

# Determinants of Choice of Place of Delivery among Women Attending Two Referral Hospitals in Kano North-West Nigeria

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## Abstract

**Background:** Women are often unable to choose for themselves when, where, and from whom to seek care. This study was undertaken to determine factors that influence a woman's choice of place of delivery among women attending immunization clinics in two referral hospitals in Kano, Nigeria. **Materials and Methods:** A hospital-based cross-sectional descriptive study conducted among 314 women who delivered in Kano, Nigeria. Stratified random sampling was done. Pretested, interviewer-administered questionnaires were used to obtain responses about sociodemographic characteristics, choice of place of delivery, and factors that influenced their choice of place of delivery. Ethical approval was obtained from an ethical committee. Women who gave birth within the past 12 months and gave informed consent were recruited. The data were analyzed using SPSS statistical software version 22. **Results:** About 218 (69.4%) women had their previous delivery in the health facility, whereas 96 (30.6%) had theirs outside the health facilities. The level of satisfaction in health facility care was also high. For those who had their deliveries outside the health facility, 37 (38.5%) of the deliveries were monitored by a nurse/midwife. The respondents level of education ( $P \leq 0.001$ ), spouse level of education ( $P < 0.001$ ), spouse occupation ( $P \leq 0.015$ ), human influence ( $P = 0.025$ ), and total cost of each visit ( $P = 0.010$ ) were associated with the choice of place of delivery; however, at multivariate logistic regression, only human influence and respondents level of education were determinants of the choice of place of delivery. **Conclusion:** Most of the respondents had their previous deliveries in the health facilities and had a high level of satisfaction with the health facilities where they delivered compared to other studies. Utilization of the health facilities for childbirth may increase if there is involvement of relations, especially husbands and mothers and if the clients' level of education is improved.

**Keywords:** Choice, delivery, determinant, northwest Nigeria, referral hospital

## INTRODUCTION

Evidence from several surveys and studies have shown poor utilization of antenatal care and facility-based delivery by women in Nigeria and other sub-Saharan African regions.<sup>1-5</sup> Poor maternal and newborn metrics in these regions have been associated with poor use of health facilities.<sup>6-11</sup> Women are often unable to decide for themselves when, where and from whom to seek care. They often end up being delivered by unskilled persons.

Factors including unavailability of the services, inadequate number of skilled personnel, geographical inaccessibility, and poor quality of care have been identified as a barrier to utilization of health facility for delivery.<sup>12</sup> Low maternal education, unemployment among fathers, first pregnancies

at <18 years of age increase the likelihood of home delivery.<sup>13</sup> Distance has also been reported as an important determinant of the place of delivery.<sup>14</sup>

One study showed a significant association between caste, education of mothers, education of spouse, occupation of spouse, per capita income, time to reach the nearest health center, parity, previous place of delivery, number of antenatal visit, knowledge about place of delivery, planned place of delivery, and place of delivery.<sup>15</sup>

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**How to cite this article:** Nwankwo ON, Ani OE, Akpoke M, Ugwa EA. Determinants of choice of place of delivery among women attending two referral hospitals in Kano North-West Nigeria. Niger Med J 2019;60:68-75.

### Access this article online

#### Quick Response Code:



**Website:**  
www.nigeriamedj.com

**DOI:**  
10.4103/nmj.NMJ\_14\_19

**Table 1: Sociodemographic characteristics of respondents**

Variable	Frequency (n=314), n (%)
Age category (years)	
15-19	19 (6.1)
20-24	125 (39.8)
25-29	88 (28.0)
30-34	50 (15.9)
35-39	20 (6.4)
40-44	9 (2.9)
45 and 49	3 (0.9)
Marital status	
Married	306 (97.5)
Divorced	5 (1.6)
Separated	1 (0.3)
Cohabiting	1 (0.3)
Widowed	1 (0.3)
Religion	
Christianity	30 (9.6)
Islam	284 (90.4)
Tribe	
Fulani	51 (16.2)
Hausa	219 (69.7)
Yoruba	13 (4.1)
Igbo	18 (5.7)
*Others	13 (4.1)

\*Others include Nupe, Igala, Idoma etc

Understanding the determinants of delivery in a facility is important for program and policy planning. This study was undertaken to determine factors that influence a woman's choice of place of delivery among women attending immunization clinics in two referral hospitals in Kano, North-West, Nigeria.

