

Knowledge, attitude, and utilization of skilled birth attendants in a rural community in Southern Nigeria: A mixed method survey

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ABSTRACT


Background: The World Health Organization recommends that women be attended by skilled birth attendants (SBAs) during delivery to improve maternal and newborn health and to achieve the maternal mortality target of the sustainable development goals (SDGs). **Objectives:** The objectives of the study were to assess the knowledge, attitude, and utilization of SBAs among women of reproductive age in a rural community in Edo State, Nigeria. **Materials and Methods:** A descriptive cross-sectional study design among a total population of women of reproductive age was carried out. Data collection was by mixed methods using a pre-tested, interviewer-administered questionnaire, and focus group discussion (FGD) Guide. Ethical clearance to conduct this study was sought and obtained from the Ethical Committee, University of Benin Teaching Hospital. Quantitative data collected were analyzed using international business machines Statistical Package for the Social Sciences version 21.0 while qualitative data were analyzed thematically using ATLAS.ti software. Logistic regression was applied to calculate crude odds ratios, adjusted odds ratios (AORs), 95% confidence intervals (CIs), and p-values of the quantitative data. The level of significance was set at $P < 0.05$. **Results:** A total number of 484 persons (comprising 465 respondents and 19 FGD participants) were surveyed. The study showed good knowledge 421 (92.1%), positive attitude 405 (88.6%), and good utilization 410 (88.2%) of SBAs. The determinants of utilization of SBAs were age (AOR: 1.086 95% CI: 1.020–1.155), knowledge of respondents (AOR: 0.034 95% CI: 0.012–0.098), and cost of services (AOR: 0.348 95% CI: 0.157–0.772). **Conclusion:** Knowledge, attitude, and utilization of SBAs were found to be good among the studied population. The determinants of utilization should be used as major points for international electrotechnical commission in key intervention programs.

KEY WORDS: Skilled Birth Attendant; Utilization; Knowledge and Attitude

INTRODUCTION

Maternal and perinatal health has emerged as the most important issue that determines global and national wellbeing.^[1] This is because every individual, family and community are at some point intimately involved in pregnancy and the success

of childbirth. The period of birth is critical in the life of both the mother and baby. Ideally, it needs to be assisted in a competent manner by a skilled birth attendant (SBA) supported by an enabling environment.^[1-3] The World Health Organization recommends that women be attended by a SBA during delivery to improve maternal and newborn health and survival.^[4] In developing countries, most childbirth occurs at home and is not assisted by SBAs. In Sub-Saharan Africa, approximately half of all live births were delivered with the assistance of SBA, in 2016.^[3] This situation increases the risk of death for both mother and child and has severe maternal and neonatal health complications.^[5] The rate of deliveries by SBAs is considered a measure of progress toward reducing maternal and neonatal mortality.^[1] In consideration of its

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importance in reducing maternal morbidity and mortality, SBA was included as indicator 3.1.2 under Goal 3 and Target 3.1 of the sustainable development goals (SDGs).^[2]

The problem of poor organization and access to maternal health services has always been a major challenge in Nigeria. The Nigeria health system as a whole has been plagued by problems of service quality, including inadequate skills, decaying infrastructures, and chronic shortages of essential drugs.^[6] Nigeria still ranks high in the list of countries with high mortality rates contributing to 14% of global maternal deaths and is second only to India whose population is 8 times larger than that of Nigeria.^[4,6-9] Approximately two-thirds of all Nigerian women deliver outside of health facilities and without medically skilled attendants present.^[9,10] Urban women are more likely to receive antenatal care from a skilled provider than their rural counterparts as documented by the 2013 national demographic and health survey (NDHS), which revealed that 47% of rural women age 15–49 did not receive antenatal care as compared with only 11% of urban women.^[9] This has been attributed to inadequate access and utilization of maternal health services.^[7] This may make the first target of SDG three which aims to reduce global maternal mortality ratio to <70/100,000 live births by 2030 difficult to achieve.^[10]

