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Original Research Article

## Clients' perception of antenatal care services in a tertiary hospital in North Eastern Nigeria

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### ABSTRACT

**Background:** The study determined and documented the level of satisfaction and quality of care of patients attending the antenatal clinic of University of Maiduguri Teaching Hospital. It was a cross sectional study.

**Methods:** Using an interviewer administered questionnaire whose contents were synthesized from validated Patient Satisfaction Questionnaire III (PSQ III), information on clients' satisfaction was obtained from 274 women attending antenatal care clinic. Data were entered in to the IBM SPSS software, and analysed. Some variables were reduced to binomial scale with two categories in order to ease the process of logistic regression. P value <0.05 at 95% confidence interval was considered significant.

**Results:** The study showed an excellent level of satisfaction of clients with services obtained from our facility. Majority of respondents, 99 (36.1%) were aged of 20-24 years, with most of them having education above primary school level- 99 (36.1%). Although most of the clients, 158 (57.7%) were unskilled, majority of the clients' husbands, 136 (49.6%) were middle level workers. However, logistic regression of all the significant determinants of patients' overall satisfaction of quality of ANC services- clients' occupation, educational status, enjoying full medical services, having enough time with doctors and access to hospital, good registration process and effective ANC laboratory, showed that none of the factors was a predictor of clients' satisfaction.

**Conclusions:** Periodic patient satisfaction survey should be institutionalized to provide feedback for continuous quality improvement.

**Keywords:** Clients' perception, Patient satisfaction, Quality of care, Tertiary hospital

### INTRODUCTION

The quality of health care delivery is best assessed by a measure of the extent to which a patient is content with the care received from the health care provider.

Patient satisfaction is a major component of quality of health care and is critical to how well patients do. Patient satisfaction and quality of care exist together as hospitals whose patients reported being highly satisfied had higher quality care.<sup>1,2</sup>

Hospitals are no more just a symbol of humanitarian services. Clients are increasingly concerned about hospital's performance with focus on resources, quality and effectiveness of services delivered by these hospitals.<sup>3</sup> Improving the quality of care and service delivery in current practice focus more on quality assurance process with the patient as the focus point.

Research from The Gambia and Sudan has shown that user experience is influenced to a great extent by factors such as the type of facility either public or private, with

those attending public facilities less satisfied than those attending private facilities.<sup>4,5</sup> Other factors influencing patient satisfaction in this region include communication with, and attitudes of care providers, waiting time, inadequate privacy and lack of space in the public facilities.

In a study from Ethiopia, satisfaction with the health care services was found to have significant association with the age and educational level of the patient. Other factors such as lack of drugs and suppliers, poor cleanliness, amenities and water supply have been shown to negatively influence patient satisfaction in some part of developing world.<sup>6,7</sup>

Antenatal care is a focused strategy for reducing maternal mortality. According to the 2013 Nigeria demographic and health survey<sup>8</sup> the maternal mortality ratio was 576/100,000 live births with only 36 per cent of deliveries occurring in health facilities. Cost and distance from the health facility have been cited as a great impediment. However, 7% of mothers from some part of Nigeria reported lack of trust for the provider or poor quality service as their reason for not delivering in health facility.<sup>8</sup> Antenatal care service utilization in some part of Nigeria is low due to poor quality services which borders on finance, transportation, hospital bureaucracy and patient waiting time.<sup>9,10</sup> To reduce maternal mortality and increase access to care in this country, patient satisfaction is a valuable tool.

The study was aimed at determining and documenting the level of satisfaction and quality of care of patients attending the antenatal clinic of University of Maiduguri Teaching Hospital (UMTH) so that there will be a benchmark of service delivery upon which improvement can be made.

## METHODS

This was a cross sectional study conducted at the antenatal clinic of the UMTH, Maiduguri, Borno State North-east Nigeria from 1<sup>st</sup> January to 26<sup>th</sup> February 2015. UMTH is a tertiary health institution and is the only functional teaching hospital in the north-eastern region of Nigeria. It is located in the central part of Maiduguri, the capital city of Borno state which lies between latitude 10<sup>o</sup> and 14<sup>o</sup> north and longitude 14<sup>o</sup> and 45<sup>o</sup> east. The 2006 Nigerian census puts the population of Borno state at 4,151,193 with 1,990,036 females.<sup>11</sup>

The hospital has an established Obstetrics and Gynaecology department which provides comprehensive gynaecological, family planning, antenatal, intrapartum and postnatal obstetric care. The antenatal clinic is run 3 times a week- Tuesdays for antenatal booking clinic visit and Wednesdays and Thursdays for antenatal follow up clinic visits. The booking clinic has annual population of 3,574 clients. The annual turnover of antenatal follow up clinics is 16,607. The clinic usually commences with

interactive health talks that cover various reproductive health issues including danger signs of pregnancy, prevention of diseases such as HIV/AIDS, cervical cancers, STIs and malaria.

