

Client Satisfaction with Quality of Antenatal Care Services among Attendees of University Health Services Medical Center, Ahmadu Bello University Zaria, Kaduna State Nigeria

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ABSTRACT

Background: Quality of Antenatal care (ANC) is still poor in most developing countries. Quality ANC has been shown to significantly reduce maternal and child mortality. There is a paucity of data on client satisfaction with services among attendees of ANC in northern Nigeria, especially those attending University medical centers. Therefore, this study assessed the quality of ANC services, level of client satisfaction and factors influencing satisfaction with such services among attendees of Ahmadu Bello University health services medical center (ABUHSMC).

Methodology: A hospital based cross-sectional study was conducted among 112 ANC attendees at ABUHSMC. Systematic random sampling technique was used to select the respondents. Data was analyzed using IBM SPSS version 23. Bivariate analysis was conducted to identify variables that were significantly associated with client satisfaction with ANC services. Variables were then fitted into a multiple logistic regression to identify independent predictors of client satisfaction at a P-value of <0.05.

Results: The mean age of the respondents was 28.74± 5.97 years. Majority (52.7%) of the clients received 11 or more ANC service components and indicated that the services were of good quality. The overall level of client satisfaction with the ANC services revealed that 67.0% were satisfied while 17.8% were not. Independent predictors of client satisfaction with ANC services were respondents' level of education, average monthly income, parity, privacy and confidentiality, cost of services, and time spent before seeing health care providers (P<0.05).

Conclusion: ANC services provided at ABUHSMC were of good quality and the majority of the clients were satisfied with such services. However, the concern of clients about long waiting times should be addressed by the hospital management through improved quantity and quality of health care personnel.

Keywords: Antenatal care, Client, Quality, Satisfaction.

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INTRODUCTION

Antenatal care (ANC) simply means the type of care given to pregnant women before birth. Its main purpose is to ensure pregnant women remain healthy and abnormal conditions are anticipated early and appropriate actions are taken.[1] Access to quality ANC services during pregnancy has been reported to reduce maternal mortality by 20%. [2,3] Additionally, 37-71% of newborn deaths could be averted if the World Health Organization (WHO) recommended four visits are to be met at a coverage rate of 90% and above.[4] Apart from the benefits of early detection of complications, and provision of health education on nutrition, breastfeeding and family planning during the ANC visits, research has shown that adequate ANC has a significant influence on utilization of postnatal care.[5,6]

However, globally, more than 500 thousand women continue to die annually as a result of pregnancy and childbirth-related complications. Of these deaths, more than half occur in sub-Saharan Africa and one third occur in South Asia.[7] With a current estimate of maternal mortality ratio of 814 per 100,000 live births, Nigeria is one of the countries with highest maternal mortality ratio in the world.[8] Almost all maternal deaths (99%) occurring in developing countries are due to complications arising during Antenatal, Intrapartum and immediate postnatal period. In most of these cases, the deaths could have easily been prevented.[9,10]

Although the coverage of ANC has improved over the years in different parts of the world, the quality of the service remains abysmally low.[11–13] In Nigeria, ANC coverage has gradually increased from 57% in 1990 to the current 67%, but the quality of the ANC remains low and variations across its regions continue to exist. [14]

According to WHO, quality health care service

should be effective, efficient, evidence-based, patient-centred, equitable and safe. [15] Patient's satisfaction with services is linked to the quality of services given and the extent to which specific needs are met. Satisfied patients are likely to come back for services provided and recommend the same to others. Various factors including client's level of education, culture, parity as well as attitude of staff, cost of care, time spent at the hospital, sanitary condition of health care facility, privacy during consultation, and provider communication skills have been found to influence patient's satisfaction with ANC in different settings.[16],[17–21]

There is a paucity of data on client satisfaction with the quality of ANC services in northern Nigeria. Most studies[22],[17],[19] on client's satisfaction with the quality of ANC services were conducted in the southern part of the country. For reasons of cultural difference, these studies may not represent the true picture of patient satisfaction with quality of services in northern Nigeria. University health services medical centers, not only provide health care services to students but also the surrounding communities. Therefore, it is important to hear from the host communities what their satisfaction with the quality of ANC services being provided by the university health services medical center is about.