To ensure better maternal and child health care in Nigeria, the National Primary Health Care Development Agency under the 2009 Appropriation Act established the midwives service scheme (MSS) with the intent of making a SBA present at every delivery.^[4] The MSS is a public sector collaborative initiative, designed to mobilize midwives, including newly qualified, unemployed, and retired midwives, for deployment to selected primary health care facilities in rural communities. The aim of the MSS is to facilitate an increase in the coverage of SBA to reduce maternal, newborn, and child mortality.^[4] The major objective of antenatal care is to ensure optimal health outcomes for the mother and her baby. Antenatal care provided by a skilled health worker enables early detection of complications and prompt treatment, prevention of diseases through immunization and micronutrient supplementation, birth preparedness and complication readiness, and health promotion and disease prevention.^[9]

Pregnancy and delivery are important aspects of population growth and development of a country. Determinants of utilization of SBAs are key variables in the evaluation of programs designed to reduce maternal mortality.^[11-13] Previous studies have identified the disparity in the presence of SBA at deliveries in rural and urban communities and many factors that seem to affect this occurrence.^[14-18] Most of these studies utilized either quantitative or qualitative methods but this study utilized a mixed method to have a more in-depth approach in assessing the utilization of SBAs. It is hoped that findings from this study will identify the prevailing challenges among women of childbearing age. Furthermore,

information from this study will add to the existing body of knowledge and provide a working database for rural women.

Furthermore, it will serve as a guide to appropriate policy formulation and health planning to continually increase knowledge of the topic and SBAs' presence thus, reducing maternal and child morbidity and mortality. The study was, therefore, carried out to assess the knowledge, attitude, and utilization of SBAs among women of childbearing age in Iraokhor community, Etsako Central local government area (LGA) of Edo State.

MATERIALS AND METHODS

This study was carried out in Iraokhor community in Etsako Central (LGA), Edo State, Nigeria. Etsako Central LGA was created from Etsako East LGA on October 1, 1996. The headquarters is Fugar which is located about 200 km from the Edo State capital and occupies an area of 660 km² with a population of 94,650 in the 2006 census and a projected population of 107,850 in 2015. 20 Etsako Central LGA is divided into 10 political wards. Iraokhor is ward 5 and headed by the Okpe-ukpi. It is bounded by Etsako East to the North-East, Ogbona and Imiava communities to the East, Iviwaneke and Ugbekpe communities to the South, Apana and Ayogwri communities to the West. It has six settlements (Usokwi, Ivhugelo, Iviagbogidi, Okotor, New Uralo, and Ivhialokoko).^[19] The predominant ethnic group is Etsako. Iraokhor Community has two government primary schools, one government secondary school, and one primary health center (PHC), which also subserves neighboring communities. Services rendered by the PHC include antenatal, delivery, immunization and family planning services, and among others.

A descriptive cross-sectional study design using mixed method was utilized for this study and the study population comprised women of childbearing age (15–45 years) in Iraokhor community. The sample size was calculated using the formula for single proportion^[20] where P was the prevalence of women (61.0%) who received antenatal care from a skilled provider in the NDHS, in 2013^[10] A total population study of all women who met the inclusion criteria was conducted in the 6 settlements that make up Iraokhor community.

Quantitative and qualitative tools were used for data collection. A structured questionnaire with open- and closed-ended questions was used to collect data. The questionnaire had 4 sections. Section A: Sociodemographic characteristics, Section B: Knowledge of SBAs, Section C: Attitude toward utilizing SBA, and Section D: Utilization of SBAs. The qualitative tool was a focused group discussion guide which was designed in line with the specific objectives to assess the knowledge, attitude, and utilization of SBAs. The questionnaire was interviewer-administered to the respondents

in a conducive environment which would promote maximum cooperation. Two focus group discussions (FGDs) involving 11 and 8 participants, respectively, categorized based on age were carried out with questions targeted at assessing their knowledge, attitude, and utilization of SBAs.

