ORIGINAL ARTICLE

Utilisation of Skilled Birth Attendants among Recently Parturient Women in Rural Communities of Kano State, Nigeria: A Mixed-Methods Study

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ABSTRACT

Background: Ensuring access to skilled birth attendants (SBA) during childbirth is critical for maternal and newborn survival, especially in underserved rural communities of northern Nigeria. **Methods:** We assessed the utilisation of SBA in rural communities of Kano state. Using a cross-sectional study design with a concurrent mixed method of data collection, multi-stage and purposive sampling techniques were employed to select respondents of the quantitative and qualitative components of the study, respectively. Focus group discussions and key informant interviews were conducted to assess the perception of women, husbands and delivery service providers regarding the utilisation of SBA. **Results:** Of the 194 women, 38(19.6%) were attended to by SBA, 138(71.1%) by unskilled birth attendants and 18(9.3%) had solitary birth. Furthermore, facility-based delivery was only 14.9% as the majority of the women delivered at home. Previous hospital delivery (p=0.02, aOR = 4.5; 95% CI=1.4-14.8) and husband's level of education (p=0.03, OR = 5.9; 95% CI=1.3-27.3) were found to be independent predictors of utilisation of SBA. Perceptions regarding utilisation of SBA varied, ranging from a general preference for home delivery with the assistance of a traditional birth attendant to a predisposition towards hospital delivery with the assistance of SBA. Factors that contributed to adherence to traditional birthing practices included healthcare workers' negative attitudes, manpower gap, lack of equipment and supplies and inadequate functioning health facilities. **Conclusion:** Utilisation of SBA in rural communities of Kano state is low. Efforts should be made to increase women's and men's awareness, improve health facilities, and ensure improved and equitable access and availability of skilled delivery care services.

Keywords: utilisation, skilled birth attendant, women, rural, Kano

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Introduction

Motherhood is usually a positive and fulfilling experience; however, it is associated with suffering, ill health, or even death for too many women.[1] The period around childbirth is the most critical for saving the lives of mothers and their newborns, and preventing stillbirths.[2] Up to 830 women die from pregnancy or childbirth-related complications worldwide daily.[2] In 2015, an estimated 303,000 women died during and following pregnancy and childbirth; 2.7 million babies died during the first 28 days of life and 2.6 million babies were stillborn.[2,3] Almost all of these deaths occurred in low-resource settings, and most could have been prevented with quality care during pregnancy and childbirth.

The single most critical intervention for safe motherhood is to ensure a skilled birth attendant (SBA) is present at every birth, and transport is available to a referral facility for obstetric care in case

of emergency.[4] A skilled birth attendant is an accredited health professional - such as a midwife, doctor, or nurse - who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns.[5] To boost the proportion of skilled birth attendants (SBAs), the Nigerian government put some interventions such as the recruitment, training and deployment of additional midwives and community health extension workers (CHEWs) in place. Also, the national policy on task shifting was aimed at improving personnel deficits in some parts of the country, especially the underserved areas.[6] This is because rural areas in Nigeria do have physical, communication, social and economic conditions that made them predisposed to relatively inequitable public services.[7]

The proportion of births attended by skilled health personnel is one of the indicators used to track progress toward achieving Sustainable Development Goal (SDG) 3. The Sustainable Development Goals offer a renewed opportunity to see improvements in maternal health for all women, in all countries, under all circumstances.[8] Target 3.1 of SDG 3 aims to reduce the global Maternal Mortality Ratio (MMR) to less than 70 per 100,000 live births by 2030.[9] According to the MDG end report, the percentage of births attended by SBAs globally, in Africa and Nigeria were 73%, 54%, and 38%, respectively, which all fall below the 90% target.[10] Nigeria Demographic and Health Survey 2013 (NDHS) reported the proportion of births assisted by skilled providers has remained relatively stagnant while NDHS 2018 reported facility deliveries are lowest in the North West region (18%) where Kano is situated.[6,11] Traditional birth attendants (TBAs) assisted 20% of all deliveries, 22% of births were assisted by a relative or other person, and 11% were unassisted.[11] Facility delivery and utilisation of SBAs in rural Nigeria were 21.9% and 22.7% respectively, while in urban Nigeria, they were 61.7% and 67.0%.[6] Contributing to these disparities are limited availability and poor quality of health services and a shortage of SBAs in rural communities. Consequently, maternal mortality remains high in rural areas because rural women predominantly utilise unskilled birth attendants or deliver alone with no attending to them.[12,13]

Achieving an increased rate of facility-based childbirth has been globally recognised as a key strategy for reducing maternal mortality. However, challenges still remain especially in low and middle-income countries like Nigeria. Globally, researchers have looked into utilising SBAs. In addition, there is a dearth of information from this region where the lowest numbers of facility births occur and this contributes significantly to poor maternal health indices nationally and internationally.[6] Thus the need to study the utilisation of SBA in North-western Nigeria, particularly in the rural areas of Kano state. A sound understanding of the level of utilisation, predictors of SBA utilisation, and perception of mothers, their husbands and delivery attendants on the utilisation of SBAs will provide useful information for reviewing maternal health care delivery services and programmes. Furthermore, providing skilled healthcare during childbirth and the immediate peripartum period is crucial for the survival and wellbeing of both the mother and her newborn.