Therefore, this study assessed the quality of ANC services, level of client satisfaction and factors influencing satisfaction with such services among ANC attendees of Ahmadu Bello University medical center in northwest Nigeria. It is hoped that findings from this study will help towards improving the quality of ANC services provided and in the long run contribute in reducing the burden of maternal morbidity and mortality generally in Nigeria.

METHODOLOGY

Study Area: The study was conducted at Ahmadu Bello University (ABU) health services medical center (sickbay). It is an NHIS accredited primary and secondary care facility provider that currently has the highest number of enrollees in the country, serving a population of about 100,000 people from surrounding communities and 35,000 students. It has 6 wards with estimated 60-bed spaces and an emergency station. The services offered in the facility include a medical clinic, emergency medicine, surgical clinic, ophthalmology, ENT, paediatrics, mental health, laboratories (haematology, microbiology and radiology), obstetrics and gynaecology, dermatology, tuberculosis and leprosy, and a pharmacy unit.

The obstetrics and gynaecology unit runs services from Monday to Friday, ranging from antenatal clinic to family planning/child spacing services. Different activities are offered at the antenatal clinic which include booking clinic on Mondays, student antenatal clinic and scanning on Tuesdays, infant feeding and other non-ABU staff clinic on Wednesdays, senior staff antenatal clinic, family planning, other obstetrics and gynaecological services on Thursdays and junior staff clinic and family planning on Fridays. An average of 30 ANC clients are usually seen per clinic day.

Study design and population: The study was a cross-sectional survey conducted among pregnant women attending antenatal clinic at the Ahmadu Bello university health services medical center. Those identified to be attending ANC for the first time in the university health services medical center and those found to be acutely ill were excluded from the study.

Sample size determination: A minimum sample size of 112 was estimated for the study at 95% confidence interval and 5% margin of error, taking an overall

client satisfaction prevalence of 89.7% obtained from a previous study[23] and considering an attrition rate of 10% as follows;

The sample size was calculated using the following formula:[24]

$$n = z^2pq/d^2$$

Where, n = Minimum sample size,

Z = 1.96, Standard normal deviate set at 95% confidence level,

p = 0.897(89.7%), q = 1 - p, complementary probability = 1 - 0.897 = 0.103,

d = 0.05, degree of accuracy.

Therefore; $n = 1.96^2 \times 0.897 \times 0.103 / 0.05^2$. n = 141.97

Since the population size of respondents attending the ANC clinic is less than 10 000, then finite correction (nf) is performed, therefore, nf will be = $n / 1 + (n/N)$ where, nf is the desired sample size when population is less than 10 000

n is the desired sample size when the population is more than 10 000

N is the estimated number of women attending antenatal care at university health services. Therefore $nf = 141.97 / 1 + (141.97/360)$ nf = 101.82 Also, in order to address lost to follow up/attrition, 10% of 101.82 was added Hence the final sample size = 101.82 + 10.18 = 112

The daily antenatal clinic attendance register was used as a sampling frame. The daily attendance at antenatal clinic was approximately 30 women. The clinic ran on Tuesdays, Thursdays and Fridays. To

determine the sampling interval at which the pregnant women were recruited the formula

$K = N/n$ was used.

Where K = sampling interval,

N = population during period of data collection (4 weeks), and n = sample size.

Therefore $k = 360/112 = 3.2 = 3$

Therefore, a systematic random sampling technique with a sampling interval of 3 was used to select clients on each antenatal clinic day over four weeks. The first pregnant woman was randomly selected by balloting from the first to the third name on the antenatal clinic register and thereafter, every third pregnant woman was sampled. This was repeated throughout the data collection period until the estimated sample size was achieved.

