Utilization of maternal health services and its determinants among mothers attending primary health care clinics in Kwara State, Nigeria

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Abstract

Objective: There is unacceptably high maternal mortality with about 800 women dying from pregnancy or delivery complications around the world daily. The study assessed the utilization of Maternal Health Services and its determinants among mothers attending primary health care clinics in Ilorin Metropolis, Kwara State, Nigeria.

Methods: It was a descriptive cross-sectional study and data was collected through the use of a pre-tested semi-structured interviewer-administered questionnaire from 400 participants, using multistage sampling technique. The level of significance was pre-determined at p-value < 0.05 at a confidence level of 95%.

Results: A total of 387 (96.8%) utilized at least one session of antenatal care (ANC) during their last pregnancy, 310 (77.6%) utilized health facilities for delivery while 48 (12%) delivered at home. Only about 68 (17%) utilized postnatal services. Women with secondary education were two times more likely to deliver in health facility compared with those with no education (AOR=2.337,CI=1.178-4.637), whereby those who attended ANC more than four visit were two times more likely to deliver in health facility than those who attended less than that (AOR=2.398,CI=1.410-4.077).

Conclusion: A higher education status and more than 4 ANC visits positively influenced utilization of health facility for delivery.

Key words: Utilization, Health Services, Mothers, Delivery, Primary Health Care

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Utilisation des services de santé maternelle et de ses déterminants chez les mères fréquentant les centres de soins de santé primaires de l'État de Kwara, au Nigéria

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Resume

Objectif: La mortalité maternelle est inacceptable et environ 800 femmes meurent chaque jour de complications liées à la grossesse ou à l'accouchement. L'étude a évalué l'utilisation des services de santé maternelle et de ses déterminants parmi les mères fréquentant les centres de soins de santé primaires de la métropole d'Ilorin, dans l'État de Kwara, au Nigéria.

Méthodes: Il s'agissait d'une étude transversale descriptive et les données ont été recueillies grâce à l'utilisation d'un questionnaire pré-testé semi-structuré administré par un intervieweur de 400 participants, en utilisant une technique d'échantillonnage en plusieurs étapes. Le niveau de signification était prédéterminé à une valeur de $p < 0,05$ à un niveau de confiance de 95%.

Résultats: Au total, 387 (96,8%) ont utilisé au moins une séance de soins prénatals au cours de leur dernière grossesse, 310 (77,6%) ont utilisé les services de santé pour accoucher, tandis que 48 (12%) ont accouché à domicile. Seulement environ 68 (17%) utilisaient les services postnataux. Les femmes ayant un niveau d'instruction secondaire étaient deux fois plus susceptibles d'accoucher dans un établissement de santé que celles qui n'étaient pas scolarisées (AOR = 2,37, IC = 1,178-4,637). établissement que ceux qui ont fréquenté moins que cela (AOR = 2.398, IC = 1.410-4.077).

Conclusion: Un niveau de scolarité plus élevé et plus de 4 visites prénatales ont eu une influence positive sur l'utilisation des établissements de santé pour l'accouchement.

Mots-clés: Utilisation, services de santé, mères, accouchement, soins de santé primaires

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INTRODUCTION

Major challenges in the World today remain the health of women and children (1). Improving maternal health is one of the targets of the third Sustainable Development Goals (SDGs) adopted by the international community (2). Half a million women globally, are estimated to die each year from pregnancy and childbirth. Greater than half of maternal and child deaths occur in Africa (3). Most of these deaths are caused by complications during or just after delivery and the vast majority of the complications are avoidable (1).

The utilization of maternal health care services is dependent on several other factors than just their mere existence. While sometimes the access to routine prenatal care can be increased through the use of mobile outreach clinics or peripheral health facilities, that of care for delivery is impeded by factors such as the unscheduled or sometimes unplanned nature of labour, by women's other responsibilities, and by fears for women's safety during night travel (4).

