



(RESEARCH ARTICLE)



Perceived factors affecting the utilization of maternity services in primary healthcare centre at a rural community in Northcentral, Nigeria

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Abstract

Background: Maternal health forms an important measure of healthcare quality, and maternal health services which involves prenatal, birth, and postnatal care is necessary to enhance maternal health and survival, decrease maternal morbidity and mortality. With a greater rate in rural than in urban regions, Nigeria contributes significantly to the global burden of avoidable maternal mortality. Utilization of maternal health services would reduce maternal mortality. Mortality among mothers would decrease with the use of maternal health care. The purpose of this study was to establish the degree to which maternal service utilization and the perceived factors influencing it in a rural community in North Central Nigeria.

Methods: In a rural community in North Central Nigeria, women of childbearing age (15–49 years) participated in this descriptive cross-sectional study. 240 women were recruited using a multistage sample procedure, and data was collected using an interviewer-administered questionnaire. Descriptive and inferential statistics were used to examine the data using SPSS version 26.

Results: This study reveal 65.9% of the respondents utilized ANC at PHC, 29.1% gave birth the PHC and 35% utilized PNC at the PHC. Factors affecting the utilization of maternity services at the PHC includes: mothers' level of education and age. Other perceived factors include; insufficient health workers, long waiting period, husband's support and history of pregnancy complications.

Conclusion: High levels of ANC consumption were observed at PHC, however low levels of PHC delivery and PNC service utilization were observed. The use of maternal health services is influenced by two main factors: age and education.

Keywords: Antenatal care; Maternity care; Delivery service; Postnatal care; Women; Primary Health Care; Nigeria

1. Introduction

Maternal health is a major determinant of the standard of healthcare in every country¹. In environments with limited resources, maternal health remains an issue, even if the rate of maternal death has declined internationally over the past 20 years². Maternal mortality rates in sub-Saharan Africa, exceed thirty-three percent². Maternal services are

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defined as health services provided during the course of pregnancy, delivery, and the postpartum phase. Pregnancy care, delivery care, and postnatal care are thus included in maternity services. Reducing morbidity and mortality of maternal is the main objective of maternity services since they offer a means of increasing maternal well-being and decreasing maternal mortality^{3,4}. In order to lower maternal mortality, the fifth goal of the Millennium Declaration highlights the necessity of providing high-quality maternal health services⁵.

Nigeria still has one of the worst rates of maternal mortality in the Western world African subregion, despite numerous attempts to lower it failing to significantly impact the overall number of pregnant women who pass away for close reasons⁵. An estimated 40,000 pregnancy-related deaths occur in Nigeria each year, accounting for 14% of all maternal deaths worldwide. According to this, Nigeria is Africa's top nation and second-largest important country overall in terms of maternal mortality, after India⁶⁻⁹.

Enough maternity and child health services should be made available and used promptly in order to significantly reduced mother and child mortality and improved maternal health outcomes¹⁰. Nigeria built its primary healthcare system with the goal of providing "healthcare for all," and maternal health services were included in its area of care.⁵ Even though these services are available, few Nigerian women take use of them, and this underutilization of maternal services was found to be a significant factor in the high risk of maternal mortality in different regions of the country.¹¹.

Globally, the rate of maternal services utilization has been reported to be 66% for prenatal care, 80% for deliveries in medical facilities, and 61% for postnatal care.² Research from Nigeria reveals that 38% of women gave birth in a medical institution, 52% of expectant mothers received four or more prenatal visits, and 37% of expectant mothers used postnatal care.¹²⁻¹⁴ Undergoing no fewer than four prenatal care visits, giving birth in a facility, postnatal treatment within first twenty-four hours of delivery, and three more encounters with trained staff are associated with the highest degree of maternity service consumption.¹⁵.

The effectiveness of prenatal care services depends on the regularity of antenatal visitations and the number of weeks of pregnancy. Antenatal services include treating and preventing malaria, immunizing against tetanus, managing anemia and STIs, and optimal diet³. Receiving delivery care entails having a professional birth attendant deliver the baby. Given that the majority of maternal deaths occur in a medical facility during the labor and delivery process, childbirth guarantees prompt and sufficient care during delivery³. The first 48 hours after delivery are a crucial time for effective postnatal care. This is significant because the situation is one of those high-risk times that, if ignored, raises the death rate¹⁶.

