsion	210	55.3
Visual disturbance	185	48.7
Weak or no movement of the foetus	287	75.5
Excessive vomiting	281	73.9
Persistent lower limb swelling	274	72.1
Vaginal bleeding	285	75.0
Abdominal pain	291	76.6
Knowledge Score (%)		
≤ 49	205	53.9
≥ 50	175	46.1

Almost all the respondents were willing to recommend the services to others (98.4%) and were generally satisfied with all the services (96.8%). Table VI shows the respondents' characteristics and bivariate analysis of the relationship with the level of satisfaction with

services. There was a statistically significant association between marital status and the level of satisfaction ($p < 0.001$). Educational status was also statistically significantly associated with the level of satisfaction ($p = 0.007$).

Table III: Satisfaction with the various aspects of information/education given during ANC

Variable	Not enough n (%)	As much as desired n (%)	Too much n (%)	No information n (%)	Cannot remember n (%)
Your Health	19 (5.0)	349 (91.8)	8 (2.1)	2 (0.5)	2 (0.5)
Birth preparedness	24 (6.3)	318 (83.7)	24 (6.3)	12 (3.2)	2 (0.5)
Nutrition during pregnancy	21 (5.5)	341 (89.7)	17 (4.5)	0 (0.0)	1 (0.3)
Danger signs	23 (6.1)	313 (82.4)	33 (8.7)	6 (1.6)	5 (1.3)
Test during Pregnancy	21 (5.5)	339 (89.2)	19 (5.0)	0 (0.0)	1 (0.3)
HIV/STI	22 (5.8)	306 (80.5)	22 (5.8)	19 (5.0)	11 (2.9)
Possible Treatment	30 (7.9)	329 (86.6)	10 (2.6)	4 (1.1)	7 (1.8)
Benefit of delivery in the health facility	35 (9.2)	303 (79.7)	19 (5.0)	13 (3.4)	10 (2.6)
Labour and delivery	29 (7.6)	316 (83.2)	22 (5.8)	9 (2.4)	4 (1.1)
Breastfeeding	12 (3.2)	320 (84.2)	38 (10.0)	9 (2.4)	1 (0.3)
Development of baby	45 (11.8)	298 (78.4)	16 (4.2)	11 (2.9)	10 (2.6)
Family planning	15 (3.9)	325 (85.5)	32 (8.4)	7 (1.8)	1 (0.3)

Figures in parentheses are percentages of the respective total

Table IV: Level of satisfaction with various domains of ANC services

Parameters	Very Satisfied n(%)	Satisfied n(%)	Not Satisfied n(%)	Totally Dissatisfied n(%)
Clinical Consultation	109 (28.7)	265 (69.7)	6 (1.6)	0 (0.0)
Physical examination	121 (31.8)	255 (67.1)	4 (1.1)	0 (0.0)
Health Education	129 (33.9)	248 (65.3)	3 (0.8)	0 (0.0)
Privacy (Auditory/Visual)	60 (15.8)	282 (74.2)	37 (9.7)	1 (0.3)
Providers' technical competence	84 (22.1)	287 (75.5)	9 (2.4)	0 (0.0)
Providers' communication skill	101 (26.6)	267 (70.3)	12 (3.2)	0 (0.0)
Providers' willingness to entertain questions	83 (21.8)	282 (74.2)	15 (3.9)	0 (0.0)
Clients' involvement in decision taking	75 (19.7)	266 (70.0)	36 (9.5)	3 (0.8)
Cost of service	82 (21.6)	227 (59.7)	70 (18.4)	1 (0.3)
Clinic opening hours	117 (30.8)	238 (62.6)	23 (6.1)	2 (0.5)
Distance from home	68 (17.9)	259 (68.2)	51 (13.4)	2 (0.5)
Waiting time	66 (17.4)	218 (57.4)	94 (24.7)	2 (0.5)
Toilet facilities	50 (13.2)	280 (73.7)	45 (11.8)	5 (1.3)
Waiting area	55 (14.5)	279 (73.4)	45 (11.8)	1 (0.3)
Environmental sanitation	55 (14.5)	293 (77.1)	32 (8.4)	0 (0.0)

Figures in parentheses are percentages of the respective total

The respondents with higher levels of education showed more satisfaction with the services. However, the association between age and the level of satisfaction was not statistically significant. There was no statistically significant association between the level of satisfaction with antenatal services and parity ($p = 0.875$) or with the knowledge of antenatal services ($p = 0.273$).