## MATERIALS AND METHODS

### Study setting and design

A hospital-based cross-sectional descriptive study conducted at immunization clinics of Murtala Mohammed Specialist Hospital and Muhammad Abdullahi Wase Specialist Hospitals in Kano following delivery. Ethical approval and informed consent were obtained. Women who gave birth within the last 12 months and were willing to give consent were recruited.

Kano State is located in North-West Nigeria. It is the second largest industrial center after Lagos State in Nigeria and the largest in Northern Nigeria with textile, tanning, footwear, cosmetics, plastics, enamelware, pharmaceuticals, ceramics, furniture, and other industries. With a population of 9,401,288 and area of 20,131 km, Kano is one of the largest cities in Nigeria consisting of 44 local government areas.<sup>16</sup> Murtala Mohammed Specialist Hospital and Muhammad Abdullahi Wase Specialist Hospitals are two large State-owned referral hospitals located at the metropolis.

### Sample size determination and sampling procedures

A single formula as  $n = z^2pq/d^2$ , was used to estimate the sample size. The following assumptions were made while calculating

**Table 2: Socioeconomic characteristics of respondents**

	Frequency (n=314), n (%)
Level of education	
None	18 (5.7)
Vocational training	12 (3.8)
Primary	31 (9.9)
Secondary	163 (51.9)
Tertiary	90 (28.7)
Occupation	
House wife	235 (74.8)
Farmer	4 (1.3)
Trader	29 (9.2)
Seamstress	6 (1.9)
Hair dresser	6 (1.9)
Civil servant	23 (7.3)
Retired	1 (0.3)
Self-employed	9 (2.9)
Caterer	1 (0.3)

the sample size. The degree of precision or margin of error ( $d$ ) chosen to be 0.05 with the reliability coefficient ( $z$ ) of 1.96% certainly ( $z = 1.96$ ). The proportion of women who indicated interest to deliver in the facility in a recent survey in Kano was 26.6%.<sup>17</sup> Therefore, the proportion of women who indicated interest to deliver in the facility,  $P = 0.266$  and  $q = 0.734$ . This gave a sample size of 300. We added 5% to account for attrition and nonresponse to obtain a sample size of 315. Women of childbearing age (15–49 years) who gave birth within the past 2 years and lived in Kano for a minimum of 1 year before the study and willing to give consent were included in the study. Since the population of the district is heterogeneous, stratified random sampling was used to minimize bias and increase reliability. The two district hospitals were designated as strata since they differ with respect of locations within the metropolis, population served and socioeconomic perspectives. Subjects per stratum were randomly selected and the number per stratum was determined by the percentage contribution of each hospital to the population in general and to the expected number of deliveries. Normally, the population around Murtala Mohammed Specialist Hospital is dense and number of deliveries higher compared to Muhammad Abdullahi Wase Specialist Hospital. Therefore, a total of 201 (63.8%) respondents were assigned for Murtala Mohammed Specialist Hospital and 114 (36.2%) was assigned to Muhammad Abdullahi Wase Specialist Hospital.

### Data collection tools and procedure

Data were collected using a pretested and structured questionnaire administered by face to face interviews. The questionnaire was adapted from other similar studies.<sup>18,19</sup> The questionnaire was originally developed in English; but back-translated to the respondents in their various local dialects. The questionnaire was pretested for clarity and content validity. The questionnaire consists of sociodemographic characteristics (age, ethnicity, religion, educational status, and occupational status and obstetric history including women's place of delivery for their last childbirth, women's past obstetrical history and factors that

**Table 3: Socioeconomic characteristics of respondents' partners**

	Frequency (n=314), n (%)
Level of education	
None	15 (4.8)
Vocational training	21 (6.7)
Primary	11 (3.5)
Secondary	103 (32.8)
Tertiary	164 (52.2)
Occupation	
Unemployed	8 (2.5)
Farmer	18 (5.7)
Trader	69 (22.0)
Artisans	2 (0.6)
Transporter	28 (8.9)
Civil servant	126 (40.1)
Retired	2 (0.6)
Self-employed	54 (17.2)
Doctor	1 (0.3)
Mechanic	2 (0.6)
Teacher	3 (1.0)
Spiritual leader	1 (0.3)

influence their choice of delivery. Data were collected by trained research assistants under the supervision of the study team.

