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PATTERN AND PREDICTORS OF UTILIZATION OF MATERNAL HEALTHCARE SERVICES IN GOMBE STATE, NORTHEAST NIGERIA

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ABSTRACT

Maternal health encompasses the well-being of women from conception through pregnancy and the postpartum period. Progress in reducing maternal mortality has remained slow, where over 162,000 women die annually from preventable pregnancy-related causes due to poor utilization of skilled maternal health services. Ninety-nine percent of these maternal deaths occur in low- and middle-income countries such as Nigeria, and Nigeria remains one of the two countries contributing to one-third of global maternal deaths, with Northern Nigeria showing the poorest indicators. This falls short of the SDG, which aim to reduce MMR to fewer than 70 per 100,000 live births. It is against this backdrop that this study was undertaken to assess the patterns and predictors of maternal health service utilization in Gombe State, Nigeria. The objectives were to assess the use of antenatal care (ANC), skilled delivery, and postnatal care (PNC), and to identify factors associated with service utilization among mothers of children under five. **Methodology:** a cross-sectional descriptive study was conducted among 630 respondents selected through multistage sampling across the three senatorial zones of Gombe State. Data were collected using a pretested, interviewer-administered questionnaire and analyzed using SPSS version 24, with significance set at $p < 0.05$. **Results:** findings indicate that education, age at last birth, religion, household income, and marital status are major individual-level predictors of maternal service use. While ANC uptake was high, utilization of skilled birth attendance and PNC remained lower. **Conclusion:** interventions should be targeted at improving factors influencing these predictors, with particular focus on less-educated, low-income, and rural women.

KEYWORDS: maternal health, antenatal care, skilled delivery, postnatal care, patterns, predictors, interventions.

INTRODUCTION

Maternal health means the health of women which includes all the services that span from the time of conception, during pregnancy, and after delivery (Mekonnen, *et al.,* 2019). The global maternal mortality rate is 223 deaths per 100,000 live births according to the United Nations with 66% of these deaths occurring in in Africa alone. Whilst most of the maternal and mortality rates are preventable, women continue to die from those preventable causes and in most cases these deaths are unaccounted for (UNIICEF, 2023).

This is particularly worrying in sub-Saharan Africa where over 162,000 women still die each year during pregnancy and childbirth, most of them due to poor utilization of available skilled maternal health care services (United Nations, 2015).

The situation is even worse in Nigeria being one of the two countries accounting for one third of the global maternal deaths. In addition to this, disparities exist across the regions and socioeconomic class with the Northern Nigeria region having the worst indices. This is a far cry from achieving the SDGs which aims to reduce maternal mortality to less than 70 per 100,000 live births (Mohammed et al., 2022).

Numerous studies have established the inverse relationship between the occurrence of maternal deaths and Antenatal Care (ANC), skilled delivery attendance, and Postnatal Care (PNC). Thus, the significant variation in maternal mortality estimates between different localities within the same region can be attributed, to a large degree, to differences in the access to, and the utilization of modern maternal health services (Shanto et al., 2023).

Data from the MPCDSR in Gombe State also reported a high maternal death ratio of 1,876 deaths/100,000 live births in 2018 as recorded by the government hospitals and PHCs, despite the MPCDSR programme (State, 2017). Therefore, for Gombe State to achieve a sustainable low maternal mortality, increase in maternal health care utilization will need to be achieved. It is then important to identify and address the different factors that influence the utilization of maternal health care services. By assessing the patterns and predictors of maternal health care service utilization, this research will provide valuable insights into the factors that facilitate or hinder the use of these essential maternal health services (Shaltiwe, *et al.,* 2022). Also, more in-depth knowledge on patterns and predictors of maternal health care utilization will be important in developing and implementing policies and strategies that can be used in guiding efforts to; addressing health disparities, informing policy and program development, enhancing healthcare access and quality, contributing to SDGs, and ultimately improve maternal health outcomes, ultimately contributing to the overall health and well-being of communities in Gombe State (Oluwole, *et al.,* 2015).

The study aims to assess the patterns and predictors of utilization of maternal health care services in Gombe State.
The specific objectives include:

1. To assess the utilization of antenatal care services among mothers of children under the age of five in Gombe State.
2. To assess the utilization of skilled delivery services among mothers of children under the age of five in Gombe State.
3. To assess the utilization of postnatal care services among mothers of children under the age of five in Gombe State.
4. To assess the factors that predict the utilization of maternal health care services among mothers of children under the age of five in Gombe State.