The FGDs took place at one of the primary schools and participants were briefed on the purpose of the discussion and were encouraged to air their views. The discussion was guided by one of the researchers such that the discussion was not dominated by a set of participants. Notes were taken during the discussion, and audio recording was also done and transcribed to corroborate the information missed during note-taking. The discussion was conducted in Pidgin English. The discussion lasted for 30 min and at the end of the discussion; participants were health educated on the need to utilize SBAs.

Ethical clearance to conduct this study was sought and obtained from the Ethical Committee, University of Benin Teaching Hospital. Approval was obtained from the Chairman of the LGA, the Medical Officer of Health and the Okpe-Ukpi of Iraokhor community before the study was carried out. Informed consent was obtained from the respondents. They were assured of confidentiality and freedom to withdraw at any time from the study without prejudice. Respondents who were ill were attended to and complicated cases referred to the health facility.

Statistical Analysis

All data were retrieved, sorted, screened for completeness, coded and analyzed using international business machines Statistical Package for the Social Sciences version 21.0 and ATLAS.ti for quantitative and qualitative data, respectively. The occupation of respondents was coded based on the International Labour Organization, classification which was modified for the purpose of this study into skill levels 0, 1, 2, 3, and 4 where skill level 0 comprised the unemployed.^[21] Monthly income was categorized using the minimum wage of the Federal Government of Nigeria (₦18,000).

A total of 15 questions were used to assess the knowledge of SBA among respondents. Each correct answer attracted a score of 1 while an incorrect answer attracted a score of 0 giving a maximum score of 15 and a minimum of 0. The scores were converted to percentages and grouped as poor knowledge (<50%) and good knowledge (≥50%). The questions used to assess knowledge were internally consistent and reliable with a Cronbach's alpha value of 0.952. A total of seven (7) questions were scored to assess the attitude of respondents using a 3 point Likert scale. Each correct answer was given a score of 1, undecided and incorrect answer was scored 0 giving a maximum score of 7 and minimum score of 0. The scores were converted to percentages and grouped as negative attitude (<50%) and positive attitude (≥50%). The

questions used to assess attitude toward SBA utilization were internally consistent and reliable with a Cronbach's alpha value of 0.895.

A total of 6 questions were used to assess the utilization of SBA. Each correct answer attracted a score of 1, while an incorrect answer was given a score of 0 giving a maximum score of 6 and a minimum of 0. Scores between 0 and 3 (≤50%) were grouped as poor practice while scores 4–6 (>50%) were grouped as good practice. The questions used to assess utilization of SBA were internally consistent and reliable with a Cronbach's alpha value of 0.718.

Univariate analysis was done to assess the distribution of the sociodemographic variables. Quantitative variables were expressed as means and standard deviation. Simple and multiple logistic regression analyses were applied to calculate crude (unadjusted) odds ratios and adjusted odds ratios, respectively. The ORs with 95% confidence intervals (CIs) and significance levels (*P*-value) were reported.

Data from the FGD were analyzed using the ATLAS.ti Vs. 6.0. Data were sorted and classified according to research objectives and translation to the English language was carried out. Themes were interpreted and elaborated on to produce the findings of the data in line with the objectives of the study.^[22,23]

RESULTS

The mean age of respondents was 32.7 ± 7.0 years with a higher proportion 117 (25.2%) belonging to the 26–30 years age group. Majority 445 (95.7%) of the respondents were married. The predominant religion was Christianity 447 (96.1%) and 207 (46.5%) had a secondary level of education. Over three-quarters of the respondents, 388 (83.4%) earned a monthly income of < ₦18,000 [Table 1]. Majority of the respondents 457 (98.3%) were aware of SBA and these 411 (89.9%) got their information from health workers. 405 (88.6%) and 431 (94.3%) had good knowledge of the importance of SBAs, and the personnel qualified to be SBA (doctors, midwives, community health workers, and nurses), respectively. Over three quarters of the respondents, 408 (89.3%) knew the meaning of African national congress (ANC) and a higher proportion 236 (51.4%) had the incorrect knowledge that the best time to register for ANC was 2nd–3rd trimester of pregnancy. Majority 421 (92.1%) had overall good knowledge of SBA [Table 2]. From the FGD, women of childbearing age in Iraokhor community opined that education and experience made one a SBA. SBAs were not only nurses midwives but also special women who have the experience to take delivery.