Methods

Study setting

The study was conducted in Kano state. Its capital is Kano and has forty-four (44) Local Governments Areas (LGAs). Three LGAs were chosen for the study: Garun-Mallam, Bunkure, and Tsanyawa LGAs. The State had a 2020-projected population of 13,411,578, with an almost equal distribution of males (51%) and females (49%). It also had an estimated 2,950,547 women of reproductive age (15-49 years old) and 670,579 pregnant women.[14] The predominant language is Hausa/Fulani, while Islam is the predominant religion.[15]

Study design

A cross-sectional study design that employed a concurrent mixed data collection method was used. Quantitative methods were used to assess the prevalence and predictors of utilisation of SBAs while qualitative methods were used to explore the perception of women, husbands, and delivery attendants regarding the utilisation of SBAs in rural communities of Kano State.

Study population

(a) Quantitative method

The study population for the quantitative aspect comprised women aged 15 – 49 years who had given

birth in the last year preceding the study in rural areas in Kano. We excluded women who had not lived in the area for up to a year and whose last child (≤ 1 year) died within six weeks preceding the study.

(b) Qualitative method

The qualitative method involved three categories of participants: women within reproductive age of 15-49 years; husbands whose wife/wives have ever given birth (due to their critical role in influencing pregnant women's decisions whether to seek health care) and delivery attendants (SBAs and prominent TBAs)

Sample size determination

(a) Quantitative method

The target sample size for the survey quantitative survey was determined using Fisher's formula.[16] Using the prevalence of SBA utilisation in Kano state (13.7%),[6] the desired level of precision of 0.05, 95% confidence level and an increase of 7% to account for non-response,[17] a sample size of 194 was obtained.

(b) Qualitative method

Focus Group Discussions (FGDs) with 8-10 women within the reproductive age of 15-49 years as well as men whose wife/wives have ever given birth were carried out to the point of saturation. Key Informant Interviews (KIIs) with prominent TBAs & SBAs in each community were also carried out.

Sampling technique

Quantitative method

A five-stage sampling technique was used to select the respondents.

Stage 1: Selection of Health Zones: A list of health zones and Local Government Areas (LGAs) under each health zone was obtained from the Primary health care management board (PHCMB) Kano State. Out of the Six (6) health zones, three (3) zones were selected by simple random (balloting) sampling technique viz: Gwale, Rano and Bichi Zones.

Stage 2: Selection of Local Government Areas (LGAs): Out of the three (3) selected health zones, one LGA was randomly selected from each health zone using balloting. The LGAs are; Garun-Mallam, Bunkure and Tsanyawa.

Stage 3: Selection of Wards: Six (6) wards were randomly selected, two (2) from each of the selected three (3) LGAs using balloting viz; Jobawa, Yadakwari, Gafan, Sanda, Daddarawa and Gozarki Wards.

Stage 4: Selection of Settlements: Six (6) settlements, one from each of the selected 6 Wards were randomly selected viz; Rigar Fulani, Shaiskawa, Jarman baka, Jarnawa, Yammamman and Tafashiya settlements.

Stage 5: Selection of Houses/Households: House numbering in each of the selected settlements was done to obtain a sampling frame. Since each settlement had a different size, the number of respondents was proportionately allocated based on size. Thereafter, the sampling fraction and interval were also calculated. The sampling fraction was calculated as sample size divided by the total number of houses in the selected settlements (i.e. 194/548 = 0.35). The reciprocal sampling fraction was obtained giving a sampling interval of 3. After calculating the sampling interval, Systematic sampling technique was used. The starting point was obtained by selecting a number between one (1) and the sampling interval for each settlement, using a random number table. Subsequent houses were identified by adding the sampling interval to the preceding house serial number. Where more than one household was found in a house, one was selected by a single one-time ballot.

Stage 6: Selection of Respondents: Finally, a woman living in the household who had delivered in the preceding 1 year was approached to participate in the study. In a household with more than one eligible respondent, only one woman was selected using a simple random sampling (balloting) because the reason for utilisation of an SBA or otherwise may likely be the same for all women married to the same man. In the sampled houses that had no eligible respondents, the next house was selected.

For the qualitative data collection, a non-probability sampling technique using purposive sampling was used to select homogenous groups of FGD participants (based on age and gender). For the KIIs, prominent TBAs and SBAs were purposively selected through snowballing from each of the rural settlements.

Data management and analysis

Data were coded and entered into Microsoft Excel Spreadsheet and analysed using Statistical Package for the Social Sciences (SPSS) IBM version 23.0. Bivariate and multivariate models using Binary logistic regression were used to assess any relationship between dependent and independent

variables and their 95% confidence intervals were presented. Independent variables found to be significant with *p* value less than 0.05 at the bivariate level as well as apriori confounders were included in a multivariate logistic regression model to control for potential confounding variables.

The thematic analysis approach was employed for qualitative analysis. All FGD and KII recordings were transcribed in their original languages (Hausa) and non-repetitive unique identifiers were assigned to all transcripts. Reiterative immersion was used for all transcripts and the first cycle of coding was done line-by-line inductively to assign tags and generate codes and categories. This was done simultaneously during the data collection process to ensure saturation. Transcripts were then sorted according to themes generated from the first cycle of coding and further reviewed with previous literature for the second cycle of coding. New themes were further reflected on and transcripts were re-sorted. Findings were triangulated with quantitative results and between KII and FGD findings. Transcripts were analysed in Hausa language and translation to English was done at the level of presentation of findings.