Methodology: a cross-sectional descriptive study was conducted among 630 respondents who are mothers of children under the age of five in the selected communities, selected through multistage sampling across the three senatorial zones of Gombe State. Sample size was calculated using the WHO 30 x 7 cluster sampling by randomly selecting 30 clusters (political wards) from each of the 3 senatorial zones in Gombe State, and then randomly selecting 7 interview sites (i.e. individuals) per political ward/cluster. Data were collected using a pretested interviewer-administered structured questionnaire via face-to-face interview to gather data on maternal healthcare utilization. Questionnaire was adapted from the Nigerian Demographic Health Survey Tool (National Population Commission FGN Abuja, 2018).

Data was then analyzed using SPSS version 27, missing values and inconsistences were also checked. Data confidentiality was also maintained by restricting access to the data.

The analyses included descriptive statistics (frequency, percentages) for sociodemographic variables and bivariate analysis (chi-square) to identify associations between predictors and utilization. The analysis also encompassed multiple (logistic regression) to identify independent predictors of maternal health care utilization. Level of statistical significance was set at p-value <0.05.

The scoring system was adapted from the Nigerian Demographic Health Survey Tool (Survey, 2013). The questionnaire that was used for this study comprises 27 questions. Section A comprises 5 questions exploring the sociodemographic characteristics of the population. The maternal healthcare utilization section B of the questionnaire comprised of 17 questions, and section C on predictors/barriers comprised 5 questions. Data results were reported on tables and charts to summarize the findings. The results were interpreted in the context of existing literature and objectives of the study.

Ethical clearance was obtained from the Gombe State Ministry of Health Research and Ethics Committee to undertake the study. Permissions were sought from the LGA Chairpersons, Emirs/Chiefs, and all relevant authorities. Respondents were fully informed on the purpose of the study, their consent was obtained in the beginning of the questionnaire before their participation and their confidentiality regarding identity was ensured.

RESULTS

Descriptive analysis like percentage, mean, standard deviations were used to describe the study population in relation to demographic and socio-economic and other relevant variables. Bivariate and multivariate logistic regression analyses were done to identify the association between the independent and outcome variables. The chi-square test was used to identify independent variables, which have association with the dependent variable that would be retained for further analysis at the multivariate stage. Further, multivariate analysis carried out to explore the net effect (relative risk) of all independent variables on the dependent variable by controlling possible intervening variables.

Table 1a: Sociodemographic Characteristics of Respondents (N = 630), September, 2025.

Variables	Frequency (N)	Percent (%)
AGE (Years)		
Under 18	171	27.1
18 – 24	144	22.9
25 – 34	243	38.6
35 – 44	54	8.6
45 and Above	18	2.9

ETHNICITY		
Hausa	157	24.9
Igbo	64	10.2
Yoruba	55	8.7
Others	354	56.2
RELIGION		
Islam	441	70.0
Christianity	180	28.6
Others	9	1.4
MARITAL STATUS		
Married	369	58.6
Divorced	81	12.9
Separated	57	9.0
Widowed	21	3.3
Single	102	16.2
OCCUPATION		
Unemployed	174	27.6
Self Employed	120	19.0
Employed	114	18.1
Student	114	18.1
Others	108	17.1
EDUCATIONAL LEVEL		
No Formal Education	147	23.3
Primary School	96	15.2
Secondary School	228	36.2
Tertiary	159	25.2
AGE WHEN FIRST MARRIED		
Under 18	104	19.7
18 – 24	184	34.8
25 – 34	157	29.7
35 – 44	65	12.3
45 and Above	18	3.4
NUMBER OF CHILDREN		
1 – 3	149	29.0
4 – 6	168	32.8
Above 6	197	38.2

Table 1b: **Sociodemographic Characteristics of Respondents Count. (N = 630), September, 2025.**

Variables	Frequency (N)	Percent (%)
AGE OF LAST BIRTH		
0 – 1	214	41.2
2 – 3	162	31.2
4 – 5	94	18.1
Above 5	49	9.4
YEARS OF MARRIAGE (YEARS)		
0 – 5	214	41.2
6 – 10	162	31.2
11 – 15	94	18.1
Above 15	49	9.4
HUSBAND'S EDUCATIONAL QUALIFICATION		
No Formal Education	147	23.3
Primary School	96	15.2
Secondary School	228	36.2
Tertiary	159	25.2
HUSBAND'S OCCUPATION		
Farmer	94	14.9
Trader	79	12.5