### Data analysis

Data were cleaned and analyzed using SPSS version 22.0 (SPSS Inc., Chicago IL, USA). Descriptive statistics were carried out using frequencies, percentages, means and standard deviations while bivariate analysis was carried out in assessing for associations between independent variables and choice of place of delivery. Logistic regressions were also used to identify the predictors of choice of delivery among women. This was carried out by putting the independent variables that were statistically significant at  $P < 0.05$  the bivariate analysis level into the logistic regression model. The statistical test of significance was set at  $P < 0.05$

## RESULTS

A total of 314 study participants completed the study, giving a response rate of 99.7%. The ages of the respondents ranged from 15 to 49 years with a large proportion of the respondents, 125 (39.8%) falling into the 20–24 years' age group. The mean age  $\pm$  standard deviations of respondents were  $26.3 \pm 5.8$  years. Most of the respondents, 306 (97.5%) were married. [Tables 1-3]. About 218 (69.4%) had their previous delivery in the health facility and 96 (30.6%) had theirs outside the health facilities. For those who had their deliveries outside the hospital, 37 (38.5%) of the deliveries were monitored by a nurse/midwife and 26 (27.1%) monitored by a traditional birth attendant (TBA) [Tables 4 and 5]. The respondents showed a high level of satisfaction with the care they received from the health facility mainly due to good care [Table 6]. Although the respondents level of education ( $P \leq 0.001$ ), spouse level of

**Table 4: Respondent's past obstetrics history**

	Frequency (%)
Number of living children	
1-5	259 (82.5)
6-11	55 (17.5)
Number of children dead	
None	250 (79.6)
$\leq 1$	46 (14.6)
2-4	18 (5.8)
Cause of death (n=64)	
Unknown	32 (50.0)
Sickness	28 (43.8)
Accident	4 (6.3)
Occurrence of death (n=64)	
During pregnancy	15 (23.4)
During labour	7 (11.0)
During delivery	6 (9.4)
40 days postpartum	10 (15.6)
Others	26 (40.6)
Place of previous delivery (n=314)	
Farm	2 (0.6)
Home	89 (28.4)
Church	1 (0.3)
TBA	1 (0.3)
On the way to the health facility	3 (1.0)
Health facility	218 (69.4)
Place of delivery if health facility (n=218)	
Maternity home	11 (5.0)
PHC center	11 (5.0)
General hospital	143 (65.6)
Teaching hospital	22 (10.1)
Private clinic	31 (14.3)
Delivery personnel (delivery outside the health facility) (n=96)	
TBA	26 (27.1)
Spiritual leader	2 (2.1)
Health assistant	4 (4.2)
Nurse/midwife	37 (38.5)
Herbalist	4 (4.2)
Neighbor	14 (14.5)
Mother	5 (5.2)
Husband	4 (4.2)
Amount spent	
Can't remember/nothing spent	35 (11.1)
<1000 naira	20 (6.4)
1000-9999 naira	145 (46.2)
10,000-20,000 naira	61 (19.4)
>20,000	39 (12.4)
Attended ANC	
Yes	302 (96.2)
No	12 (3.8)
Frequency of ANC attendance (n=302)	
Once	18 (6.0)
2-3 times	68 (22.5)
$\geq 4$ times	216 (71.5)

TBA - Traditional birth attendant; ANC - Antenatal care; PHC - Primary health care

