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Comparison of Pregnant Women's Satisfaction with Maternal Health Services between Urban and Rural Primary Health Centers in Abuja, Nigeria

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Abstract **Background:** Maternal satisfaction is a critical component of healthcare delivery, influencing the uptake of services and maternal health outcomes. This study aims to compare pregnant women’s satisfaction with maternal health services between urban and rural Primary Healthcare Centers (PHCs) in Abuja, Nigeria. **Methods:** A cross-sectional comparative study design was employed. Quantitative data were collected from 240 pregnant women attending antenatal care services, evenly distributed between urban and rural PHCs. The questionnaire measured satisfaction across service domains, while the Focus Group Discussion (FGD) provided qualitative insights into service delivery. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 29, with the level of significance set at 0.05. **Results:** Pregnant women's satisfaction was significantly higher in urban PHCs (76.2%) compared to rural PHCs (23.8%) ($p < 0.001$). Urban centers benefited from better staffing, infrastructure, and communication, while rural centers experienced challenges such as staff shortages and longer wait times. Multiple binary logistic regression revealed that pregnant women in urban PHCs were 12 times more likely to be satisfied than those in rural PHCs (OR = 11.75, 95% CI = 5.94 to 23.24). **Conclusions:** The disparity highlights a need for targeted interventions to address resource and service delivery gaps in rural PHCs. Strengthening infrastructure, increasing workforce availability, and improving staff-pregnant women communication are recommended.

Keywords Maternal Health, Pregnant Women's Satisfaction, Urban-Rural Disparity, Primary Health Center

1. Introduction

Maternal satisfaction is an integral part of healthcare delivery, influencing health-seeking behaviors, service utilization, and maternal health outcomes [1]. The World Health Organization (WHO) emphasizes that achieving universal health coverage requires equitable access to quality maternal healthcare services, which depend heavily on user satisfaction [2]. In Nigeria, disparities between urban and rural healthcare systems significantly affect maternal satisfaction, contributing to unequal health outcomes.

Nigeria's maternal mortality ratio remains one of the highest globally, with over 800 maternal deaths per 100,000 live births [2]. Despite improvements in healthcare policies, rural areas continue to experience a disproportionate burden of maternal morbidity and mortality due to inadequate healthcare infrastructure, workforce shortages, and logistical barriers. Urban centers, by contrast, tend to have better-equipped facilities and more healthcare professionals, leading to higher satisfaction rates among users [3]. These disparities highlight the critical need for research that examines pregnant women's satisfaction and its determinants in both urban and rural settings.

Pregnant women's satisfaction with maternal health services is a multifaceted construct influenced by factors such as facility infrastructure, staff attitude and competence, waiting times, and the availability of essential medical supplies. A study found that characteristics like ecological zone and place of residence were correlated with satisfaction, with pregnant women from rural areas being more content with the care they received at the facility than those from metropolitan areas.

Pregnant women from rural areas may experience lower levels of satisfaction, partly due to reduced empowerment, limited educational opportunities, and lower socioeconomic status compared to their urban counterparts. They may also feel less confident in assessing and expressing their satisfaction with care. Research further indicates that middle-class women generally prefer less professional dominance and greater personal choice during childbirth than women from lower socioeconomic backgrounds [4].

This study aims to compare pregnant women's satisfaction between urban and rural primary healthcare centers (PHCs) in Abuja, Nigeria. It seeks to identify the factors contributing to observed disparities and proposes evidence-based recommendations to enhance service delivery and satisfaction across both settings. By understanding these differences, policymakers and stakeholders can design targeted interventions that address gaps in rural healthcare delivery, ensuring equitable maternal health services.

Abuja, the capital of Nigeria, comprises a mix of urban and rural settlements. Urban areas benefit from relatively advanced healthcare infrastructure, reflecting investments in tertiary and secondary healthcare facilities. Rural areas, however, often rely on under-resourced PHCs, which are intended to serve as the first point of contact for maternal health services. In urban PHCs, pregnant women frequently report satisfaction with shorter wait times, cleaner environments, and better communication with healthcare providers [5].