Business	33	5.2
Civil Servant	196	31.1
Self Employed	153	24.3
Others	75	11.9
HOUSEHOLD MONTHLY INCOME (₦)		
50,000.00 or less	234	37.1
100,000.00 or less	237	37.6
More than 100,000.00	159	25.2

The sociodemographic characteristics of the respondents' shows that most of the respondents are between the ages of 25 to 34 years old and more than sixty percent of the respondents were married women and majority of the respondents are from poor family background.

1.1 THE UTILIZATION OF ANTENATAL CARE SERVICES AMONG MOTHERS OF CHILDREN UNDER THE AGE OF FIVE IN GOMBE STATE.

In line with the first specific objectives of the study to assess the utilization of antenatal care services among mothers of children under the ages of five in Gombe state, the section of the questionnaires that examine that was analyzed and presented below. The data was coded as follows, Yes = 1, No = 2, other items were given numbers 1, 2, 3 and 4 in the order of arrangement.

Scoring mean of 0 to 10 means poor utilization of antenatal care services while a total mean of 11 to 21 indicate a very good use of antenatal care services in the study area.

Table 2: **The Utilization of Maternal Health Services Among Mothers of Children under the Age of Five in Gombe State (n = 630), September, 2025.**

Variable	N	Min.	Max.	Mean	Std. Dev.
Did you visit a health facility for maternal health services during your most recent pregnancy?					
Yes	336	1.00	2.00	1.4667	.50008
No	294				
If Yes to 14 above, which services did you access?					
Antenatal care	101	1.00	3.00	1.9476	.77775
Delivery services	112				
Post-natal care	123				
If Yes to 14 above, which type of health facility did you visit?					
Primary health care center	158	1.00	3.00	1.0111	.47915
General hospital	112				
Tertiary hospital	66				
How many times did you visit the clinic during your most recent pregnancy (for ANC)?					
None	384	1.00	5.00	1.8095	1.15825
1 – 3	66				
4 – 6	120				
Above 6 times	60				
If you did not use the Primary Healthcare Center, what was the primary reason?					
Service not satisfactory	213	1.00	6.00	3.6619	.47419
Long waiting periods	221				
Doctors/midwives not available	417				
Medicines are not available	313				
Long distance	84				

Treatment is costly	3				
During your most recent delivery, where you attended by a skilled birth attendant (Doctor, Nurse or Midwife)?					
Yes	296	1.00	2.00	1.0845	.99637
No	334				
If yes to the above, who attended to your delivery?					
Doctor	153	1.00	4.00	1.7817	.45302
Nurse					
Midwife					
Others					
If no to the above, Why?	334	1.00	3.00	1.7817	.45302
	630			**14.5447**	

Majority of the respondents visited a health facility for either antenatal, postnatal care, or delivery services. The facility mostly visited are the primary health care facilities, and majority of them were attended to by a skilled-birth attendant.

The total mean of 14.5 indicated a very good maternal care utilization among mothers of under five children in Gombe state (Table 2).

1.2 THE UTILIZATION OF SKILLED DELIVERY SERVICES AMONG MOTHERS OF CHILDREN UNDER THE AGE OF FIVE IN GOMBE STATE.

Descriptive statistics was also employed to analyze the section of the questionnaires that tested the utilization of the skilled delivery services among mothers of children under the ages of five in Gombe state.

Table 3: Respondents' Utilization of Delivery Services in Gombe State,September, 2025 (n = 630).

Variables	Frequency (N)	Percent (%)
Where did you deliver your last child?		
Home	294	46.7
Government health facility	258	41.0
Private health facility	66	10.5
Other	12	1.9
Who assisted you during delivery?		
Doctor	273	43.3
Nurse/Midwife	81	12.9
Traditional birth attendant	90	14.3
Family member	150	23.8
Other	36	5.7
Did you experience any complications during delivery?		
Yes	147	23.3
No	483	76.7
If Yes, what kind of complications?		
Prolonged labour	63	10.0
Excessive bleeding	39	6.2
Infection	21	3.3
Others	24	3.8

More than 60% of the respondents give birth in a health facility and were attended to by skilled birth attendants. Most of the respondents (76.7%) do not experience any complications during delivery.

