

Utilization of Health Facility Delivery Services And Associated Factors Among Pregnant Women In Sokoto State, Nigeria

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Abstract:

Background: Utilization of maternal care health services is associated with improved maternal and neonatal health outcomes. Therefore, understanding the factors affecting utilization of maternal health services is crucial to its promotion. This study aimed to assess the utilization of health facility delivery services and associated factors by pregnant women in Sokoto state, Nigeria.

Methods: A descriptive cross-sectional study was conducted among 232 pregnant women selected by multistage sampling technique. A set of pre-tested, interviewer-administered, semi-structured questionnaire was used to collect information on the research variables and data were analyzed using IBM SPSS version 20 statistical package.

Results: The mean age of the respondents was 27.23 ± 6.27 years. Most of the respondents (98.3%) were married, and a larger proportion had Qur'anic education (47.8%). Most of the respondents had good knowledge of the various aspects of the danger signs of pregnancy (96.6%), and showed positive attitude towards utilization of hospital delivery services (90.5%). About half of respondents (51.3%) reside more than 5km from a health facility, and only 89 (38.4%) delivered their last pregnancies at a health facility. The factors that were significantly associated with utilization of maternal delivery services were education level of the respondents and respondents' husbands, occupation of the respondents' husbands, attitude of the respondents and distance from a health facility.

Conclusion: Enlightenment of the public on the benefits of utilizing health facilities delivery services and establishment of more health facilities within 5 km radius of where people live to enhance accessibility and utilization are hereby suggested.

Key words: Knowledge, attitude, utilization, pregnant women, health facility delivery services

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I. Introduction

Utilization of maternal health care services is an important health issue with regards to the wellbeing and survival of both the mother and her child during childbirth, and this has implications on the maternal and child mortality rate in human society.¹ The very key to reducing maternal mortality ratio and improving maternal health is increasing attendance by skilled health personnel throughout pregnancy and delivery.² In fact, skilled attendance at birth has been identified as the single most important factor in preventing maternal deaths and most important element in reducing neonatal death.^{3, 4} The very low maternal/infant mortality and morbidity rates reported in developed countries compared to developing countries have been attributed to the higher utilization of modern obstetrics services in the developed countries.⁵ An estimated 99% of pregnant women in developed countries use skilled obstetric care, compared to 53% of their developing countries counterparts.⁶ In Nigeria only 34% of pregnant women have access to skilled attendance during delivery.⁷

However, in most developing countries and Nigeria in particular there are certain factors that inhibit pregnant women from patronizing maternal health care services during childbirth; such factors include availability of the services, socio-economic, demographic and cultural factors, and the health beliefs of the community.^{8,9}

Despite the various national and international initiatives to improve maternal health, more than half a million women from developing countries die each year as a result of complications related to pregnancy and childbirth and sub-Saharan Africa shares nearly half of the toll.¹⁰ Nigeria has approximately 2% of the world's population but contributes almost 10% of the world's maternal deaths.¹¹

Many complications of pregnancy and child birth that lead to mortality can be prevented by providing quality maternal health care services that involves early detection of problems and appropriate timely interventions.¹² It is therefore every woman's right to access high quality maternal health services that in turn must be accessible, affordable, effective, appropriate and acceptable to them in order to avoid this preventable morbidity and mortality.¹³ It is well recognised that women's current age plays an important role in the utilization of medical services. Mothers' age may sometimes serve as a proxy for women's accumulated knowledge of health care services, which may have a positive influence on the use of health services. On the other hand, because of developments in modern medicine and improvements in educational opportunities for women in recent years, younger women might have an enhanced knowledge of modern healthcare services and place more value upon modern medical care.^{14,15}

A descriptive cross-sectional study conducted in Sagamu, South-Western Nigeria among 392 pregnant women showed that (19%) of the women who were aged less than 20 years did not use the service facilities compared to less than 10% of women in the older age groups.¹⁶ A related study conducted in Tanzania, reported that a high proportion of women who were attended to during delivery by skilled attendant decreased significantly with increasing age of women.¹⁷ Another cross-sectional survey conducted in 14 states in rural areas of India observed that, there was a reduction in the proportion of women obtaining antenatal and delivery services with increasing age.¹⁸