**Table 5: Factors that influenced respondent's satisfaction with management of previous delivery**

	Satisfaction with care (n=314)			Test statistic ( $\chi^2$ )	P
	Yes (%)	No (%)	Total (%)		
Place of delivery					
Farm	0 (0.0)	2 (100.0)	2 (100.0)	44.472	0.001*
Home	82 (92.1)	7 (7.9)	89 (100.0)		
Church	1 (100.0)	0 (0.0)	1 (100.0)		
TBA	1 (100.0)	0 (0.0)	1 (100.0)		
Way to the health facility	1 (33.3)	2 (66.7)	3 (100.0)		
Health facility	207 (95.0)	11 (5.0)	218 (100.0)		
Type of health facility used for delivery					
Maternity home	11 (100.0)	0 (0.0)	11 (100.0)	6.019	0.181
PHC	9 (81.8)	2 (18.2)	11 (100.0)		
General hospital	135 (94.4)	8 (5.6)	143 (100.0)		
Teaching hospital	22 (100.0)	0 (0.0)	22 (100.0)		
Private hospital	30 (96.8)	1 (3.2)	31 (100.0)		
Delivery personnel (outside the health facilities)					
TBA	20 (76.9)	6 (23.1)	26 (100.0)	15.446	0.043*
Spiritual leader	2 (100.0)	0 (0.0)	2 (100.0)		
Health assistant	4 (100.0)	0 (0.0)	4 (100.0)		
Nurse/midwife	36 (97.3)	1 (2.7)	37 (100.0)		
Herbalist	4 (100.0)	0 (0.0)	4 (100.0)		
Neighbor	13 (92.9)	1 (7.1)	14 (100.0)		
Mother	5 (100.0)	0 (0.0)	5 (100.0)		
Husband	2 (50.0)	2 (50.0)	4 (100.0)		

\*Statistically significant difference ( $P < 0.05$ ). TBA - Traditional birth attendant; PHC - Primary health care

**Table 6: Reasons for respondent's level of satisfaction with care provided in previous delivery**

Reasons	Level of satisfaction	Frequency (%)
Good care	Satisfied (n=292)	286 (97.9)
Absence of complications		6 (2.1)
Poor care provided	Not satisfied (n=22)	17 (77.3)
Lack of privacy		1 (4.5)
Unfriendly attitude of staff		4 (18.2)

education ( $P < 0.001$ ), spouse occupation ( $P \leq 0.015$ ), human influence ( $P = 0.025$ ) and total cost of each visit ( $P = 0.010$ ) were associated with choice of place of delivery [Tables 7-9], however at multivariate logistic regression only human influence and respondents level of education were determinants of the choice of place of delivery [Table 10]. The respondents with vocational training, secondary and tertiary education were more likely to use health facility for delivery compared to those with informal or no level of education. Thus, people with tertiary education were approximately 99% less likely not to have their delivery outside the health facility compared to people with no formal level of education (odds ratio 0.078; confidence interval 0.011–0.567;  $P = 0.012$ ).

## DISCUSSION

Most of the respondents are between 20 and 24 years and considered youthful. Pregnancy and delivery among women at this age may be associated with complications such as anemia,

preeclampsia, prolonged labor, etc.<sup>20,21</sup> As shown in the present study, northern Nigeria women who are predominantly Hausa and Muslim go into pregnancy and labor at relatively younger ages<sup>11,13</sup>, compared to women in the Southern part who are relatively older during pregnancy and labor.<sup>11,22</sup> A previous study has also shown that women who get involved in their first pregnancy at 18 years or below are unlikely to use the health facility for their delivery.<sup>23</sup>

About 218 (69.4%) had their previous delivery in the health facility. This is higher than the national average and finding by Shehu *et al.* in Sokoto who reported that that proportion of women who delivered in health facilities was 65% and 4.7% in the urban and rural groups, respectively.<sup>23,24</sup> Idris *et al.* in a study done in Zaria also showed that as much as 70% of women in a sub-urban area did not have health facility delivery but were delivered of their babies at home.<sup>25</sup> Very poor utilization of health facilities even among women who had ANC at a tertiary hospital has also been reported in Northern Nigeria.<sup>26,27</sup>