Antenatal care utilization in the developing countries is low when compared to that of the developed countries which is (65% vs 97%), so also is skilled attendance at delivery, which is 53% in developing countries, while it is 99% in the developed countries and postpartum care utilization is 30% compared to 90% in developed countries (5). In Africa, less than 50% of births are attended to by skilled health workers (6) despite an increase from 43% to 57% between 1990 and 2005 in all developing regions. Consequently, two million women have died in Africa during childbirth since 2000 (7).

Assessing the level of utilization of childbirth care services is important to know whether women who are determined to deliver in such facilities do not eventually get discouraged due to the factors affecting utilization including accessibility. Maternal Health Service utilization and, understanding the associated factors are particularly important in order to reduce the existing gaps among regions and improve the quality of health services delivered to pregnant mothers towards reducing the maternal morbidity and mortality that are related to pregnancy and childbirth.

This study assessed the utilization of Maternal Health Services and its determinants among mothers attending primary health care clinics in Ilorin Metropolis**,** Kwara State, Nigeria.

METHODS

The study was a descriptive cross sectional study among mothers attending the well baby clinic and primary health care clinics.

Ilorin, the capital of Kwara State is strategically located within the North Central geopolitical zone of Nigeria. The projected population based on 2006 Census using an annual growth rate of 3.2% was 805,396 as of 2016 (8). There is a teaching hospital, 1 general hospital, specialist hospital, and 2 cottage hospitals serve as referral centres for all the over 81 primary health care (PHC) centres and over 50 registered private clinics (9). There are also informal health facilities like the religious homes, traditional and herbal homes where child birth also take place. Primary healthcare clinics of *Alanamu* basic health centre*, Okelele* health centre and University of Ilorin Well baby clinic (*Amilegbe*) were the specific study areas because of the number of women who patronize such clinics (especially for immunization services) and each are representative of all the LGAs in Ilorin metropolis (Ilorin West, Ilorin East and Ilorin South). The facilities are also the ones supported by the tertiary facility in Ilorin.

Advocacy /Community Entry: A letter of introduction was obtained from the Department of Epidemiology and Community Health, University of Ilorin. The Officers in charge of the well baby clinic and primary health clinics to be used were informed and the letter of introduction also given to them.

Study Population: Women in the reproductive age group (15-49 years) in PHC clinics of *Alanamu* basic health centre, *Okelele* health centre and University of Ilorin Teaching Hospital Well baby clinic (*Amilegbe*) whose last parous experience was within 1 year preceding the study.

Sample Size Determination: The estimated sample size was determined using the formula :(10) $n = \dfrac{Z^2 pq}{d^2}$

The minimum sample size required for this study was 313; however, 400 respondents were used to improve the reliability of this study.

Sampling Technique: Multistage sampling technique was employed using two stages.
Stage 1
The three Primary health care clinics namely *Alanamu* basic health centre, *Okelele* health centre and University Ilorin well baby clinic

(*Amilegbe*) that recorded highest patronage of women (especially for immunization services) were selected and Proportionate allocation of respondents to be interviewed was made based on the average number of children brought by their mothers to the primary health care clinics for immunization.

Stage 2

A systematic random sampling method was used to obtain the number of women to be sampled in each of the clinics.

Study Instruments/Tools: The data was collected using a pre-tested, semi-structured interviewer- administered questionnaire to get information from eligible respondents. The questionnaire was developed by reviewing relevant literature on the subject to ensure reliability (11-14).

Data Management/ Statistical Analysis: Correctly completed questionnaires were sorted out. Information was coded and data was analysed using SPSS software version 20.0. Data collected was presented in prose, frequency tables, charts and graphs. Frequency distribution and other relevant summary statistics were generated and test statistics of chi- square and binary logistic regressions were used to test hypothesis. Chi -square test was used to test for association between the categorical variables. Crude odds ratio were used to investigate the relationship between one independent variable with outcome variable (dependent variable) and adjusted odds ratio were used to see the relationship between many independent variables with outcome variable after controlling confounding factors. A confidence limit of 95% was used in this study and a p- value of < 0.05 was considered significant.

Ethical Considerations: Ethical clearance was obtained from the Ethical Review Committee of University of Ilorin before the commencement of the study. A written informed consent was obtained from each participant before recruitment into the study. Consenting participants were requested to append their signatures or thumb prints.

