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Demographic Factors Influencing the Utilization of Focused Antenatal Care Services in Jama'a Local Government Area, Kaduna State, Nigeria

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Abstract

Focused Antenatal Care (FANC) is a critical intervention designed to improve maternal and neonatal outcomes by ensuring timely and appropriate healthcare during pregnancy. Despite its benefits, utilization remains sub-optimal in many low-resource settings, including Nigeria This study assessed the influence of demographic factors on the utilization of FANC services among pregnant women attending public secondary hospitals in Jama'a Local Government Area (LGA), Kaduna State. A hospital-based cross-sectional descriptive study was conducted among 301 pregnant women using structured interviewer-administered questionnaires. The data collected included socio-demographic information and FANC attendance history. Descriptive statistics and Chi-square tests were employed for data analysis using SPSS version 23. A p-value of less than 0.05 was considered statistically significant. The study found that only 10.6% of respondents completed at least four antenatal visits as recommended by the World Health Organization. Significant demographic predictors of FANC utilization included age (p=0.003), parity (p=0.002), educational status (p=0.001), and ethnicity (p=0.027). Women aged 25–34

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years, with 1–3 children, and with secondary or tertiary education were more likely to complete four or more ANC visits. FANC utilization in Jama'a LGA is low, and key demographic factors significantly influence its uptake. Interventions targeting less-educated, younger, and high-parity women are needed to improve ANC attendance and maternal health outcomes in the Jama'a LGA, and Kaduna State in general.

Keywords: Focused Antenatal Care, Utilization, Demographic Factors, Pregnant Women, Jama'a LGA, Kaduna, Nigeria

INTRODUCTION

Maternal health remains a critical aspect of public health interventions, particularly in resource-limited contexts like Nigeria. The World Health Organization (2022) introduced the Focused Antenatal Care (FANC) model to improve maternal and perinatal outcomes through individualized and targeted care, recommending at least four strategically timed visits for low-risk pregnancies. Unlike conventional antenatal models that emphasize frequency, FANC prioritizes quality and essential interventions (Afolabi, Fagbemi, & Olowookere, 2021).

Despite widespread adoption of the FANC approach in Nigeria, maternal and infant mortality rates are still significantly high, especially in rural regions (Adekanle & Isawumi, 2021). Studies have shown that barriers such as sociocultural practices, economic hardship, and demographic challenges continue to hinder service utilization (Chukwuma, Ezeh, & Mberu, 2021; Oyedele & Okonkwo, 2023). In rural settings like Jama'a Local Government Area (LGA) of Kaduna State, these barriers are intensified by poor infrastructure, poverty, and traditional beliefs, resulting in suboptimal uptake of antenatal services (Ibrahim, Sule, & Olorunfemi, 2021; Ilori et al., 2022). Demographic elements such as age, educational level, marital status, parity, religion, and ethnicity have been identified as significant predictors of ANC utilization (Ujah, Okeke, & Umeh, 2022; Yaya, Okonofua, & Ghose, 2022).

This study, therefore, aims to explore the influence of these demographic variables on the utilization of FANC services among pregnant women in Jama'a LGA.

Statement of the Problem

Despite the proven effectiveness of FANC in enhancing maternal and neonatal health outcomes, its implementation in rural Nigerian communities remains inadequate. The 2018 Nigeria Demographic and Health Survey (NDHS) reports significantly lower rates of ANC attendance in rural areas like Jama'a LGA compared to urban counterparts (Lawal & Oladipo, 2022). Socio-demographic impediments—including early maternal age, high parity, limited formal education, cultural restraints, and economic deprivation—continue to discourage timely and consistent engagement with antenatal services (Olowokere & Ogundele, 2022; Okereke, Agbakwuru, & Nwankwo, 2021).

Previous research efforts have often focused on urban populations or conducted national-level assessments, leaving out community-specific realities and needs in rural settings (Fagbamigbe & Idemudia, 2021). This lack of context-specific insight results in generalized policies that are less effective in addressing rural health disparities. To bridge this knowledge gap, this study examined the demographic factors affecting FANC service uptake in the rural communities of Jama'a LGA.