Most healthcare delivery systems include both public and private facilities. However, in rural areas, only public health facilities are typically available, whereas urban areas offer a wider range of choices. Studies have shown that high levels of satisfaction promote repeated use of healthcare services, which in turn improves maternal and neonatal health outcomes. Conversely, dissatisfaction can reduce service utilization, further worsening maternal health indicators, particularly in resource-constrained rural settings.

These factors contribute to higher perceived quality of care, pregnant women in rural PHCs often encounter long wait times, limited availability of skilled personnel, and poorly maintained facilities, resulting in lower satisfaction rates. Addressing these challenges requires an understanding of the factors influencing pregnant women's satisfaction in both settings.

The findings from this study are expected to provide valuable insights into the urban–rural divide in maternal health service satisfaction. By identifying key predictors of satisfaction and uncovering systemic inequities, the research aims to inform policies and programs that enhance maternal health service delivery. Higher satisfaction among pregnant women can lead to increased utilization of healthcare services, thereby contributing to reductions in maternal mortality and morbidity in alignment with Nigeria's commitment to the Sustainable Development Goals (SDGs).

Specifically, this study addresses SDG 3.1, which seeks to reduce the global maternal mortality ratio to fewer than 70 per 100,000 live births, by identifying service delivery gaps that influence pregnant women's satisfaction. It also supports SDG 3.8 on achieving universal health coverage by highlighting disparities in access to essential healthcare services between urban and rural primary healthcare centers, thus providing evidence for targeted interventions to ensure equitable coverage [6].

Focusing on Abuja as a case study, the research also provides a framework that can be replicated in other regions of Nigeria and similar contexts in low- and middle-income countries. This approach ensures that the findings contribute to the broader discourse on equitable healthcare delivery, particularly in settings with significant urban-rural disparities.

2. Methods and Research Design

Study Settings: The study was conducted in primary healthcare (PHC) facilities within the Abuja Municipal Area Council (AMAC), one of the six area councils in Nigeria's Federal Capital Territory (FCT), Abuja. AMAC comprises both urban and rural areas. The urban zones are characterized by higher population density, better road networks, and greater access to healthcare facilities, whereas the rural zones have more dispersed populations, limited infrastructure, and fewer healthcare resources.

According to the National Population Commission, AMAC has an estimated population of over 1.5 million people, representing diverse ethnic groups and including public sector employees, traders, artisans, and subsistence farmers. AMAC was selected for this study because it contains both urban and rural communities within the same administrative boundary, enabling direct comparison of satisfaction levels under similar governance but differing resource availability and infrastructure.

Study Population: The participants of this study were pregnant women attending antenatal care in urban and rural PHC facilities in Abuja. The inclusion criteria were women between the ages of 15-49 years.

Study Design: This study employed a cross-sectional analytical comparative design for the study of pregnant women's satisfaction with maternal health services between urban and rural PHC facilities in Abuja.

Sample Size and Sampling Technique: A sample size of 240 participants (120 each from urban and rural PHCs) was determined using the formula for comparison of proportions [7]. Abuja Municipal Area Council (AMAC) was selected from the six area councils in Abuja by simple random sampling. Two urban and two rural PHCs were selected through simple random sampling from the list of PHC in AMAC. First, AMAC was selected from the six area councils in Abuja. Next, four PHCs (two urban, two rural) were randomly chosen from AMAC's list of facilities. Finally, 60 respondents were selected from each PHC over five antenatal clinic days (12 per day). At each facility, the first participant of the day was chosen by simple random sampling, and the rest were selected using systematic random sampling based on the facility's average daily attendance.

Data Collection Instruments: Data were collected using structured questionnaires and a focus group discussion (FGD) guide. The questionnaire was designed to capture demographic information, service satisfaction across domains, and perceived barriers to care.

Data Collection Procedure: The researcher administered the questionnaires during antenatal care (ANC) sessions. Qualitative data were collected through Focus Group Discussions (FGDs) to gain deeper insights into participants' experiences and perceptions of maternal health services. Four FGDs were conducted, including two in urban PHCs and two in rural PHCs, each facilitated by the researcher.

