

Uptake of Antenatal Care Among Pregnant Women in Plateau State Nigeria

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Abstract-Background-Antenatal care offers pregnant women promotive, preventive and curative services. Despite this, some pregnant women still don't access ANC at all while others don't have access to ANC by skilled health care professionals. This increases the risk of maternal morbidity and mortality. This study therefore aims to determine the predictors of ANC attendance among in Plateau State. **Methodology-**A community based cross sectional study, 400 study participants across six communities in the three senatorial zones in Plateau State were selected. Focused Group Discussion was conducted among study participants. Data was analysed using SPSS version 23. **Results-** 90.8% of respondents booked their last pregnancy out of which 55.8% had more than four ANC visits. Only 52.9% of the women had ANC by skilled health care providers. 69.7% of women who did not book their pregnancy delivered at home. Educational status, marital status and marital setting were predictors of ANC attendance among the study population. Women who had formal education were 1.7 times more likely to attend ANC compared to those with non-formal or no education at all. (P-value <0.001 CI 1.267-2.321). Also, women in monogamous settings were more likely to attend ANC compared to those in polygamous setting (P-value 0.015 CI 0.162-0.822). **Conclusion-** Many of the respondents did not have the required number of ANC visits. More targeted interventions should be implemented in order to ensure that women have access to skilled care during pregnancy as this will reduce the risk of complications in pregnancy and delivery.

Index terms—Antenatal care, skilled birth attendance, predictors.

I. INTRODUCTION

Antenatal care (ANC) is one of the maternal health services which provides women access to quality promotive, preventive and curative health services. It enables women to have safe pregnancy, delivery and healthy babies [1]. Policies regarding ANC have been modified overtime with the aim of achieving the highest level of health for mothers and their babies.

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Focused Antenatal Care which was goal directed and a client-oriented service requires a minimum of four ANC visits for women in each pregnancy. Presently, World Health Organization (WHO) requires that all pregnant women have a minimum of eight ANC visits as opposed to four visits [1],[2]. This modification was done in order to identify complications promptly and reduce perinatal mortality. Despite the importance and availability of this service, 36% of pregnant women worldwide still have less than four ANC visits while some don't attend ANC at all [1]. The proportion of women who attend ANC is low especially in developing countries which account for poorer maternal health indices compared to the developed countries. Across sub-Saharan about 71% of pregnant women attend ANC at least once, however, only 44% attend ANC four or more times [2]. In Nigeria, the Demographic Health Survey (DHS) 2013 stated that only 61% of pregnant women attended ANC; this shows a marginal increase of only 3% compared to 2008 figures Nationwide. Variations in the number of women accessing ANC still exists across geographical zones, women in urban areas accessing ANC still outnumber those accessing ANC from the rural areas [3]. According to the NDHS, as many as 33.9% of women in Plateau State did not attend ANC at all [3], [4]. Those assessing ANC in many cases do not have an adequate number of visits and the care may not be provided by skilled Birth Attendants (SBA).

Reasons proffered for poor ANC attendance by pregnant women ranged from cultural barriers, low literacy and low economic status to non-availability of health facilities and poor attitude of healthcare providers most of which are largely preventable [3], [5].

This study was carried out to determine the utilization of ANC services and factors influencing utilization of these services among women in Plateau State. This information will enable health care providers to provide targeted interventions in order to improve uptake of ANC and improve maternal health indices in the State.

II. METHODOLOGY

A Study Area

This study was carried out in six LGAs of Plateau State The state has an estimated population of 3,206,531 (1,598,998 males and 1,607,533 females). Plateau State is divided into three senatorial zones namely Northern, Central and Southern senatorial zones [4].

B Study Population

Women of reproductive age (15-49 years) who fulfilled the inclusion criteria in selected catchment communities in the study areas.

C. Study Design

This was a cross sectional study in which data were obtained from the study participants at a point in time. Mixed methods of data collection were used by employing quantitative and qualitative data collection techniques.

D Sample Size Determination

The sample size for this study was determined using the appropriate sample size determination formula for a cross sectional study. Where n is the minimum sample size, Z is the standard normal deviate at 95% confidence interval (1.96), q is the complementary probability (1 – p), d is the precision of the study set at 0.05 and p was the proportion of women who attended ANC in 2013 in Plateau State (NDHS) [4]. = 66.1%. This gave a minimum sample size of 373 after inclusion of 10% to cater for non, poor and incomplete responses.