Ethical considerations

Ethical approval was obtained from the Health Research Ethics Committee of Kano State Ministry of Health (MOH/Off/797/T.I/562). Formal permission was also obtained from the LGA, traditional rulers and village heads of the settlements. All necessary information was read to potential participants including assuring confidentiality, anonymity, and benefits to the participants and freedom to withdraw at any time without any negative consequence. Once understood and accepted, the participant signed/thumb-printed the informed consent form.

Results

A total of 194 respondents were approached for the quantitative component of this study and all the questionnaires were correctly filled and analysed, giving a response rate of 100%. For the qualitative component, 18 FGDs and 8 KIIs were conducted and included in the analysis: 12 FGDs with women and 6 with men, 6 KIIs with TBAs and 2 with SBAs.

The respondents ranged from 15 to 49 years, with a mean age of 27.1± 7.3 years. More than a quarter of the mothers 79(40.7%), were between 25-34 years. All the respondents were Muslims, and the majority 168(86.6%), were from the Hausa tribe. Almost all the women, 191(98.5%), were currently married, and the majority, 130(67.0%), had no formal education. However, close to a third, 59(32.2%) of their husbands had a secondary level of education or higher. Even though the majority, 139(71.6%) of the women were income earners, almost all of the women were poor, with a median monthly income of 500 Naira. Likewise, most of their husbands were poor, with a median monthly income of 5000 Naira. (Table 1)

Most of the women, 158(81.4%), were multiparous, with a mean parity of 4.3±2.9 and a mean age of the last child of 6.1±4.0 months at the time of the study. The mean age at first pregnancy was 17.1±2.4 years, and 151(77.8%) women gave birth to their first child before the age of 20 years. Most of the women's index pregnancy, 139 (71.1%), was planned. The majority of them, 164 (84.5%) did not have any complications during their index pregnancy, labour or delivery. One hundred and fifty-eight women (81.4%) had access to information on childbirth, while more than a third, 62(39.2%) of the women had previously delivered in a health facility (Table 2)

One third of the women had autonomy in decision-making regarding the place of delivery as most of the respondents decided on the place of their last delivery either alone (38.1%) or together with their husbands (35.6%). During their last pregnancy, 152(78.4%) respondents received ANC from a skilled provider, but of these only 59(38.8%) had their first ANC visit in the first trimester of pregnancy and only 49(32.2%) reported visiting ANC clinic at least four times during their last pregnancy.(Table 3) Of those who had any attendant at delivery, only 1(0.5%) was assisted by a Doctor, 25(12.9%) by a Nurse/Midwife, 12(6.2%) by a CHEW, 113(58.3%) by TBAs and 25(12.9%) by a family member/friend/neighbour. During their most recent delivery, 38(19.6%) respondents were attended to by SBAs, 138(71.1%) by unskilled birth attendants, and 18(9.3%) delivered alone with no one present (solitary birth). Furthermore, facility-based delivery was only 14.9%, as most of the women 165(85.1%) delivered at home; of these women that delivered at home, 9(5.5%) were assisted by SBAs. (Table 3).

Factors associated with the utilisation of SBAs

Factors associated with the utilisation of SBAs were parity, ANC attendance, timing of ANC booking, information availability, previous hospital delivery and husband's level of education. (Table 4).

Table 5 shows that only previous hospital delivery and husband's level of education remained independent predictors of SBA utilisation. Women who had previously delivered at a health facility were 4.5 times more likely to utilise a SBA than those who had not previously delivered in the hospital (aOR = 4.5, 95% CI=1.4 -14.8). More so, women whose husbands achieved secondary or above education were almost six times more likely to utilise a SBA than women whose husbands had informal or primary education (aOR = 5.9, 95% CI=1.3-27.8).

Perceptions regarding utilisation of skilled birth attendants

Respondents of the qualitative component of the study expressed different reactions to their perceptions regarding the utilisation of skilled birth attendants. Findings revealed that even though most women attend ANC where health workers were promoting the importance of facility-based delivery, the general preference was for home delivery, with hospital delivery being resorted to during difficulty in labour/complications as expressed below:

"Women that deliver at home outnumber those that deliver at the hospital. However, if there is a problem during delivery, like delayed labour or persistent bleeding, they go to the hospital." (KII 42y old Trained TBA)

"Majority of women in this locality deliver at home but if they realise there is a problem, they go to the hospital to deliver." (FGD 48y old man, father of 10)

Other men gave similar responses:

"I have two wives, one of them usually delivers at the hospital because she faces problems during delivery and labour, but my other wife, she delivers at home."(FGD 53y old man, father of 21)

Some women valued their privacy and preferred delivering alone in their own rooms. Few others preferred to be assisted by their mate while a majority preferred to be assisted by a TBA and were deterred from seeking the assistance of skilled birth attendants due to their negative attitudes.

"My mate assists me when I am in labour, we stay together so I just call on her and she will assist me. The attitude that health workers portray to pregnant women when they go to deliver is not good and it stops them from going to deliver in the hospital" (FGD 28y old Para 2)

"I prefer to be assisted by a TBA to avoid the embarrassment and humiliation that some health workers do. TBAs do not embarrass women; they take good care of them, help them with house chores and bury the placenta. They clean the women and their babies very well unlike those health workers that send people home with their dirty clothes." (FGD 36y old Para 3)

This was re-iterated by the men. Some respondents attributed this persistent preference for home birth and lack of utilisation of skilled birth attendants to socio-cultural and accessibility factors.