“SBAs be people wey go the school for training and wey get employment from government”

Table 1: Sociodemographic characteristics of respondents (*n*=465)

Variables	<i>n</i> (%)
Age group (years)	
15–20	17(3.7)
21–25	68(14.6)
26–30	117 (25.2)
31–35	96 (20.6)
36–40	105 (22.6)
41–45	62 (13.3)
Mean age±SD	32.7±7.0
Marital status	
Single	10 (2.2)
Married	445 (95.7)
Widowed	7(1.5)
Separated	3 (0.6)
Religion	
Christianity	447 (96.1)
Islam	18 (3.9)
Level of education of respondents	
No formal	23 (5.2)
Primary	183 (41.1)
Secondary	207 (46.5)
Tertiary	32 (7.2)
Occupational classification of respondents	
Skill level 0	18 (3.9)
Skill level I	325 (69.9)
Skill level II	100 (21.5)
Skill level III	1 (0.2)
Skill level IV	4 (4.5)
Monthly income of respondents (₦)	
<18,000	388 (83.4)
≥18,000	77 (16.6)

SD: Standard deviation

[Persons who have been trained in school and are employed by the government]

36-year-old teacher

“Special women still dey wey no go school but get the experience but no be nurse or doctor”

[special women may not have the formal education but have a lot of experience in assisting in deliveries]

32-year-old trader

Four hundred and three (88.3%) and 399 (87.3%) of the respondents agreed that women should plan ahead before delivery and that delivery should be in a health facility, respectively. Over three quarters of the respondents, 399 (87.1%) and 376 (82.3%) agreed that delivery should be

Table 2: Knowledge domains of SBA (*n*=465)

Variables	<i>n</i> (%)
Awareness of SBA (<i>n</i> =465)	
Yes	457 (98.3)
No	8 (1.7)
Source of information (<i>n</i> =457)*	
Health worker	411 (89.9)
Radio	64 (14.0)
Television	32 (7.0)
Newspaper	20 (4.4)
Internet	2 (0.4)
Importance of SBA (<i>n</i> =457)	
Good knowledge	405 (88.6)
Poor knowledge	52 (11.4)
Personnel qualified to be SBA (<i>n</i> =457)	
Good knowledge	431 (94.3)
Poor knowledge	26 (5.7)
Meaning of antenatal care (ANC) (<i>n</i> =457)	
Good knowledge	408 (89.3)
Poor knowledge	49 (10.7)
Best time to register for ANC (<i>n</i> =457)	
1 st trimester	222 (48.6)
2 nd –3 rd trimester	236 (51.4)
Importance of ANC (<i>n</i> =457)	
Good knowledge	428 (6.3)
Poor knowledge	29 (93.7)
Overall knowledge score (<i>n</i> =457)	
Good	421 (92.1)
Poor	36 (7.9)

*multiple response question, SBA: Skilled birth attendants, ANC: African national congress

assisted by an SBA and that the presence of SBA reduces complications. Over four-fifths 405 (88.6%) had an overall positive attitude toward the utilization of SBAs [Table 3].

Four hundred and sixteen (89.5%) of the respondents had ever attended ANC, and of these above three-fifths 274 (65.9%) and 353 (84.9%) had <4 visits and attended ANC at PHC, respectively. Of those who had never attended ANC, 23 (46.8%) stated that their mothers were experienced enough. For over three quarters of the respondents 354 (76.1%), the place of last delivery was the PHC and 401 (86.2%) had ever been assisted in delivery by an SBA. Over four-fifths of the respondents, 410 (88.2%) had an overall good utilization of SBA [Table 4].