E. Inclusion and Exclusion Criteria

Women of reproductive age, in the selected communities whose last child birth was within the last three years, had resided in the community for greater than three years and gave consent to participate in the study. Those who fulfilled the inclusion criteria but were ill at the time of the study were excluded.

F. Sampling Technique

Multistage sampling technique was used to select study participant.

Simple random sampling technique was used to select two LGAs each from the three senatorial zones of Plateau State. Thereafter, simple random sampling technique was used to select six Primary Health Care facilities from the selected LGAs.

Using simple random sampling technique, one catchment community surrounding each of the selected PHC facilities was selected and included in the study, giving a total of six catchment communities.

At the last stage, a sampling interval was obtained by dividing the number of households with women whose LCB was three years and below in each community by the sample size for each community. this gave a sampling interval of 4. In each of the communities, the first house selected was the maiangwans house and subsequently houses were selected in a clockwise manner from his house using the sampling interval. In households that had more than one eligible respondents, simple random sampling technique was used to select one respondent.

In the case where a participant did not give consent to participate in this study, the next participant was selected and sampling interval used thereafter. This was done until the sample size was attained.

For the Focused group discussion (FGD), a total of 32 women were selected purposively and stratified based on

literacy and parity in collaboration with the women leaders in the communities.

G Data Collection

Data was collected using a structured interviewer administered questionnaire, with the aid of 5 research assistants. The questionnaire was used to obtain information on socio-demographic characteristics of the women, parity and information on ANC attendance. It was pretested in a community with similar sociodemographic characteristic. A focused group discussion guide was used to obtain information from the FGD participants on beliefs which may act as barriers to accessing ANC services. Ethical clearance was sought and obtained from Jos University Teaching Hospital Ethical Review Committee. Written and verbal informed consents were obtained from all the respondents with confidentiality and anonymity of their responses assured and maintained

H. Data Analysis

After collection of data, the responses were appropriately coded, entered into Microsoft excel software and cleaned; thereafter, the data was exported to IBM Statistical Package for the Social Sciences (SPSS) version 23. Information obtained from FGDs were transferred from the voice recorder, transcription and content analysis were done, recurrent themes were identified and used for triangulation.

III RESULTS

The average age of the respondents was 28 years. More respondents were aged 25-35 years and had primary education, 44% and 43% respectively. Majority of respondents were married, Christians and earned less than 10,000 naira monthly (94.8%, 85.8% and 94.3%) respectively.

Table1: Sociodemographic characteristics of study participants

VARIABLE	Frequency (%) n=400
Age group (years)	
15-24	133(33.3)
25-34	176(44.0)
35-44	80(20.0)
>44	11(2.7)
Marital status	
Single	11(2.8)
Married	379(94.8)
Widowed	4(1.0)
Divorced/separated	6(1.5)
Family type	
Monogamous	316(83.2)
Polygamous	64(16.8)
Educational status	
None	50(12.5)
Arabic	24(6.0)
Primary	173(43.3)
Secondary	130(32.5)
Tertiary	23(5.8)

Religion	
Christianity	345(86.3)
Islam	55(13.7)
Occupation	
Unskilled	345(86.3)
Semi-skilled	45(13.7)
Monthly income of respondent (Naira)	
<10,000	377(94.3)
>10,000	23(5.7)
Parity	
1 delivery	4(1.0)
2-5 deliveries	238(59.5)
>5 deliveries	158(39.5)

and eventually have problems with the pregnancy or labour, the health workers will be very furious and almost deny us care”(A non-literate gravida 3 para 2.

Table 2: ANC attendance and services offered

VARIABLE	Frequency (%) n=400
ANC attendance	
Ever attended ANC	363(90.7)
Did not attend ANC	37(9.3)
Number of ANC visits	
1 visit	60(16.5)
2-3 visits	80(22.0)
>4 visits	223(61.4)
Who offered ANC	
Skilled attendant	192(52.9)
Unskilled attendant	171(47.1)

Almost all respondents (90.7%) attended ANC. Of those who attended only 61.4% had more than four ANC visits and 52.9% of ANC services were offered by Skilled Birth Attendants.

FGD Responses on ANC Attendance

Majority of the women involved in focus group discussions in both groups said they did not have problems with attending antenatal and said ANC attendance was very common among women in their communities. They acknowledged that was the only way to access viability and access quick response from health care providers if complications arise.