Reports from several studies have identified education as one of the most important determinants of utilization of health facility delivery services world-wide.^{19,20} It is well recognized that a woman's educational level has a positive impact on health care utilisation. In a study conducted in Gidan Igwe, Sokoto state Nigeria, it was reported that 76% of the respondents with formal education delivered in the health facility compared with only 21% of those without formal education.²⁰

A survey conducted in the 36 states of Nigeria among 2148 women, reported that 60.3% of those with formal education used antenatal care services during their most recent pregnancy, while 43.5% had skilled attendants at deliveries.²¹ Another study in rural Bangladesh reported strong influence of mother's education on the utilization of health care services.¹⁴ A cross-sectional survey conducted in Entebbe, Uganda among 413 pregnant women, showed that less educated mothers were more likely to have unskilled or no assistance at delivery.²²

It was reported in several studies that nature of constant jobs determine the utilization of ANC in delivery care for a woman and the level of awareness in social class of the families are closely related to husband's jobs.^{8,23} A study conducted among pregnant women in Sagamu, South-West Nigeria, reported that, of the 392 women who used the maternal health services, 334(85.2%) were gainfully employed compared to only 58(14.8%) who were either full time house wives or unemployed.¹⁶

An analysis of the 1993 Turkish Demographic Health Survey, found that women with low parity were significantly more likely to select a facility-based delivery.²⁴ In another related study among 635 pregnant women in rural western Kenya reported that, women who delivered unassisted were more likely to be of parity greater than 5.²⁵

A cross-sectional survey among 7005 women in 14 states in rural areas of India reported a reduction in the proportion of women obtaining antenatal and delivery services with increasing parity.¹⁸ A study conducted in Eriteria among 851 women of reproductive age, reported that, unmarried women have higher level of skilled care attendance (66.0%) as compared with married women (35.3%).²⁶

Reports from 2000 Ethiopian Demographic Health Survey (DHS) showed that, 12.5% out of 785 unmarried women were more than twice as likely as married women (5.5% out of 7,193) to receive delivery assistance from a health professional.²⁷

The effect of distance on the use of health services has been attributed to the time and cost of travel, compounded by unhelpful topography, poor road conditions and a lack of public transport.²⁴ A cross-sectional study conducted in Southern Tanzania reported that, the proportion of women that had a skilled attendant at delivery decreased with increasing distance to the health facility from 50.1% among women residing within 5km of a health facility to 20.2% among women residing further than 5km from a health facility.¹⁷ In another survey done among 435 women in Nouna Health District in North-Western Burkina Faso, reported that living within 5 km from the health facility was positively associated with utilization of ANC and skilled care at delivery.²⁸ A study conducted in rural western Kenya among 635 women reported that a walking time of greater than one hour from the health facility was one of the factors contributing to giving birth outside the health facility.²⁵

Health knowledge is a vital element that enable women to be aware of their health status and the importance of appropriate use of antenatal and delivery service.²⁹ A study conducted in southern Tanzania among 914 pregnant women, revealed that the proportion of respondents who enjoyed skilled care at delivery increased with respondents' knowledge of maternal services delivery from 39% to 68%. Among the respondents.¹⁷

A similar cross-sectional survey conducted among 314 mothers in Sekele district, North-Western Ethiopia, found that knowledge of the mother on pregnancy and delivery was significantly associated with institutional delivery utilization.² Another survey conducted among 7005 women in 14 states in rural areas of India, reported that awareness of care during pregnancy and knowledge of pregnancy related complications were associated with increased utilization of antenatal care services and place of delivery.¹⁸

A cross-sectional study among 310 married women in Xiengkhouang province, Lao People's Democratic Republic (PDR) revealed that 192 (61.9%) of the respondents harbored a negative attitude towards the utilization of ANC and delivery services.³⁰