Data collection instrument: The instrument used for the study was a pretested structured interviewer-administered questionnaire adapted from a study on client satisfaction with antenatal care services in primary healthcare centers [20] Data was collected over four weeks in which it was estimated using the daily antenatal clinic attendance register that 360 clients will be attended to during the data collection period. Data was collected with the help of two (2) trained 600 level medical students. The principal investigator trained the research assistants for 2 hours daily for 2 days on the objective of the study and the administration of the data collection tool. They were literate in both English and Hausa, and the entire data collection process was supervised by the principal investigator.

Data analysis

Data collected was cleaned, validated, and analyzed using statistical package for social sciences (IBM

SPSS) software version 23.0. Quality of services was assessed based on the total number of components of antenatal care offered at the facility as follows;

Good --- 11 – 14 components of services offered, [25–27]

Fair ---- 7 – 10 components of services offered,

Poor---- 0 – 6 components of services offered

For the descriptive aspect of the analysis, frequency distributions were generated for all categorical variables. Means and standard deviations and other descriptive measures were determined for quantitative variables. Bivariate analysis was conducted to test the associations between independent variables and client satisfaction with services at a 95% confidence interval level. Independent variables with $P < 0.2$ were fit into a multivariate logistic regression model to determine independent predictors of clients' satisfaction with quality of ANC services.

Ethical Consideration: An ethical clearance was obtained from the Ethical Clearance Committee of Ahmadu Bello University Teaching Hospital, Zaria before embarking on the study. Permission was obtained from the medical director of Ahmadu Bello University health services medical center after a detailed explanation on the nature of the study. Written informed consent from eligible respondents that could read and write was obtained before administering the survey questionnaire to them. While thumb printing or verbal consent was also obtained from the individual clients who could not read and write before administration of the questionnaire. Emphasis was made to the respondents on confidentiality of responses obtained and the liberty of opting out of the study at any time if they so wish. In order to guard against social desirability effect (courtesy bias), before administering a questionnaire to any respondent, apart from the written informed consent, the

respondent was reassured that their response was anonymous and it will not in any way affect the services offered to them.

RESULTS

A total of 112 questionnaires were successfully administered, however, one respondent did not answer questions on satisfaction, giving a response rate of 99.1%. The mean age of the respondents was 28.70 ± 5.97 years with majority of them being of Hausa/Fulani (60.7%) ethnic group and Islam as their religion (74.1%). Most (75.0%) of the respondents had tertiary level of education with 41.1% being students while 22.3% were junior non-academic staff. Those respondents with average monthly income of between #10 000- #50 000 constitute 55.4%. Majority of the respondents booked their pregnancy from 14–28 weeks (63.0%) with a mean gestational age of 16.64 ± 6.62 weeks at booking (Table 1).

More than half [59 (52.7%)] of the respondents received 11 or more ANC service components, indicating good quality of service while 42 (37.5%) had received a fair quality service and 9.8% had received poor quality service (Table 3). Blood pressure, height and weight measurements were the most offered ANC services to the clients [112 (100.0%) each]. These were followed closely by abdominal examination [111 (99.1%)] and folic acid tablets [109 (97.3%)]. The least offered ANC service components were VDRL test and blood glucose test accounting for 6 (5.4%) and 40 (35.7%) respondents respectively (Table 2).

In assessing the time spent before seeing the health care provider from the time of arrival at the health facility, 41.4% of the clients spent more than an hour, 33.6% spent less than or equal to 30 minutes, 20.7% spent between 31 to 60 minutes before seeing the healthcare provider (Figure 1). Review of the time

spent by the respondents from arrival at the health facility to seeing the health care provider revealed that 44.6% viewed the time as long, 42.0% viewed it as normal and 13.4% considered the time spent to be short. Majority (66.0%) of the respondents spent from 10 to 20 minutes with the health care provider, 17.0% spent greater than 20 minutes, about 10.7% of the clients spent less than 10 minutes and 6.3% of the clients don't know the time they spent with the health care provider (Figure 2). In reviewing the time spent for consultation with the health care provider, more than two-thirds of the respondents (74.1%) viewed it as appropriate, 14.3% thought the time spent was long and 11.6% of the respondents think that the time spent was short. Half (50.0%) of the respondents waited the most before seeing the health care provider, 27.7% before receiving drugs, and 18.7% before seeing the laboratory scientist/technologist. While the point of waiting the least was before getting a card accounting for only 3.6% of the respondents. In assessing the reasons why clients wait as long as they do at the stated points, the most stated reason was as a result of long queues (62.5%) and lack of enough personnel (15.2%). Late arrival of personnel was mentioned by 11.6% of the respondents and disorderliness (10.8%) was the least stated reason.