Education on diet and nutrition, immunization and breast feeding is also done. The entire activities last for about an hour. Vital signs are taken and urinalysis is done to check for presence of protein and glucose. Laboratory service is offered in the clinic and this enables on the spot sample collection for routine investigations without clients needing to go to the hospital laboratory.

The study population was clients on follow up antenatal clinic visits. Women attending antenatal booking and post-natal clinics were excluded. The instrument for the study was a pre-tested interviewer administered questionnaire whose contents were synthesized from validated Patient Satisfaction Questionnaire III (PSQ III) designed by Ware JE, et al. in 1978.<sup>12</sup> The questionnaire was divided into sections: Socio-demographic and obstetric characteristics, Services/procedures, Content of health information and education, Cost implication, Attitude of health personnel, Waiting time, Effective communication and Overall rating of antenatal care services. The questionnaires were administered in English language but translation to native language was done when necessary during the course of data collection.

Satisfaction of clients was measured by Likert scale.<sup>13</sup> The scores were marked using a 5-point scale in descending order as fully satisfied (5 points), satisfied (4 points), uncertain (3 points), dissatisfied (2 points) and very dissatisfied (1 point). Antenatal Care (ANC) was defined as health care given to a woman during pregnancy. Waiting time was defined as time spent from the end of the health talk to the beginning of the clinic consultation.

The sample size was derived using Kish's formula<sup>14</sup>

$$n_f = \frac{n}{1 + \frac{(n)}{N}}$$

where  $n_f$  is the desired sample size when population is less than 10,000,  $n$  is the desired sample size when population is greater than 10,000 and  $N$  is the estimate of the population size (3,574 representing the annual antenatal booking clinic attendees at the study centre).  $n$  was calculated to be 236 using Taylor's formula,

$$n = \frac{z^2 pq}{d^2}$$

where  $z$  is the standard normal deviate (1.96) at 95% confidence interval,  $p$  is the proportion of the target population estimated to be satisfied with ANC services (81.1%) which was extrapolated from finding of a similar study conducted in Ibadan, South-West Nigeria  $q$  is the proportion of failure which is  $1.0-p$  and  $d$  is the degree of

accuracy set as 0.05.<sup>7</sup> Consequently, the sample size, *n*, with 20 % attrition was 274.

A total of 274 clients were recruited consecutively from the population of antenatal care clinic women after ethical approval from the research and ethical committee of University of Maiduguri Teaching Hospital, and after obtaining informed consent from them.

### Statistical analysis

The data was entered in to the IBM SPSS software version 20.0 (New York, 2011). Frequency and percentage analyses were done for the sociodemographic characteristics, and chi square analysis was performed to identify variables that had significant influence on client satisfaction. The data was also reduced to binomial scale with two categories of satisfied and not satisfied in order to ease the process of statistical analysis, particularly logistic regression which was utilized to identify predictors. *p* value <0.05 at 95% confidence interval was considered significant.

## RESULTS

All the 274 clients interviewed gave complete responses to all the items in the questionnaire. Overall 269 (98.2%) of clients were satisfied with services rendered in our centres. The age ranged from 15-44 years with mean age of 26.1 years±5.8 years.

Table 1 shows the sociodemographic characteristics of respondents. Majority of respondents, 99 (36.1%) were aged of 20-24 years, followed by age group 25-29 years which accounted for 76 (27.7%). Minority of the clients, 4 (1.5%) were Aged 40-44 years. One hundred and twenty two (44.5%) respondents were kanuris. Hausas were the next major clients constituting 32 (11.7%) of all the women interviewed, followed by Fulani ethnic group which accounted for 29 (10.6%) of the clients. Igbos and Yorubas accounted for 9 (3.3%) and 7 (2.6%) of the clients respectively. Fifty five clients (20.1%) were from minority ethnic groups numbering 9.