1.3 THE UTILIZATION OF POSTNATAL CARE SERVICES AMONG MOTHERS OF CHILDREN UNDER THE AGE OF FIVE IN GOMBE STATE.

The utilization of postnatal care services by the mothers of children under the ages of five in Gombe state was access and recorded on table 5.

Table 4: Utilization of Postnatal care services among mothers of Children under the age of five in Gombe state.September, 2025 (n = 630).

Variables	Frequency (N)	Percent (%)
Did you attend any postnatal care visit after delivery?		
Yes	336	53.3
No	294	46.7
If YES, how many postnatal visits did you have?		
1	159	25.2
2-3	102	16.2
4 or more	75	11.9
At what stage postpartum did you have your first postnatal visit?		
Within the first week	129	20.5
Between 1-6 weeks	147	23.3
After 6 weeks	60	9.5
Did you experience any complications in the first 40 days after delivery?		
Yes	69	11.0
No	561	89.0

Most of the respondents (53.3%) attended postnatal care services. Most of the respondents also had their first postnatal visit between 1-6 weeks of postpartum. Most of the respondents (89.0%) do not experience any complications in the first 40 days after delivery.

1.4 THE FACTORS THAT PREDICT THE UTILIZATION OF MATERNAL HEALTH CARE SERVICES AMONG MOTHERS OF CHILDREN UNDER THE AGE OF FIVE IN GOMBE STATE

Descriptive statistics and Multivariate analysis were employed to examine the predictors of utilization of maternal health care services among mothers of children of under the ages of five in Gombe state.

The section D of the questionnaire which deal with the factors that predict the utilization of maternal health care services among mothers of children under the age of five in Gombe state were first analyzed and the multivariate analysis was then conducted.

Table 5: Factors that Predict the Utilization of Maternal Health Care Services Among Mothers of Children under the Age of Five in Gombe State. 2025 (n = 630).

Variables	Frequency (N)	Percent (%)
How far is the nearest health facility from your home?		
Less than 30 mins.	153	24.3
Less than 1 hour	195	31.0
More than 1 hour	282	44.7
How do you access the health facility?		
Walking	315	44.8
Public transport	186	29.5
Private Transport	75	11.9
Others	54	8.6
Are maternal health services affordable to you?		
Yes	492	78.1

No	138	21.9
Are there any health services you needed but were not provided?		
Yes	51	8.1
No	579	91.9
What were the main factors/reasons influencing your decision to seek maternal health care?		
Availability of services	51	8.1
Quality of care	39	6.2
Cost of services	21	3.3
Distance to health facility	294	46.7
Family support	69	11.0
Previous experiences	39	6.2
Health education/awareness	102	16.2
Cultural beliefs	9	1.4
Other	6	1.0
Were you satisfied with the care you received?		
Yes	291	46.2
No	339	53.8
Did you face any barriers to accessing maternal health care services?		
Yes	294	47.7
No	336	53.3
What suggestions would you give to improve maternal health care services in your community?		
Increase availability of services	114	18.1
Improve quality of care	138	21.9
Reduce costs	93	14.8
Enhance transportation and accessibility	111	17.6
Improve health worker attitudes	63	10
Increase health education and awareness	96	15.2
Other	15	2.4

The factors that predict the Utilization of Maternal Health Care Services among Mothers of Children under the Age of Five in Gombe State include the distance of the facilities from the residence of the respondents, quality of services delivered at the facilities, health education and awareness.