"Sometimes it is just our traditional superstitious beliefs that make women deliver at home." (FGD 36y old Para 3)

"Lack of good roads, especially during the rainy season prevents us from going to the hospital, It's not everybody that own means of transportation. So how to transport a pregnant woman is a problem, especially at night." (FGD 48y old Para4)

Concerning economic accessibility

"Home delivery is cheaper, if we go to the hospital, we spend a lot of money. You will see that a wife wants to go to the hospital, her husband equally wants her to go, but there is no money." (FGD 53y old man, father of 6)

Some respondents gave a contrary opinion concerning cost and distance.

"Poor people are more determined to take their wives to the hospital because there are instances where you see a man selling his belongings or farm produce just to take his wife to deliver at the hospital."

Concerning perceived benefit/need, many respondents attributed adherence to traditional birthing practices to a shortage of health care providers, lack of equipment/supplies, and inadequate functioning health facilities.

"TBAs are plenty, unlike doctors/nurses, that is why we always patronize them. We don't have good hospitals in our village; we have to travel to Rano general hospital." (FGD 30yr old Para 6)

"You see this hospital in our village, they don't work at night, more so, you can go there very early in the morning and it is still not open, so we just get traditional medication or Islamic script (rubutu) for them to take" (FGD 40y old man, father of 3)

"It is not all the time that we are around; they can come and meet the hospital closed. Another thing is we don't have enough equipment" (KII 38y old Midwife)

In contrast, in one of the LGAs, the study discovered a preponderance of facility-based delivery. Whereas home delivery used to be the norm, it is no more, because the world has changed.

"Nowadays, if you see a woman who delivered at home, then the labour came unexpectedly. Now women go to the hospital to deliver but mostly the young ones" (FGD 75y old Para 11).

Table 1: Socio-demographic characteristics of the respondents

Socio-demographic characteristics		Frequency (%) n=194
Age group (years)	15-24	75 (38.7)
	25-34	79 (40.7)
	35-49	40 (20.6)
	Mean ± SD	27.1±7.3
Tribe	Hausa	168 (86.6)
	Non-Hausa (others)	26 (13.4)
Occupation	Non-income earners	55 (28.4)
	Income earners	139 (71.6)
Average monthly income (Naira)	<20,000	192(99.0)
	≥ 20,000	2(1.0)
	Median (Range)	500(0-30,000)
Highest level of education	No formal education	130 (67.0)
	Primary	36 (18.6)
	Secondary	26 (13.4)
	Tertiary	2 (1.0)
Current Marital Status	Married	191 (98.5)
	Divorced	1 (0.5)
	Widowed	2 (1.0)
Husband's highest level of education	No formal education	56(30.6)
	Primary	38(20.8)
	Secondary	59(32.2)
	Tertiary	30(16.4)
Husband's Average Monthly income (Naira)	0-20,000	165(85.1)
	20,100-40,000	29(15.0)
	40,100-60,000	6(3.1)
	60,100-80,000	4(2.1)
	80,100-100,000	6(3.1)
	Median (Range)	5,000 (0-100,000)

Table 2: Obstetric history of respondents

Obstetric characteristics		Frequency (%) n=194
Parity	Primiparous	36(18.6)
	Multiparous	158(81.4)
Age at first pregnancy (years)	<20	167(86.1)
	≥20	27(13.9)
	Mean ± SD	17.1±2.4
Age at first childbirth (years)	<20	151(77.8)
	≥20	43(22.2)
	Mean ± SD	17.9±2.4
Planning of pregnancy (wantedness)	Yes	139(71.1)
	No	55(28.3)
Complication during pregnancy, labour	Yes	30(15.5)
or delivery	No	164(84.5)
Availability of information on childbirth	Yes	158(81.4)
	No	36(18.6)
Previous hospital delivery	Yes	62(39.2)
	No	96(60.8)

Table 3: Utilisation of antenatal care (ANC) and skilled birth attendants

Variable	Frequency (%) n=194
ANC attendance	
Yes	152(78.4)
No	42(21.6)
Total	194(100.0)
Timing of ANC booking	
<16 weeks	59(38.8)
≥16 weeks	93(61.2)
Total	152(100.0)
No of Antenatal care (ANC) visit	
<4 times	49(32.2)
≥4 times	103(67.8)
Total	152(100.0)
Place of delivery	
Health facility	29 (14.9)
Home	165(85.1)
Presence of delivery attendant	
Yes	176(90.7)
No	18(9.3)
Type of delivery attendant	
Skilled	38(19.6)
Unskilled	138(71.1)

Table 4: Factors Associated with the utilisation of skilled birth attendants

Factors	Utilisation of skilled birth attendant		Total	Test statistic	p-value
	Yes	No		χ^2	
	n (%)	n (%)			
Mother's age (years)					
<20	15(26.8)	41(73.2)	56(100.0)	2.59	0.11
≥20	23(16.7)	115(83.3)	138(100.0)		
Tribe					
Hausa	33(19.6)	135(80.4)	168(100.0)	0.002	0.96
Non-Hausa (Others)	5(19.2)	21(80.8)	26(100.0)		
Mother's level of education					
<Secondary	29(17.5)	137(82.5)	166(100.0)	3.27	0.07
≥Secondary	9(32.1)	19(67.9)	28(100.0)		
Mother's income					
Living below poverty line**	37(19.3)	155(80.7)	192(100.0)		0.35†
Living above poverty line**	1(50.0)	1(50.0)	2(100.0)		
Marital status					
Currently married	38(19.9)	153(80.1)	191(100.0)		1.00†
Not married	0(00.0)	3(100.0)	3(100.0)		
Parity					
Primiparity	12(33.3)	24(66.7)	36(100.0)	5.30	0.02*
Multiparity	26(16.5)	132(83.5)	158(100.0)		
Age at first pregnancy (years)					
<20	33(19.8)	134(80.2)	167(100.0)	0.02	0.88