Significance of the Study

The relevance of this study lies in its contribution to locally grounded maternal health research, especially in Jama'a LGA in Kaduna State, Northern Nigeria. By examining how demographic attributes shape women's antenatal care-seeking behaviors, the findings provide evidence for targeted, culturally sensitive interventions. This is crucial for achieving Sustainable Development Goal 3, which aims to reduce global maternal mortality (World Health Organization, 2022; Oyeyemi, Bello, & Adebayo, 2021).

Furthermore, this research adds to the empirical literature by offering rural-focused insights that are often missing in mainstream studies (Oyedele, Fagbamigbe, & Akinyemi, 2023; Eze, Okonkwo, & Nwafor, 2023). The outcomes of this study inform health practitioners, policymakers, and program designers seeking to improve maternal healthcare access and outcomes in under-served populations.

Justification for the Study

Current investigations on FANC utilization disproportionately emphasize urban populations, often ignoring the distinct socio-cultural, religious, and economic dynamics that influence health behaviors in rural areas (Akinwumi & Ijadunola, 2023; Okonjo &

Okafor, 2023). Consequently, health policies derived from such research may not be adequately tailored to the unique needs of rural women, thereby perpetuating disparities in access and utilization.

By focusing on the rural context of Jama'a LGA, this study fills the existing gap in literature with community-level evidence. This localized approach ensures that maternal health interventions are more reflective of the lived realities of women in these communities, thereby improving their relevance and effectiveness.

Conceptual and Theoretical Framework

Conceptual Clarifications

Focused Antenatal Care (FANC): The concept of Focused Antenatal Care (FANC), as recommended by the World Health Organization (WHO), emphasizes personalized and evidence-based maternal care rather than the traditional model of frequent routine visits. It prioritizes quality over quantity by prescribing a minimum of four purposeful visits tailored to the specific needs of women with uncomplicated pregnancies. During these visits, essential screenings, preventive therapies, and health education are delivered, aiming to optimize maternal and fetal outcomes (World Health Organization, 2022; Afolabi, Fagbemi, & Olowookere, 2021).

Demographic Factors: Demographic variables play a critical role in influencing health behaviors, including the utilization of antenatal care services.

a. **Age:** Younger expectant mothers may encounter barriers such as inadequate information, social stigma, or limited autonomy, while older women tend to be more proactive due to increased health awareness (Adekanle & Isawumi, 2021; Eze, Okonkwo, & Nwafor, 2023).

b. **Marital Status:** Being married often enhances a woman's access to ANC through emotional and financial support from a spouse, making it easier to attend scheduled visits (Oyedele & Okonkwo, 2023; Okereke, Agbakwuru, & Nwankwo, 2021).

c. **Parity:** Women who have had multiple pregnancies may underestimate the need for ANC due to prior experiences, while first-time mothers often exhibit greater caution and commitment to care (Ibrahim, Sule, & Olorunfemi, 2021; Ilori et al., 2022).

d. **Education Level:** Educational attainment correlates positively with health literacy and the ability to make informed decisions regarding maternal health. Educated women are more likely to understand the benefits of early and regular ANC (Ujah, Okeke, & Umeh, 2022; Eze et al., 2023).

e. **Religion:** Religious affiliation can shape beliefs about pregnancy and influence health-seeking behavior. Some religious norms may restrict women's autonomy in making healthcare decisions (Oyeyemi, Bello, & Adebayo, 2021; Okonjo & Okafor, 2023).

f. **Ethnicity:** Cultural practices and language differences among ethnic groups can either facilitate or hinder access to antenatal services. In some communities, traditional norms and mistrust of formal health services reduce ANC attendance (Yaya, Okonofua, & Ghose, 2022; Chukwuma, Ezeh, & Mberu, 2021).

Utilization of FANC: FANC utilization is assessed through several parameters:

i. **Frequency:** Adequate ANC attendance is typically defined as completing at least four visits (Fagbamigbe & Idemudia, 2021).

ii. **Timing:** Early initiation, particularly during the first trimester, is vital for detecting and managing potential risks (Lawal & Oladipo, 2022; Okereke et al., 2021).

iii. **Quality:** This involves not only the delivery of essential services and interventions but also positive provider-client interaction and adherence to follow-up schedules (Olowokere & Ogundele, 2022; Akinwumi & Ijadunola, 2023).