Mother complications and poor postnatal effects, which include the onset of early labor, a lower birth weight, retarded intrauterine growth, and maternal death, have been associated with the non-utilization of maternity services¹⁷. Many factors, including education level, age, poverty, the distance to the facility, location of delivery, wealth within the household, place of residence, exposure to media, accessibility to transportation, the babies chronological birth position and economic circumstances, have been linked to woman inadequate usage of health care, which increases risk of maternal mortality^{2,13,18-19}. Nigerian rural areas have a higher risk of maternal death than the country's urban areas²⁰⁻²¹. In Nigeria, one of the most crucial public health issues at the moment is lowering maternal mortality in rural areas. Determining the elements that promote the use of maternity services is essential, as well develop policies and health education to address these issues, and minimize maternal mortality in rural areas. Therefore, the purpose of this study was to ascertain the extent of maternal service utilization as well as the different factors that are thought to influence this utilization at a PHC located in a rural community in Nigeria.

2. Methodology

This study was conducted in Malete Community, a rural settlement in Kwara State, Northcentral Nigeria. The approximate number of women who are of childbearing age is 3,584, however, it has only one primary healthcare centre. The community also sits Kwara State University, Kwara. This research was a descriptive cross-sectional study with Study population carried out among women of child bearing age, whose last child is less than 5 years of age.

Determining sample size since target population for this study is less than 10000, the formula below was used.

$$nf = \frac{n}{1+n/N}$$

By substituting

$$nf = \frac{162}{1 + 162/3854}$$

$$nf = \frac{162}{1.0420}$$

$$nf = 155$$

To compensate for attrition or non-response, a response rate of 70% is anticipated, calculated the sample size by:

$$ns = \frac{n}{0.7}$$

$$\text{Then, } ns = \frac{155}{0.7}$$

$$ns = 221$$

Sample size minimum for the study was 221. However, data was collected from 240 women, after screening of completeness of the questionnaire, 10 were excluded and 230 were analysed.

Instrument for data collection was interviewer - administered questionnaire, designed after consideration of previous literatures. The questionnaire was based on previous study. It includes both open and closed ended questions, separated into four (4) sections according to the study's objective. Socio demographic characteristics, the level of utilization of maternity services in PHC, describe the factors affecting the utilization of maternity services in PHC in Malete and determine the quality of care at PHC in Malete.

Data was collected using an interviewer administered questionnaire and was analysed using Statistical Package for Social Sciences version 26. All variables were presented using descriptive statistics (frequency and percentage). To determine whether the independent and dependent variables were associated, the chi-square test was employed. At a 95% confidence interval, $p < 0.05$ was deemed statistically significant.

Permission to commence this research was obtained from the Department of Public Health, Kwara State University, Kwara state. At community entry, consent was gotten from community leader, primary healthcare centre and participants, observing the anonymity and confidentiality.

3. Results

Table 1 Socio-demographic characteristics of respondents (n = 230)

Variables	Frequency	Percentage (%)
Age group (in years)		
15 - 24	80	34.8
25 - 34	107	46.5
35 - 49	43	18.7
Mean ± SD	27.17 ± 6.84	
Marital Status		
Single	60	26.1
Married	170	73.9
Level of Education		
Primary	69	30.0
Secondary	118	51.0
Others	43	19.0

Occupation		
Trader	100	43.5
Artisan	77	33.5
Civil servant	12	5.2
Others	41	17.8
Religion		
Islam	210	91.3
Christianity	20	8.7
Tribe		
Yoruba	217	94.3
Others	13	5.7
Parity		
Primiparous	69	30.0
Multiparous	161	70.0

The mean age of participants was 27.17 ± 6.84 years, and less than half of the respondents 107(46.5%) were between the ages of 25-34 years old. About three-quarters of the respondents 170 (73.9%) were married, 118(51.0%) attained secondary level of education, 100 (43.5%) work as a trader. Nearly all respondents 210 (91.3%) were Muslims, 217 (94.3%) were Yoruba and 161 (70.0%) were multiparous. **(Table 1)**

Table 2 Level of utilization of maternity services at primary healthcare

Variables	Frequency, n	Percentage (%)
Attendance of at least one ANC in last pregnancy		
Yes	195	84.8
No	35	15.2
Location of ANC		
Primary Healthcare centre	160	69.6
Traditional Birth Attendant	20	8.7
Others	15	6.5
Nil	35	15.2
Location of last delivery		
Primary Healthcare centre	67	29.1
Traditional Birth Attendant	150	65.2
Others	13	5.7
Receipt of post-natal care		
Yes	100	43.5
No	130	56.5
Location of post-natal care centre		
Primary Healthcare centre	35	15.2
Traditional Birth Attendant	65	28.3
Nil	130	56.5