Discussion

A large proportion (96.8%) of the respondents was satisfied with most of the services while 3.2% of the respondents were dissatisfied. This finding is higher than what obtained in various other Nigerian studies which showed an overall level of satisfaction of 81.4% in the

south-west, ^[13] and 74.0% in north-west Nigeria. ^[22] In Enugu, south-east Nigeria, the

overall satisfaction was as low as 53.0%. ^[23]

Table V: Domains of satisfaction with antenatal services

<i>Variable</i>	<i>Frequency</i>	<i>Percentage</i>
Aspect of service most satisfied with		
Health talk	169	44.5
Physical examination	70	18.4
Clinical consultation	53	13.9
Timeliness of service	21	5.5
Immunization	25	6.6
Availability of medication as needed	16	4.2
Cost of service	23	6.1
Home service	3	0.8
Aspect of Service most dissatisfied with		
Health education	12	3.2
Physical examination	16	4.2
Clinical consultation	23	6.1
Timeliness of service	114	30.0
Immunization	10	2.6
Availability of medication as needed	34	8.9
Cost of service	84	22.1
Environmental sanitation	33	8.7
Home visits	1	0.3
None	53	13.9
Willingness to recommend service to others		
Yes	374	98.4
No	6	1.6
General Satisfaction with services		
Satisfied	368	96.8
Not Satisfied	12	3.2

Despite the setbacks noticed in primary health care facilities in Nigeria, including the shortage of manpower, ^[24] clients' satisfaction was quite high in the present study. The high level of satisfaction recorded in this study might have resulted from good health worker-client relationship and simply an act of appreciation to the health workers who made efforts to make efficient use of the limited resources available. The fact that the majority (98.4%) of the respondents opted to recommend the services they enjoyed to others corroborates these assumptions. This is similar to the findings in another Nigerian study where 98.3% of the respondents will recommend the services. ^[22]

This study showed the aspects of the services clients were most dissatisfied with were timeliness (30%), cost of service (22.1%) and availability of medication (8.9%). This is not unexpected because waiting time is a chief cause of dissatisfaction with services rendered in out-patient clinics. ^[25] However, contrary to this, a study in northern Nigeria revealed that more clients were satisfied with the waiting time (96.2%) as compared to other aspects of the services. ^[26] Waiting time was also perceived as adequate in a study in south-eastern Nigeria. ^[18]

Table VI: Relationship between respondents' characteristics and the level of satisfaction with antenatal care services