Another study conducted among 250 women in Osun state, south-western Nigeria reported that only about half 123 (49.2%) of the respondents showed positive attitude towards the utilization of ANC and delivery services.³¹ A similar study done Among 104 Orang Asli women in Malaysia, reported the proportion of respondents with good attitude to be 53.8%.³²

II. Materials And Methods

Study Design, Area, Population and Sampling Technique

This was a cross-sectional study among pregnant women attending the antenatal clinics of the health facilities in Sokoto state, Northwestern Nigeria, in July and August 2015. The sample size was estimated at 232 using the formula for calculating sample size for descriptive studies,³³ an 82% prevalence of utilization of health facilities delivery services in a previous study, a precision level of 5%, and an anticipated response rate of 90% was used.³⁴ The eligible participants were selected by a multistage sampling technique. At the first stage 2 Local Government Areas (LGAs) were selected from each of the 3 health zones by simple random sampling using the balloting procedure (making a total of 6 LGAs).

A list of all health facilities in the selected LGAs was obtained from Sokoto state Ministry of Health, and at the second stage, three health facilities were selected from each of the selected LGAs by simple random sampling. At third stage, eligible study subjects were selected by systematic sampling technique using the ANC attendance list in the respective facilities as sampling frame and proportionate allocation of the study subjects was done based on the total number of client flow.

Data Collection and Analysis

A semi-structured, interviewer-administered questionnaire was developed and used to obtain information on participants' socio-demographic characteristics, knowledge of health facility delivery services, attitude towards utilization of health facility delivery services and utilization of health facility delivery services.

It was reviewed by researchers in the Department of Community Health, Usmanu Danfodiyo University, Sokoto, Nigeria. Corrections were made based on their inputs on content validity. The questionnaire was pretested on 25 pregnant women and attending ANC in 2 of the LGAs that were not selected for the study. Some questions were rephrased for clarity after the pre-testing. Six research assistants (comprised of midwives and record officers) were used in questionnaire administration after being trained on the conduct of survey research, the objectives of the study, and administration of the survey instrument.

Institutional ethical clearance was obtained from the Ethical Committee of Sokoto State Ministry of Health, Sokoto, Nigeria. Permission to administer the questionnaires was obtained from the Management of the respective local governments areas selected for the study. Informed consent was also obtained from the participants before questionnaire administration.

Data were analyzed using the IBM® SPSS Version 20 statistical computer software package.

Each correct response of the respondents on knowledge and attitude was scored one mark and any wrong or non-response was scored zero. The total score was determined by calculating the total correct responses divided by the total number of expected correct responses multiplied by one hundred. Knowledge of danger signs of pregnancy was scored and converted into categorical variables (good and poor knowledge). Respondents' positive attitude was scored one mark, poor attitude was scored zero, and aggregate score was determined for each respondent and converted into categorical variables (positive or negative).

Bivariate analyses were performed to examine the association between the selected independent variables and the place of delivery using Chi square test of significance.

All the results were presented in form of tables and charts. All statistical tests were carried out as 2 tailed test with level of significance (α) set at $p < 0.05$.

III. Results

Socio-demographic characteristic of the respondents and their husbands

The mean age of the respondents was 27.23 ± 6.27 and majority 72 (31.0%) of the 232 respondents were aged 25-29 years. The predominant religion was Islam 211 (90.9%). Most, 228 (98.3%) of the respondents were married, and about half 111 (47.8%) of them had Qur'anic education. Majority 173 (74.6%) of the

respondents were house wives with civil servants constituting only 23 (9.9%). Significant proportion 90 (38.7) of the respondents' husbands were business men and majority of them 74(31.9) had secondary education (Table 1).

Respondents' parity, distance from health facility and place of last delivery

About a half, 114 (49.1%) of the 232 respondents had between 2-4 deliveries, and more than half 119 (51.3%) of them reside a distance of over 5km from a health facility; only 89 (38.4%) of them delivered their last pregnancies at a health facility (Table 2).

Knowledge and attitude of respondent towards utilization of health facility delivery services

Most, 224 (96.6%) of the 232 respondents had good knowledge of utilization of health facility delivery services and most of them 210 (90.5%) had positive attitude towards utilization of hospital delivery services (Table 3).