Majority of the respondents 195 (84.8%) attended at least one ANC during their last pregnancy, of which 160 (69.6%) did so at primary healthcare centre, 20 (8.7%) attended ANC at TBA and 15 (6.5%) attended ANC at other private hospitals outside the town. About two-third of the respondents 150(65.2%) utilized TBA for their last delivery care, while 67 (29.1%) attended the primary healthcare centre. For PNC, close to two - third of the respondents 130 (56.5%) did not receive PNC and only 35 (15.2%) received postnatal care from the primary healthcare centre.

Table 3 Association between Socio-demographic characteristics and level of utilization ANC among respondents

Variables	Utilization of ANC at PHC		χ^2	p-value
	Yes (%) n=160	No (%) n=70		
Age group (in years)			12.022	0.002
15 – 24	63 (78.7)	17 (21.3)		
25 – 34	76 (71.0)	31 (29.0)		
35 – 49	21 (48.8)	22 (51.2)		
Marital Status			0.544	0.461
Single	44 (73.3)	16 (26.7)		
Married	116 (68.2)	54 (31.8)		
Level of education			15.264	0.001
Primary	43 (62.3)	26 (37.7)		
Secondary	95 (80.5)	23 (19.5)		
No education	22 (51.2)	21 (48.8)		
Occupation			63.890	0.001
Trader	42 (42.0)	58(58.0)		
Artisan	71 (92.2)	6 (7.8)		
Civil servant	10 (83.3)	2 (16.7)		
Others	37 (90.2)	4 (9.8)		
Parity			2.698	0.100
Primiparous	58 (84.1)	11 (15.9)		
Multiparous	102 (63.4)	36 (36.6)		

No statistically significant correlation was found between marital status and parity. Respondents who were younger in age (15 – 24 years) utilized at ANC at PHC more, when compared to other age group, and statistically significant correlation was found between age and utilization of ANC. Majority of the respondents who attained up to secondary level of education 95(80.5%) attended ANC at PHC compared to other, and this observed difference in utilization of ANC based on level of education is statistically significant ($p < 0.05$). A higher proportion of the respondents who were artisans attended ANC compared to other occupation, and this observed difference based on occupation is statistically significant ($p < 0.05$). (**Table 3**)

Table 4 Association between Socio-demographic characteristics and level of utilization of delivery care among respondents

Variables	Utilization of delivery care at PHC Maleta		χ^2	p-value
	Yes (%) N=67	No (%) N=163		
Age group (in years)			7.020	0.029
15 – 24	32(40.0)	48(60.0)		
25 – 34	25(23.4)	82(76.6)		
35 – 49	10(23.3)	33(76.7)		
Marital Status			41.625	0.001
Single	37(61.7)	23(38.3)		
Married	30(17.6)	140(82.4)		
Level of education			7.937	0.019
Primary	15(21.7)	54(78.3)		
Secondary	44(37.3)	74(62.7)		
Others	8(18.6)	35(81.4)		
Occupation			54.643	<0.001
Trader	20(20.0)	80(80.0)		
Artisan	10(13.0)	67(87.0)		
Civil servant	10(83.3)	2(16.7)		
Others	26(63.4)	15(36.6)		
Parity			32.133	<0.001
Primiparous	38(55.0)	31(45.0)		
Multiparous	29(18.0)	132(82.0)		

A higher proportion of those between 15 – 24 years, who were single, attained secondary level of education, were civil servants and were primiparous utilized PHC for delivery, and Age, married status, education, occupation, and parity were all statistically significantly correlated with the use of PHC for delivery. (**Table 4**)

Table 5 Association between Socio-demographic characteristics and level of utilization of PNC among respondents

Variables	Utilization of PNC at PHC		χ^2	P
	Yes (%) N=35	No (%) N=195		
Age group (in years)			9.526	0.008
15 – 24	20 (25.0)	60 (75.0)		
25 – 34	12 (11.2)	95 (88.8)		
35 – 49	3 (7.0)	40 (93.0)		
Marital Status			13.749	0.002
Single	18 (30.0)	42 (70.0)		