RESULTS

In table 1, age of the respondents ranged from 16 to 48 years with a mean age of 29 ± 5 years while the modal age group is 25-29 years which represent almost one- third of the respondents. More than two- thirds of the respondents (78.3%) practiced Islam while the 87 (21.8%) practiced

Christianity. Majority of the respondents (92.7%) were Yoruba by tribe.

Three hundred and ninety four (98.5%) of the respondents were married, 6 (1.5%) were single. Only 24 (6%) of the respondents had no formal education whereas about 161 (40.2%) had at least secondary education. Majority of the respondents 280 (70.0%) were self -employed while 42 (10.5%) were unemployed.

In table 2, out of the 400 respondents, 387 (96.8%) attended at least one session of antenatal care during their last pregnancy, while 13 (3.2%) did not receive ANC. Among those that received ANC, the majority 233 (58.3%) received it in a public health facility (government owned health facility), 132 (33.0%) received it in private health facilities while those that received antenatal care in TBA home and Religious homes were 13 (3.3%) and 7 (1.8%) respectively. More than half of the respondents 231 (59.7%), started ANC visits during the first trimester while, only 33 (8.5%) started during the third trimester. Reasons given for attending at this time were by choice 144(37.2%), 124 (32.0%) started because they had pregnancy symptoms and 49 (12.7%) started at this time following ill health in pregnancy. Among the respondents that attended ANC during the last pregnancy, 289 (74.7%) made 4 or more visits while 19 (4.9%) made only one visit.

In table 3, 175 (43.8%) had their delivery in a public health facility, 135 (33.8%) had their delivery at a private health facility whereas about 48 (12.0%) had their deliveries at home. Deliveries in formal health facilities were 310 (77.5%). The study revealed that 347(86.8%) were attended to by skilled birth attendants, 24 (6%) were supervised by TBA, while 29 (7.3%) were not supervised by either SBA or TBA. Majority of respondents 373 (93.3%) had their deliveries via spontaneous vertex delivery while 21(5.3%) had emergency CS.

Majority of the respondents 319 (79.2%) were not advised to return for postnatal care whereas 83(20.8%) were advised to return for postnatal care. However, 68(17%) of the respondents attended antenatal care.

Table 4 showed that the socio-demographic variables associated with the utilization of facility- based delivery were religion and education status of respondents. The analysis of religion of respondents revealed that the peak of health facility-based delivery utilization occurred among the Muslims (79.9%) while the least occurred among the Christians (69.9%). The relationship between religion and

utilization of health facility-based delivery was statistically significant. ($X^2 = 4.64$; p = 0.03) The educational status of respondents revealed that the peak of health facility-based delivery utilization occurred among respondents who had post-secondary/tertiary education (134) (86.5%). The relationship between educational status of respondents and utilization of health facility-based delivery was statistically significant. ($X^2 = 11.63$; p <0.01) The educational status of respondent's husband revealed that the peak of health facility-based delivery utilization occurred among respondents whose husbands had post secondary/tertiary education (81.7%). The relationship between educational status of husbands' respondents and utilization of health facility-based delivery was statistically significant. ($X^2 = 4.86$; p = 0.03) The ANC attendance revealed that the peak of health facility-based delivery utilization occurred among respondents who attended ANC clinics 304 (78.6%). The relationship between ANC attendance and utilization of health facility-based delivery was statistically significant. ($X^2 = 7.571$; p = <0.01) The number of ANC attendance was highest for those who attended four or more times 238 (82.6%). The relationship between number of ANC attendance and utilization of health facility based delivery was statistically significant. ($X^2 = 11.16$; p = <0.01). The mode of delivery revealed that those that delivered by other means (assisted delivery and caesarean section) were more likely to utilize health facility for delivery. This relationship was statistically significant. ($X^2 = 5.67$; p = 0.02)

Table 5 revealed that religion, the level of education of respondents and number of ANC visits were the predictors for utilization of health facilities for delivery.