The level of satisfaction in health facility care in this study was high. Satisfaction is mostly related to good care and dissatisfaction is mostly due to poor care, attitude of healthcare workers and lack of privacy. Women's experiences of disrespect during facility-based childbirth is recognized as important determinants of quality of care, as well as women's and family's choices about where to give birth and of their overall experience in major phases of their lives. Health providers' poor attitude or lack of privacy may be disrespectful and an indicator of poor quality of care. Low levels of

dissatisfaction with service quality as a result of disrespect and abuse of women have been reported in various setting and are

responsible for significant number of deliveries in other places other than the health facilities.<sup>27-31</sup>

**Table 7: Factors influencing respondents' utilization of health care services for delivery**

Variables	n=314	
	Yes (%)	No (%)
Transportation costs	29 (9.2)	285 (90.8)
Healthcare costs	45 (14.3)	269 (85.7)
Unavailability of means of transportation	14 (4.5)	300 (95.5)
Distance from the house to health facility	26 (8.3)	288 (91.7)
Religious reasons	3 (1.0)	311 (99.0)
Previous uneventful delivery at health facility	13 (4.1)	301 (95.9)
Onset of labour at night	43 (13.7)	271 (86.3)
Fear of caesarean section	20 (6.4)	294 (93.6)
Lack of privacy	38 (12.1)	276 (87.9)
Unfriendly attitude of staff	21 (6.7)	293 (93.3)
Long waiting time	24 (7.6)	290 (92.4)
Cost of drugs	26 (8.3)	288 (91.7)
Shortage of staff	22 (7.0)	292 (93.0)
Lack of urgency at health facility	15 (4.8)	299 (95.2)
Lack of confidence in health care worker	16 (5.1)	298 (94.9)
Poor quality of treatment received	17 (5.4)	297 (94.6)
Absence of doctors	16 (5.1)	298 (94.9)
Neatness of health facility	12 (3.8)	302 (96.2)
Advice of friends and other relatives	24 (7.6)	290 (92.4)
Husband's influence	135 (43.0)	179 (57.0)
Mother's influence	31 (9.9)	283 (90.1)
Influence of mother-in-law	10 (3.2)	304 (96.8)

The authors found that for those who had their deliveries outside the health facility, most of the deliveries were monitored by a nurse/midwife and this was followed by TBAs. This is contrary to a previous studies that health facility deliveries are more likely to be attended to by a doctor or nurse/midwife, whereas home deliveries are likely to be attended to by a TBA.<sup>23,25</sup> This may be related to various community enlightenment efforts by development partners and regular home visits by healthcare workers. It is encouraging that even where facility-base delivery is poor, the use of skilled birth attendants should be encouraged.

Most of the women stated that the influence of their husbands' and mothers determined their choice of place of delivery. The respondent's level of education was also a determinant of the choice of place of delivery. Other factors such as quality of care issues including disrespect, cost of services and transportation were also mentioned. Previous studies have similarly reported health care quality<sup>12,23,32</sup> cost of care,<sup>33,34</sup> cost of transportation,<sup>35</sup> husbands' decision<sup>36</sup> labour onset at night<sup>37</sup> as predictors of delivery at health facilities as women are likely to utilize delivery services in health facilities if quality of care is improved, if they can afford the financial cost of care, have readily available and affordable transportation, if their husbands are positively involved in their healthcare decision-making and if health workers including doctors are readily available to attend to women who start labor at night.

