

Clients' Assessment of Quality of Antenatal Care Services at Federal Teaching Hospital Abakaliki, Nigeria: Understanding Key Role of Health Providers

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Authors' contributions

This work was carried out in collaboration among all authors. Author ENO conceptualized the study, did the literature search, participated in the design, wrote the study protocol and coordinated the research, performed the statistical analysis and drafted the manuscript. Author CEO participated in literature search, design and revision of draft. Author NO participated in design, literature search, supervised data collection and revision of draft. Author CC participated in the design, literature search and acquisition of data. Author JUU participated in the design, literature search and acquisition of data. Author LUO conceptualized the study, participated in the design and statistical analysis. All authors read and approved the final manuscript.

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ABSTRACT

Aims: The research objective of this article sought to determine the clients' evaluation of the quality of antenatal care (ANC) at Federal Teaching Hospital Abakaliki, Nigeria.

Study Design: A descriptive cross-sectional study design was adopted.

Place and Duration of Study: Federal Teaching Hospital Abakaliki, Nigeria. The study took place between April and May, 2018.

Methodology: A systematic random sampling technique was used to select 415 women receiving ANC at the facility. A questionnaire designed by the authors was used as an instrument for the research. A composite index of satisfaction (overall satisfaction) was derived. It was determined by proportion of clients who were satisfied with ANC services, were willing to use facility again for ANC and also recommend to others. It also included those who reported being well received at facility and were satisfied with attitude of Doctors and Nurses. A 'Yes' answer to these six variables was regarded as overall satisfaction.

Results: From the results of the study, mean age of respondents was 29.3±4.5 years. It was found that the major reasons for registering at the facility were quest for quality care (41.0%) and facility has trained health workers,(21.4%). Majority, 91.6% intend to deliver at the facility. It was found that majority (73.0%) had overall satisfaction with ANC services. The predictors of overall satisfaction included having attained tertiary education, (AOR=0.4; 95%CI: 0.2-0.8), being unemployed, (AOR=0.6; 95%CI: 0.3-0.9) and intention to deliver in same health facility, (AOR=2.4; 95%CI:1.2-5.1)

Conclusions: The major reasons for choosing the health facility for ANC were health worker related. Majority of the clients had overall satisfaction with antenatal services and were also willing to deliver at the facility. Being satisfied with ANC services facilitates delivery in health facility and this is capable of improving maternal health in Nigeria. In realizing this, health providers have a prominent role to play. There is thus the need to support health workers in fulfilling this essential role and this may necessitate training health workers on quality of care.

Keywords: Quality of care; antenatal care; tertiary hospital; providers; Abakaliki; Nigeria.

1. INTRODUCTION

Antenatal care (ANC) is care a woman receives while pregnant which helps to ensure healthy outcome to woman and her baby [1], and should be provided by skilled provider. The World Health Organization (WHO) identifies midwife, doctor or nurse as skilled providers [2]. According to United Nations Children's Fund, 86% of pregnant women in the world attend at least one ANC with a skilled provider while about 62% make at least four antenatal visits [3]. There is evidence that regions of the world where maternal mortality is high, proportion of women that make at least four antenatal visits were lower than those with low mortality [3]. Nigeria bears the highest burden of maternal deaths globally by accounting for 23% of total maternal deaths [4]. In Nigeria, 67% made at least four ANC visits while about 34% received no form of ANC [5].

It has been postulated that application of evidence based interventions in low resource settings could reduce maternal deaths [6]. The high maternal mortality ratio in Nigeria has been attributed to poor quality maternal health services [7]. Elsewhere the root cause of a long standing high maternal mortality was also attributed to poor quality care [8]. Thus it has been premised that to decrease the maternal death burden in Nigeria, there is need to embrace quality maternal health services [9].

Presently, there is evidence that ANC could improve pregnancy outcome and child health [10]. Thus ANC is an important tool in realizing the third Sustainable Development Goal by 2030 [10].