Age of the respondents was not a significant predictor of both knowledge of SBA and attitude toward utilization of SBA in both the adjusted and unadjusted analysis ($P > 0.05$). Respondents with secondary level of education were less likely to have good knowledge of SBA in both the unadjusted (OR: 0.942, CI: 0.111–7.957) analysis and

Table 3: Attitude of respondents toward SBA (n=457)

Variable	Agree n (%)	Indifferent n (%)	Disagree n (%)
ANC is important for pregnant women	404 (88.4)	15 (3.3)	38 (8.3)
Pregnant women should attend ANC	389 (85.1)	15 (3.3)	53 (11.6)
Registration for ANC should be within the first 12 weeks of pregnancy	316 (69.2)	23 (5.0)	118 (25.8)
Expectant mothers should plan ahead before delivery	403 (88.2)	12 (2.6)	42 (9.2)
Delivery should be in a health facility	399 (87.3)	20 (4.4)	38 (8.3)
Delivery should be assisted by SBA	398 (87.1)	14 (3.1)	45 (9.8)
Presence of SBA reduces complications	376 (82.3)	24 (5.3)	57 (12.4)

ANC: African national congress, SBA: Skilled birth attendants

Table 4: Utilization of skilled birth attendants

Variables	n (%)	
Ever attended ANC (n=465)		
Yes	416	89.5
No	49	10.5
Number of ANC visits (n=416)		
<4	274	65.9
>4	142	34.1
Place of attendance of ANC (n=416)		
PHC	353	84.9
General Hospital	50	12.0
Private health facility	13	3.1
Reasons for not attending ANC (n=49)		
Mother considered to be experienced enough	23	46.8
No money	17	34.7
Do not see the need	6	12.2
Delivery to be taken by old woman	3	6.1
Place of last delivery (n=465)		
PHC	354	76.1
General hospital	50	10.8
At home	47	10.1
Private health facility	12	2.6
TBA house	2	0.4
Ever been assisted by SBA (n=465)		
Yes	401	86.2
No	55	13.8
Willingness to utilize SBA in next pregnancy (n=465)		
Yes	410	88.2
No	55	11.8
Overall utilization of SBA (n=465)		
Good	410	88.2
Poor	55	55

SBA: Skilled birth attendants, ANC: African national congress, PHC: Primary health center

utilization of SBA in both the unadjusted (OR: 0.041, CI: 0.017–0.097) analysis and adjusted (OR: 0.046, CI: 0.019–0.012) analysis [Table 5].

FGD revealed that though many women register for ANC, they may not deliver in the health facility due to factors such as cost of services, perceived time-wasting in the facility, bureaucratic challenges at the health facility, and lack of emotional support during delivery. Other factors that prevented them from delivering in a health facility include absence of a qualified SBA, security, lack of 24 h services, and inadequate services rendered at the health facility.

“The old mama wey dey help women born, na their own cheap pass health centre”

[services are cheaper at the traditional birth attendant compared to the health centre]

30-year-old teacher

When you reach clinic, dem go say go here, pay for here, buy this, take card, do this, wait here. Person wen you carry go go nearly die before dem attend you.

[On arrival at the clinic, you are made to go to different locations to make payments and get services. It wears out the patients and their relatives]

21-year-old farmer

“Some nurse no dey stay the health centre. Dem go cum and for evening go comot and e no good”

[Some nurses are not available at the health facility. They come in the mornings and leave in the evening which is not good]

35-year-old trader

“Dem no dey stay for night so wen labour start for night u no go see nurse”

[They do not run the night shift and so when labour starts at night, they are not available]

adjusted (OR: 0.879, CI: 0.102–7.556) analysis compared to respondents with a tertiary level of education. Knowledge of SBA was a significant predictor of overall attitude toward utilization of SBAs, respondents who had poor knowledge of SBAs were less likely to have positive attitude toward

Table 5: Unadjusted and adjusted predictors of knowledge and attitude toward skilled birth attendants