**Table 8a: Sociodemographics factors influencing respondents' choice of place of previous delivery**

	Place of previous delivery (n=314)			Test statistic	P
	In the health facility (%)	Outside the health facility (%)	Total (%)		
Age					
15-19	12 (63.2)	7 (36.8)	19 (100.0)	2.405	0.934
20-24	91 (72.8)	34 (27.2)	125 (100.0)		
25-29	60 (68.2)	28 (31.8)	88 (100.0)		
30-34	34 (68.0)	16 (32.0)	50 (100.0)		
35-39	13 (65.0)	7 (35.0)	20 (100.0)		
40-44	6 (66.7)	3 (33.3)	9 (100.0)		
45 and 49	2 (66.7)	1 (33.3)	3 (100.0)		
Marital status				7.433	0.115
Married	214 (69.9)	92 (30.1)	306 (100.0)		
Divorced	1 (20.0)	4 (80.0)	5 (100.0)		
Separated	1 (100.0)	0 (0.0)	1 (100.0)		
Cohabiting	1 (100.0)	0 (0.0)	1 (100.0)		
Widowed	1 (100.0)	0 (0.0)	1 (100.0)		
Religion				$\chi^2=0.238$	0.625
Christianity	22 (73.3)	8 (26.7)	30 (100.0)		
Islam	196 (69.0)	88 (31.0)	284 (100.0)		
Tribe				7.556	0.109
Fulani	39 (76.5)	12 (23.5)	51 (100.0)		
Hausa	143 (65.3)	76 (34.7)	219 (100.0)		
Yoruba	10 (76.9)	3 (23.1)	13 (100.0)		
Igbo	16 (88.9)	2 (11.1)	18 (100.0)		
Others*	10 (76.9)	3 (23.1)	13 (100.0)		

\* $P<0.05$  is statistically significant

**Table 8b: Socioeconomics factors influencing respondents' choice of place of previous delivery**

	Place of previous delivery (n=314)			Test statistic ( $\chi^2$ )	P		
	In the health facility (%)	Outside the health facility (%)	Total (%)				
Respondent's level of education							
None	7 (38.9)	11 (61.1)	18 (100.0)	23.289	<0.001*		
Vocational training	7 (58.3)	5 (41.7)	12 (100.0)				
Primary	15 (48.4)	16 (51.6)	31 (100.0)				
Secondary	114 (68.9)	49 (30.1)	163 (100.0)				
Tertiary	75 (83.3)	15 (16.7)	90 (100.0)				
Respondent's occupation							
House wife	163 (69.4)	72 (30.6)	235 (100.0)	6.915*	0.546		
Farmer	2 (50.0)	2 (50.0)	4 (100.0)				
Trader	18 (62.1)	11 (37.9)	29 (100.0)				
Seamstress	4 (66.7)	2 (33.3)	6 (100.0)				
Hair dresser	4 (66.7)	2 (33.3)	6 (100.0)				
Civil servant	19 (82.6)	4 (17.4)	23 (100.0)				
Retired	0 (0.0)	1 (100.0)	1 (100.0)				
Self-employed	7 (77.8)	2 (22.2)	9 (100.0)				
Caterer	1 (100.0)	0 (0.0)	1 (100.0)				
Spouse's level of education							
None	6 (40.0)	9 (60.0)	15 (100.0)			30.374	<0.001*
Vocational training	16 (76.2)	5 (23.8)	21 (100.0)				
Primary	6 (54.5)	5 (45.5)	11 (100.0)				
Secondary	56 (54.4)	47 (45.6)	103 (100.0)				
Tertiary	134 (81.7)	30 (18.3)	164 (100.0)				
Spouse's occupation <sup>#</sup>							
Not currently working	6 (60.0)	4 (40.0)	10 (100.0)	21.078	<0.001*		
Informal sector	104 (59.4)	71 (40.6)	175 (100.0)				
Formal sector	108 (83.7)	21 (16.3)	129 (100.0)				

\*Statistically significant; <sup>a</sup>Likelihood ratio; FET; <sup>#</sup>Not working - Unemployed, retired; Informal sector workers - Farmer, trader, artisans, transporter, self-employed, mechanic, professionals, spiritual leader; Formal sector worker - Civil servants, teachers. FET - Fischers exact test