An FGD guide ensured consistency across sessions, covering key themes such as services received during ANC; ease of booking and accessing services; service availability; attitudes and competence of healthcare providers; availability and functionality of medical technology and drugs; communication and provision of information; and overall satisfaction with recommendations for improvement.

Each FGD lasted approximately 60–90 minutes and was conducted in English or translated into the local language as needed. Informed consent was obtained from all participants. Each group consisted of 6–8 ANC attendees. Data were analyzed using thematic analysis, with transcripts manually coded and findings supported by direct quotes. Data collection spanned a three-month period, from February to April 2024.

Variables Measured

- **Dependent Variable:** Satisfaction of pregnant women with maternal health services, measured on a 5-point Likert scale.
- **Independent Variables:** Demographic factors (age, education, marital status), healthcare facility attributes (wait times, cleanliness, staff attitude), and systemic factors (transportation, availability of medical supplies).

Data Analysis: Quantitative data were analyzed using Statistical Package for Social Sciences (SPSS) version 29. Descriptive statistics summarized demographic characteristics and satisfaction scores. Chi-square tests assessed differences in satisfaction between urban and rural pregnant women. Multiple binary logistic regression identified predictors of satisfaction, with a significance level set at 0.05.

3. Results

3.1. Quantitative Findings

As presented in Table 1, the mean age of the 240 respondents was 27.8 years (SD = 4.3), with over half (51.7%) between 18–27 years. Significant differences were observed in marital status, ethnicity, educational level, and employment status. In terms of marital status, there was a significant difference ($p = 0.031$) with the majority 99.2% of urban respondents being married. Similarly, significant disparities were found in ethnicity ($p < 0.001$), revealing varied distributions across different ethnic groups, Hausa (urban: 42.5%, rural: 31.7%), Igbo (urban: 28.3%, rural: 14.2%), Yoruba (urban: 19.2%, rural: 8.3%), and Others (urban: 10%, rural: 45.8%). Age and religion, did not show statistically significant differences between urban and rural populations, suggesting similar distributions across these demographics in both settings.

As seen in Table 2, the level of education of respondents exhibited a significant difference ($p < 0.001$), indicating differing educational levels between urban and rural areas. Employment status showed a significant difference ($p < 0.001$), with a higher percentage of unemployment noted in rural areas (84.2%). Occupation did not show statistically significant differences between urban and rural populations.

Table 1. Socio-demographic characteristics of respondents

Variable	Frequency (%)		χ^2	df	p
	Urban n = 120	**Rural n = 120**			
Age (year)					
18-27	66 (55.0)	58 (48.3)	1.402	2	0.496
28-37	50 (41.7)	59 (49.2)			
38 above	4 (3.3)	3 (2.5)			
Mean age	27.72 ± 4.331	27.95 ±4.215	Student's T = -0.423		
Median age	27	28			
Marital Status					
Single	1 (0.8)	7 (5.8)	4.655	1	0.031*
Married	119 (99.2)	113 (94.2)			
Ethnicity					
Hausa	51 (42.5)	38 (31.7)	40.284	3	<0.001*
Igbo	34 (28.3)	17 (14.2)			
Yoruba	23 (19.2)	10 (8.3)			
Others	12 (10.0)	55 (45.8)			
Religion					
Islam	58 (48.3)	55 (45.8)	1.111	2	0.574
Christianity	62 (51.7)	64 (53.3)			
Others	0 (0)	1 (0.8)			

Table 1. Socioeconomic characteristics of respondents

Variable	Frequency (%)		χ^2	df	p
	Urban n = 120	**Rural n = 120**			
Educational Level					
No formal	7 (5.8)	5 (4.2)	24.373	3	<0.001*
Primary	19 (15.8)	31 (25.8)			
Secondary	40 (33.3)	64 (53.3)			
Tertiary	54 (45.0)	20 (16.7)			
Occupation					
Unskilled	42 (35.0)	55 (45.8)	3.105	2	0.212
Manual Skilled	40 (33.3)	31 (25.8)			
Non manual Skilled	38 (31.7)	34 (28.3)			
Employment status					
Employed	50 (41.7)	19 (15.8)	19.547	1	<0.001*
Unemployed	70 (58.3)	101 (84.2)			