Two hundred and fifty (91.2%) were of Islamic faith while 24 (8.8%) were Christians. Most of the clients, 158 (57.7%) were unskilled while 78 (28.5%) and 38 (13.9%) were middle-level workers and professionals respectively. However, most of the clients' husbands, 136 (49.6%) were middle level workers while 81 (29.6%) and 57 (20.8%) were professionals and unskilled workers respectively. Analysis of the educational status revealed that most of the clients had education above primary school level- 99 (36.1%) and 95 (34.7%) had tertiary and secondary school levels of education respectively. Only 25 (9.1%) of them had primary school level of education while 55 (20.1%) had no formal education. Ninety nine (36.1%) and 95 (34.7%) of the clients were para 2-4 and para 1 respectively while minority, 37 (13.5%) were para 0.

**Table 1: Sociodemographic characteristics of respondents.**

Characteristics	Frequency	%
<b>Age (Yrs)</b>		
15-19	21	7.7
20-24	99	36.1
25-29	76	27.7
30-34	51	18.6
35-39	23	8.4
40-44	4	1.5
Total	274	100
<b>Tribe</b>		
Hausa	32	11.7
Kanuri	122	44.5
Fulani	29	10.6
Shuwa	20	7.3
Igbo	9	3.3
Yoruba	7	2.6
Others	55	20.1
Total	274	100
<b>Religion</b>		
Islam	250	91.2
Christianity	24	8.8
Total	274	100
<b>Occupation</b>		
Professionals	38	13.9
Middle level	78	28.5
Unskilled	158	57.7
Total	274	100
<b>Occupation</b>		
Professionals	81	29.6
Middle level	136	49.6
Unskilled	57	20.8
Total	274	100
<b>Educational status</b>		
No formal Education	55	20.1
Primary	25	9.1
Secondary	95	34.7
Tertiary	99	36.1
Total	274	100
<b>Parity</b>		
0	37	13.5
1	95	34.7
2-4	99	36.1
5 or more	43	15.7
Total	274	100

Table 2 shows the assessment of the health topics and amenities provided at the antenatal clinic. Overall, majority of the clients agreed to receiving adequate health topics (72.8% versus 16.1 %;  $\chi^2= 0.748$ ,  $P < 0.0001$ ). For individual variables, 236 (86%) agrees that education on diet and nutrition was adequate while 22 (8%) believed it was not adequate. Similarly, 239 (87%) clients agreed that education on danger signs of pregnancy was adequate while 25 (9%) said it was not adequate. This trend is same for education on breast feeding, family

planning, prevention of malaria, STIs, HIV/AIDs and cervical cancer, as well as breast self-examination where

majority of the clients where more than 50 % of the clients agreed that it was adequate.

**Table 2: Assessment of health topics.**

Health Topics	Strongly Agree N (%)	Agree N (%)	Uncertain N (%)	Disagree N (%)	Strongly disagree N (%)
Diet and nutrition	116 (42)	120 (44)	16 (6)	20 (7)	2 (1)
Danger signs of pregnancy	109 (40)	130 (47)	10 (4)	22 (8)	3 (1)
Breast feeding	90 (33)	121 (44)	34 (12)	24 (9)	5 (2)
Family planning	89 (32)	116 (42)	30 (11)	29 (11)	10 (4)
Prevention of malaria	90 (33)	119 (43)	24 (9)	35 (13)	6 (2)
STIS	81 (29)	103 (38)	43 (16)	41 (15)	6 (2)
HIV/AIDS	98 (36)	115 (41)	25 (9)	29 (11)	7 (3)
Cervical cancer	69 (25)	74 (27)	40 (15)	68 (25)	23 (8)
Breast self-examination	73 (27)	83 (30)	44 (16)	47 (17)	27 (10)