Factors	Utilisation of skilled birth attendant		Total	Test statistic	p-value
	Yes	No		$\chi 2$	
	n (%)	n (%)			
≥20	5(18.5)	22(81.5)	27(100.0)		
Planning of pregnancy					
Yes	26(18.7)	113(81.3)	139(100.0)		
No	12(21.8)	43(78.2)	55(100.0)	0.24	0.62
Antenatal care (ANC) Attendance					
Yes	36(23.7)	116(76.3)	152(100.0)	7.48	0.01*
No	2(4.8)	40(95.2)	42(100.0)		
Timing of ANC booking					
<16 weeks	7(11.9)	52(88.1)	59(100.0)	7.45	0.01*
≥16 weeks	29(31.2)	64(68.8)	93(100.0)		
Number of ANC visit					
<4 times	14(28.6)	35(71.4)	49(100.0)		
≥4 times	22(21.4)	81(78.6)	103(100.0)	0.96	0.33
Complication during Pregnancy, Labour & Delivery					
Yes	6(20.0)	24(80.0)	30(100.0)		
No	32(19.5)	132(80.5)	164(100.0)	0.004	0.95
Availability of information on childbirth					
Yes	36(22.8)	122(77.2)	158 (100.0)		
No	2(5.6)	34(94.4)	36(100.0)	5.53	0.02*
Woman's autonomy					
Yes	36(19.6)	148(80.4)	184(100.0)		1.00†
No	2(20.0)	8(80.0)	10(100.0)		

Factors	Utilisation of skilled birth attendant		Total	Test statistic	p-value
	Yes	No		χ^2	
	n (%)	n (%)			
Distance to health facility					
≤5km	9(16.7)	45(83.3)	54(100.0)	0.41	0.52
>5km	29(20.7)	111(79.3)	140(100.0)		
Availability of regular transportation					
Yes	28(19.2)	118(80.8)	146(100.0)	0.06	0.80
No	10(20.8)	38(79.2)	48(100.0)		
Previous hospital delivery					
Yes	23(37.1)	39(62.9)	62(100.0)		
No	6(6.2)	91(93.8)	97(100.0)	24.24	0.0001*
Husband's level of education					
<Secondary	4(6.0)	63(94.0)	67(100.0)	12.05	0.001*
≥Secondary	34(26.8)	93(73.2)	127(100.0)		
Husband's Income					
Living below poverty line**	31(18.8)	134(81.2)	165(100.0)	0.45	0.50
Living above poverty line**	7(24.1)	22(75.9)	29(100.0)		

*Significant at p-value < 0.05, †Fishers exact test

**Poverty line is $1.90 per day (Exchange rate at the period of study was 360 Naira to a Dollar)

Table 5: Predictors of utilisation of skilled birth attendants

Factors	Crude OR (95% CI)	Adjusted OR (95% CI)	p-value
Mother's level of education			
<Secondary	1		
≥Secondary	2.5 (1.2-5.1)	2.3 (0.8-7.1)	0.14
Parity			
Primiparity	1		
Multiparity	0.4 (0.2-0.9)	0.4 (0.1-1.8)	0.23
Antenatal care (ANC) use			
Yes	0.2 (0.04-0.7)	0.4 (0.1-2.2)	0.29
No	1		
Timing of ANC booking			
<16 weeks	0.7 (0.3-1.7)	0.7 (0.3-2.1)	0.58
≥16 weeks	1		
Availability of information on childbirth			
Yes	0.2 (0.04-0.9)	0.3 (0.1-2.1)	0.25
No	1		
Previous hospital delivery			
Yes	2.6 (1.2-5.8)	4.5 (1.4-14.8)	0.02*
No	1		
Husband's level of education			
<Secondary	1		
≥Secondary	0.2 (0.1-0.5)	5.9 (1.3-27.8)	0.03*
Age (years)			
<20	1		
≥20	1.8 (0.9-3.8)	0.6 (0.1-2.8)	0.55
Tribe			
Hausa	1.0 (0.4-2.9)	1.0 (0.3-4.0)	0.99
Others	1		

Factors	Crude OR (95% CI)	Adjusted OR (95% CI)	p-value
Mother's Income			
Living below poverty line**	4.2 (0.3-68.5)	11.8 (0.2-66.4)	0.23
Living above poverty line**	1		
Husband's income			
Living below poverty line**	1.4 (0.5-3.5)	0.5 (0.1-2.1)	0.37
Living above poverty line**	1		
Age at first pregnancy (years)			
<20	1.1 (0.4-3.1)	0.6 (0.1-3.3)	
≥20	1		0.55
Planning of pregnancy			
Yes	1.2 (0.6-2.6)	0.8 (0.3-2.8)	0.85
No	1		
Number of ANC visit			
<4 times	1	1.1 (0.3-3.5)	0.93
≥4 times	2.1 (0.8-5.4)		
Complications during pregnancy, labour & delivery	0.9 (0.4-2.6)	1.2 (0.3-5.5)	0.79
Yes	1		
No			
Woman's autonomy			
Yes	1.0 (0.2-5.0)	0.4 (0.04-3.5)	0.41
No	1		
Distance to health facility			
≤5km	1		
>5km	1.3 (0.6-3.0)	1.7 (0.5-5.8)	0.38
Availability of regular transportation			
Yes	0.9 (0.4-2.0)	1.7 (0.4-7.1)	0.44
No	1		