Assessment of overall level of respondents' satisfaction with the quality of ANC services received at the health facility revealed that 67.0% were satisfied, 15.2% were neutral while 17.8% were dissatisfied.

At the bivariate level of analysis, sociodemographic and other characteristics that are significantly associated with respondent's satisfaction with quality of ANC services include; age ($P=0.008$), average monthly income ($P=0.008$), parity ($P=0.001$), privacy ($P<0.001$), cost of ANC services ($P=0.002$), and waiting time ($P=0.032$) (Table 3). After

controlling for confounders, independent predictors of client satisfaction with quality of ANC services include level of education, parity, average monthly income, privacy, cost of ANC services and waiting time (Table 4).

Holding other variables constant, respondents with secondary levels of education had 0.008 odds of becoming satisfied rather than dissatisfied with the quality of ANC services when compared with clients that had tertiary level of education (respondents with secondary levels of education had 92% higher chance of becoming dissatisfied with the quality of ANC services than those with tertiary level of education). In other words, higher education increased the odds of becoming satisfied with the services.

Primipara (para 1) had lower odds of becoming neutral rather than dissatisfied with the quality of ANC services when compared with grand multipara (para 5+) (aOR 0.00 95% CI 1.57-0.690). Although not statistically significant, further inspection of the relation between parity and level of satisfaction in the multinomial model revealed lower odds of satisfaction rather than dissatisfaction with quality of ANC services among para 1 and para 2-4.

Respondents with other levels of income had higher odds (aOR 5608.6, aOR 1006.7 and aOR 187.2) of becoming satisfied rather than dissatisfied with the quality of ANC services offered when compared with respondents that had more than #100000 average monthly income. In other words, higher levels of income decreased the odds of becoming satisfied with the quality of ANC services.

Respondents whose privacies were ensured had higher odds (aOR 259.7 95% CI 8.8-7645.3) of becoming satisfied rather than dissatisfied with the quality of ANC services offered when compared with respondents whose privacies were not ensured.

Respondents who spent less than #1000 on ANC services had higher odds of becoming satisfied rather

than dissatisfied with the quality of ANC services when compared with those who spent more than #1000 on ANC services. In other words, spending less on ANC services increased the odds of becoming satisfied with the services.

Respondents who spent 30 minutes or less and those who spent between 31-60 minutes before seeing health care providers had higher odds of being satisfied rather than dissatisfied when compared with those that spent 1 hour or more (aOR .122.2 95% CI 3.8-3893.8, and aOR 320.8 95% CI 6.0-17054.0 respectively). In other words, the lesser the waiting time the more the odds of becoming satisfied with the quality of ANC services

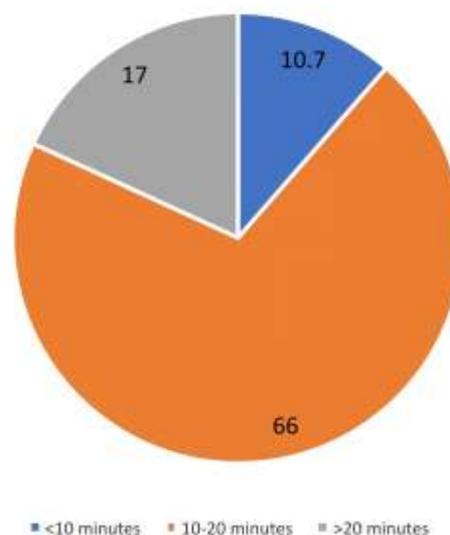


Figure 2: Consultation time ANC, Ahmadu Bello University Health Services Medical Centre, 2019