Expectedly, WHO anticipates that every pregnant woman should receive quality care from prenatal to postnatal period [11]. A study revealed that consumers of healthcare are willing to pay for services if their satisfaction with care received is increased [12]. It has been shown that clients' satisfaction with healthcare services is one of the major tools for assessing healthcare quality and responsiveness of health system [13]. It has also been found that when clients are satisfied with maternity services received, they are more likely to use health facility again and also recommend facility to others for same purpose [14]. Furthermore, when a woman is satisfied with ANC services, she is more likely to make the recommended number of visits [15], thus leading to positive pregnancy outcomes [15,16]. However, dissatisfaction with ANC by pregnant women could lead to preference for traditional based maternity care which is associated maternal and fetal mortalities [17]. These mortalities are not just simple health indicators but are determinants of health status of a country [18] which are very high in Nigeria [5]. This study was designed to determine clients' assessment of quality of ANC services at Federal Teaching Hospital

Abakaliki, Nigeria and predictors of satisfaction with ANC.

2. MATERIALS AND METHODS

2.1 Study Setting

The study was conducted at Federal Teaching Hospital Abakaliki, Ebonyi state, Nigeria. (It is presently referred to as Alex Ekwueme Federal University Teaching Hospital Abakaliki). It is a tertiary hospital established in December, 2011. The hospital is of 602 bed capacity and serves as teaching hospital for medical students of College of Health Sciences of Ebonyi State University Abakaliki, Nigeria. It also offers Residency training for doctors in different fields of Medicine. ANC services are offered on every working day of the week under different teams headed by medical consultants in Department of Obstetrics and Gynecology. The study took place between April and May, 2018.

2.2 Study Design

This was a descriptive cross sectional study.

2.3 Study Population

Study population were pregnant women attending ANC at the health facility. A minimum of two ANC visits qualified a woman for inclusion in the study.

2.4 Sample Size Determination

Minimum sample size was determined by the formula used for single proportions [19]. A sample size of 415 pregnant women were included based on a type 1 error (α) of 0.05, tolerable margin of error of 0.05 and a proportion of 77.5%, representing proportion of respondents that had overall satisfaction with quality of ANC in a tertiary hospital in Nigeria [20].

2.4.1 Sampling technique

Systematic random sampling technique using facility register was used to select clients as they presented on each day of data collection. An average of 1124 clients presented in clinic on a monthly basis and this served as sampling frame. Sampling interval was determined by dividing sampling frame (1124) by sample size (415), hence a sampling interval of 3 was used. Every third client was recruited for the study based on order of registration of clients on each day of data collection..The index client was

selected by simple random sampling method through balloting. The clients coming for ANC on five working days of the week were included in the study.

2.5 Study Instrument

A pretested semi-structured questionnaire which was developed by the researchers was used for the study. The questionnaire was administered to the clients by trained research assistants.

2.6 Data Management

Data entry and analysis were done using IBM Statistical Package for Social Sciences statistical software version 25. Frequency tables and cross-tabulations were generated. Chi square test and multivariate analysis using binary logistic regression were used in the analysis and level of statistical significance was determined by a p value of < 0.05 .

2.6.1 Outcome measure

Outcome measure was clients overall satisfaction with ANC services. This was assessed using six variables and was determined by proportion of clients satisfied with ANC received on day of data collection and were ready to use health facility again and also willing to recommend to others for same service. Also, bearing in mind the prominent role health providers play in clients' assessment of quality of care in developing countries [9], the index also included proportion of clients who reported being well received at the health facility and were satisfied with attitude of Doctors and Nurses attending to them. A 'Yes' answer to these six variables by any respondent was regarded as having overall satisfaction.

The socio-economic status index was developed using Principal Component Analysis, (PCA) in STATA statistical software version 12. The input to the PCA included information on estimated household monthly income and ownership of ten household items. For calculation of distribution cut points, quartiles, (Q) were used. Each respondent was assigned the wealth index score of her household. The quartiles were Q1 = poorest, Q2= the very poor, Q3= the poor and Q4= least poor.

Multivariate analysis using binary logistic regression was used to determine predictors of

clients overall satisfaction with ANC. Variables that had a p value of <0.2 on bivariate analysis were entered into the logistic regression model to determine the predictors of clients' overall satisfaction. Result of regression analysis was reported using adjusted odds ratio and 95% confidential interval.