DISCUSSION

Utilization of maternal health services is an important aspect to be considered in reducing maternal morbidity, mortality and associated complications. This study examined the utilization of maternal health services, determined the factors associated with health facility-based delivery among mothers who attended primary healthcare clinics in Ilorin Metropolis, Kwara State.

Most of those interviewed were young and were within the reproductive age group. They are likely to recollect accurately the activities undergone during pregnancy, delivery and immediate postnatal care.

The study showed that almost all mothers whose last parous experiences were within 1 year preceding the study had reported that they had at least a single ANC visit for the most recent delivery where the remaining had delivered without their experience of prenatal visit. This was similar to a study conducted in South East Nigeria (Anambra) where about 97.0% of women during their last pregnancy utilized the formal health facility for ANC services (15).

Likewise, in a study carried out in Ogun State in Nigeria, 94.3% attended ANC services but only 84.6% utilized formal health facility for ANC services (12). In another study carried out in Ibadan 76.8% attended formal health facility for ANC services (16). The finding in this study was in contrast to that found in the Northern Nigeria in Kano State where only 59% utilized ANC services during pregnancy (17).

Majority of the respondents made more than four ANC visits. This gives the notion that traditional antenatal clinic visitation is widely practised. Similar to the findings in this study, a study conducted in Sagamu, Ogun state, in Nigeria, showed that most of the women who received ANC also used government facilities (63.4%), 21.2% attended private clinics however, almost one in every ten (9.7%) used traditional birth attendants' homes (12). In South East Nigeria (Anambra), the majority of women utilized the hospital during the last ANC, while 1.6% utilized the services of traditional birth attendants, which were similar to the findings from this study (15). This study revealed that during the ANC visit, only 94 (24.3%) of the respondents were advised on where to deliver. Out of these, the majority were advised by health workers on delivering in formal health services. Counselling women on choices of safe delivery is important because identification of health facility for delivery and skilled birth attendant are one of the birth preparedness components as was observed in this study.

Skilled attendants are important during pregnancy, child birth and the immediate postnatal period. Considering the most recent delivery a mother had, the findings of this study showed that utilization of skilled delivery care among the mothers interviewed was high. This is in contrast with that of the most recent Nigerian Demographic Health Survey (NDHS) which indicated that 38% of deliveries are attended by skilled birth assistants (18). In this study, slightly above two-third of the respondents had their deliveries in health facilities. This finding was similar to that conducted in Sagamu, Ogun state

in South Western Nigeria (12). A study conducted in Anambra, South East Nigeria, gave a much higher finding of women who delivered in a formal health facility (15). However, in Nigeria, a study of the determinants of antenatal care, institutional delivery and postnatal care services utilization in Nigeria, it was found that, 37.3% of pregnant women delivered in a health facility (19). This finding was also similar to that of the most recent Nigerian Demographic Health Survey (NDHS) which indicated that 36% of deliveries were in health facilities (18). These were different from the high percentage gotten in this study. This might be the fact that the surveys were conducted in both rural and urban areas whereas this study was exclusively urban environment.

In this study, as many as 48 (12%) of the respondents delivered at home while 17 (4.2%) delivered in TBA homes, 21 (5.3%) delivered in a Religious homes and 2 (0.5%) delivered in transit. This was different from findings in Ogun and Anambra both in Nigeria, had lower deliveries taking place at home 3.6% and 5.3% respectively (12, 15). However studies in Uganda and Ethiopia revealed higher delivery rates at home, 26.4% and 87.9% respectively (20, 21). Majority of safe deliveries took place in health facilities hence the need to encourage women to deliver in health facilities where they can be attended by skilled attendants as well as get emergency attention in the event of complications.

It was discovered from this study that only 83 (20.8%) of the respondents were advised by health care workers in health facilities to attend postnatal care but only 68 (17%) of the respondents utilized postnatal care services after delivery. This finding is lower than a survey conducted on determinants of postnatal care non-utilization among women in Nigeria (22). It is also lower than a National HIV/AIDS and Reproductive Health Survey which assessed the "Determinants of use of maternal health services in Nigeria - looking beyond individual and household factors" in which only 41.2% of the respondents received postnatal care (23). This is similar to the latest NDHS in which reported only 42% utilized postnatal services (18). The poor postnatal services utilization may be due to the fact that many women do not see the need probably because they do not have any complaints.