**Table 3: Assessment of influence of sociodemographic factors on service satisfaction.**

Factor	Overall Satisfaction		Total	$\chi^2$	p value
	Satisfied	Not Satisfied			
<b>Age (Yrs)</b>					
15-19	18 (94.7)	1 (5.3)	19	0.982	0.964
20-24	89 (97.8)	2 (2.2)	91		
25-29	69 (97.2)	2 (2.8)	71		
30-34	50 (98.0)	1 (2.0)	51		
35-39	23 (95.8)	1 (4.2)	24		
40-44	4 (100)	0 (0.0)	4		
<b>Tribe</b>					
Kanuri	110 (98.2)	2 (1.8)	112	7.320	0.292
Hausa	25 (100)	0 (0.0)	25		
Fulani	32 (100)	0 (0.0)	32		
Shuwa	17 (94.4)	1 (5.6)	18		
Igbo	7 (87.5)	1 (12.5)	8		
Yoruba	8 (100)	0 (0.0)	8		
Others	50 (94.3)	3 (5.7)	53		
<b>Religion</b>					
Islam	229 (97.9)	5 (2.1)	234	3.657	0.114
Christianity	20 (90.9)	2 (9.1)	22		
<b>Occupation</b>					
Professionals	29 (87.9)	4 (12.1)	33	13.164	0.001
Middle level	72 (97.3)	2 (2.7)	74		
Unskilled	146 (99.3)	1 (0.7)	147		
<b>Educational status</b>					
No formal Education	47 (97.9)	1 (2.1)	48	7.484	0.024
Primary	20 (100)	0 (0.0)	20		
Secondary	90 (100)	0 (0.0)	90		
Tertiary	91 (93.8)	6 (6.2)	97		
<b>Husbands' occupation</b>					
Professionals	75 (94.9)	4 (5.1)	79	2.322	0.313
Middle level	123 (98.4)	2 (1.6)	125		
Unskilled	50 (98)	1 (2.0)	51		
<b>Parity</b>					
0	29 (93.5)	2 (6.5)	31	2.865	0.413
1	82 (96.5)	3 (3.5)	85		
2-4	90 (97.8)	2 (2.2)	92		
5 or more	38 (100)	0 (0.0)	38		

Table 3 shows the influence of clients' sociodemographic characteristics on the overall level of satisfaction of the quality of ANC services in our health facility. Only clients' occupation ( $\chi^2= 13.164$ ,  $P=0.001$ ), and educational status ( $\chi^2= 7.484$ ,  $P = 0.024$ ) were significant determinants of overall satisfaction of the quality of antenatal care services. Age, tribe, religion, husbands' occupation and parity were not found to be significant determinants.

**Table 4: Assessment of influence of technical quality, communication and financial aspects on service satisfaction.**

Factor	Overall satisfaction		Total	$\chi^2$	P value
	Satisfied	Not Satisfied			
<b>Enjoy full medical care</b>					
Yes	217 (98.2)	4 (1.8)	221	4.405	0.036
No	20 (90.9)	2 (9.1)	22		
<b>Doctors are friendly</b>					
Yes	204 (98.1)	4 (1.9)	208	0.391	0.532
No	20 (100)	0 (0.0)	20		
<b>Good communication</b>					
Yes	159 (97)	5 (3.0)	164	0.074	1.000
No	80 (97.6)	2 (2.4)	82		
<b>Cost effective services</b>					
Yes	193 (96.5)	7 (3.5)	200	1.299	0.599
No	36 (100)	0 (0.0)	36		
<b>Enough time with doctors</b>					
Yes	169 (98.8)	2 (1.2)	171	5.181	0.043
No	57 (93.4)	4 (6.6)	61		
<b>Easy access to hospital</b>					
Yes	190 (99)	2 (1.0)	192	10.880	0.008
No	35 (89.7)	4 (10.3)	39		
<b>Long waiting time</b>					
Yes	178 (96.2)	7 (3.8)	185	2.144	0.357
No	55 (100)	0 (0.0)	55		

Table 4 shows the assessment of influence of some aspects of technical quality, communication and finances on the overall satisfaction of quality of ANC services.

From the table, clients who enjoyed full medical care ( $\chi^2= 4.405$ ,  $P = 0.036$ ), had enough time with doctors ( $\chi^2= 5.181$ ,  $P = 0.043$ ), and had easy access to hospital ( $\chi^2= 10.880$ ,  $P = 0.008$ ) were more likely to have overall satisfaction with the quality of ANC. Doctors being friendly, good communication, cost effective services and waiting time at the clinic did not influence the satisfaction of the clients.

Good registration process ( $\chi^2= 6.396$ ,  $P = 0.028$ ), and effective ANC laboratory ( $\chi^2= 6.910$ ,  $P = 0.045$ ) were the two logistics in the ANC that positively influenced clients' overall satisfaction, as shown in table 5. Other logistic activities such as assessment of vital signs, good reception at labour ward, good water and electricity supply, and good toilet hygiene did not significantly influence satisfaction.