Married	17 (10.0)	153 (90.0)		
Level of education			11.005	0.004
Primary	10 (14.5)	59 (85.5)		
Secondary	25 (21.2)	93 (78.8)		
Others	0 (0.0)	43 (100.0)		
Occupation			9.992	0.018
Trader	10 (10.0)	90 (90.0)		
Artisan	15 (19.5)	62 (80.5)		
Civil servant	5 (41.7)	7 (58.3)		
Others	5 (12.2)	36 (87.8)		
Parity			17.692	0.001
Primiparous	21 (30.40)	48 (69.60)		
Multiparous	14 (8.70)	147 (91.30)		

A statistically significant correlation was found between parity, occupation, education level, age, and marital status. A higher proportion of those who were between 15 – 24 years of age, were single, had attained secondary level of education, were civil servants and were primiparous utilized postnatal care at primary healthcare centre. **(Table 5)**

Table 6 Factors affecting the Utilization of maternity services at PHC, Maleta

Variables	Frequency	Percentage
Level of income		
High	38	16.5
Average	92	40.0
Low	100	43.5
Husbands support for utilization of maternity services		
Yes	49	21.3
No	181	78.7
Attitude of health workers		
Good	90	39.1
Fair	100	43.5
Poor	40	17.4
Comfortable being examined by a male health worker		
Yes	175	76.1
No	55	23.9
Reasons for non-comfortability with male health worker (n= 55)		
Husband does not like it	16	29.1
I don't like it	11	20.0
Religious reasons	13	23.6
Cultural reasons	15	27.3

Complications in pregnancy		
Yes	68	29.6
No	162	70.4
Complications during delivery		
Yes	44	19.1
No	186	80.9
Complications after delivery		
Yes	55	23.9
No	175	76.1
Distance of PHC to residence		
Very far	89	38.7
Not too far	115	50.0
Close by	26	11.3
Road to PHC is motorable		
Yes	200	87.0
No	30	13.0
Waiting hour before being attended to		
Long	163	70.9
Moderate	67	29.1
Short	0	0.0
Availability of drugs		
Yes	66	28.7
No	164	71.3
Perceived cost of care		
High	57	24.8
Moderate	167	72.6
Low	6	2.6

Less than half of the respondents 100 (43.5%) have their level of income on low level, more than three-quarter of the respondents 181 (78.7%) did not have their husband's support for the utilization of maternity services at PHC, Maleté. Less than half of the respondents 100 (43.5%) described attitude of health workers at PHC, Maleté as fair, 175 (76.1%) are comfortable having a male health professional examine them, while 16 people (29.1%) did not feel comfortable that way stated that their husband does not like it. Less than three - quarter of the respondents 162 (70.4%) never had pregnancy complications, Majority of the respondents 186 (80.9%) never had delivery complications while more than three - quarter of the respondents 175 (76.1%) never had complications after delivery. Half of the respondents 115 (50.00%) described the PHC not to be too far to their residence while more than one - tenth of the respondents 26 (13.1%) described it to be near. Majority of the respondents 200 (87.0%) confirmed that the road to PHC Maleté is motorable. Less than three - quarter of the respondents 163 (70.9%) stated that the waiting hour at PHC Maleté is long. Less than three - quarter of the respondents 164 (71.3%) stated that drugs are not always available at PHC Maleté and 167(72.6%) described the cost of care to be moderate. (Table 6)

4. Discussion

Over two-thirds of the participants in this study used ANC at the primary healthcare facility. This is consistent with findings from a rural community in Edo state, southern Nigeria²². A higher level of utilization (93.1%) has been reported from an urban local government in Enugu, South-east, Nigeria¹¹. The substantial amount of utilization might be attributed to different kinds of community and a significant number of women in the community of reproductive age who were used in the study. Women who live in urban settlements have also been reported to use maternal services in greater numbers than those who live in rural areas². Based on 2018 NDHS data, the level of antenatal service utilization in Nigeria was reported to be 74%².

This study's high rate of antenatal service utilization may be explained by the community's functional primary healthcare center. Age, education level, and occupation are factors associated with ANC utilization; comparable findings have previously revealed^{2,22}. The study's sample size was larger among participants between the ages of 15 and 24; the rate of ANC utilization decreased with age; younger women have been reported to use ANC in PHC compared to older women²². In contrast, a study conducted in Ibadan using NDHS data disclosed that greater numbers of older women utilize antenatal care services^{2,23}. In this study, more of those who attained secondary educational level utilized ANC compared to other, and it was seen that the higher educational level were more women utilized ANC services at health facilities. This report bears similarities to several other investigations conducted in Nigeria and other African countries^{2,23-26}. Conversely, ANC service utilization is more common among women with lesser levels of education, according to one study²². The use of ANC was not correlated with marital status in the current investigation. This, however, is not the case for earlier research from a national survey and a Southern rural area in Nigeria's Edo State^{2,23}. According to reports, married women are more likely to seek maternal care because they are entitled to financial support from their spouses².