Variable	Level of Satisfaction			Total n (%)	χ^2	P-value
	Satisfied n (%)	Not Satisfied n (%)	Totally Dissatisfied n(%)			
Age Group (Years)						
<20	23 (100.0)	0 (0.0)	0 (0.0)	23 (100.0)	3.40	0.857
20-29	214 (97.3%)	4 (1.8)	2 (0.9)	220 (100.0)		
30-39	123 (95.3)	5 (3.9)	1 (0.8)	129 (100.0)		
40-49	8 (100.0)	0 (0.0)	0 (0.0)	8 (100.0)		
Marital Status						
Single	14 (100.0)	0 (0.0)	0 (0.0)	14 (100.0)	10.39	<0.001
Married	338 (97.1)	7 (2.0)	3 (0.9)	348 (100.0)		
Separated	7 (100.0)	0 (0.0)	0 (0.0)	7 (100.0)		
Divorced	3 (60.0)	2 (40.0)	0 (0.0)	5 (100.0)		
Widow	6 (100.0)	0 (0.0)	0 (0.0)	6 (100.0)		
Educational Status						
No formal education	15 (83.3)	3 (16.7)	0 (0.0)	18 (100.0)	9.78	0.007
Primary	72 (98.6)	1 (1.4)	0 (0.0)	73 (100.0)		
Secondary	199 (97.5)	3 (1.5)	2 (1.0)	204 (100.0)		
Tertiary	82 (96.5)	2 (2.4)	1 (1.1)	85 (100.0)		
Parity						
≤ 5	360 (96.8)	9 (2.4)	3 (0.8)	372 (100.0)	0.266	0.875
≥ 6	8 (0.0)	0 (0.0)	0 (0.0)	8 (100.0)		
Knowledge Score						
Poor Knowledge	197 (96.1)	5 (2.4)	3 (1.5)	205 (100.0)	2.596	0.273
Good Knowledge	171 (97.7)	4 (2.3)	0 (0.0)	175 (100.0)		

The drug revolving fund is a method of financing medical treatment, in which after an initial amount of money is invested to buy drugs and subsequent purchases are made from the monies obtained from selling these drugs. This is to reduce the chronic shortage of medicines and ensure affordability. [27] In the present study, many of the respondents were dissatisfied with the cost of service and the availability of medicines. This may imply a poor implementation of the drug revolving fund strategy, which has led to inconsistencies

in the stock of medications sold at high costs when available. However, dissatisfaction with cost does not necessarily mean the services were costlier than what obtains at the secondary and tertiary levels of care or other sources of ANC such as churches and traditional birth homes. This may reflect the disappointment on the parts of the clients who expected the fulfilment of political promises of absolutely free health care services at the grassroots level. In contrast to this level of satisfaction with cost, another Nigerian study

had revealed clients were satisfied with payment for services. [26]

The knowledge of ANC in the present study was poor as less than half (46.1%) of the respondents had good knowledge of ANC. This finding was at variance with what was reported in a similar study in Nnewi, south-eastern part of the country, where the majority (68.2%) of the respondents had good knowledge. [18] It was observed that the least known purpose of ANC was “to give prompt attention to pregnant women.” This, however, concurs with what obtained in the study in Nnewi, South-east Nigeria. [18] This might be a reflection of the experiences of the participants as regards keeping to time while providing the services and that they have been delayed one time or the other in the course of receiving care in primary health centres. Therefore, they did not regard ANC service as one designed to ensure prompt action is given to mother and child during pregnancy and delivery. This may call for interventions to improve good time management while providing services to clients, especially in primary health care facilities.

The majority of the respondents in the present study knew tetanus toxoid should be given in pregnancy. Most (80.7%) of them opined that mothers were to get two to three doses of this toxoid during each pregnancy and that it was for the protection of both mother and child. Only a few of the respondents believed that tetanus toxoid was to protect either children or mothers alone. This finding was similar to what was recorded in another Nigerian study. [18] The good knowledge of the minimum number of tetanus toxoid doses reported in the present study may be plausible considering the report of the National Demographic Health Survey 2013, which suggested that majority (76.6%) of women in the south-west region of Nigeria received at least two doses of tetanus toxoid during their last pregnancies. [28]

The present study suggests an inverse relationship between the knowledge of the respondents about ANC and the information respondents received during ANC. Most (91.8%) of the respondents claimed the information they received was as much as desired when compared to only 46.9% of the respondents with good knowledge. This shows that the information given to respondents may not translate into knowledge and this has implications for health education programmes and policies, especially in the areas of the content of information given and strategies employed to disseminate such.