**Table 5: Assessment of influence of activities and hygiene on service satisfaction.**

Factor	Overall satisfaction		Total	$\chi^2$	P value
	Satisfied	Not Satisfied			
<b>Good registration process</b>					
Yes	174 (98.9)	2 (1.1)	176	6.396	0.028
No	50 (92.6)	4 (7.4)	54		
<b>Vital signs are taken</b>					
Yes	225 (97.8)	5 (2.2)	230	1.556	0.284
No	12 (92.3)	1 (7.7)	13		
<b>Effective ANC laboratory services</b>					
Yes	217 (98.2)	4 (1.8)	221	6.910	0.045
No	14 (87.5)	2 (12.5)	16		
<b>Good reception at labour ward</b>					
Yes	155 (98.1)	3 (1.9)	158	2.086	0.189
No	29 (93.5)	2 (6.5)	31		
<b>Good water supply</b>					
Yes	226 (97.4)	6 (2.6)	232	0.053	1.000
No	2 (100)	0 (0.0)	2		
<b>Good electricity supply</b>					
Yes	222 (96.9)	7 (3.1)	229	0.315	1.000
No	10 (100)	0 (0.0)	10		
<b>Good toilet hygiene</b>					
Yes	183 (97.3)	5 (2.7)	188	0.015	0.690
No	42 (97.7)	1 (2.3)	43		
<b>Recommend hospital to family and friends</b>					
Yes	243 (97.6)	6 (2.4)	249	0.025	0.976
No	1 (100)	0 (0.0)	1		

Logistic regression of all the significant determinants of patients' overall satisfaction of quality of ANC services- clients' occupation, educational status, enjoying full medical services, having enough time with doctors and access to hospital, good registration process and effective ANC laboratory, showed that none of the factors was a predictor of clients' satisfaction.

## DISCUSSION

Antenatal care is a very important component of maternal healthcare services. It gives women and their families an opportunity to learn about the risk associated with pregnancy and guides their health seeking practices and decision- making, thereby preventing maternal and infant morbidity and mortality.

Our study evaluated the perception of patients and their level of satisfaction with antenatal care. Like our study, previous researches have revealed positive correlation between patient's satisfaction and health care utilization.<sup>15,16</sup> The predominant age group of respondents of 20-24 years found in our study is similar to a study carried out in Lagos which recorded 20-29 years.<sup>17</sup> This age group reflects the age of increased reproductive capacity.

The overall satisfaction of clients with services received from our centre was 98.2% which was higher than those

reported from Ibadan (75%), Enugu (53%) and Kano (83%).<sup>18-20</sup> Apart from variation in the way services are delivered, differences in study populations and hence patients' expectation could affect satisfaction level.

A high proportion of the patients were also satisfied with the ease of accessing care from our centre (99%). This is in contrast with findings from other studies, where lower proportions of patients were satisfied with ease of accessing care as reported by 84% in Kano 56% in Benin city 49% in Ile-Ife and 53% in Enugu.<sup>19-22</sup> Apart from location of our facility within the capital city, less bureaucracy might have contributed to patient satisfaction.

The high level of satisfaction with payment (96.5%) obtained in this study may have resulted from the safety net provided by the social welfare department, the public sector National Health Insurance Policy (NHIS), the retainership clinic and the comparative low charges in the hospital compared to private health facilities.

Patient waiting time in outpatient clinics is often the major reason for patients' complaints regarding their experiences in outpatient clinics. Therefore, patient satisfaction with waiting time plays a crucial role in the overall satisfaction with services. In this study, waiting time had the highest proportion of satisfied patients (96.2%). This is in keeping with a study carried out in Nnewi Nigeria where waiting time was perceived by respondents as being adequate.<sup>23</sup>

This study found that excellent proportions of patients were satisfied with the quality of medical care and services provided by the doctors. Good communication between patients and care providers has been described as an important component of good medical practice and in present study, 97% of those who enjoyed good communication reported satisfaction with services rendered.<sup>1,4</sup>

Some of the factors that attract patients to the health facility are the availability of facilities for good registration process, effective laboratory services, good reception at labour ward, good water and electricity supply and good toilet hygiene. In the present study 97.6% of the respondents were satisfied and willing to recommend the hospital to family and friends.

A number of limitations did exist in the study. Firstly, the excellent overall satisfaction by respondents should be interpreted with caution as literature has shown that pregnant women tend to be relatively uncritical, and accept as appropriate whatever care they receive.<sup>24</sup> Secondly, the quantitative nature of the study was a potential limitation, as patients may have certain important beliefs that could not be expressed using a quantitative survey tool. In addition, the most recent visit might not represent the patient's cumulative experience

across all visits. Finally, the results cannot really be generalized to other Northeast region of Nigeria.

Overall, the study showed a high level of satisfaction of patients with services obtained from our facility. Periodic patient satisfaction survey should be institutionalized to provide feedback for continuous quality improvement.

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