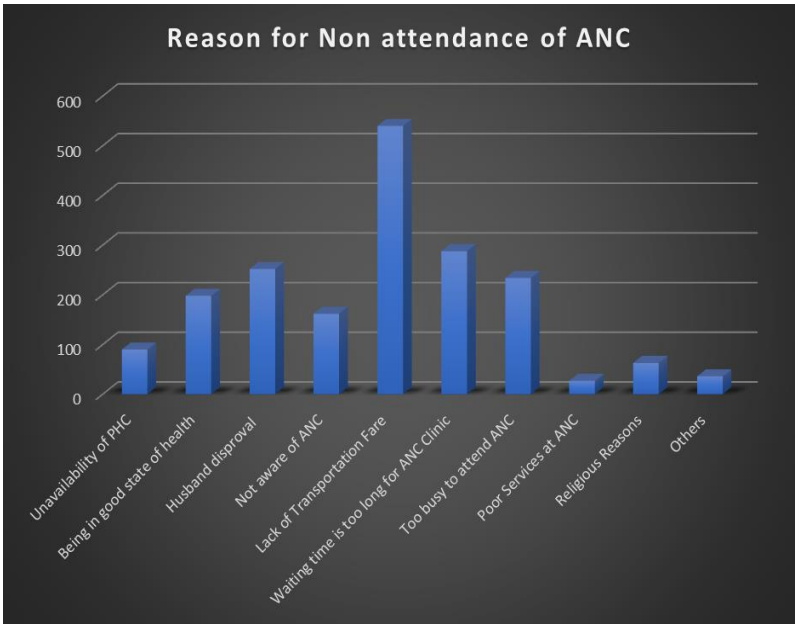

Fig. 2: Reason for Non Utilization of Postnatal Services.

The reason for non-utilization of postnatal care services among mothers of children of under five in Gombe state shows that lack of transportation fare and distance of the facilities from the residence of the respondents as the leading factors affecting the attendance of postnatal care services utilizations in the study area.

Table 6: Multilevel analysis of the predictors of indicators of use of maternal and child health services in Gombe State. 2025 (n = 630).

Characteristics	n	Odds Ratio (Std. Error)[a]		
Fixed Effects[b]		**Antenatal Care**	**Delivery Care**	**Postnatal Care**
Education				
No formal education(RC)	147	1.00	1.00	1.00
Primary school	96	2.01*** (0.43)	3.01*** (0.60)	2.06*** (0.38)
Secondary school	228	1.98*** (0.31)	1.79*** (0.28)	1.46*** (0.25)
Post-Secondary	159	5.03** (2.64)	10.68*** (4.88)	3.50*** (1.15)
Age				
Under 18(RC)	171	1.00	1.00	1.00
18-24	144	2.53* (0.27)	2.71 (0.22)	1.88** (0.43)
25-34	243	1.48*** (0.48)	2.02*** (0.62)	1.69** (0.34)
35-44	54	5.76*** (0.87)	4.27*** (1.07)	3.46*** (0.55)
45 and above	171	3.86*** (1.69)	2.34*** (1.23)	2.02*** (0.76)
Religion				
Islam(RC)	441	1.00	1.00	1.00
Christianity	180	1.39 (0.30)	1.50(0.33)	1.14 (0.24)
Others	9	7.04 (0.24)	5.14 (0.06)	4.23 (0.74)
Household Monthly Income:				
₦50,000 or less(RC)	234	1.00	1.00	1.00
₦100,000 or less	237	2.46* (0.37)	1.98** (0.43)	1.01 (0.20)
More than ₦100,000	159	4.37*** (0.68)	3.53*** (0.62)	1.69** (0.34)
Marital Status				
Married(RC)	390	1.00	1.00	1.00
Single	102	1.63 (0.37)	1.42 (0.34)	1.64 (0.41)
Divorced	81	0.27 (0.21)	0.57 (0.24)	0.87 (0.30)
Widowed	57	0.20 (0.10)	0.17 (0.20)	0.63 (0.02)

Notes: § p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001

RC = reference category

Standard errors are in parenthesis

The most significant individual-level predictors of use of maternal and child care services are education, age at the birth of last child, religion, household income and marital status (Table 7). The odds of reporting use of antenatal care services increase steadily with education such that the women with post-secondary education are five times as likely to report antenatal service use and ten times delivery service use and four times postnatal service use as their counterparts with no formal education.

Table 7: Multivariate logistic regression analysis results of respondents in maternal care utilization, in Gombe State September, 2025, (n=630).

Variables	B	Sig(p)	Exp (β) (OR)	95% C.I. for EXP(β)	
				Lower	Upper
Number of Pregnancies					
1(RC)					
2	.175	.804	1.168	.343	3.976
3	-.486	.060	.174*	.036	.927

4 and above					
Parity					
Parity 1	-.566	.448	.568	0.132	2.448
Parity 2 to 3	.032	.972	1.034	0.208	3.444
Parity 4 and above(RC)					
Number of Children Currently Alive					
1	.980	.026	2.805*	1.078	6.387
2-3	.203	.120	1.902	0.684	3.999
4 and above(RC)					
Previous Pregnancy Complications					
Yes(RC)					
No	.593	.171	1.809	0.775	4.222
Age at First Pregnancy					
Less than 20 years	−1.92	2.025	.034	.146*	.867
21-30 years	−1.40	1.124	.246	.041	1.470
More than 30 years(RC)					
Age of Oldest Child (in years)					
5 years(RC)					
4 years	1.389	.006	4.013**	1.487	10.831
3 years	1.485	.037	4.416*	1.097	17.784
2 years	1.264	.019	3.541*	1.236	10.147
1 years	−1.087	.021	.337*	0.134	0.850

* = P < 0.05 ** = P < 0.01 *** = P < 0.001.