“munazuwa antenatal, in bamujeba I munsamudamuwa da chikikoaihuwazasu mana fadasosaikumasuchebazasukarbe mu ba” translated as: we attend ANC because if we don't

Table 3: Factors influencing utilization of ANC

VARIABLE	Attended ANC Frequency (%) n=363	Did not attend ANC Frequency (%) n=37	χ^2	df	p-value
Age group (years)					
15-24	120(90.2)	13(9.8)	1.224	3	0.747
25-34	160(90.9)	16(9.1)			
35-44	72(90.0)	8(10.0)			
>44	11(100)	0(0)			

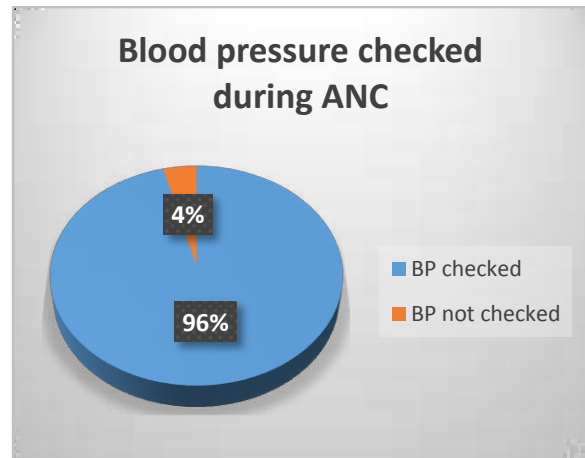


Fig 1. Blood pressure checked during ANC

96% of the women who attended ANC had their blood pressure checked.

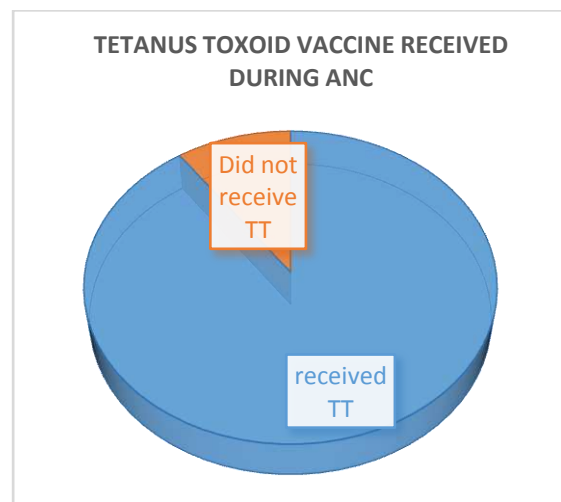


Fig 2. Tetanus Toxoid vaccine received during ANC

90% of respondents had TT vaccine during their pregnancy.

Marital status					
Married	349(92.1)	30(7.9)	0.001*		
Not married	14(66.7)	7(33.3)			
Family type					
Monogamous	296(94.6)	20 (5.4)	6.325	1	0.012
Polygamous	54(84.4)	10(15.6)			
Educational status					
Primary or lower	61 (82.4)	13(17.6)	7.464	1	0.006
Secondary or higher	302 (92.6)	24(7.4)			
Religion					
Christianity	309(90.6)	34(9.4)	1.256	1	0.263
Islam	54(94.7)	3(5.3)			
Monthly income of r (Naira)					
<10,000	342(90.7)	35(9.3)	0.009	1	1.000
>10,000	21(91.3)	2(8.7)			
Parity					
1 delivery	1(25.0)	3(75.0)	1.427	2	0.490
2-5 deliveries	23(9.7)	215(90.3)			
>5 deliveries	13(8.2)	145(91.8)			
Place of delivery					
Hospital	213(95.1)	11(4.9)	11.086	2	0.004
Home	147(85.5)	25(14.5)			
Others	3(100)	0(0)			

More married women (92.1%) and women in monogamous settings (94.6%) attended ANC compared to unmarried women and those in polygamous marriages. This finding was statistically significant (p value <0.001). Also 92.6% of women with secondary or higher education and 82.4% of those with no formal or primary education attended ANC. This difference was statistically significant.