*Significant at p-value < 0.05

**Poverty line is $1.90 per day (Exchange rate at the period of study was 360 Naira to a Dollar

Discussion

The study provides information on the level and predictors of utilisation of SBA. The study demonstrates a high level of ANC utilisation (78.4%), a low level of skilled attendance at delivery (19.6%), and a high prevalence of home delivery (85.1%). A few home deliveries were however assisted by a SBA. Some women also practiced solitary birth (i.e. unassisted delivery). Previous hospital delivery and the husband's level of education were found to be independent predictors of SBA utilisation. Perceptions regarding utilisation of SBA varied, ranging from a general preference for home delivery with the assistance of a traditional birth attendant to a predisposition towards hospital delivery with the assistance of SBA. Factors that contributed to adherence to traditional birthing practices included healthcare workers' negative attitudes, manpower gap, lack of equipment and supplies and inadequate functioning health facilities. These results are corroborated by findings of the qualitative component of this study as respondents reported that even though most women go for ANC, the general preference was for home delivery with hospital delivery being resorted to during difficulty in labour or when complications like persistent bleeding occur. Additionally, some women valued their privacy and preferred delivering alone in their own rooms while others preferred to be assisted by a TBA and were deterred from seeking the assistance of SBAs, due to their negative attitudes.

The low level of skilled attendance at delivery and predominance of home deliveries found in this study is similar to that reported for rural women across Nigeria as reported by NDHS.[6] It is also in keeping with prevalence of home deliveries in northern Nigeria (88%).[6] Likewise, it is similar to findings of other studies from northern Nigeria and many sub-Saharan African countries.[18,19,20] In contrast, the prevalence of hospital delivery found in this study (14.9%) is much lower than that found in a rural community in Jos (60.0%),[21] despite it being a northern Nigerian state. This may be due to variation in social-cultural factors. It is possible that there are more educated women in Jos. Educated women are more likely to be aware of the benefits of hospital delivery, more likely to have resources, better communication skills with husbands and health care workers, and therefore, more autonomous to make informed decisions regarding the place of delivery. The same was noted in a study in Lagos State, Nigeria.[22] Another possible explanation for the higher prevalence of hospital delivery in Lagos is that the study was conducted in an urban area with a greater number of healthcare facilities including general hospitals, specialist maternity hospitals, and several state-owned primary healthcare centres as well as private hospitals and maternity homes.[22] The findings differ from studies conducted in Rwanda, Tanzania, the Philippines, and Nepal.[23-26] The findings are also contrary to what is obtainable in developed nations where almost all deliveries occur with the assistance of SBAs.[27]

The study also revealed that few home deliveries (5.5%) were attended to by a skilled attendant. This may be due to the fact that women now realise the importance of SBAs, and also because of limited availability/accessibility of health facilities offering delivery services, they seek the assistance of SBAs at home, as reported by some FGD respondents. In Contrast, other studies in northern Nigeria and Ethiopia found that no skilled delivery took place at home.[17, 20] Solitary birth (delivery with no one present) was being practiced (9.3%) in the rural communities but it was lower than the National value of 13% and 17% reported in rural areas of Nigeria.[6] It is also lower than a prevalence of 42% found in Katsina state.[28] This can be attributed to the high prevalence of utilisation of unskilled birth attendants in the rural communities or the preponderance for facility-based delivery found in some parts of rural communities, as women are becoming more civilised and enlightened, thereby seeking the assistance of SBAs. In contrast, the prevalence of solitary birth found in this study is higher than that of a study done in Uganda.[29] This may be due to the higher utilisation of SBAs in Uganda.

Previous hospital delivery was found to be a predictor of the utilisation of SBA. Women who had previously delivered at a health facility were 4.5 times more likely to utilise a SBA than those who had not previously delivered at a health facility. This is similar to the findings of studies done in Katsina and Rwanda.[23,28] A possible explanation for this is that women who have previously delivered at the hospital are exposed to the health information on the importance of skilled care at delivery. They also become more familiar with the setting. This may

make them more likely to use the hospital again, especially if the previous delivery went well and they are satisfied with the quality of the services. Husbands' level of education was another predictor of utilisation of SBA. Women whose husbands attained at least secondary education were almost six times more likely to utilise a skilled birth attendant than women whose husbands had informal education or primary level of education. This finding is in line with studies done in Ethiopia and Kenya.[30,31] Educated husbands might be more open toward orthodox healthcare and aware of the benefits of utilising SBA. They might also put fewer constraints on their wives' mobility and decision-making, thus facilitating care seeking. More so, they may be more able to communicate with health workers and demand adequate services and appropriate care for their wives.