Theoretical Framework

This study is guided by the Andersen Behavioral Model of Health Services Use, a well-established framework for examining factors that influence healthcare utilization.

I. **Predisposing Factors:** These include inherent characteristics such as age, marital status, parity, and ethnicity. Such factors shape individual perceptions about health and susceptibility to complications, thereby influencing decisions to seek care. For example, marital status may affect emotional and logistical support for accessing services, while ethnic background might affect beliefs and practices around pregnancy and childbirth (Chukwuma et al., 2021; Ibrahim et al., 2021).

II. **Enabling Factors:** These refer to external conditions that facilitate or hinder service use. They include resources like income, education, and geographic access to healthcare facilities. Women with higher educational levels and household incomes are

more likely to utilize ANC due to improved understanding of its benefits and the ability to afford transportation and medical costs (Ujah et al., 2022; Fagbamigbe & Idemudia, 2021).

III. **Need-Based Factors:** This domain involves both perceived and professionally assessed health needs. Perceived need relates to a woman's personal judgment about the importance of ANC based on symptoms or prior knowledge. In contrast, evaluated need depends on clinical assessments, which may often be overlooked in rural areas due to lack of access or awareness (Lawal & Oladipo, 2022; Afolabi et al., 2021).

Using this model provides a comprehensive understanding of how individual, cultural, and systemic factors combine to affect antenatal care use in the study setting of Jama'a LGA.

METHODOLOGY

Study Design and Setting

A hospital-based cross-sectional descriptive study was conducted between August 2023 and October 2023 in two public secondary hospitals in Jama'a LGA, Kaduna State.

Population and Sampling

The study population comprised pregnant women aged 15–49 attending ANC clinics. A sample size of 301 was derived using the Yamane Taro formula (95% confidence level; 5% margin of error). Systematic sampling was applied, selecting every fourth woman listed on the ANC registers. Two hospitals were randomly chosen from a pool of three via balloting.

Instrumentation

A structured questionnaire was used to gather data on demographics, FANC utilization, and barriers. Validation was undertaken by two public health experts, with a pilot study (20% of the sample) conducted in Kaura LGA. Reliability was confirmed using Cronbach's Alpha.

Data Collection and Quality Control

Data were collected by two trained assistants during ANC clinic hours. Supervisors reviewed forms for completeness and consistency daily.

Data Analysis

SPSS Version 23 was used for data analysis. Descriptive statistics (frequencies, percentages) were calculated, and chi-square tests ($p < 0.05$) assessed associations between demographic variables and FANC utilization.

Ethical Considerations

Ethical approval was obtained from the Kaduna State Ministry of Health. Informed consent was obtained from all participants, and confidentiality was ensured through anonymization of data.

RESULTS

Introduction

This chapter presents the analyzed data obtained from 301 pregnant women who participated in the study. The results are categorized into three major sections: demographic characteristics of respondents, patterns of FANC utilization, and association between demographic factors and FANC utilization based on chi-square tests.

Table 1. Demographic Characteristics of Respondents

Variable	Category	Frequency (n=301)	Percentage (%)
Age (years)	15–24	98	32.6
	25–34	142	47.2
	≥35	61	20.3
Marital Status	Single	17	5.6
	Married	270	89.7
	Widowed/Divorced	14	4.7
Parity	0	62	20.6
	1–3	148	49.2
	≥4	91	30.2
Education Level	No formal education	49	16.3
	Primary	75	24.9
	Secondary	114	37.9
	Tertiary	63	20.9

Variable	Category	Frequency (n=301)	Percentage (%)
Religion	Christianity	162	53.8
	Islam	139	46.2
Ethnicity	Bajju	123	40.9
	Ninzo	67	22.3
	Hausa/Fulani	51	16.9
	Gong	60	19.9

Majority of respondents were between 25–34 years, married, and had at least a secondary education. The sample was ethnically diverse, predominantly Bajju and Ninzo.