Satisfaction of Pregnant Women with Health Service Components

As shown in Table 3, statistically significant differences were observed between urban and rural PHCs across multiple domains of service delivery. In the health workforce category, pregnant women in urban PHCs reported greater satisfaction regarding staff adequacy, approachability, attentiveness, friendliness, and competence. However, there were no significant differences in perceptions of staff knowledgeability or ability to understand local languages ($p > 0.05$). For medical technology, both urban and rural pregnant women expressed similar levels of satisfaction concerning the availability and functionality of equipment, access to investigations, drug supply, and other medical resources ($p > 0.05$).

Table 3. Satisfaction with maternal health service of respondents

Variable	Mean ± SD		Mann-Whitney U	p-value
	Urban n =120	Rural n =120		
Health workforce				
The health facility has adequate staff	4.01 ± 0.542	3.34 ± 1.025	4679.5	<0.001*
Easily locate and approach staff with problem	4.22 ± 0.414	3.97 ± 0.579	5822	<0.001*
They take time to listen attentively	4.21 ± 0.685	4.05 ± 0.743	6428	0.101
They are friendly in attending to patients	4.25 ± 0.716	4.20 ± 0.774	6986	0.663
The staff are knowledgeable of their work	4.37 ± 0.484	4.32 ± 0.608	7054	0.752
Satisfied with the competence of staff	4.33 ± 0.502	4.19 ± 0.639	6475	0.117
Staff listen and use language can understand	4.51 ± 0.502	4.58 ± 0.559	6539	0.154
Total average	*4.21 ± 0.350*	*3.98 ± 0.446*	*4978.5*	*<0.001**
Medical products and technology				
Available medical technology	3.89 ± 0.577	3.78 ± 0.747	6801	0.363
Medical technology always functional	3.98 ± 0.635	3.88 ± 0.568	6478	0.077
Prescribed investigations are always available	3.93 ± 0.871	3.94 ± 0.677	7089.5	0.811
Drugs and medical supplies are available	4.03 ± 0.809	4.13 ± 0.616	6902.5	0.529
Total average	*3.96 ± 0.557*	*3.93 ± 0.407*	*6061*	*0.030**
Information and Communication				
Tests and procedures are explained	4.01 ± 0.494	3.84 ± 0.608	6374.5	0.044*
Information on follow-up is given	4.13 ± 0.579	4.06 ± 0.523	6700.5	0.227
Info on ANC and immunization is provided	4.39 ± 0.639	4.07 ± 0.719	5406	<0.001*
Total average	*4.18 ± 0.389*	*3.99 ± 0.406*	*4907*	*<0.001**
Structure and physical environment				
Satisfied with cleanliness of waiting area	3.93 ± 0.444	2.98 ± 1.033	3504	<0.001*
Satisfied with the waiting time	3.73 ± 0.733	2.53 ± 1.020	2780	<0.001*
The toilets and bathrooms are clean	3.73 ± 0.767	3.01 ± 0.957	4386.5	<0.001*
Privacy within the consultation room	4.08 ± 0.705	3.83 ± 0.570	5834.5	0.002*
Facility ensures cleanliness of compound	4.29 ± 0.492	3.92 ± 0.630	5139	<0.001*
Total average	*3.95 ± 0.372*	*3.25 ± 0.535*	*1964.5*	*<0.001**
Service delivery and outcome of visit				
Explanation of treatment received was given	4.03 ± 0.399	3.90 ± 0.475	6574	0.058
Facility maintains secure data entry records	4.13 ± 0.501	3.98 ± 0.439	6212	0.11
Satisfied with the cost of the services	4.60 ± 0.556	3.62 ± 0.918	2804	<0.001*
Handles problems in a timely manner	4.36 ± 0.515	4.03 ± 0.517	5187	<0.001*
Provides services at promised dates and time	4.28 ± 0.565	4.03 ± 0.579	5785	0.001*
Satisfied with convenience of the location	4.34 ± 0.527	4.13 ± 0.564	5938	0.005*
Secured accessing healthcare services	4.31 ± 0.531	4.06 ± 0.598	5757	0.001*
Working hours are appropriate	4.27 ± 0.530	4.09 ± 0.580	6164.5	0.0178
Total average	*4.29 ± 0.273*	*3.98 ± 0.289*	*3065*	*<0.001**
Overall Average	***4.16 ± 0.213***	***3.87 ± 0.244***	***2566.5***	***<0.001****