3. RESULTS AND DISCUSSION

Table 1 shows socio-demographic characteristics of respondents. The mean age of respondents

was 29.3±4.5 years. Majority, (69.1%) and their husbands also, (74.2%) have attained tertiary education.

Table 2 shows Gestational age at registration for ANC and services received. The highest proportion of respondents, 46% registered for ANC in first trimester. The major reasons for registering in the facility included perceived quality of care, (41.0%) and health facility has trained health workers (21.4%). Majority, (91.6%) intend to deliver in the same facility.

Table 1. Socio-demographic characteristics of respondents

Variable	Frequency (n=415)	Percent (%)
Age of respondents (years)		
Mean± SD	29.3±4.5	
Age of respondents in groups		
<25 years	51	12.3
25-29 years	170	41.0
30-34 years	139	33.5
≥35 years	55	13.3
Number of children		
No child	87	21.0
1-4 Children	148	35.7
≥5 children	180	43.4
Ethnicity		
Igbo	390	94.0
Other ethnic groups*	25	6.0
Marital status		
Single	16	3.9
Married	399	96.1
Education of Respondents		
No formal education	3	0.7
Primary education	16	3.9
Secondary education	108	26.0
Tertiary education	288	69.4
Employment status of respondents		
Unemployed	137	33.0
Self employed	109	26.3
Salaried employment	169	40.7
Education of Husband (n=399)		
No formal education	2	0.5
Primary education	17	4.3
Secondary education	80	20.1
Tertiary education	300	75.2
Employment status of Husbands		
Unemployed	1	0.3
Self employed	167	41.9
Salaried employment	231	57.9
Socio-economic status (n=415)		
Poorest	105	25.3
Very Poor	104	25.1
Poor	113	27.2
Least Poor	93	22.4

*Hausa, Yoruba, Minority tribes

Table 2. Gestation age at registration for ANC and services received

Variable	Frequency (n=415)	Percent (%)
Booking for ANC		
First trimester	191	46.0
Second trimester	188	45.3
Third trimester	36	8.7
Reason for choosing facility for ANC		
Perceived quality of care	170	41.0
Trained health workers	89	21.4
Personal	82	19.8
Good facilities	40	9.6
Recommendation from people	31	7.5
No specific reason	3	0.7
Intended place for delivery		
Same facility used for ANC*	380	91.6
Private/mission hospital	4	1.0
Outside Ebonyi state	3	0.7
Traditional Birth attendant	1	0.2
Home	1	0.2
Not yet decided	26	6.3
Services received during ANC		
Weight measurement	409	98.6
Blood pressure measurement	408	98.3
Urine test	407	98.1
HIV screening	404	97.3
Blood test	404	97.3
Height measurement	381	91.8
Iron supplementation	412	99.2
Injection tetanus toxoid	381	91.8
Malaria prophylaxis	368	88.7
Ultrasound scan	358	86.3

*ANC Antenatal care

Table 3 shows clients assessment of quality of ANC services. Majority of the respondents, 96.9% were satisfied with quality of ANC services received at the facility. Similar proportions of clients, 95.4% were willing to use the facility again for ANC and also recommend same facility to others. Majority, 73.0% had overall satisfaction with ANC.

Table 3. Clients' assessment of quality of ANC services

Variable	Frequency (n=415)	Percent (%)
Satisfaction with aspects of services		
Cleanliness of clinic area		
Yes	397	95.7
No	18	4.3
Time spent at antenatal clinic		
Yes	307	74.0
No	108	26.0
Waiting time		
Yes	302	72.8
No	113	27.2
Cost of services		
Yes	302	72.8
No	113	27.2
Satisfied with ANC		
Yes	402	96.9
No	13	3.1
Intend to use facility again for ANC		
Yes	396	95.4
No	19	4.6
Recommend facility to others for ANC		
Yes	400	95.4
No	15	3.6
Good reception from health workers		
Yes	355	85.5
No	60	14.5
Good attitude of Doctors		
Yes	379	91.3
No	36	8.7
Good attitude of Nurses		
Yes	353	85.1
No	62	14.9
Overall Satisfaction with ANC		
Yes	303	73.0
No	112	27.0