Interestingly, distance to health facilities was not a significant predictor of SBA utilisation despite the study being conducted in rural communities. In contrast, findings from other studies in Nigeria,[17,21] Ethiopia[30], Rwanda,[23] Kenya,[32] and Nepal[33] showed that distance strongly predicts SBA utilisation. However, findings from this study were similar to a study conducted in rural Katsina.[34] Respondents of the FGDs and KIIs gave different responses regarding how distance affects the utilisation of SBAs. While most respondents believed that distance to the health facilities offering delivery services, poor terrain especially during raining season coupled with limited availability of transport are contributors to the continuing practice of home births, few others believe distance is not a problem, as going to the hospital just has to do with determination because health should be a priority. This finding of distance posing a barrier to SBA utilisation is similar to findings of other qualitative studies done in Northern Nigeria, Uganda, Zambia, and Kenya.[17,35-37]

Though ANC utilisation was high, it is not associated with SBA utilisation in this study. This is similar to findings of a study in Nepal[26] but contrary to findings of Nigerian studies,[17,21] other African studies[19,24,30,31] and an Asian study[33] which found out that ANC use was a significant determinant of institutional delivery and SBA utilisation. ANC services can provide opportunities for health workers to promote facility delivery or give women information on the status of their pregnancy, informing their decision on where to deliver. Women who use ANC may therefore be more likely to use facilities for delivery. A possible explanation for ANC utilisation not being a determinant of SBA utilisation in this study is that women who were told their pregnancy was normal may have felt they had a low risk of developing complications and decided to deliver at home without a skilled attendant. Another reason may be that the facilities that offered the ANC do not provide delivery services. More so delivery services could incur costs unlike ANC, which is free with free drugs. Qualitative findings of this study strongly support these reasons as respondents mentioned that health care workers are not always available and many pregnant women travel long distances to reach facilities offering delivery services. Likewise, they are deterred from going to the hospital mainly due to financial implications.

Women's autonomy was also not a predictor of the utilisation of SBA. This is similar to the finding of an Ethiopian study.[30] Respondents of the FGDs and KIIs gave varied opinions on women's autonomy. While some respondents considered lack of spousal permission and decision making on the place of delivery by in-laws a barrier to utilisation of SBAs, others mentioned that people are becoming aware hence a significant reduction in decision making by in-laws. Qualitative studies in Ghana and Zambia reported similar findings.[36,38] Other factors perceived to contribute to adherence to traditional birthing practices were health care workers' negative attitudes, staff shortage, lack of equipment and supplies, and inadequate functioning health facilities.

The findings of this study will assist in designing appropriate and timely interventions for increasing SBA utilisation in rural communities of Kano State. The main focus for sustainable changes is raising community awareness and advocacy at the grassroots level, campaigning on female and male education as well as strengthening the health system. However, the study did not differentiate between preventive facility delivery for uncomplicated pregnancies and emergency care seeking for complicated pregnancies.

Conclusion:

Utilisation of SBA in rural communities of Kano state is low. Efforts should be made to increase women's and men's awareness, improve health facilities, and ensure improved and equitable access and availability of skilled delivery care services.

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References

1. World Health Organization. Maternal Health. WHO health topics. Available from: http://www.who.int/topics/maternal_health/en/ [Accessed on 26/2/20]
2. World Health Organization. Nine countries commit to halving maternal and newborn deaths in health facilities. 2020. Available from: http://www.who.int/maternal_child_adolescent/news_events/news/quality-of-care-network/en/ [Accessed on 26/2/20]
3. World Health Organization. Maternal mortality. 2016. Available from: http://www.who.int/mediacentre/factsheets/fs348/en/ [Accessed on 26/2/2017]
4. Liliana C. Skilled Attendant at birth. MDG 5, Target 5A, Indicator 5.2. Workshop on MDG monitoring to 2015 and beyond. Bangkok. 9-13 July 2012. Available from: http://slideplayer.com/slide/5968245/ [Accessed on 26/2/20].
5. World Health Organization. Making pregnancy safer: the critical role of the skilled attendant. A joint statement. Geneva 2004. Available from: http://www.who.int>documents [Accessed on 26/2/2020]
6. National Population Commission and Inner City Fund International. Nigeria Demographic and Health Survey. National Population Commission, Federal Republic of Nigeria, Abuja, Nigeria and ICF International, Rockville, Maryland, USA. 2013.Available from: https://dhsprogram.com/pubs/pdf/FR293/FR293.
7. United Nations children fund (UNICEF). Training and Implementation Plan. Integrated Health Training Package for Rural Settlements, Nigeria. Available from:https://s3.amazonaws.com/gpeitk/reference_links/en/Nigeria_Integrated_Health_Training_Hard_to_Reach_Settlements.pdf [Accessed on 25/2/2020]
8. World Health Organization. Ten facts on maternal health. Available from: http://www.who.int/features/factfiles/maternal_health/en/[Accessed on 26/2/2021]
9. World Bank Group. Trends in Maternal Mortality: 1990 to 2015: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Available from: http://apps.who.int/iris/bitstream/10665/194254/1/9789241565141_eng.pdf?ua=1 Accessed on 3/3/2020.
10. Federal Government of Nigeria. Millennium Development Goals. End-point Report. Office of the Senior Special Assistant to the President on Millennium Development Goals (MDGs). Federal Secretariat, Abuja - Nigeria. 2015.
11. National Population Commission Nigeria and ICF. Nigeria Demographic and Health Survey 2018. Abuja, Nigeria, and Rockville, Maryland, USA. 2019.
12. Azuh DE, Azuh AE, Iweala EJ, Adeloye D, Akanbi M, Mordi RC. Factors influencing maternal mortality among rural communities in southwestern Nigeria. Int J Women's Health. 2017; 9:179–88.
13. Fapohunda BM, Orobaton NG. When Women Deliver with No One Present in Nigeria : Who, What , Where and So What? PLoS ONE. 2013; 8(7) e69569.
14. Kano State Ministry of Health. Report of the 2012 Joint Annual Review & Mid-Term Review of the Strategic Health Development Plan Kano State. Government of Kano State. 2012.
15. Kano State Ministry of Health. State Strategic Health Development Plan (2010 – 2015). Government of Kano State. 2010.
16. Pourhoseingholi MA, Vahedi M, Rahimzadeh M. Sample size calculation in medical studies. Gastroenterol Hepatol. 2013;6(1):14–7.
17. Henry VD, Findley SE, Ager A, Cometto G, Godwin Y, Adamu F, et al. Using community-based research to shape the design and delivery of maternal health services in Northern Nigeria. Reproductive Health Matters. 2012;20(39):104–12.
18. Tarekegn SM, Lieberman LS, Giedraitis V. Determinants of maternal health service utilization in Ethiopia: analysis of the 2011 Ethiopian Demographic and Health Survey. BMC Pregnancy Childbirth. 2014;14(1):161.
19. Hagos S, Shaweno D, Assegid M, Mekonnen A, Afework MF, Ahmed S. Utilization of institutional delivery service at Wukro and Butajera districts in the Northern and South Central Ethiopia. BMC Pregnancy Childbirth 2014;14(1):178.
20. Oguntunde O, Aina O, Ibrahim MS, Umar HS. Antenatal Care and Skilled Birth Attendance in

