

Research Article

Pattern of Antenatal Care Visit Among Pregnant Women in Geidam Local Government Area, Yobe State, Nigeria: A Community Base Cross-Sectional Study

Usman Abba^{1,*} , Abubakar Musa² 

¹Department of Obstetrics and Gynaecology, Yobe State University, Damaturu, Nigeria

²Department of Community Medicine, Abubakar Tafawa Balewa University and Abubakar Tafawa Balewa University Teaching Hospital, Bauchi, Nigeria

Abstract

Background: Antenatal care (ANC) is crucial for reducing maternal mortality, yet access remains a challenge in many low-resource settings like rural Nigeria. This study aimed to assess the pattern of ANC visits and identify factors influencing attendance among pregnant women in Geidam, Yobe State. **Methods:** A community-based, descriptive cross-sectional study was conducted among 400 women of reproductive age (15–49 years) in Geidam Local Government Area. Participants were selected using systematic random sampling. Data were collected via a pre-tested, interviewer-administered questionnaire and analysed using Epi-info version 7.0. Descriptive statistics and chi-square tests were employed, with a p-value <0.05 considered significant. **Results:** The mean age was 29.5 ±6.8 years. Most participants (68.3%) attended ANC. The primary reason for attendance was to ensure a better pregnancy outcome (85%). Among attendees, 32.2% had the recommended minimum of three visits. Reasons for non-attendance included cost (36.2%), distance (28.5%), and husband's refusal (8.3%). Factors significantly associated with ANC attendance were age, education, parity, and residence (p<0.05). The study area has a historically high maternal mortality ratio, with a rate of 630 per 100,000 live births reported in a prior study. **Conclusion:** While most women attended ANC, significant barriers related to accessibility, cost, and sociocultural factors persist. Interventions should focus on female education, subsidized services, improving rural infrastructure, and promoting male involvement to enhance ANC utilization.

Keywords

Antenatal Care, Pregnant Women, Pregnancy Outcome, Yobe, Nigeria

1. Introduction

Background

Antenatal care (ANC) involves the care a pregnant woman receives through consultations with trained healthcare workers to ensure the best possible outcomes for the mother and foetus. The

World Health Organization (WHO) recommends a minimum of eight contacts, starting in the first trimester. [1] Early and regular ANC is vital for the detection and management of complications, health promotion, and birth preparedness.

*Corresponding author: usmanabbagdm@gmail.com (Usman Abba)

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Globally, an estimated 295,000 women died from pregnancy-related causes in 2017, with sub-Saharan Africa accounting for approximately 66% of these deaths. [2] In Nigeria, the maternal mortality ratio remains unacceptably high at 512 deaths per 100,000 live births. [3] Inadequate ANC is a major contributing factor to these deaths. While national ANC coverage for at least one visit is high (67%), the proportion receiving the recommended four or more visits drops to 51%. [4] Coverage is even lower in northern Nigerian states like Yobe due to socioeconomic, cultural, and geographic barriers. [5]

Studies in similar settings have identified key determinants of ANC utilization, including maternal education, household wealth, urban residence, and women's autonomy. [6, 7] However, there is a paucity of recent, community-specific data from rural Geidam in Yobe State, a region characterized by poverty, insecurity, and limited health infrastructure. This study therefore aims to fill this gap by describing the pattern of ANC visits and identifying the specific factors influencing attendance in this underserved population. The findings will inform targeted interventions to improve maternal health services in the region.

2. Methodology

2.1. Study Area

Yobe State is located in northeastern Nigeria. Geidam Local Government Area (LGA) is one of its rural LGAs, characterized by a savannah landscape and challenges of desertification, which impedes transportation and access to services.

2.2. Study Design

A community-based, descriptive cross-sectional study was conducted in Geidam LGA.

2.3. Study Population

The study population included women of childbearing age (15–49 years) residing in Geidam LGA who had a pregnancy outcome (live birth or stillbirth) in the 12 months preceding the study. Women who were critically ill, mentally incapacitated, or not permanent residents were excluded.

2.4. Sample Size Determination

The minimum sample size was determined using the formula for estimating a single proportion:

$$n = Z_{\alpha/2}^2 pq / d^2$$

Where: n =the desired sample size, Z =the standard normal deviate (1.96 at 95% CI), p = the proportion of ANC attendance from a previous study in a similar setting (62.5%), [8] $q=1-p$ (0.375), and d =Degree of accuracy desired (0.05).

$$n = (1.96)^2 * 0.625 * 0.375 / (0.05)^2 = 360.15$$

A 10% non-response rate was added, giving a final sample size of 400.

2.5. Sampling Technique

A systematic random sampling technique was used. The list of settlements in Geidam LGA served as the sampling frame. One settlement was randomly selected as a starting point, and every k th household (where k = interval calculated from estimated number of eligible households) was selected. In each selected household, one eligible woman was interviewed. If more than one eligible woman was present, one was chosen using simple random sampling (lottery method).

2.6. Ethical Consideration

Ethical approval was obtained from the Yobe State Ministry of Health Research Ethics Committee (Reference: YSMOH/HREC/2021/045). Written informed consent was obtained from all participants after explaining the study's purpose, risks, and benefits. Confidentiality was maintained throughout.

2.7. Data Collection

Primary data were collected using a semi-structured, pre-tested interviewer-administered questionnaire. Eight trained female data collectors conducted interviews with 400 women regarding their socio-demographics, ANC attendance, and reasons for attendance or non-attendance.