ANC Antenatal care

Table 4 shows the factors affecting overall satisfaction with ANC among the respondents. A significantly higher proportion of the respondents who have attained secondary education and below, (82.7%) had overall satisfaction with antenatal care when compared with those who have attained tertiary education, 68.8%, ($\chi^2=8.676$, $p=0.003$). A higher proportion of the respondents who intend to deliver at the health facility, 74.5% had overall satisfaction with antenatal care when compared with those who did not intend to deliver at the facility, 57.1% and the difference in proportions was found to be statistically significant, ($\chi^2=4.885$, $p=0.027$).

Table 5 shows predictors of overall satisfaction with ANC. Respondents who attained tertiary education were 2.5 times less likely to have overall satisfaction when compared with those who attained secondary education and below. (AOR=0.4, 95%CI: 0.2-0.8). Respondents who intend to deliver in the same health facility were 2.4 times more likely to have overall satisfaction with ANC when compared to those who intend to deliver elsewhere. (AOR=2.4, 95%CI: 1.2-5.1).

3.1 Discussion

The highest proportion of respondents, 46.0% booked for ANC in first trimester, followed by those who registered in second trimester, 45.3%. These results are at variance with that obtained from a previous study at Abakaliki, Nigeria where only 16.9% of respondents booked in first trimester [21]. It has been observed that several maternal factors affect timing of booking for ANC in southeast Nigeria [22], implying that registration for ANC is mainly the decision

Table 4. Factors affecting overall satisfaction with ANC among the respondents

Variable	Overall satisfaction with antenatal care (n=415)		χ^2	p value
	Yes N(%)	No N(%)		
Age of Respondents (years)				
<25 years	34 (66.7)	17 (33.3)	1.576	0.455
25 – 29 years	123 (72.4)	47 (27.6)		
≥ 30 years	146 (75.3)	48 (24.7)		
Marital status				
Single	13 (81.2)	3 (18.8)	0.573	0.449
Married	290 (72.7)	109 (27.3)		
Number of children				
No child	57 (65.5)	30 (34.5)	3.471	0.176
1-4 children	233 (74.7)	79 (25.3)		
≥5 children	13 (81.2)	3 (18.8)		
Education of Respondents				
Tertiary education	198 (68.8)	90 (31.2)	8.676	0.003
Secondary education and less	105 (82.7)	22 (17.3)		
Education of Husband				
Tertiary education	208 (69.3)	92 (30.7)	6.827	0.009
Secondary education and less	82 (82.8)	17 (17.2)		
Employment status of respondents				
Unemployed	88 (64.2)	49 (35.8)	8.220	0.016
Self employed	86 (78.9)	23 (21.1)		
Salaried employment	129 (76.3)	40 (23.7)		
Employment status of Husbands				
Unemployed	1 (100.0)	0 (0.0)	3.487*	0.175
Self employed	129 (77.2)	38 (22.8)		
Salaried employment	160 (69.3)	71 (30.0)		
Socio-economic class				
Poorest	82 (78.1)	23 (21.9)	4.043	0.357
Very Poor	77 (74.0)	27 (26.0)		
Poor	83 (73.5)	30 (26.5)		
Least Poor	81 (65.6)	34 (34.4)		
Intention to deliver at the health facility				
Yes	283 (74.5)	97 (25.5)	4.885	0.027
No	20 (57.1)	15 (42.9)		

*Likelihood ratio

Table 5. Predictors of overall satisfaction with antenatal care among the respondents

Variable	Adjusted odds ratio	p value	95% CI**	
			Lower	Upper
Number of children				
No child	0.6	0.501	0.2	2.5
1-4 children	0.8	0.733	0.2	2.9
≥5 children	1			
Education of Respondents				
Tertiary education	0.4	0.004	0.2	0.8
Secondary education and less	1			
Employment status of respondents				
Unemployed	0.6	0.029	0.3	0.9
Self employed	0.8	0.445	0.4	1.5
Salaried employment	1			
Intention to deliver at the health facility				
Yes	2.4	0.019	1.2	5.1
No	1			

**95% confidence interval

of the individual involved. In a similar study in a tertiary hospital in southern Nigeria, 27.6% booked for ANC in first semester [23]. However in a study in Saudi Arabia, majority of the women, 65.3% booked for ANC in first trimester [24].