Association between utilization of health facility delivery services and the socio-demographic characteristics of respondents and their husbands

Whereas, there was no association ($p > 0.05$) between utilization of health facility delivery services and respondents' age, religion, marital status and occupation, it was found to be associated with their educational status, and their husbands' educational status and occupation.

The proportion of respondents who utilized health facility delivery services was statistically significantly higher among those with formal education (53.6%), as compared to those with no formal education (24.2%), $\chi^2 = 21.183$, $p = 0.001$. It was also statistically significantly higher among those whose husbands had formal education (44.4%), as compared to those whose husbands did not have formal education (24.3%), $\chi^2 = 8.400$, $p = 0.004$. Similarly, the proportion of respondents who utilized health facility delivery services was statistically significantly higher among those whose husbands were civil servants (60.0%), as compared to those whose husbands belong to other occupations such as business, farming etc. (29.0%), $\chi^2 = 24.570$, $p = 0.001$ (Table 4).

Association between utilization of health facility delivery services and respondents' parity and the distance of their homes from the health facility

Whereas, there was no association ($p > 0.05$) between utilization of health facility delivery services and respondents' parity, it was found to be associated with the distance of their homes from the health facility.

The proportion of respondents who utilized health facility delivery services was statistically significantly higher among those whose homes were within 5km radius from the health facility (54.0%), as compared to those whose homes were more than 5km away from the health facility (23.5%), $\chi^2 = 22.732$, $p = 0.001$ (Table 5).

Association between utilization of health facility delivery services and respondents' knowledge and attitude

Whereas, there was no association ($p > 0.05$) between utilization of health facility delivery services and good knowledge of utilization of health facility delivery services, it was found to be associated with positive attitude towards utilization of health facility delivery services.

The proportion of respondents who utilized health facility delivery services was statistically significantly higher among those with positive attitude towards it (42.4%), as compared to those with negative attitude towards it (0%), $\chi^2 = 15.127$, $p = 0.001$ (Table 6).

IV. Tables

Table 1: Socio-demographic characteristics of the respondents and their husbands

Variables	Frequency (%) n=232
Age group (years)	
15- 19	24 (10.3)
20 -24	55 (23.7)
25-29	72 (31.0)
30 – 34	51 (21.9)
35 – 39	14 (6.1)
40 – 44	6 (2.6)
45 -49	10 (4.4)
Mean age 27.23 ± 6.27	
Religion	
Islam	211 (90.9)
Christianity	21 (9.1)
Ethnic group	
Hausa/Fulani	168 (72.4)
Yoruba	23 (9.9)

Igbo	15 (6.4)
Others	26 (11.3)
Marital status	
Single	2 (0.9)
Married	228 (98.3)
Divorced	1 (0.4)
Widow	0 (0.0)
Separated	1 (0.4)
Occupational status of respondents	
House wives	173 (74.6)
Farmer	6 (2.6)
Petty Trader	26 (11.2)
Civil Servant	23 (9.9)
Others	4 (1.7)
Educational status of respondents	
None	9 (3.9)
Qur'anic	111 (47.8)
Primary	46 (19.8)
Secondary	54 (23.3)
Tertiary	12 (5.2)
Occupational status of respondents' husbands	
Farmer	61 (26.3)
Daily Labourer	9 (3.9)
Civil Servant	70 (30.2)
Business	90 (38.7)
Others	2 (0.9)
Educational status of respondents' husbands	
None	6 (2.6)
Qur'anic	64 (27.6)
Primary	36 (15.5)
Secondary	74 (31.9)
Tertiary	52 (22.4)

Table 2: Respondents parity, distance of home from a health facility and place of delivery

Variables	Frequency (%) n=232
Parity	
Nullipara	27 (11.6)
Primipara	34 (14.7)
Multipara (2-4)	114 (49.1)
Grand Multipara ≥ 5	57 (24.6)
Distance of home from a health facility	
≤ 5km	113 (48.7)
> 5km	119 (51.3)
Place of delivery of last pregnancy	
Health facility	89 (38.4)
Home	143 (61.6)