Table 1: Socio-demographic Characteristics of Pregnant Women Attending Antenatal Care at Ahmadu Bello University Health Services/Medical Centre, 2019

Variable	Frequency (n = 112)	Percent (%)
Age group (in years)		
15 – 24	32	28.6
25 – 34	58	51.8
35 – 45	22	19.6
Ethnic group		
Hausa/Fulani	68	60.7
Igbo	8	7.1
Yoruba	18	16.1
Others	18	16.1
Religion		
Islam	83	74.1
Christianity	29	25.9
Level of education		
Quranic education	3	2.7
Primary education	9	8.0
Secondary education	16	14.3
Tertiary education	84	75.0
Occupation		
Student	46	41.1
Junior non- academic staff	25	22.3
Senior non- academic staff	7	6.3
Academic staff	17	15.2
Others	17	15.2
Average monthly income (in naira)		
<10 000	17	15.2
10 000–50 000	62	55.4
51 000–100 000	13	11.6
>100 000	20	17.9
Parity		
0	22	19.6
1	33	29.5
2–4	52	46.4
5	5	4.5
Gestational age at booking (in weeks)		
1–13	36	32.1
14–28	71	63.4
29–40	5	4.5

Table 2: Antenatal Care Service Components Offered to Attendees at University Health Services/ Medical Center, Ahmadu Bello University Zaria, 2019

ANC Components	Frequency (n=112)	Per cent (%)
Abdominal examination	111	99.1
Blood pressure measurement	112	100.0
Height and weight	112	100.0
Anti-malarial drugs	91	81.3
Folic acid tablet	109	97.3
Iron tablet	54	48.2
Tetanus Toxoid	102	91.1
Ultrasound scan	96	85.7
HIV test	71	63.4
Urine test	105	93.8
Blood grouping	101	90.2
Haemoglobin estimation	68	60.7
VDRL test	6	5.4
Blood glucose	40	35.7
Other investigations	40	35.7

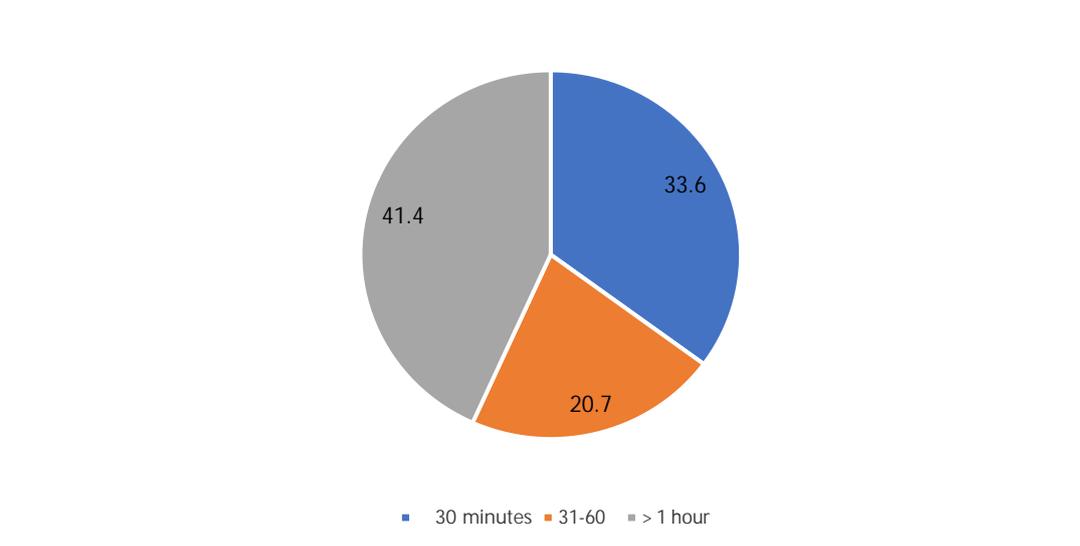


Figure1: waiting time ANC, Ahmadu Bello University Health Services Medical Centre, 2019

Table 3: Respondents Characteristics and Level of satisfaction with ANC services Ahmadu Bello University Health Services Medical Center 2019