These findings differ from that in a district in Cameroon where no client booked for ANC in first trimester [25]. This may be an indication of geographical differences in perception of ANC and its utilization by women. There were also differences in the concept of ideal booking period for ANC. For example, in a study in southwest Nigeria, the highest proportion of respondents, 46.1% were of the opinion that the first trimester is the ideal period [26]. In southeast Nigeria, the highest proportion of respondents, 37.2% perceived the second trimester as the ideal booking period [21].

The major reasons for choosing the health facility for ANC were perceived quality of care 41.0% and facility had trained health workers, 21.4%. In a study in Sagamu, southwest Nigeria, perceived quality of care was the major reason for choosing a place for ANC [27]. This is an indication that pregnant women in Nigeria desire quality ANC and the need for providers to meet such a worthy expectation.

Majority of respondents, 91.6% intend to deliver at the same facility used for ANC. This has huge implications for improving maternal health in Nigeria and it may be an indication that the expectations of the women were met during ANC. There has been an opinion that high quality

ANC will encourage its utilization by women and this will make it possible that the women will prefer to deliver in the same health facilities [28]. This is of relevance as utilization of formal health facilities for delivery services in Nigeria is poor as only 36% of births take place in health facilities and this is worse in rural areas [5] and in primary health centers [9].

This observation in which majority of women intend to deliver in a teaching hospital after receiving ANC in same facility is different from the observations in several tertiary hospitals in Nigeria. For example, in Sokoto, Nigeria, only 68.5% of women who attended ANC in a tertiary hospital delivered in the health facility [29]. In Jos, Nigeria, there was a huge gap between ANC attendance and delivery in the health institution as less than one third of the respondents delivered at the health facility [30]. In the same study, almost a similar proportion delivered at home [30]. This obviously should call for concern bearing in mind the high burden of maternal mortality in Nigeria. In another tertiary hospital in northern Nigeria, 13.7% of clients that booked in that facility delivered there because of cultural factors like mode and position of delivery [31].

The situation is not different from results from hospitals in other levels of care in Nigeria. For instance, in a study in Kano state, a higher proportion of respondents, 74.1% stopped attending ANC and delivered at home because of poor attitude of health workers and other factors [32]. This observation is different from that in southeast Nigeria where good attitude of health

workers helped clients to recommend the primary health centers to others for antenatal and postnatal services [9]. This brings to the fore the crucial role healthcare workers have to play in reducing the high maternal mortality in Nigeria.

Majority of respondents received various services during antenatal care including weight, height and blood pressure measurements. Similar results were obtained from a tertiary hospital at Ibadan, Nigeria [33]. This could be a confirmation that healthcare workers in Nigeria are aware of components of ANC.

Majority, 96.9% were satisfied with ANC received at the facility. Similar results were obtained in other levels of healthcare in Nigeria [34,35], and even when certain deficiencies in the health system were obvious [9]. This is consistent with findings in other developing countries [25,36]. It has been posited that mothers in developing countries focus more on providers of maternal healthcare and their interactions with them rather than the health system and thus are easily satisfied with services received [9]. This makes it imperative that providers of maternal health care should understand the prominent role they have to play in reducing the high maternal death burden in Nigeria by ensuring good utilization of formal health facilities for antenatal and delivery services.

Majority of respondents, 85.5% were satisfied with the good reception from health workers during ANC. Majority, 91.3% were satisfied with attitude of doctors and nurses, 85.1%. These findings are encouraging and are similar to that obtained from tertiary health institutions in other parts of Nigeria [20,33]. The results from a systematic review revealed that women place high premium on being treated with dignity irrespective of status [37]. Thus it has been postulated that improving the client provider relationship during ANC will increase attendance in such clinics hence reducing pregnancy complications during pregnancy [38]. It has also been suggested that in reducing the high maternal mortality in Nigeria, health workers should treat pregnant women with respect [32], and this may have prompted the call to train health providers on quality of care [39].