RC = Reference category.

The multivariate analysis for Maternal Care Service Utilization revealed that the odds of attending maternal care services is 1.2 times higher (OR=1.168) for women who had their second pregnancy as compared to those women with their third and fourth pregnancies. The multivariate analysis result also showed that the likelihood of utilizing maternal care services decreased, as the family income gets lower. The multivariate analysis as shows that women who got their first pregnancy at the age of 21-30 years are more likely to utilize maternal care services than younger women.

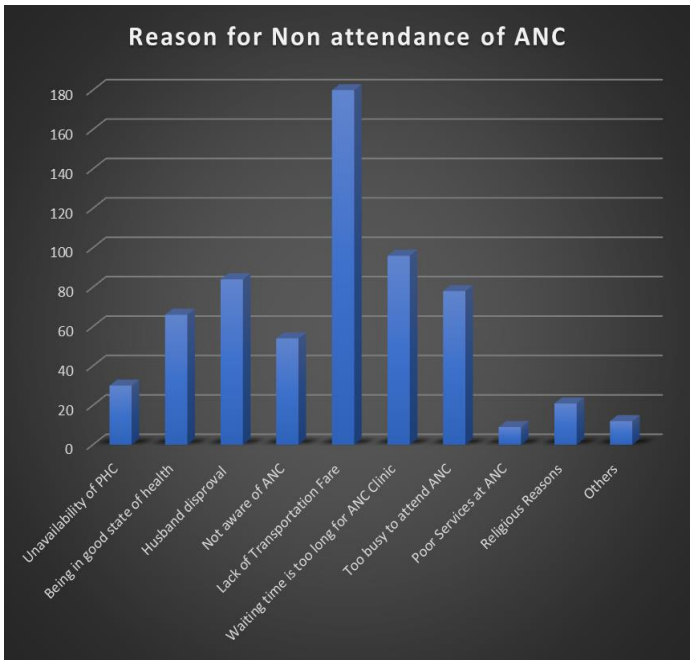

Fig. 1: Reason for Nonattendance of ANC.

Lack of transportation fare, husband disproval as well as the distance of the antenatal care clinics from the women's place of residence were the topmost reason for women not attending antenatal care (Figure 1).

DISCUSSION

Demographic findings showed that over 65% of the respondents were young mothers below the age of 40 years old.

Majority (56.2%) were from indigenous tribes in Gombe State. 70% were Muslims, and 81.9% were employed civil servants or self-employed. 76.7% of the respondents have received some levels of formal education (Table 1a). The study also showed that 84.2% of the respondents first got married at the ages below 40 years of age, 29% have 1 to 3 children and 74.7% have family monthly income of between 100,000 Naira and less (Table 1b).

Majority of those that visited and utilized antenatal care were women who were 18 years and above at their first marriage (80.3%), while women who married at the age of 25-34 years sought antenatal care services more than all the other age groups of the respondents. About 50% of the Muslim women wished to deliver at home than hospital delivery. This finding is in concordance with the earlier finding of Obiyan & Kumar, (2015) who opined that Muslim women do not seek for antenatal and delivery services because most of the physicians are male and therefore many women think that is not allowed for them to go to the male doctors for treatment. pregnancy. More than 60% of the women in this study area made their first antenatal visits in their second and third trimester of pregnancy. This indicates that, a considerable number of women in the study area start ANC at relatively late stage of pregnancy.

The research finding also revealed that more educated women received or attended antenatal care when compared with the uneducated women. Safe delivery was also influenced by the women's level of education and economic status. This study therefore is in line with previous researches which confirmed that the powerful instruments in promoting antenatal visit or treatment-seeking behaviour and hospital delivery is educational level (Dairo & Owoyokun, 2010, Rusian, *et al.,* 2019).