Three Communities in Kaduna State, Nigeria. Afr. J. Reprod. Health. 2010;14(3): 89-96.

21. Joanna M, Envuladu E, Agbo H, Lassa S, Kigbu JH, Zoakah AI. Factors determining the choice of a place of delivery among pregnant women in Russia village of Jos North, Nigeria : achieving the MDGs 4 and 5. Int J Med Biomed research. 2013;2(1):23–7.
22. Olusanya BO, Alakija OP, Inem VA. Non-Uptake of facility-based Maternity services in an inner-city community in Lagos, Nigeria : an observational study. J. Biosoc. Sci..2010;42:341–358.
23. Joharifard S, Rulisa S, Niyonkuru F, Weinhold A, Sayinzoga F, Wilkinson J, et al. Prevalence and predictors of giving birth in health facilities in Bugesera District, Rwanda. BMC Public Health. 2012;12(1):1049.
24. Mageda K, Mmbaga EJ. Prevalence and predictors of institutional delivery among pregnant mothers in Biharamulo district, Tanzania: A cross-sectional study. Pan Afr Med J. 2015; 21:111.
25. Calpito KA, Cañizares CM, Celis V, Duarte NE, Gaela M, Medina J, et.al. Selected Socio-demographic and Psychosocial Variables Related to Mothers' Preference for Childbirth Setting in a Barangay in Rosario, Cavite. Acta medica Philippina. 2015;49(3):32-38
26. Shah R, Rehfuess EA, Maskey MK, Fischer R, Bhandari PB, Delius M. Factors affecting institutional delivery in rural Chitwan district of Nepal: a community-based cross-sectional study. BMC Pregnancy Childbirth. 2015;15:27.
27. World Health Organization. The Work of WHO in the Western Pacific Region. World Health Organization. 2004.
28. Adewemimo AW, Msuya SE, Olaniyan CT, Adegoke AA. Utilisation of skilled birth attendance in Northern Nigeria : A cross-sectional survey. Midwifery. 2014; 30(1):e7–13.
29. Kabakyenga JK, O¨stergren PO, Turyakira E, Pettersson KO. Influence of Birth Preparedness, Decision-Making on Location of Birth and Assistance by Skilled Birth Attendants among Women in South-Western Uganda. PLoS ONE .2012;7(4): e35747.
30. Kebede A, Hassen K, Teklehaymanot AN. Factors associated with institutional delivery service utilization in Ethiopia. Int J Women's Health. 2016; 8:463–75.
31. Gitimu A, Herr C, Oruko H, Karijo E, Gichuki R, Ofware P, et al. Determinants of use of skilled birth attendant at delivery in Makueni, Kenya : a cross sectional study. BMC Pregnancy and Childbirth. 2015 15:9;1–7.
32. Kawakatsu Y, Sugishita T, Oruenjo K, Wakhule S, Kibosia K, Were E, et al. Determinants of health facility utilization for childbirth in rural western Kenya: cross-sectional study. BMC Pregnancy Childbirth. 2014;14:265.
33. Dhakal S, Teijlingen EV, Raja EA, Dhakal KB. Skilled care at birth among rural women in Nepal: Practice and challenges. J Heal Popul Nutr. 2011; 29(4):371–378.
34. Hagos S, Shaweno D, Assegid M, Mekonnen A, Afework MF, Ahmed S. Utilization of institutional delivery service at Wukro and Butajera districts in the Northern and South Central Ethiopia. BMC Pregnancy Childbirth. 2014;14(1):178.
35. Anastasi E, Borchert M, Campbell O, Sondorp E, Kaducu F, Hill O, et al. Losing women along the path to safe motherhood: why is there such a gap between women's use of antenatal care and skilled birth attendance? A mixed methods study in northern Uganda. BMC Pregnancy Childbirth. 2015;15(1):287.
36. Sialubanje C, Massar K, Hamer DH, Ruiter RAC. Reasons for home delivery and use of traditional birth attendants in rural Zambia : a qualitative study. BMC Pregnancy Childbirth. 2015.1–12.
37. Caulfield T, Onyo P, Byrne A, Nduba J, Nyagero J, Morgan A, et al. Factors influencing place of delivery for pastoralist women in Kenya : a qualitative study. BMC Women's Health 2016;16 (52): 1–11.
38. Gabrysch S, Campbell O. Still too far to walk : Literature review of the determinants of delivery service use. BMC Pregnancy Childbirth. 2009;18:1–18.

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