Under information and communication, pregnant women in urban PHCs were significantly more satisfied with how tests and procedures were explained, the provision of follow-up information, and the communication of antenatal care and immunization details. Regarding structure and physical environment, urban PHCs were rated higher in cleanliness (of waiting areas, toilets, and the compound), privacy within consultation rooms, and reduced waiting times.

Finally, in the service delivery domain, pregnant women in urban PHCs reported significantly better satisfaction with service costs, timeliness of problem resolution, adherence to appointment schedules, convenience of location, secured healthcare access, and appropriateness of working hours. However, satisfaction with treatment explanation and secure data handling showed no significant urban-rural difference ($p > 0.05$).

In Table 4, urban PHCs showed higher satisfaction (76.2%) compared to rural areas (23.8%). Conversely, rural areas had more dissatisfaction (78.9%) than urban areas (21.1%). There is a significant association ($p < 0.001$) between location and satisfaction levels. Figure 1 shows the overall satisfaction of respondents with maternal health services. It reveals that urban respondents demonstrate higher satisfaction rates, with 80% of pregnant women expressing satisfaction with maternal health services compared to only 25% in rural areas. Conversely, rural primary health centers show levels of dissatisfaction, with 75% of pregnant women reporting unsatisfactory experiences with maternal health services, while urban centers maintain a relatively low 20% dissatisfaction rate. This gap reflects the inequities in the quality, accessibility, or delivery of maternal health services between urban and rural primary healthcare facilities in Abuja.

Table 4. Satisfaction of respondents

	Urban n=120	Rural n=120	χ^2	p-value
Satisfied	96 (80.0)	30 (25.0)	72.782	<0.001*
Unsatisfied	24 (20.0)	90 (75.0)		

* Statistically significant

Comparative Analysis

There is a significant association between the educational level of the spouse and satisfaction levels, with higher educational levels correlating with higher satisfaction rates (p-value: 0.033). The occupation of the spouse shows a significant association with satisfaction levels, with non-manual skilled spouses associated with higher satisfaction (p-value: 0.020). The employment status of the spouse is significantly associated with satisfaction levels, with employed spouses showing higher satisfaction rates (p-value: <0.001). Other factors, including parity, number of living children, time since last delivery, outcome of last pregnancy, and status of the newborn, did not show significant associations with satisfaction levels (p-values > 0.05).

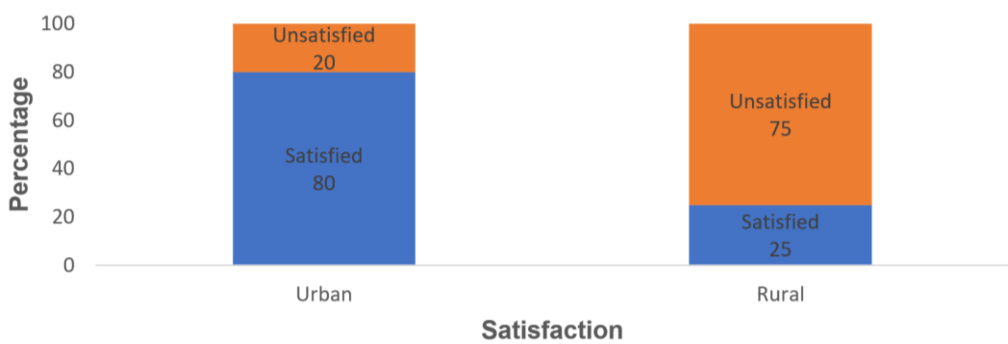

Figure 1. Overall satisfaction with maternal health services of respondents

Table 5. Multiple logistic regression of pregnant women's satisfaction on associated factors of respondents