Predictors	Unadjusted OR (95% CI)	P-value	Adjusted OR (95% CI)	P-value
Knowledge of SBA				
Age group (years)	0.969 (0.922–1.018)	0.319	0.997 (0.948–1.049)	0.907
Religion				
Christianity	0.723 (0.093–5.616)	0.692	0.773 (0.096–6.233)	0.809
Non-Christian*	1		1	
Marital status				
Single	1.600 (0.081–31.771)	0.758	0.772 (0.033–18.005)	0.872
Married	2.239 (0.255–19.686)	0.467	1.690 (0.180–15.819)	0.646
Separated	0.400 (0.016–10.017)	0.577	0.323 (0.012–8.807)	0.503
Widowed*	1		1	
Level of Education				
No formal	0.222 (0.025–1.956)	0.175	0.205 (0.023–1.852)	0.158
Primary	0.262 (0.034–2.015)	0.198	0.249 (0.032–1.954)	0.186
Secondary	0.942 (0.111–7.957)	0.956	0.879 (0.102–7.556)	0.907
Tertiary*	1		1	
Attitude Toward SBA				
Age group (years)	0.970 (0.939–1.002)	0.068	0.985 (0.948–1.024)	0.454
Religion				
Christianity	1.555 (0.534–4.524)	0.418	2.157 (0.660–7.048)	0.203
Non-Christian*	1		1	
Marital status				
Single	0.700 (0.049–10.014)	0.793	0.280 (0.014–5.696)	0.407
Married	0.744 (0.086–6.447)	0.788	0.376 (0.033–4.339)	0.433
Separated	0.100 (0.004–2.504)	0.161	0.082 (0.002–2.849)	0.167
Widowed*	1		1	
Level of education				
No formal	0.300 (0.087–1.029)	0.056	0.441 (0.118–1.653)	0.224
Primary	0.424 (0.141–1.276)	0.127	0.585 (0.184–1.862)	0.364
Secondary	1.235 (0.392–3.893)	0.719	1.413 (0.422–4.736)	0.575
Tertiary*	1		1	
Overall knowledge of SBA				
Poor	0.041 (0.017–0.097)	<0.001	0.046 (0.019–0.012)	<0.001
Good*	1			

SBA: Skilled birth attendants, OR: Odds ratio, CI: Confidence interval

23-year-old trader

“Matron bin dey wey dey stay for night, but dem come kidnap am. Since then, no nurse dey gree stay till night because security no dey”

[The matron initially ran the night shift but after she was kidnapped, no nurse agreed to run the night shift]

30-year-old tailor

Age group of the respondents was not a significant predictor of utilization of SBA in the unadjusted (OR: 1.012, CI: 0.972–1.055) analysis, however, after adjusting for covariates, it became a significant predictor (OR: 1.086,

CI: 1.020–1.155). Women who had a monthly income of <₦18,000 were less likely to have good utilization of the SBAs in the unadjusted (OR: 0.458, CI: 0.177–1.190) and the adjusted analysis (OR: 0.128, CI: 0.283–4.496). Cost of assessing antenatal and delivery services was also a significant predictor of utilization of SBA in both the unadjusted (OR: 0.393, CI: 0.201–0.767) and adjusted (OR: 0.348, CI: 0.157–0.772) analyses. Overall knowledge of SBA and overall attitude toward SBA were significant predictors of utilization of SBA. Those with poor knowledge of SBA and negative attitude toward utilization of SBA were less likely to have good utilization of SBA in both the adjusted and unadjusted analysis compared to those with good knowledge and positive attitude ($P < 0.001$) [Table 6].

DISCUSSION

This study showed that the majority of the women of childbearing age in Iraokhor had good knowledge of SBAs and also good attitude toward SBA. A higher proportion of the respondents were also found to utilize the services of SBAs; however, FGD revealed that though many women register for ANC, they may not deliver in the health facility due to factors such as cost of services, perceived time-wasting in the facility, bureaucratic challenges at the health facility and lack of emotional support during delivery. Other factors that prevented them from delivering in a health facility include absence of a qualified SBA, security, lack of 24 h services, and inadequate services rendered at the health facility.