Marital status, the number of antenatal visits and educational level were significantly associated with clients' satisfaction with services. Being more educated might have offered the women more opportunities to understand and appreciate the services rendered to them more than their counterparts with lower education. This finding agreed with a previous report from a similar Nigerian study where women who were dissatisfied with antenatal care services had lower education. [22] It also concurs with reports from similar studies conducted in Kazakhstan, [29] and India. [30]

Conclusion

The knowledge of ANC was poor although the majority of the respondents believed that information given during health education was adequate. Client satisfaction was generally good except in a few areas of service such as cost and waiting time. There is an implication for programmes in areas of cost of services and good time management during services. Furthermore, the content and quality of information should be given utmost attention during health education exercises. This study has identified major barriers to client satisfaction with antenatal care. Overcoming these barriers will promote maternal and child health care services.

Acknowledgement: The authors appreciate the participants for their contributions towards this work.

Authors' Contributions: SK and OO1 conceived the research idea and wrote the first draft of the manuscript. SK did the data analysis, data interpretation and literature review. All authors contributed to the drafting and review of the manuscript and approved the final version of the manuscript.

Conflicts of Interest: None.

Funding: Self-funded.

Publication History: Submitted 25 August 2019; Accepted 17 December 2019.

References

1. Magoma M, Requejo J, Campbell OM, Cousens S, Filippi V. High ANC coverage and low skilled attendance in a rural Tanzanian district: a case for implementing a birth plan intervention. *BMC Pregnancy Childbirth* 2010; 10: 13. doi:10.1186/1471-2393-10-13.
2. McPherson RA, Khadka N, Moore JM, Sharma M. Are birth-preparedness programmes effective? Results from a field trial in Siraha district, Nepal. *J Health Pop Nutri* 2006; 24: 479-88).
3. Villar J, Ba'aqeel H, Piaggio G, Lumbiganon P, Miguel BJ, Farnot U. WHO Antenatal Care randomized trial for the evaluation for a new model of routine antenatal care. *Lancet* 2001; 357: 1551-1564.
4. Pattinson RC, Buchmann E, Mantel G, Schoon M, Rees H. Can enquiries into severe acute maternal morbidity act as a surrogate for maternal death enquiries? *Brit J Obstet Gynaecol* 2003; 110: 889-893.
5. Roemer ME, Montava CA. Quality assessment and assurance in PHC. WHO Upset Publications 1988; 105: 1-78.
6. Donabedian A. The quality of care. How can it be assessed? *J Am Med Assoc* 1988; 260: 1745-1748.
7. Maternal and neonatal health program. Country profile, Guatemala. In: Nanci Franco de Mendez, 2003. Maternal mortality in Guatemala. Available at <http://www.who.int/medicines/ast>
8. Debono D, Travaglia J. Complaints and patient satisfaction: A comprehensive review of the literature. Australia University of New South Wales, The Centre for Clinical Governance Research in Health 2009. Available at <https://www2health.vic.gov.au>Api>downloadmedia> Accessed on 10th October 2017.
9. Douglas S, Cervin C, Bower KN. What women expect of the family physician as maternity care providers. *Can Fam Physician* 2007; 53: 875-879.
10. Oladapo OT, Iyaniwura CA, Sule-Odu AO. Quality of antenatal care at primary care level in south-west Nigeria. *Afr J Reprod Health* 2008; 12: 71-92.
11. Yan T, Wen SW, Walker MC, Beduz MA, Kim PC. Women satisfaction with the current state of prenatal care for pregnancies complicated by fetal anomalies. A survey of five academic perinatal units in Ontario. *J Obstet Gynaecol Can* 2007; 29: 308-314.
12. Illiyasu Z, Abubakar IS, Galadanci HS, Aliyu MH. Birth preparedness, complication readiness and fathers' participation in maternity care in northern Nigerian community. *Afr J Reprod Health* 2010; 14: 21-32.
13. Chivonivoni C, Ehlers V, Roos H. Mothers attitude using services preventing mother to child HIV/AIDS transmission in Zimbabwe. An interview survey. *Int J Nurs Studies* 2008; 45: 1618-1624.