Predictor variable	β	SE	Wald	p-value	Adj. OR	95% CI Lower	95% CI Upper
Constant	*-1.355*	*0.449*	*9.095*	*0.003**			
Location (Urban/Rural)	2.464	0.348	50.169	<0.001*	11.75	5.94	23.24
Tertiary Education (Yes/No)	-0.154	0.433	0.127	0.721	0.86	0.37	2.00
Employed (Yes/No)	-0.429	0.418	1.054	0.305	0.65	0.29	1.48
Spouse had tertiary education (Yes/No)	0.271	0.417	0.423	0.516	1.31	0.58	2.97
Manually skilled spouse (Yes/No)	0.259	0.499	0.269	0.604	1.30	0.49	3.44
Spouse employed (Yes/No)	0.230	0.432	0.284	0.594	1.26	0.54	2.93

* Statistically significant β = Regression coefficient; SE = Standard error; Adj. = Adjusted; OR = Odds ratio

Findings from Table 5 revealed that pregnant women in urban PHCs were 12 times more likely to report satisfaction compared to pregnant women in rural PHCs (OR = 11.75, 95% CI = 5.94–23.24). Logistic regression revealed key predictors of satisfaction. The primary predictors of satisfaction included:

- **Education level:** Women with secondary or tertiary education were more likely to report satisfaction.
- **Marital status:** Married women showed higher satisfaction compared to single or widowed participants.
- **Transportation access:** Easy access to transportation positively influenced satisfaction levels.

The evidence showed that pregnant women in urban PHCs were significantly more likely to rate their experience positively.

3.2. Qualitative Findings

Qualitative insights were gathered through focus group discussions with women who had utilized maternal health services at both urban and rural PHCs in Abuja. Six major themes emerged:

Services Received: Participants in both settings reported that a broad range of maternal health services including antenatal care, immunizations, and referrals were available. Pregnant women in urban PHCs generally expressed greater satisfaction, while rural users appreciated the comprehensiveness but highlighted the role of referrals to secondary facilities.

Ease of Booking and Access: Urban participants found the registration processes straightforward and efficient. In contrast, rural participants reported delays and long queues due to high patient volumes, often requiring them to arrive early to secure service.

Healthcare Providers: Pregnant women in urban PHCs praised the availability and professionalism of doctors and nurses. Rural participants reported staff shortages, leading to long waits, but commended the friendliness and good communication skills of the available personnel.

Medical Technology and Drugs: Urban PHCs were seen as well-equipped, with reliable, modern equipment and sufficient drug availability. In rural areas, participants reported outdated or unavailable lab services, though drug availability through on-site pharmacies was not an issue.

Communication and Information: Pregnant women in urban PHCs received clear explanations about care and appreciated proactive communication, such as SMS reminders. Rural participants noted gaps in communication from providers but acknowledged that the language used was appropriate and understandable.

Overall Satisfaction and recommendations: General satisfaction was high in both settings, but relatively lower in rural PHCs due to staffing shortages, outdated infrastructure, and cleanliness concerns. Recommendations from pregnant women in rural PHCs included hiring more staff, improving facility conditions, and enhancing service speed. Nonetheless, most participants across both settings indicated they would recommend the facilities to others.

Evidence from focus group discussions revealed contrasting perceptions between urban and rural pregnant women. Urban participants commended the availability of medical supplies and courteous staff. In contrast, pregnant women in rural PHCs highlighted long wait times, inadequate staffing, and poor facility maintenance as key sources of dissatisfaction.