In the current study, 29.1% of the respondents, or less than one-third, gave birth at the primary healthcare facility. This result is less than the 46.6% that the state of Edo recorded²². Okpala et al. also identified a higher level of delivery-related use of health facilities.¹¹ The most common justifications cited for using PHC for delivery were the facility's proximity to the patient's home, the requirement for professional assistance, the availability of a physician, and high-quality treatment^{2,11,22}. The following factors are linked to the use of PHC for delivery: age, marital status, education level, employment, and parity with PHC use. A greater percentage of unmarried, secondary school educated, primiparous, civil servants, and those between the ages of 15 and 24 used PHC for delivery. However, higher educated women are less likely to use PHCs for newborn care, according to this research²². This might have to do with how women view the quality of care offered at PHCs.

In this study, less than one-fifth (15.2%) utilized PNC at the primary healthcare facility. A research conducted in the state of Ekiti has shown a similarly low level of PNC utilization²⁷. Merely 10% of mothers in Ethiopia made use of postpartum care.¹⁷ On the other hand, Southeast Nigeria's Enugu state reported a high percentage of utilization (93.1%)²². It has previously been noted, using data at the national level, that women in Southeast and Southwest Nigeria tend to use maternal health care more frequently²². The necessity of understanding a child's health status and the advice of doctors and nurses were two variables that contributed to the high level of PNC service consumption in Enugu¹¹. In this study, age, marital status, educational attainment, and parity are factors linked to the use of PNC services. PNC service was used by younger women (less than 25 years old) and those without prior history of childbirth, relative to other study participants. Numerous studies carried out in low- and middle-income countries (LMIC) have revealed a similar finding: moms who were younger at the time of birth used postnatal care more frequently than mothers who were older and more experienced.²⁸⁻³⁰ This was in contrast to the findings of the Tolera et al¹⁷. study, which showed that older women (those over 35) were more likely than younger women to use PNC services. Additional research carried out in rural areas of Nigeria, Indonesia, and Sudan also indicates that the age of reproductive-age women affects their behavior with regard to using maternal healthcare^{13,29,31} While maternal health care were more frequently used by married women, Adedokun et al², reported that more single individuals in this sample used PNC services. PNC services were used by individuals with secondary education more often than by those with only primary or no education. This aligns with the findings reported by Adedokun et al. and Tolera et al.^{2,17} Good health for mothers higher educational attainment has been linked to seeking behavior. The fact that education broadens one's perspective on a range of life situations and that educated women are more likely to see the benefits of having access to high-quality healthcare for their own and their children's health may help to explain this.²

Additional factors that have been linked to a decrease in the use of PNC include: not attending prenatal care; not knowing about or having a history of postnatal complications; not knowing that PNC services are available; and not knowing enough about the recommended number of PNC visits¹⁷. The purpose of the current study was to determine the perceived factors that encourage the use of maternal health services. The factors that have been documented include

the following: income level; distance from habitation to PHC; road to motorable road PHC; length of time spent waiting for attention; and perception of the expense of care. According to Okpala et al.¹¹, Among the considered factors influencing the utilization of maternal health services are cultural attitudes, the professional definition of need, accessibility to medical treatment, and economic status. The study's findings identified a number of variables that influence the use of maternity services, and these variables can be grouped using the behavioral model proposed by Andersen and Newman³⁵: Predisposing factors: age and education level; (2) Enabling factors: husband's support; (3) Need factor: pregnancy difficulties; and (4) Quality of care: lack of drugs, long waiting periods, and insufficient health staff.

5. Conclusion

The level of maternal health service utilization in a rural community in North Central Nigeria has been evaluated in this study. Utilization of maternal health services in PHC was 15.2% for postnatal care, 29.1% for delivery, and 69.5% for prenatal care. Prenatal care was the most often used service, while birth and postnatal care use are still low. The use of maternal health services was significantly correlated with age and education. Maternal health services are used more frequently when people are younger and more educated.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of ethical approval

The ethical approval for this study was obtained from the Kwara State Ministry of Health, Ilorin, Nigeria.

Statement of informed consent

Participation was anonymous and voluntary. Informed consent was sought from the respondents and participants could withdraw from the survey at any time.

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