Table 3: Respondents' knowledge and attitude toward utilization of health facility delivery services

Variables	Frequency (%) n = 232
Knowledge	
Good	224 (96.6)
Poor	8 (3.4)
Attitude	
Positive	210 (90.5)
Negative	22 (9.5)

Table 4: Association between utilization of health facility delivery services and the socio-demographic characteristics of the respondents and their husbands

Variables		Place of delivery (n = 232)		Test significance of
		Home Frequency (%)	Health facility Frequency (%)	
Age	<35	121 (60.0)	81 (40.0)	$\chi^2 = 1.993$ p = 0.158
	≥35	22 (73.3)	8 (23.7)	
Religion	Islam	128 (60.7)	83 (39.3)	$\chi^2 = 0.936$ p = 0.333
	Christianity	15 (71.4)	6 (28.6)	

Marital Status	Single/widow/divorce/separated	2 (50.0)	2 (50.0)	$\chi^2 = 0.233$
	Married	141 (61.8)	87 (38.2)	p = 0.629
Occupational status of respondents				
House wife		111 (64.2)	62 (35.8)	$\chi^2 = 1.833$
Civil servant		32 (54.2)	27 (45.8)	p = 0.176
Educational status of respondents				
Informal (none and Quranic school only)		91 (75.8)	29 (24.2)	$\chi^2 = 21.183$
Formal (primary, secondary and tertiary)		52 (46.4)	60 (53.6)	p = 0.001
Occupational status of respondents' husbands				
Civil Servant		28 (40.0)	42 (60.0)	$\chi^2 = 24.570$
Business/famer/labourer/others		120 (71.0)	42 (29.0)	p = 0.001
Educational status of respondents' husbands				
Informal (none and Qur'anic school only)		53 (75.7)	17 (24.3)	$\chi^2 = 8.400$
Formal (primary, secondary and tertiary)		90 (55.6)	72 (44.4)	p = 0.004

Table 5: Association between utilization of health facility delivery services and respondents' parity and the distance of their homes from the health facility

Variables		Place of delivery (n = 232)		Test of significance
		Home Frequency (%)	Health facility Frequency (%)	
Parity	Multipara (<5 deliveries)	113 (64.6)	62 (35.4)	$\chi^2 = 2.592$ p = 0.107
	Grand Multipara (≥ 5 deliveries)	30 (52.6)	27 (47.4)	
Distance of home from the health facility	≤ 5 km	52 (46.0)	61 (54.0)	$\chi^2 = 22.732$ p = 0.001
	> 5km	91 (76.5)	28 (23.5)	

Table 6: Association between utilization of health facility delivery services and respondents' knowledge and attitude

Variables		Place of delivery (n = 232)		Test of significance
		Home Frequency (%)	Health facility Frequency (%)	
Knowledge	Good	137 (61.4)	86 (38.6)	$\chi^2 = 0.981$ p = 0.322
	Poor	7 (77.8)	1 (22.2)	
Attitude	Positive	121 (57.6)	89 (42.4)	$\chi^2 = 15.127$ p = 0.001
	Negative	22 (100)	0 (0)	

V. Discussion

Two hundred and twenty four (96.6%) of the 232 respondents had good knowledge of utilization health facility delivery services. while those with poor knowledge were 8 (3.4). This finding is similar to the finding in a study carried out in Shanghai, China where majority (93.5%) of the respondents were reported to have good knowledge of maternal health care service.³⁵ But it is in contrast to the finding in a study conducted in Southern Tanzania where only 39% of the respondents had good knowledge of maternal healthcare services.¹⁷ It also in contrast to the finding in a study carried out in Xiengkhouang province, Lao, PDR where only 26.1% of the respondents were reported to have good knowledge of ANC and delivery services.³⁰

Most, 210 (88.8%) of the 232 respondents had positive attitude towards utilization of hospital delivery services. This finding is in contrast to the study conducted among 250 women in Osun state, south western Nigeria where only about half 123 (49.2%) of the respondents were reported to have positive attitude towards the utilization of ANC and delivery services.³¹ It is also in contrast to the finding in a study done among 104 Orang Asli women in Malaysia, where the proportion of respondents with good attitude was 53.8%.³²