Representative quotes included:

- **Pregnant women in urban PHCs**: *"I am satisfied with the service, they meet my expectations at the primary health level"*
- **Pregnant women in rural PHCs**: *"they are trying their best and I am satisfied coming here for my antenatal, but they can do better when it comes to wait time."*

4. Discussion

The findings of this study highlight significant disparities in pregnant women's satisfaction with maternal health services between urban and rural PHCs in Abuja, Nigeria. The demographics are indicative that most of the respondents receiving maternal health services at the PHC facility were of reproductive age compared to other age groups. There was no significant association between age and satisfaction with maternal health services. However, a study conducted in a hospital setting reported that older women are more satisfied with perceived quality of service delivery [8].

The high levels of satisfaction are comparable to findings from various regions, reflecting a range of satisfaction rates across different contexts. For instance, a rural community-based study in Nigeria, reported a satisfaction rate of 85.5% [9], indicating a positive perception of maternal health services. Similarly, in Nnewi, Nigeria [10], a satisfaction rate of 90% was observed, reflecting a satisfactory experience among women in both the rural and urban facilities.

Although these rates are high, they are however, lower than the 99% satisfaction reported in a study conducted in Zanjan, Iran at urban clinics [11], highlighting the varying degrees of satisfaction experienced by women accessing maternal health services globally. Conversely, a facility-based study in urban Anambra reported a satisfaction rate of 91.6%, aligning closely with the satisfaction levels observed in our study [9]. These comparisons demonstrate the nature of satisfaction with maternal health services, influenced by factors such as geographic location, healthcare infrastructure, and cultural context.

A significant difference was observed in satisfaction levels between urban and rural respondents. Satisfaction with maternal health services was notably higher among urban respondents and substantially lower among those in rural areas. Urban respondents were significantly more likely to report satisfaction, with rates estimated to be up to

23 times higher than in rural settings.

This disparity suggests marked differences in the quality, accessibility, and overall experience of maternal health services between the two contexts. Urban areas likely benefit from better infrastructure, greater resource availability, and a higher concentration of healthcare professionals, all of which contribute to the elevated satisfaction levels reported.

The association between location and satisfaction levels suggests the importance of addressing healthcare disparities between urban and rural areas. It raises critical questions about resource allocation, healthcare infrastructure development, and equitable access to quality maternal health services across diverse geographical settings. Factors such as proximity to healthcare facilities, availability of skilled healthcare providers, access to modern medical technology, and efficient service delivery mechanisms play pivotal roles in shaping satisfaction levels among maternal health service users in urban and rural contexts.

This study sheds light on the challenges and opportunities in healthcare delivery, highlighting the need for targeted interventions to bridge the satisfaction gap and ensure equitable access to high-quality maternal healthcare services regardless of geographical location.

The correlation between the spouse's educational level, occupation, and employment status with satisfaction rates can be attributed to several factors. Higher education often leads to better health literacy and understanding of healthcare procedures, making individuals more proactive in managing their health and navigating healthcare services effectively [12].

The higher satisfaction level of married women in health care facilities may be a result of married individuals often having better support systems, financial stability, and emotional assistance, influencing their healthcare experience positively. This aligns with social support theories, indicating that spousal support can mitigate challenges and enhance satisfaction during maternal healthcare experiences.

However, conflicting findings, such as a study conducted in the rural area of Kenya, raised questions about the universality of these trends and suggest potential cultural or contextual influences not explored in this study [7]. Despite these contradictions, the study's findings on marital status and education contribute to the understanding of social determinants of health and their impact on healthcare satisfaction.

The correlation between marital status and satisfaction levels with healthcare facilities implies the impact of social and support structures on individuals' healthcare experiences. It informs the considerations about the interconnectedness of social factors and healthcare outcomes, emphasizing the need for practical approaches in healthcare. The introduction of various government policies and programs, such as the Midwives Service Scheme (MSS) and Saving One Million Lives program could further increase maternal and child health outcomes, including satisfaction with healthcare services [13].