The study also showed majority (more than 60%) of the respondents who gave birth in a health facility were attended to by skilled birth attendants. Also, most of the respondents (76.7%) did not experience any complications during delivery (Table 3), this finding is in concordance with the work of Al-Mujtaba, *et al.,* (2020).

Most of the respondents (53.3%) attended PNC services and had their first postnatal visit between 1-6 weeks of postpartum. Most of them (89.0%) also did not experience any complications in the first 40 days after delivery. This finding differs from several research findings which indicated that in Northern Nigeria, the utilization of postnatal care (PNC) is generally low (Somefun1 and Ibisomi, 2016). Education emerged as a significant determinant of PNC utilization. It has been argued that better educated women understand the importance of postnatal care and are more likely to know where to get it than less educated women. This finding is in line with those of many other studies that showed that education is likely to empower an individual to gain access to health promotion message, information to obtain services and importance of the available services (Somefun1 and Ibisomi, 2016).

The finding of the study however, varies from the finding of other research such as Babalola and Fatusi, (2019) who opined that the indicators of skilled assistance during delivery and use of postnatal care are considerably lower in Nigeria than in most African countries. A recent UNICEF report (UNICEF, 2020) shows that regarding skilled assisted

delivery, only Burundi, Chad, Eritrea, Ethiopia, Niger and Somalia performed more poorly than Nigeria in sub-Saharan Africa.

The result of the multivariate analysis found five independent variables to be associated with the utilization of maternal health care services by mothers of children under the age five in this study. Educational background, Age, marital status, religion and gestational age were all significantly associated with the utilization of maternal health care services.

Others included the availability of health facility nearby, paid work in the seven days preceding the survey, having previous pregnancies and knowledge of the signs of pregnancy complications was also significantly associated with the utilization of maternal health care services. This finding also agrees with the findings of several researches conducted previously (Yahya & Pumpaibool, 2018, Sabo, *et al*., 2024).

CONCLUSION AND RECOMMENDATIONS

Summary of Key Findings

1. The overall maternal health care service utilization in the study area was found to be good.
2. The research finding revealed that educated women utilized maternal health care services more when compared with the uneducated women.
3. The odds of reporting use of antenatal care services increase steadily with education such that the women with post-secondary education are five times as likely to report antenatal service use and ten times delivery service use and four times postnatal service use as their counterparts with no formal education.
4. Key predictors for utilization are education and socioeconomic status, with women's own education and higher household income increasing service use.
5. Other factors influencing utilization include the need for husband's permission and financial support, age at the birth of last child, religion, household income and marital status, cultural beliefs, accessibility of the healthcare centers and access to transportation. The distance of the health care centers to the resident of the women also affected their decision to utilize the maternal healthcare services.

Implications for Public Health

1. The study contributes to knowledge by identifying key factors like education, age, employment status, religion and accessibility that influence service use, which can inform targeted public health interventions.
2. It also highlights challenges such as long distances to facilities, high costs, poor quality of care, and specific unmet needs, thereby providing evidence to address knowledge gaps and guide policy for improving maternal health outcomes in the region.
3. The study also added to the existing literatures body of knowledge on the maternal services utilization in Gombe state which will serve as a source of secondary data for further research work.
4. More than 60% of the women in this study area made their first antenatal visits at relatively late stage of pregnancy. 53.3% of the respondents utilized postnatal care, more than 60% utilize delivery care. This finding implies moderate utilization of maternal healthcare services in Gombe state, thereby highlighting a need for a more robust public health awareness and approach.

Recommendations

1. Government at all levels should do more in creating awareness of the need and the importance of the utilization of maternal health care services especially in the rural communities.
2. Gombe State Government should mobilize or transfer midwives under the (Basic Healthcare Provision Fund-BHCPF) to primary healthcare facilities in order to improve quality of maternal healthcare as well as improving accessibility (by reducing the distance to access quality healthcare).
3. The Gombe State Government 'Adolescent Girls Initiative for Learning and Empowerment' – AGILE (a government project that advocates and sponsors girl-child education) which would improve girl-child education.
4. The government should enact a policy that will support the establishment of women's savings groups across the state, with a special emphasis on rural areas where costs and distances are barriers preventing women from giving birth in the facility. This will allow women to have an easy access to loans from their savings to pay for maternal and child health care.
5. A training and re-training policy for health care workers should be introduced in order to improve the quality of maternal health service delivery in the facilities. This will boost the morale of women to patronize their services.

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