Table 4: Logistic regression showing predictors of ANC attendance

VARIABLE	Odds Ratio	95% Confidence Interval	P-value
Educational Status			
Formal	1.715	1.267-2.321	<0.000
Non-formal	1		
Family type			
Monogamous	1		
Polygamous	0.365	0.162-0.882	0.015
Marital status			
Married	1		
Not married	0.234	0.117-0.465	<0.000

Women with secondary education or higher education had 1.7 times more odds of attending ANC compared to those with no formal education. This finding was statistically significant p value <0.001; CI 1.267-2.321. Married women

and those in monogamous setting also had more odds of attending ANC. (p value 0.015; OR 0.365; CI 0.162-0.882 and p value <0.001; OR 0.234; CI 0.117-0.465) respectively.

FGD Responses on reason for ANC Attendance

Some respondents suggested that a few women do not attend ANC at all while some go when they are close to delivering or if they had a problem. They blamed nonattendance of some women on ignorance while others said it was because of the cost.

“ munazuwa antenatal duk da rashikudiamadamuwan shine in munje ma in aihuwaya zo ba wan da zaikarba, maiamfaninzuwa”.we attend ANC even when we don’t have money but the problem is when it’s time to deliver there won’t be anyone to take the delivery in the facility, so what’s the use of going for ANC. (A non-literate grand multiparous woman).

IV. DISCUSSION

In this study, more than half of the respondents were between the ages of 25-34 years of age and had attained primary educational qualification, this is an indication of the probable age at marriage in the state which is in keeping with other studies in the Plateau, Edo and Ethiopia [6], [7],[8]. This finding is different from findings in Katsina State where most of the respondents were between the ages of 15-19 years with primary education [9]. This finding may be because the average age at marriage in Northern states are usually lower compared to other parts of the country.



The parity of respondents in this study is in keeping with studies in Plateau, Katsina and Yobe, where 45%, 42% and 46% of respondents had five or more deliveries, but higher than that from a study in Anambra where only 12% of respondents were grand multiparous. This disparity may be as a result of the higher fertility rate in the North compared to the Southern part of Nigeria [10],[11].

This study showed that a high proportion of women booked for ANC in the last pregnancy. Similar to a study carried out in Benue State which showed that 94% of respondents attended ANC in their last pregnancy [5]. This may be linked to increased awareness and signifying an increase in ANC attendance among women. Although having four or more ANC visits was low in this study, it was similar to findings from two studies in Anambra State where 60% of respondents had four or more ANC visits [11],[12]. This was different from the 2013 NDHS which showed that 51% of women had a minimum of four ANC visits in their last pregnancy [3]. The low coverages observed may be because of financial constraints as reported by some respondents during FGD in this study. Women in this study also acknowledge that majority of the women attended ANC to confirm their pregnancy and guarantee quick response if they had complication in labour, they also attributed nonattendance to ignorance and lack of finances which may be the reason for low coverage in many Northern States [13]. The proportion of women who received ANC from a skilled provider was similar to the findings in NDHS which showed that 61% of respondents in Nigeria and 63% of respondents in Plateau State received ANC from SBAs. This signifies that there may be no improvement in the number of ANC visits among women in the state for over four years [3].

Furthermore, majority of the women who attended ANC had urinalysis test and their blood pressure checked. Similar to findings from the NDHS. However, this study showed a higher proportion of pregnancies protected from neonatal tetanus compared to findings from the NDHS which showed that only half of the respondents had tetanus toxoid vaccines. This increase in number may be due to increased awareness among health workers and mothers on the importance of TT vaccine [3]. Attending ANC has also shown to increase likelihood of facility delivery as shown in this study and a study in Benue State which showed that 88% of women who attended ANC delivered the index child in the health facility, this may be as a result of health education on the importance of facility delivery which is provided to women during ANC. [5].

Exploring the factors affecting uptake of ANC services findings in this study revealed that women with higher education, married women and those in monogamous setting were more likely to attend ANC, these findings were corroborated with findings from a study in India which showed that more educated women were more likely to attend ANC [14]. The findings were also similar to a systematic review of studies carried out in developing countries which showed that maternal education, marital status and income predicted ANC attendance [15]. Similarly, another study in Osun State also revealed that higher level of education and being married were significantly associated with attending ANC. The reason for these findings may be because education is of significant

importance in improving awareness and understanding the risks associated with pregnancy. Also, married women may be more likely to get financial and psychological support from their spouses, thereby increasing their likelihood of attending ANC [16].

CONCLUSION

This study has shown that a lot of women attend ANC but not all have the required number of visits. The low frequency of ANC may increase the chance of perinatal and maternal mortality. Reducing the cost of ANC and providing targeted interventions to those of lower educational status may improve the quantity and quality of ANC obtained

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