In this study, a high proportion of respondents with good knowledge of SBAs found is in contrast with that from

a comparative study done in Kaduna and Kano States in Nigeria in 2013 where most of the women of childbearing age had poor knowledge of SBAs.^[24] This contrast may be attributed to prevailing beliefs and values in the study locations. The finding of a higher proportion of the population with good attitude toward SBA is similar to a cross-sectional study conducted in Kalay Township, Myanmar, Asia, where attitude was noticed to be good.^[25] This good attitude could have been a result of their good knowledge. Good attitude may lead to increased utilization of SBA thus improving maternal and child health indices which in the long run would improve socioeconomic development. The finding of utilization of skill birth attendant's services by majority of the respondents was similar to a descriptive cross-sectional study done in Sagamu, Lagos State, Nigeria, and that done in Egypt.^[26,27] This could be a fallout of the good attitude and also due to

Table 6: Unadjusted and adjusted predictors of utilization of SBA

Predictors	Unadjusted OR (95% CI)	P value	AOR (95% CI)	P value
Utilization of SBA				
Age group (years)	1.012 (0.972–1.055)	0.542	1.086 (1.020–1.155)	0.009
Religion				
Christianity	1.017 (0.226–4.576)	0.972	1.214 (0.142–10.390)	0.859
Non-Christian*	1		1	
Marital status				
Single	0.700 (0.049–10.014)	0.793	0.795 (0.029–21.883)	0.892
Married	1.522 (0.174–13.284)	0.704	2.742 (0.191–39.426)	0.458
Separated	0.400 (0.016–10.017)	0.577	1.466 (0.040–53.780)	0.835
Widowed*	1		1	
Level of education				
No formal	0.157 (0.019–1.337)	0.090	0.181 (0.011–2.880)	0.226
Primary	0.160 (0.021–1.213)	0.076	0.168 (0.013–2.137)	0.169
Secondary	0.819 (0.099–6.813)	0.854	0.799 (0.057–11.194)	0.868
Tertiary*	1		1	
Monthly income (₦)				
<18,000	0.458 (0.177–1.190)	0.109	0.128 (0.283–4.496)	0.864
≥18,000*	1		1	
High cost of services				
No	0.393 (0.201–0.767)	0.006	0.348 (0.157–0.772)	0.009
Yes	1		1	
Distance to health facility (min)				
<30	1.261 (0.584–2.723)	0.555	0.793 (0.237–2.653)	0.707
≥30*	1		1	
Overall knowledge of SBA				
Poor	0.016 (0.007–0.038)	<0.001	0.034 (0.012–0.098)	<0.001
Good*	1		1	
Overall attitude toward SBA				
Negative	0.050 (0.025–0.099)	<0.001	0.113 (0.046–0.276)	<0.001
Positive*	1		1	

*Reference category, †Adjustment was made for all the covariates in the table based on the conceptual framework and not necessarily statistical considerations, SBA: Skilled birth attendants, AOR: Adjusted odds ratio, CI: Confidence interval

the fact majority of the respondents knew the importance of utilizing SBAs during pregnancy and delivery as was earlier highlighted from this study. The utilization of SBAs during pregnancy makes it easier to detect possible complications early and manage them promptly with good outcomes for mother and child.

One of the strengths of this research work is that a mixed method of both qualitative and quantitative was used; therefore, findings from work can be generalized. The limitation due to chance or random error was also avoided in the course of the research by making sure the statistical comparisons are adequately powered and are analyzed with appropriate tests.

Bias which is a systematic error was also addressed using scientific methods of sample selection as stated in the methodology. Multivariate model of logistic regression as a statistical analysis was used to eliminate confounding effects.

CONCLUSION

Majority of the women of childbearing age in Iraokhor community had good knowledge and a positive attitude toward SBAs. Most of the women of childbearing age in Iraokhor utilized the services of SBAs. This should be encouraged by ensuring that effective services and manpower are always available. The determinants of utilization should be emphasized as action points in key intervention programs.

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