Majority of respondents, 73.0% had overall satisfaction with ANC services received. In studies in tertiary health institutions in Nigeria, majority of respondents had overall satisfaction with quality of ANC received [20,33]. Satisfaction with prenatal care has been found to be an

important determinant of its utilization [40]. Also such quality ANC services will encourage utilization of health services for delivery hence capable of reducing the high maternal morbidity and mortality in Nigeria [28].

From the results of this study, respondents who have attained tertiary education were 2.5 times less likely to have overall satisfaction with ANC when compared with those who attained secondary education and below. This result may be based on the differences in expectations of women based on educational status as education is a strong determinant of utilization of ANC in Nigeria [5]. The result is however at variance with what was obtained in Malaysia where respondents who attained tertiary education were more likely to be satisfied with ANC than those who attained secondary education and below [41].

The respondents who were unemployed were about twice less likely to have overall satisfaction with ANC when compared with those who were on salaried employment. This result is at variance with that obtained from a study in Enugu state, Nigeria where the unemployed were more satisfied with maternal health service than those on salaried employment [9]. However, the study was when the Government of Enugu State, Nigeria offered free maternal health service to all residents of the state. This could explain the difference in findings from the two studies since the current economic realities in Nigeria is different from that at the time of the study. However, it is worth emphasizing that majority of respondents in this study were satisfied with cost of services and also with waiting time at the facility.

There is evidence that consumers of healthcare prefer high quality care even at higher cost [12]. This could explain why majority of respondents in this study were satisfied with cost of services and also waiting time. Incidentally, 66.5% of respondents in a tertiary hospital in Osun state, Nigeria were dissatisfied with time spent in the clinic during ANC visits [20]. This was further supported by findings in southwest Nigeria where a significantly higher proportion of respondents who were satisfied with ANC were pleased with the time spent at the health facility than those not satisfied [33].

Respondents who had intention to deliver in the health facility were 2.4 times more likely to have overall satisfaction with ANC when compared

with those who did not. Similarly, in a study in Ibadan, Nigeria, those who had the intention of using the facility again for ANC were more likely to be satisfied when compared with those who did not [33]. Thus there is a link between overall satisfaction with ANC and intention to use health facility again for ANC and also deliver in the same facility. These factors are provider driven and have implications for improving maternal health in Nigeria. Consequently, there is need to focus on quality ANC in Nigeria and in realizing this, the health workers have prominent roles to play. There is need to encourage and support health workers in fulfilling this essential role and this may necessitate training them on quality of care.

4. CONCLUSION

Major reasons for choosing health facility for ANC were health worker related. Majority had overall satisfaction with antenatal services received and were also willing to deliver at the facility. Being satisfied with ANC services facilitates delivery in health facility thus capable of improving maternal health and in realizing this, health providers have a prominent role to play. There is need to support health workers in fulfilling this essential role and this may necessitate training health workers on quality of care.

5. LIMITATIONS

There was no qualitative assessment of the views and expectations of the women on what aspects of quality best determines their satisfaction with antenatal care services. However, while the qualitative method would have permitted the clients to fully disclose their feelings in greater depth, it also has low external validity when compared with the quantitative method. This would limit the application of the findings to the population from which the sample was drawn. A well-defined sampling process and interviews by trained research assistants as was performed in this study provided results that could be generalized to a large extent. [Also, the presence of interviewers in the health facility on antenatal day has the possibility of introducing bias to the study. This is because the clients may perceive the interviews to be an audit process by the management of the hospital and may not be willing to indict the health workers. Adequate measures were however taken to explain to the clients on the relevance of the study.

CONSENT

All the women who refused to give consent were excluded from the study.

ETHICAL APPROVAL

Ethical approval for the study was obtained from the Health Research and Ethics Committee of Federal Teaching Hospital Abakaliki, Nigeria. The respondents were required to sign or thumb print to a written informed consent before the interview and the nature of the study, its relevance and the level of their participation were made known to them. Respondents were assured that all information provided through the questionnaire will be kept confidential. Also, there was nowhere the names of the respondents were written on the questionnaire. Participation in the study was voluntary.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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