The religion of respondents was found to have statistically significant association with utilization of facility based delivery. From the

analysis more Muslims utilized health facility for delivery than Christians. This may be due to the fact that more Christians tend to utilize religious homes than Muslims. However this differed from some other studies which indicated that those who practice Muslim religions are less likely to deliver in a facility (24, 25).

Respondents' ages did not seem to affect the utilization of health facility for delivery and despite the fact that majority of the respondents were married, marital status showed no statistically significant association with utilization of facility based delivery. The association between utilization of facility-based delivery and respondents' level of education was statistically significant. The highest percentage was seen among respondents who had post secondary/tertiary education (86.5%) while the least occurred in the respondents who had no formal education. Many studies have also found a significant relationship between utilization of facility based delivery and respondents' level of education (19, 21, 24). The association between utilization of facility- based delivery and respondent husbands' level of education was statistically significant. The highest percentage was seen among respondents who had post-secondary/tertiary education (81.7%) while the least occurred in the respondents who had no formal education (53.8%). This was also corroborated in studies conducted in Ethiopia where women whose husbands had completed higher education were 9 times more likely to utilize health facility delivery services and also in Nigeria, husband's level of education has a positive influence on health facility delivery. It was reported that women whose husbands had tertiary level of education had about 61% increased probability of facility delivery (19). Education is a key determinant of utilization of health facility delivery services because education could enhance female autonomy so as to develop confidence and capability to make decisions concerning their health. Educated women also often seek out higher quality services.

The association between utilization of facility-based delivery and ANC attendance was statistically significant. The highest percentage was seen among respondents who utilized ANC services. Studies also conducted in Nigeria and Ethiopia also revealed that mothers who visited ANC during last pregnancy were about four times more likely to deliver in health facilities than mothers who did not visit ANC (19, 26). This can attributed to the fact that women are often

encouraged during antenatal visits to deliver in the health facility.

CONCLUSION

Utilization of ANC services was considerably high. Majority attended at least one session of antenatal care during their last pregnancy. Public health facilities/ Government owned health facilities were the most utilized for delivery. Postnatal service utilization was poor The factors that were associated with health facility- based delivery services were religion; the level of education of respondents and their husbands; ANC attendance and number of ANC visits made. However, a higher education status and more than 4 ANC visits positively influenced utilization of health facility for delivery.

Government needs to encourage girl child and male education beyond secondary school; scale-up mass education at health facilities, community level and in the mass media as all these will translate to improvement in the utilization of health facilities for deliverers.

Conflict of Interest: The authors declare no conflicts of interest.

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Table1: **Socio-demographic characteristics of respondents**

Variable	Frequency	N=400 Percent (%)
Age		
Mean ± SD	29.20 ± 5.74	
Range	16 – 48	
Age Group		
15 – 19	7	1.8
20 – 24	74	18.4
25 – 29	136	34.0
30 – 34	104	26.0
= 35	79	19.8
Religion		
Christianity	87	21.7
Islam	313	78.3
Ethnicity		
Yoruba	371	92.7
Ibo	6	1.5
Hausa	14	3.5
Others	9	2.3
Marital Status		
Married	394	98.5
Single	6	1.5
Educational status		
None	24	6.0
Primary	60	15.0
Secondary	161	40.2
Post- secondary	155	38.8
Employment status		
Employed	80	20.0
Unemployed	41	10.3
Self employed	279	69.8