Table 2. Patterns of FANC Utilization

ANC Visits Attended	Frequency	Percentage (%)
1 Visit	133	44.2
2 Visits	85	28.2
3 Visits	51	16.9
≥4 Visits (Recommended)	32	10.6
Timing of First Visit	**Frequency**	**Percentage (%)**
First Trimester (≤12 wks)	43	14.3
Second Trimester (13–27 wks)	167	55.5
Third Trimester (≥28 wks)	91	30.2

Only 10.6% of respondents met the recommended four or more FANC visits. A majority (55.5%) initiated antenatal care in the second trimester, which is sub-optimal for early risk identification and management.

Table 3. Association Between Demographic Factors and FANC Utilization (Chi-square Test)

Variable	Chi-square (χ^2)	df	p-value	Significance
Age Group	11.562	2	0.003	Significant
Marital Status	4.832	2	0.089	Not Significant
Parity	12.798	2	0.002	Significant

Variable	Chi-square (χ^2)	df	p-value	Significance
Education Level	16.721	3	0.001	Significant
Religion	1.423	1	0.233	Not Significant
Ethnicity	9.215	3	0.027	Significant

There were statistically significant associations between FANC utilization and age, parity, education, and ethnicity. Religion and marital status did not show significant associations.

DISCUSSION

This chapter discusses the findings of the study on demographic factors influencing the utilization of Focused Antenatal Care (FANC) services among pregnant women in public secondary hospitals in Jama'a LGA, Kaduna State. The discussion is presented in light of the study objective, existing literature, and implications for public health practice. It also includes the conclusion and recommendations drawn from the findings.

Utilization of FANC Services

This study found that just 10.6% of participants completed the World Health Organization's (WHO) recommendation of at least four antenatal care (ANC) visits. This low uptake is comparable to observations in North-Central Nigeria by Afolabi et al. (2021), who noted that fewer than 20% of expectant mothers achieved this target. The pattern reflects broader systemic issues such as inadequate awareness, limited access, and socioeconomic barriers (Chukwuma et al., 2021; Akinwumi & Ijadunola, 2023). Additionally, more than half (55.5%) of the respondents initiated ANC in their second trimester, delaying essential screenings and interventions. These findings echo the conclusions of Okereke et al. (2021), who highlighted that late booking hinders timely identification of pregnancy complications, thereby reducing the preventive potential of FANC services. Barriers such as rural residence and healthcare infrastructure inadequacies also exacerbate delayed initiation (Olowokere & Ogundele, 2022; Lawal & Oladipo, 2022).

Influence of Age

Age was shown to significantly influence FANC attendance (p=0.003), with women aged 25 to 34 being more consistent in utilizing these services than those younger or older. This trend supports the assertion by Adekanle and Isawumi (2021) that women in this age group often have previous childbirth experiences, enhancing their awareness of potential risks and

the importance of ANC. Similarly, Fagbamigbe and Idemudia (2021) reported that this age group often exhibits higher health literacy and engagement with maternal health services. Younger women, especially adolescents, may face sociocultural stigmas or lack decision-making power, while older women may underestimate the risks associated with pregnancy.

Influence of Parity

Parity showed a statistically significant association with FANC usage (p=0.002). Women with one to three children were more likely to attend FANC services compared to first-time mothers and those with four or more children. This aligns with findings by Ibrahim et al. (2021), who documented that multiparous women with extensive maternal experience might undervalue frequent ANC visits. Ilori et al. (2022) further suggested that such women often rely on traditional knowledge or past pregnancies, which may lead them to misjudge the necessity for ongoing professional monitoring during subsequent pregnancies.

Influence of Educational Status

Educational attainment emerged as a critical determinant of ANC engagement (p=0.001). Women who attained secondary or tertiary education demonstrated significantly higher FANC attendance. This observation concurs with Ujah et al. (2022) and Eze et al. (2023), who emphasized that formal education enhances women's understanding of healthcare needs, the importance of timely interventions, and their ability to navigate health systems. Furthermore, Chukwuma et al. (2021) noted that education equips women with negotiation and communication skills that enable them to advocate for their health needs, especially in resource-limited settings. Thus, enhancing female education is vital to improving maternal health outcomes.