Socio-demographic variable	Client's satisfaction			X ² / Fisher's exact	df	P-value
	Satisfied	Neutral	Dissatisfied			
Age						
24 and below	27	5	0	13.52	4	0.008
25 - 34	38	8	11			
35 and above	10	4	8			
Level of education						
Qur'anic education	3	0	0	7.865	6	0.174
primary education	4	4	1			
secondary education	10	1	5			
tertiary education	58	12	13			
Average monthly income (in Naira)						
< 10 000	13	2	1	15.695	6	0.008
10 000 - 50 000	46	10	6			
51 000- 100 000	8	0	5			
> 100 000	8	5	7			
Parity						
0	20	2	0	21.116	6	0.001
1	28	2	3			
2-4	24	12	15			
5+	3	1	1			
Gestational age at booking						
1-13	21	7	8	2.609	4	0.587
14-28	50	10	11			
29-40	4	0	0			
Privacy						
yes	71	11	7	31.911	2	0.000
no	4	6	12			
Cost of ANC services (in Naira)						
<1000	73	12	16	12.018	2	0.002
>1000	2	5	3			
Component of services received						
0-7	6	1	1	1.880	4	0.798
8-10	27	9	7			
11-14	42	7	11			
Waiting time						
within 30mins	32	5	2	10.249	4	0.032
31-60mins	16	5	3			
more than 1 hour	27	7	14			
Consultation time						
<10 minutes	8	2	1	3.569	6	0.745
10-20 minutes	46	12	16			
>20 minutes	15	2	2			

Note totals add up 111 instead of 112 because of non response to questions on satisfaction

Table 5: Independent Factors Influencing Client Satisfaction with Quality of ANC Service: Result from Multinomial Logistic Regression

Variables	Satisfied			Neutral		
	aOR	95%CI	P-value	aOR	95%CI	P-value
Age group (in years)						
< 24	1.5E8	0.000- .	0.994	6.2 E10	0.000- .	0.992
25-34	1.155	0.051-26.22	0.928	19.814	0.640-613.28	0.088
35	Reference	.	.	Reference	.	.
Level of education						
No education
Qur'anic	1.3E9	0.000-.	0.998	77.89	77.89-77.89	.
Primary	.008	4.5E-5- 1.37	0.066	0.037	0.000-5.8	0.203
Secondary	.008	9.3E-5-0.620	0.030	0.001	3.3E-6-0.21	0.012
Tertiary	Reference	.	.	Reference	.	.
Level of income (in naira)						
<10000						
10000-50000	5608.57	7.567-4.2E6	0.010	22.898	0.070-7.5E3	0.289
51000-100000	1006.75	11.36-8.9E4	0.003	27.954	0.434-1.8E3	0.117
>100000	187.22	2.074-1.7E4	0.023	6.4E-10	0.000	0.996
Parity						
para 0	Reference	.	.	Reference	.	.
para 1	2.7E7	0.000	0.995	8.0E5	0.000	0.996
para 2-4	0.085	6.6E-5-109.2	0.499	.000	1.5E-7-0.69	0.040
para 5+	0.520	.004-76.26	0.797	.160	0.001-20.51	0.459
Privacy						
privacy ensured	Reference	.	.	Reference	.	.
privacy not ensured	259.79	8.827-7.6E3	0.001	5.63	0.285-111.28	0.256
Cost of ANC services						
< #1000	Reference	.	.	Reference	.	.
># 1000	70.48	0.786-6.3E3	0.064	.018	0.001-0.66	0.029
Waiting time						
30 minutes	Reference	.	.	Reference	.	.
31-60 minutes	122.209	3.836-3.8E3	0.007	17.33	0.441-680.97	0.128
1 hour	320.811	6.035-1.7E4	0.004	341.93	5.854-1.9E4	0.005
	Reference	.	.	Reference	.	.