Table 2: **Utilization of Antenatal Care Services during the last pregnancy**

Variable		N=400
	Frequency	**Percent (%)**
ANC Attendance		
Yes	387	96.8
No	13	3.2
Place of ANC (n =387)		
Public health facility	233	58.4
Private health facility	132	33.0
TBA home	13	3.3
Religious home	7	1.8
Chemist shop	2	0.5
Gestational age at 1st ANC visit (n =387)		
1st trimester	231	59.7
2nd trimester	123	31.8
3rd trimester	33	8.5
Median (IQR)	12.00 (8.00 – 16.00)	
Reasons for starting ANC		
Illness	49	12.7
Finances	14	3.6
Choice	144	37.2
Pregnancy symptoms	124	32.0
Others	56	14.5
Number of ANC visit (n = 387)		
1	19	4.8
2 – 3	79	19.8
= 4	289	72.3
Delivery at place of ANC (n =387)		
Yes	264	68.2
No	123	31.8

Table 3: Utilization of delivery and Postnatal Services during the most recent delivery

Variable	Frequency	N=400 Percent (%)
Place of delivery		
Public HF	175	43.8
Private HF	135	33.8
Home	48	12.0
Religious place	21	5.3
TBA	17	4.1
In transit	2	0.5
Others	2	0.5
Who assisted delivery?		
Nurse/Midwife/Chew	202	50.5
Doctor	145	36.3
TBA	24	6.0
No one	19	4.7
Relative/Family	10	2.5
Mode of delivery		
SVD	373	93.3
Assisted delivery	6	1.4
Caesarean Section	21	5.3
Were you told to attend Postnatal care services by birth attendant		
Yes	83	20.8
No	317	79.2
Postnatal care attendance		
Yes	68	17.0
No	332	83.0
Time of PNC visit (n=68)		
Within one week	50	12.5
Six weeks after delivery	18	4.5

Table 4: Socio-demographic and Obstetric factors influencing Health Facility- based delivery

Variable	HF n (%)	Other n (%)	Total n (%)	χ^2	*p*- value
Age Group (years)					
< 30	165 (76.0)	52 (24.0)	217 (100.0)	0.58	0.45
= 30	145 (79.2)	38 (20.8)	183 (100.0)		
Religion					
Christianity	60 (69.0)	27 (31.0)	87 (100.0)	4.64	0.03*
Islam	250 (79.9)	63 (20.1)	313 (100.0)		
Ethnicity					
Yoruba	287 (77.4)	84 (22.6)	371 (100.0)	0.06	0.81
Others	23 (79.3)	6 (20.7)	29 (100.0)		
Educational status					
Up to Secondary	176 (71.8)	69 (28.2)	245 (100.0)	11.63	<0.01*
Post Secondary	134 (86.5)	21 (13.5)	155 (100.0)		
Husband's level of education (n = 394)					
Up to Secondary	123 (72.4)	47 (27.6)	170 (100.0)	4.86	0.03*
Post Secondary	183 (81.7)	41 (18.3)	224 (100.0)		
ANC Attendance					
Yes	304 (78.6)	83 (21.4)	387 (100.0)	7.57	<0.01*
No	6 (46.2)	7 (53.8)	13 (100.0)		
Number of ANC attendance					
< 4	66 (66.7)	33 (33.3)	99 (100.0)	11.16	<0.01*
≥ 4	238 (82.6)	50 (17.4)	288 (100.0)		
Mode of delivery					
SVD	284 (76.1)	89 (23.9)	373 (100.0)	5.87	0.02*
Other	26 (96.3)	1 (3.7)	27 (100.0)		

χ^2: Chi square, Y: Yates corrected Chi square, *: *p* value < 0.05 (i.e. statistically significant)

Table 5: Predictors of Utilization of Health facility-based delivery

Variable	AOR	95% CI Lower	95% CI Upper	*p*- value
Religion (Islam)	2.481	1.352	4.554	0.003*
Educational status of respondents (Post-secondary)	2.337	1.178	4.637	0.015*
Husband's Educational status (Post-secondary)	1.188	0.648	2.176	0.577
ANC attendance (Yes)	1.410	0.411	4.843	0.585
Number of ANC (= 4)	2.398	1.410	4.077	0.001*
Mode of delivery (SVD)	0.171	.022	1.325	0.091

AOR: Adjusted Odds ratio
95% CI: 95% Confidence interval
*: p value <0.05
Predictive value: 77.0%
R^2: 0.144