Influence of Ethnicity and Religion

Ethnicity was found to significantly impact ANC utilization (p=0.027), indicating cultural variations in health-seeking behaviors. Similar disparities were reported by Yaya et al. (2022), who identified ethnic and sociocultural differences as key contributors to inequities in maternal healthcare use across Nigeria. Cultural norms, traditional beliefs, and community expectations often influence whether and how women access services (Okonjo & Okafor, 2023; Oyedele & Okonkwo, 2023). On the contrary, religion did not present a significant association with ANC attendance in this study. This contrasts with earlier studies such as Oyeyemi et al. (2021), which found religious beliefs to be influential in

maternal care decisions. The discrepancy may be context-specific, suggesting that in this community, religious doctrine may not restrict women's access to ANC services.

CONCLUSION

This study investigated the influence of demographic factors—such as age, marital status, parity, educational level, religion, and ethnicity—on the utilization of Focused Antenatal Care (FANC) services in public secondary health facilities within Jama'a LGA, Kaduna State. The findings reveal that several demographic variables significantly affect ANC attendance, timing of first visits, and frequency of visits.

Specifically, educational attainment emerged as a strong predictor of FANC utilization, with women who had secondary education and above more likely to initiate early and frequent ANC visits. Parity also played a significant role; multiparous women were less likely to utilize FANC services compared to primiparous and nulliparous women. Age influenced service uptake, as younger women, especially adolescents, showed lower attendance rates, likely due to stigma and lack of awareness. Marital status was also significant, with married women more likely to access services, suggesting the role of spousal support and societal norms.

Religious and cultural beliefs continue to influence health-seeking behaviors, as shown by the varying levels of ANC attendance among different ethnic and religious groups. Some traditional beliefs still hinder early registration and continuity of care during pregnancy.

Overall, the study highlights the need for targeted, culturally sensitive interventions to improve ANC utilization. Addressing disparities caused by educational gaps, religious or ethnic perceptions, and marital dynamics is crucial for enhancing maternal health outcomes in the region.

Recommendations

Based on the findings of this study, the following recommendations are made to enhance the utilization of FANC services among pregnant women in Jama'a LGA:

1. Strengthen Health Education and Community Outreach

- Health education campaigns should be intensified in both urban and rural communities to raise awareness on the importance of early and regular ANC attendance.

- Community health extension workers should use local languages and culturally appropriate methods to reach women, particularly in hard-to-reach areas.

2. Promote Female Education

- Government and NGOs should invest in girls' education, as higher educational attainment is associated with better maternal health-seeking behavior.
- Scholarship schemes and incentives should be provided to encourage school enrollment and retention of the girl-child.

3. Engage Men and Community Leaders

- Spousal involvement should be promoted through male-focused ANC education programs, especially within faith-based and community settings.
- Traditional and religious leaders should be mobilized as advocates for maternal health and to address cultural misconceptions about ANC.

4. Introduce Adolescent-Friendly ANC Services

- Establish youth-friendly maternal health units in secondary health facilities to encourage antenatal care utilization among teenage and unmarried mothers.
- Create safe, stigma-free environments and integrate peer support systems to support adolescents during pregnancy.

5. Subsidize and Incentivize ANC Services

- The government should subsidize antenatal care costs or provide conditional cash transfers to encourage early registration and follow-up visits.
- Consider providing incentives such as free maternity kits or transportation support for women who complete the recommended ANC schedule.

6. Culturally Sensitive Health Policies

- Maternal health programs should be designed with sensitivity to local customs, religious beliefs, and ethnic diversities to increase community buy-in and acceptance.
- Health workers should receive cultural competency training to reduce bias and improve the quality of care.

5.3. 7. Monitor and Evaluate ANC Programs

- Strengthen data collection and monitoring mechanisms to track ANC attendance and demographic profiles at the local level.
- Use data for targeted interventions, resource allocation, and periodic policy reviews to ensure continuous improvement in maternal health outcomes.

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