**Table 9: Other factors influencing respondents' choice of place of delivery**

	Place of previous delivery (n=314)			Test statistic ( $\chi^2$ )	P
	In the health facility (%)	Outside the health facility (%)	Total (%)		
Human influence					
Husband	104 (77.0)	31 (23.0)	135 (100.0)	10.943	0.025*
Mother	18 (58.1)	13 (41.9)	31 (100.0)		
Mother-in-law	7 (70.0)	3 (30.0)	10 (100.0)		
Other relatives	11 (57.9)	8 (42.1)	19 (100.0)		
Friend	4 (40.0)	6 (60.0)	10 (100.0)		
Transportation costs					
Yes	11 (37.9)	18 (62.1)	29 (100.0)	14.932	0.001*
No	207 (72.6)	78 (27.4)	285 (100.0)		
Available transportation					
Yes	6 (42.9)	8 (57.1)	14 (100.0)	4.873	0.037*
No	212 (70.7)	88 (29.3)	300 (100.0)		
Labour onset at night					
Yes	22 (51.2)	21 (48.8)	43 (100.0)	7.830	0.007*
No	196 (72.3)	75 (27.7)	271 (100.0)		
Unfriendly staff					
Yes	10 (47.6)	11 (52.4)	21 (100.0)	5.042	0.030*
No	208 (71.0)	85 (29.0)	293 (100.0)		

Contd...

**Table 9: Contd...**

	Place of previous delivery (n=314)			Test statistic ( $\chi^2$ )	P
	In the health facility (%)	Outside the health facility (%)	Total (%)		
Lack of confidence in health worker					
Yes	7 (43.7)	9 (56.3)	16 (100.0)	5.237	0.028*
No	211 (70.8)	87 (29.2)	298 (100.0)		
Absence of doctors					
Yes	7 (43.7)	9 (56.3)	16 (100.0)	5.237	0.028*
No	211 (70.8)	87 (29.2)	298 (100.0)		

  

	Place of previous delivery (n=314)			Test statistic ( $\chi^2$ )	P
	In the hospital (%)	Outside the hospital (%)	Total (%)		
Distance between house and health facility (km)					
<5	99 (74.4)	34 (25.6)	133 (100.0)	2.728	0.108
>5	119 (65.7)	62 (34.3)	181 (100.0)		
Total cost of each visit to the health facility (naira)					
<500	140 (67.3)	68 (32.7)	208 (100.0)	8.910	0.012*
500-1000	66 (77.6)	19 (22.4)	85 (100.0)		
>1000	5 (38.5)	8 (61.5)	13 (100.0)		

\*P<0.05 is statistically significant

**Table 10: Multivariate logistic regression of determinants of nonuse of health facility for delivery**

Predictor variables	OR	CI		P
		Lower	Higher	
Respondent's level of education				
None	1			
Vocational training	0.066	0.005	0.867	0.039*
Primary	0.216	0.028	1.642	0.139
Secondary	0.089	0.013	0.594	0.012*
Tertiary	0.078	0.011	0.567	0.012*
Spouse's level of education				
None	1			
Vocational training	0.788	0.071	8.687	0.845
Primary	0.462	0.031	6.867	0.575
Secondary	2.371	0.333	16.89	0.389
Tertiary	1.937	0.252	14.882	0.525
Human influence				
Husband	1			
Mother	2.533	1.011	6.346	0.047*
Mother-in-law	1.499	0.312	7.213	0.614
Other relatives	2.161	0.651	7.177	0.208
Friend	4.544	0.943	21.898	0.059
Spouse's occupation				
Not currently working	1			
Informal sector workers	0.862	0.099	7.475	0.893
Formal sector workers	0.447	0.050	4.006	0.447

OR - Odds ratio; CI - Confidence interval. \*P<0.05 is statistically significant

Most of the respondents had their previous deliveries in the health facilities and had a high level of satisfaction with the health facilities where they delivered compared to other studies. Factors that influenced the use of health facilities including

cost, the attitude of health-care workers and influence of relations, etc., are similar to those reported in previous studies.

## CONCLUSION

The utilization of health facilities for childbirth may increase if there is involvement of relations, especially husbands and mothers and if the clients' level of education is improved.

The study limitation is that a qualitative method including focus group discussions and in-depth-interviews with users and nonusers of health facilities, the health workers, spouses and relatives of the clients will better reveal barriers and facilitators of choice of health facilities for delivery.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

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