14. WHO Fact Sheet 2016. Maternal Mortality available at www.who.int/mediacentre/factsheet. Accessed on 4/4/17
15. Fawole AO, Okunlola AO, Adekunle AO. Clients perceptions of the quality of antenatal care. *J Natl Med Assoc* 2008; 100: 1052-1058.
16. Balogun OR. Patients' perception of antenatal care service in four selected private health facilities in Ilorin, Kwara State of Nigeria. *Niger Med Pract* 2007; 51: 80-84.
17. Eagles eye: Historical Background of Ikenne Remo. Available at <https://tshowinereke.blogspot.com/2013/08/ikenneremo.html>. Accessed on 10/07/17
18. Nnebue CC, Ebenebe UE, Adinma ED, Iyoke CA, Obionu CN, Ilika AL. clients' knowledge, perception and satisfaction with the quality of maternal health care services at the primary health care level in Nnewi, Nigeria. *Niger J Clin Pract* 2014; 17: 594-560.
19. Edie GEHE, Obinchemti TE, Tamufor EN, Njie MM, Njamen TN, Achiji EA. Perceptions of antenatal care services by pregnant women attending government health centres in the Buea Health District, Cameroon: a cross-sectional study. *Pan Afr Med J* 2015; 21: 45.
20. Rajiv KG, Tajal NS, Aruna KV, Rayaz J. knowledge regarding antenatal care services, its utilization and delivery practices in mothers (aged 15-49 years) in a rural area of North India. *Trop J Med Res* 2015; 18: 89-94
21. Barun BP, Pranaya G, Dattreya RS, Kapil HP, Ajoy M, Neha S. A study on knowledge and practices of antenatal care among pregnant women attending antenatal clinic at a Tertiary Care Hospital of Pune, Maharashtra. *Med J Dr DY Patil University* 2016; 9: 354-362.
22. Sufiyan MB, Umar AA, Shugaba A. Client satisfaction with antenatal care services in primary health centres in Sabon Gari local government area, Kaduna State. *J Comm Med Prim Health Care* 2012; 25: 12-22.
23. Eze CU. Survey of patients' satisfaction with obstetric ultrasound at the University of Nigeria Teaching Hospital, Enugu, Nigeria. *Niger J Health Biomed. Sci* 2006; 5: 93-97.
24. Aluko JO, Anthea R, Marie Modeste RR. Manpower capacity and reasons for staff shortage in primary health care maternity centres in Nigeria: a mixed-method study. *BMC Health Serv Res* 2019; 19: 10.
25. Ogaji DS, Mezie-Okoye MM. Waiting time and patient satisfaction: survey of patients seeking care at the general outpatient clinic of the University of Port Harcourt Teaching Hospital. *Port Harcourt Med J* 2017; 11: 148-155.
26. Ibrahim SM, Bakari M, Abdullahi HU, Bukar M. Clients perception of antenatal care services in a tertiary hospital in North-Eastern Nigeria. *Int J Reprod Contracep Obstet Gynecol*, 2017; 6: 4217-4223.
27. Ali GKM. How to establish a successful revolving fund: the experience of Khartoum state in Sudan. *Bull World Health Org* 2009; 87: 139-142.
28. National Population Commission and ICF International. Nigerian Demographic Health Survey 2013 available at <https://dhsprogram.com>pubs>pdf>
29. Dauletyarova MA, Semenova YM, Kaylubaeva G, Manabaeva GK, Toktabayeva B, Zhelpakova MS, et al. Are Kazakhstani women satisfied with antenatal care? Implementing the WHO Tool to Assess the Quality of Antenatal

Services. Int J Environ Res Public Health
2018; 15: 325.

30. Rashmi K, Vijay KB. Client Satisfaction in
Rural India for Primary Health care. A tool
for Quality Assessment. Al-Ameen J Med
Sci 2010; 3: 109-114.



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