2.8. Data Analysis

Data were analysed using Epi-info version 7.0 statistical software. Categorical variables were summarized using frequencies and proportions. Associations between categorical variables (e.g., ANC attendance and age group) were tested using the Chi-square test. A p -value <0.05 was considered statistically significant. Missing data were excluded from analysis on a per-variable basis.

3. Results

The response rate was 95% (380 out of 400 women successfully interviewed).

3.1. Demographic Characteristic of the Respondents

Table 1 shows the distribution of respondents by their socio-demographic characteristics.

Table 1. Socio-Demographic Characteristics of Respondents (n=400).

Variables	Frequency	Percentage (%)
AGE in years		
15-19	26	6.8
20-24	72	18.9
25-29	112	29.5
30-34	79	20.8
35-39	36	9.5
40-44	38	10.0
45-49	37	9.7
ETHNICITY		
KANURI	205	53.9
HAUSA	39	10.3
FULANI	36	9.5
MANGA	35	9.2
BODOWOI	21	5.5
OTHERS	44	11.6
EDUCATIONAL STATUS		
NIL	163	42.9
QUR'ANIC	82	21.6
PRIMARY	83	21.8
SECONDARY	55	14.5
TERTIARY	15	3.9
OCCUPATION		
FARMER	207	54.5
HOUSE WIFE	117	30.8
PETTY TRADER	57	15.0
CIVIL SERVANT	12	3.2
OTHERS	7	1.8

Variables	Frequency	Percentage (%)
PARITY		
NULLIPARA	47	12.4
MULTI PARA	167	43.9
GRAND MULTIPARA	186	48.9

Table 2. Number of ANC Visits among Attendees (n=273).

Number of Visits	Frequency	Percentage (%)
1	8	2.9
2	25	9.2
3	88	32.2
4	74	27.1
5	35	12.8
6	27	9.9
7	11	4.0
8	3	1.1
9	2	0.7
Total	273	100.0

3.2. Reasons for ANC Attendance and Non-Attendance

Among the 273 attendees, the primary reason was to ensure better pregnancy outcomes (85%). Among the 107 non-attendees, the cited reasons were: high cost (36.2%), distance to facility (28.5%), perception of ineffectiveness (15.0%), unavailability of services (12.1%), and lack of husband's consent (8.3%).

3.3. Factors Associated with ANC Attendance

Table 3 shows the relationship between ANC attendance and selected demographic factors.

Table 3. Association Between ANC Attendance and Demographic Factors.

Age Group	Attended ANC (n=273)	Did Not Attend ANC (n=107)	p-value
15-24	75 (27.5%)	23 (21.5%)	0.045*
25-34	140 (51.3%)	51 (47.7%)	
35-49	58 (21.2%)	33 (30.8%)	
Education			<0.001*
None/Quranic	145 (53.1%)	80 (74.8%)	

Age Group	Attended ANC (n=273)	Did Not Attend ANC (n=107)	p-value
Formal	128 (46.9%)	27 (25.2%)	<0.001*
Residence			
Near Health Fac.	201 (73.6%)	45 (42.1%)	
Far from Fac.	72 (26.4%)	62 (57.9%)	

*Chi-square test, significant at $p < 0.05$

4. Discussion

This study found that 68.3% of women in Geidam LGA attended ANC at least once during their last pregnancy. This rate is comparable to the 67% national average for at least one ANC visit. [8] but lower than the WHO's target of universal coverage. The finding that 32.2% of attendees achieved the (then) WHO-recommended minimum of three visits highlights a significant gap in the continuity and adequacy of care, consistent with studies from similar rural settings in Northern Nigeria. [9]

The predominant reason for attending ANC—to ensure better pregnancy outcomes—reflects a positive perception of its value. However, major barriers persisted. Cost and distance were the most frequently cited reasons for non-attendance, a common finding in resource-poor, rural areas where poverty is widespread and health facilities are scarce. [10] The significant influence of husband's refusal (8.3%) underscores the critical role of male decision-making in maternal health-seeking behaviour in this patriarchal context, aligning with findings from Ethiopia and Sudan. [11]

Age, educational status, and proximity to a health facility were significantly associated with ANC attendance. Women aged 25-34 had the highest attendance, likely reflecting peak reproductive activity and stability. As consistently documented, higher maternal education was a strong predictor of service utilization, likely due to increased health literacy and autonomy. [12] Residence near a facility drastically improved uptake, emphasizing the disabling effect of geographic barriers in this region with poor road networks.

This study has limitations. Its cross-sectional design limits causal inference. Recall bias may affect the accuracy of self-reported data on past pregnancies. Furthermore, the study did not assess the quality of ANC received, which is a crucial dimension of care.

5. Conclusion

The study demonstrates that while a majority of women in Geidam LGA initiate ANC, the proportion receiving adequate

care remains low. Key determinants of utilization are multifactorial, encompassing economic (cost), geographic (distance), and sociocultural (education, male permission) dimensions.

To improve ANC coverage and quality, the following evidence-based recommendations are proposed:

- 1) Policy and Financing: Implement and subsidize community-based health insurance schemes to reduce out-of-pocket costs for ANC services.
- 2) Service Delivery: Establish and staff more primary healthcare centres in remote communities through mobile clinics or outreach programs to reduce distance barriers.
- 3) Social Empowerment: Intensify girl-child education and community health education programs targeting women and their husbands to increase awareness and shift norms regarding maternal healthcare.
- 4) Male Involvement: Design and promote community interventions that actively engage men as supportive partners in maternal health.

Abbreviations

ANC Antenatal Care
LGA Local Government Area

Conflicts of Interest

The authors declare no conflicts of interest.

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