The physical environment of healthcare facilities, including infrastructure, cleanliness, and efficient management, has consistently emerged as a significant determinant of pregnant women's satisfaction. Studies have also highlighted the importance of good building infrastructure, water supply, electricity, cleanliness, and adequate room space in promoting positive assessments of health facilities and maternal care services [14], [15], [16]. Efficient management practices, such as streamlined patient consultations and improved access to services, have also been associated with higher levels of satisfaction among patients [16].

Evidence from the FGDs revealed that longer wait times emerged as a significant concern in rural healthcare facilities, highlighting a potential issue in service delivery. The shortage of healthcare providers in rural areas may lead to delays in accessing care, impacting patient satisfaction and overall healthcare experience. The disparity in waiting times between rural and urban facilities underscores broader challenges in healthcare access and resource allocation. It revealed the need for targeted strategies to address staffing shortages and improve efficiency in rural healthcare settings. The issue of longer wait times requires a comprehensive approach, including measures to recruit and retain healthcare professionals in rural areas, optimize scheduling and appointment systems, and enhance resource allocation to prioritize patient care.

The issue of longer wait times in rural healthcare facilities contributes to the dialogue on healthcare disparities between rural and urban settings. It highlights the importance of equitable access to timely and quality healthcare services, calling for interventions to bridge gaps and improve patient experiences across different healthcare settings.

Strengths and Limitations: The mixed-methods approach allowed for a comprehensive understanding of pregnant women's satisfaction. Quantitative data provided measurable insights, while qualitative data enriched the analysis with personal experiences and contextual details. However, the study's cross-sectional design limits causal interpretations, and findings may not be generalizable to all PHCs in Nigeria due to regional differences.

5. Implications for Policy and Practice

The results highlight the importance of addressing urban-rural disparities to improve maternal health outcomes. Policymakers should prioritize investments in rural healthcare infrastructure, including staffing, medical supplies, and facility maintenance. Training programs focused on communication and patient-centered care can enhance staff-patient interactions, particularly in underserved areas.

Improved transportation networks and community-based interventions could mitigate access barriers for rural populations. Additionally, regular monitoring and evaluation of pregnant women’s satisfaction can help identify gaps and inform targeted improvements.

Future Research: Further studies are needed to explore longitudinal changes in pregnant women’s satisfaction and the impact of specific interventions. Comparative analyses across different states in Nigeria could provide insights into regional disparities and inform nationwide strategies for improving maternal health services.

6. Conclusions

Addressing the systemic challenges identified in this study is essential for achieving equitable healthcare delivery and enhancing patient satisfaction, particularly in rural PHCs. Targeted policies and interventions are necessary to bridge satisfaction gaps and improve maternal health outcomes across Abuja’s PHCs. Ensuring equitable resource distribution and fostering patient-centered care are critical for achieving Sustainable Development Goals related to maternal health.

Declarations

Ethics Approval

Ethical approval was obtained from the Abuja Health Research Ethics Committee (NUNHREC/2024/03/001/04-03-2024). All participants provided informed consent prior to data collection, and confidentiality was maintained throughout the study.

Consent for Publication

Not applicable.

Availability of Data and Materials

The datasets generated and analyzed during this study are available from the corresponding author upon reasonable request.

Competing Interests

The authors declare no competing interests.

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Authors' Contributions

DCD-was involved in the conception, design, acquisition, analysis, interpretation of data and drafting and substantive revision of the manuscript. JM- was involved in the conception, design, analysis, interpretation of data, and substantive revision of the manuscript. TK- was involved in the conception, design, interpretation of data, and substantive revision of the manuscript. DAG- was involved in analysis, interpretation of data and revision of the manuscript. AL- was involved in interpretation of data, and substantive revision of the manuscript. ISA was involved in the conception, design, interpretation of data, and revision of the manuscript. MS- was involved in interpretation of data, and substantive revision of the manuscript. EL- was involved in interpretation of data, and revision of the manuscript. All authors read and approved of the final manuscript.

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Abbreviations

PHCs: Primary Health Centers
WHO: World Health Organization
FGD: Focus Group Discussion
SDGs: Sustainable Development Goals
SPSS: Statistical Package for the Social Sciences

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