a. The reference category is dissatisfied

* for each of the variables the reference is the last subcategory

DISCUSSION

The study assessed the quality, level of client satisfaction and factors influencing satisfaction with ANC services among attendees of Ahmadu Bello University Health Services Medical Center in northwest Nigeria. It was found that the quality of ANC services received by most of the respondents was good, with more than half of them receiving 11 or more ANC service components. This finding was similar to what was obtained by a study in Kenyatta national hospital Kenya and a study carried out by Kwami where almost two-third (62.4%) and 89.6% of the respondents respectively received good quality antenatal care.[11],[28] This, however, contrast the finding obtained in studies conducted by Saira Mehnaz et al, Nemat Ismail et al and fagbamigbe et al where 45.9%, 42.9% and 11.3% respectively had the minimum acceptable quality of care.[13], [29], [30]

The average waiting time from entry into the health facility and time taken to see the health care provider was greater than 60 minutes for most of the respondents, followed by 31-60 minutes, with only a few of the respondents spending less than 30 minutes. Majority of the respondents thought that this time was long. This may have implication on their satisfaction with the quality of the ANC services offered at the medical center. This findings is consistent with a study conducted by Singh et al, Olufunmilayo et al and Sufiyan et al where the majority of the respondents spent over an hour and were displeased with the time spent as it was too long.[17],[31],[32]. The reasons given for the long waiting time were long queue, inadequate number of personnel, late arrival of health care providers, disorderliness and collection of investigation results from previous visits before seeing the health care provider.

Two-third of the respondents spent between 10-20

minutes contact time with their health care provider discussing their health concerns, and most of them viewed the time as appropriate and were satisfied with it. This however, contrast what was reported in a study conducted by Oladipo et al where average time spent with the health care provider was less than 10 minutes, with 74.7% of the respondents being satisfied with this time.[31] This could be because the majority of the patients had little or no complaints and were just attending regular antenatal care services, it could also be attributed to the fact that more patient attends the facility as it is a primary health care centre and more patient are seen compared to a university health service medical center.

The overall level of client satisfaction found in this study is good. This corresponds to the level of satisfaction obtained in different studies conducted in Nigeria .[20], [31] Despite some of the short falls noticed in the system, this was the level of satisfaction revealed by the respondents. It may reflect social desirability effect,[33] as some of the respondents may choose to give responses that pleased the health care providers contrary to their true feelings.

Independent predictors of clients' satisfaction with quality of ANC services identified in this study include; level of education, parity, average monthly income, privacy and confidentiality, cost of ANC, and waiting time before seeing a provider. The increase in odds of becoming satisfied with the quality of ANC services with higher levels of education may reveal higher understanding of the content of the services delivered and appreciating the importance of the services. The findings that less parous women were less likely to be satisfied with ANC services than more parous women may be

reflections of awareness and experienced with the services. More parous women may be aware of what ANC services they require at a particular gestational age, and therefore, are more likely to be satisfied with the services than the less parous women.

The finding that higher average monthly income decreases the odds of satisfying with quality of ANC service may be due to change in taste as one's income increases. The increase in odds of satisfaction with the quality of ANC services with less amount spent on the services is consistent with the findings of other studies where out-of-pocket expenditure was negatively associated with satisfaction with reproductive health services.[34,35] The finding may not only reveal the affordability of the services but also the quality as well as clients' preferences, as many clients may prefer quality and affordable services and they may be more likely satisfied if they have both. The findings of more satisfaction among clients who spent less than one hour before seeing a health care provider and those whose privacy and confidentiality were ensured are consistent with other studies where ease of seeing a health care provider and privacy during consultations were reported to increase patient satisfaction.[36,37]

CONCLUSION

Antenatal care services in Ahmadu Bello university health services medical center are of good quality, and the recipients of such services are satisfied with the quality of such services. Independent predictors of clients' satisfaction with ANC services were level of education, average monthly income, parity, privacy and confidentiality, cost of ANC, and waiting time before seeing a provider.

The governing council of the Ahmadu Bello University Zaria should employ more staff to reduce long waiting time and queues at the health facility.

The medical director of the Ahmadu Bello University health services medical center should motivate the facility health care providers by means of incentives in order to encourage them stop arriving late at work.

Conflict of Interest

Authors declare no conflict of interest

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