Of the 232 respondents who participated in this study only 89 (38.4%) reported delivering their last pregnancies at a health facility. This is similar to the finding in a study conducted in Gidan Igwe, Sokoto, Nigeria where only 39.7% of the respondents had their last deliveries at a health facility.²⁰ It is also similar to the finding in a study conducted in rural western Kenya where most of the respondents (83%) delivered outside a health facility.²⁵ The finding in this study is in contrast to the finding of a study conducted in Sagamu south west Nigeria, where most of the respondents (79%) had their last deliveries in a health facility.¹⁶ It also contrast another study carried out in rural Burkina Faso where 72% of the respondents were reported to delivered their last pregnancy in a health facility.²⁸

Among the 120 respondents with no formal (i.e., none or only Quaranic education) only 29 (24.2%) delivered in health facility as compared to 60 (53.6%) of 122 respondents who had formal education (primary, secondary and tertiary), and the difference was found to be statistically significant ($p < 0.05$).

This finding is in consonance with the finding in a survey conducted among 2148 women in the 36 states of Nigeria which reported that, 60.3% of those with formal education used antenatal care services, while 43.5% had skilled attendants at deliveries.²¹ It is also in agreement with the finding in a survey conducted among 413 pregnant women in Entebbe, Uganda, which revealed that less educated mothers were more likely to have unskilled or no assistance at delivery.²² It is also similar to the finding in a study conducted in rural Bangladesh which reported that mother's education had strong influence on the utilization of health care services.¹⁴

The significantly ($p < 0.05$) higher utilization of health facility delivery services by respondents whose husbands were civil servants (60.0%) as compared to those whose husbands belong to other occupations (29.0%) in this study, is in agreement with the finding in a study conducted in Sidha, Pakistan which reported that women whose husbands were in white-collar occupation utilized health care delivery service more, compared to women whose husbands were in blue-collar occupation.⁸

The significantly ($p < 0.05$) higher utilization of health facility delivery services by respondents whose husbands were had formal education (44.4%) as compared to those whose husbands did not have formal education (24.3%) in this study, corroborates the finding in a study conducted in rural Bangladesh which found husband or partner's level of education to be an important predictor of utilization of maternal health care services.¹⁴

The finding of a higher proportion (54.0%) of respondents who reside ≤ 5 km from a health facility delivering in a health facility as compared to 23.5% of those who reside > 5 km among the respondents in this study is in concordance with the finding in a study conducted in Tanzania which reported that, the proportion of women who had skilled attendant at delivery decreases with increasing distance of their homes to a health facility from 50.1% of women who reside within 5km to a health facility to 20.2% of women who reside further than 5km from a health facility.¹⁷ Similar to the finding in this study, a study conducted in rural areas of Kenya, reported that, walking time of greater than one hour from the health facility was one of the factors contributing to giving birth outside the health facility.²⁵ Another study carried out in Nouna, Burkina Faso also found that living within 5km from a health facility was positively associated with utilization of ANC and skilled care at delivery.²⁸

The significant association of positive attitude and utilization of health facility delivery services among the respondents in this study with close to a half of respondents with positive attitude towards health facility delivery services (42.4%) delivering at the health facility, as compared to none (0%) of those with negative attitude towards health facility delivery services, perfectly agrees with the finding in a study in Osun state, south western Nigeria, which found significant relationship ($p < 0.05$) between the attitude of respondents and utilization of maternal health care services.³¹

VI. Conclusion

Although, majority of the respondents in this study had good knowledge of utilization of health facilities delivery services (96.6%) and demonstrated positive attitude towards it (90.5%), only about a third of respondents (38.4%) delivered at a health facility; and this was found to be associated with their educational status, their husbands educational status and occupation, living within 5 km radius of a health facility, and their attitude towards it. Enlightenment of the public on the benefits of utilizing health facilities delivery services and establishment of more health facilities within 5 km radius of where people live to enhance accessibility and utilization are hereby suggested.

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