

Determinants of choice of orthodox and informal maternity facilities among women in an urban community in Ibadan, Southwest Nigeria.

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Abstract

Background: Utilization of Antenatal Care (ANC) and skilled assistance during delivery are required to reduce maternal mortality and morbidity. Lack of skilled care during pregnancy and delivery is associated with poor pregnancy and delivery outcomes. The facility chosen for antenatal care and delivery determines whether women receive care from skilled or unskilled personnel. More information is needed on facility preferences of Nigerian women for ANC. This study was therefore conducted to assess antenatal care utilization, choice of facility for antenatal care and delivery among women in an urban community in Ibadan, Nigeria.

Methods: This was a cross-sectional study. A two-stage cluster sampling technique was used to select 351 women in Yemetu area. A pretested semi-structured questionnaire was used to obtain information on socio-demographic characteristics, antenatal care component, facility chosen for antenatal care and delivery, as well as the reasons for utilizing these facilities. Private and government-owned health facilities were classified as orthodox facilities while mission homes and facilities run by traditional birth attendants were classified as informal facilities.

Results: The mean age of respondents was 28.8 ± 5.6 years. 81.5% had at least secondary education. Sixty-two (17.7%) of respondents chose informal facilities for antenatal care and 76 (21.7%) delivered in informal facilities. Good component of antenatal care was received by 93.8% of women in orthodox facilities compared to 74.2% in informal facilities ($p=0.001$). Respondents' educational attainment was the single predictor of choice of informal facilities for antenatal care ($OR=2.6$; $95\%CI= 1.4 - 4.9$). The predictors of the choice of informal facilities for delivery were respondents who did not have antenatal care with skilled personnel at least once ($OR=252.4$; $95\%CI= 78.2 - 817.9$), and those who did not have someone to take them to the hospital during labour ($OR= 4.38$; $95\%CI= 1.6 - 12.3$).

Conclusion: There is a need to promote utilization of orthodox facilities for antenatal care especially among women of lower educational status.

Keywords: Antenatal care utilization, Antenatal care components, Informal health facilities

Résumé

Contexte: L'utilisation des soins prénatals et une assistance qualifiée lors de l'accouchement sont nécessaires pour réduire la mortalité et la morbidité maternelles. Le manque de soins qualifiés pendant la grossesse et l'accouchement est associé à de piètres résultats en termes de grossesse et d'accouchement. L'établissement choisi pour les soins prénatals et l'accouchement détermine si les femmes reçoivent les soins d'un personnel qualifié ou non qualifié. Des informations supplémentaires sont nécessaires sur les préférences des femmes nigérianes en matière d'établissement pour les soins prénatals. Cette étude a donc été menée pour évaluer l'utilisation des soins prénatals, le choix de l'établissement pour les soins prénatals et l'accouchement chez les femmes d'une communauté urbaine d'Ibadan, au Nigéria.

Méthodes: Il s'agissait d'une étude transversale. Une technique d'échantillonnage en grappes en deux étapes a été utilisée pour sélectionner 351 foyers de femmes dans la région de Yemetu. Un questionnaire semi-structuré prétesté a été utilisé pour obtenir des informations sur les caractéristiques sociodémographiques, la composante de soins prénatals, l'établissement choisi pour les soins prénatals et l'accouchement, ainsi que les raisons de l'utilisation de ces établissements. Les établissements de santé privés et appartenant à l'État ont été classés entant qu'établissements orthodoxes, tandis que les maisons de mission et les établissements gérés par des accoucheuses traditionnelles ont été classés entant qu'établissements informels.

Résultats: L'âge moyen des répondants était de $28,8 \pm 5,6$ ans. 81,5% avaient au moins une éducation secondaire. Soixante-deux (17,7%) des répondants ont choisi des établissements informels pour les soins prénatals et 76 (21,7%) ont accouché dans des établissements informels. Une bonne composante de soins prénatals a été reçu par 93,8% des femmes fréquentant les structures orthodoxes, par rapport à 74,2% dans les structures informelles ($p = 0,001$). Le niveau de scolarité du répondant était l'unique facteur prédictif du choix d'un établissement informel pour les soins prénatals (OR

of women delivered in orthodox facilities while 37% of delivery took place at home (informal facilities) and 38% of deliveries were assisted by skilled personnel [12].

Research shows that women fail to utilize health facilities during childbirth for several reasons. Blondel *et al.* reported that 7% of women delivered at home because maternity facility was 30km away from their homes. Women that delivered at home had higher parity and lower educational attainments than those that delivered in orthodox facilities [15]. A study conducted in Bangladesh revealed that, distance, cost of transportation and user fees in health facilities were the major barriers to accessing skilled care during delivery [16].

A qualitative research conducted in a rural community in Zambia (in sub-Saharan Africa) had similar findings: women did not deliver in hospitals because of unaffordable user fees, poor quality of care received in available hospitals, long distance to health facilities and lack of transportation, including lack of adequate knowledge on the importance of delivering in health facilities [17]. Waiswa *et al.* (2008) in a study conducted in rural Uganda also had similar findings; women were willing to have their deliveries in health units/facilities but were unable to do so due to several barriers. These included, health workers' rudeness, corrupt tendencies and unavailability; inability to afford health facility-based care or maama kits (the standard clean delivery kits required for delivery in health facilities); commencement of labour at night in the absence of transportation and also because health facilities were usually closed at night. Women therefore preferred to deliver with the help of TBAs who were more readily available and willing to provide services on credit [18].

In South-west Nigeria, eighty-seven percent (87%) of pregnant women received antenatal care from a skilled provider and approximately 75% delivered in orthodox facilities [12]. It is necessary to understand the pattern of utilization of antenatal care and delivery services to identify suboptimal utilization patterns and reasons for choice of women's preferred facilities for delivery. Factors associated with delivery in informal facilities need to be determined. The aim of this study was to assess antenatal care utilization, choice of facility for antenatal care and delivery and reasons for facility preferences among women in an urban community in Ibadan, Nigeria. This would create evidence to inform and guide interventions to accelerate the progress being made in the improvement of maternal health in the country.

Methods

Study Area

The study was conducted in Yemetu, an urban community with a population of 30, 861 people of which about 6,790 of them are women of reproductive age and are located in Ibadan North Local Government Area (LGA), in south western Nigeria. A number of health facilities are within reach of community members. These are a primary health care facility (Kola Daisi Foundation Community Health Centre), a government owned secondary health facility (Adeoyo Maternity Hospital), a tertiary hospital (University College Hospital) and several private health care facilities.

Study population

The study was conducted among women of reproductive age 15-49 residing in Yemetu community. Women residing in Yemetu Community who had a delivery in the year preceding the study and gave their written informed consent were included in the study. Women who did not have antenatal care during their last pregnancies and those who received antenatal care from more than one site were excluded from the study. This is because "antenatal care" is a key outcome variable for the study, and multiple booking would introduce confounding.

Study design and sampling

A cross sectional design was used. Sample size was estimated using the Leslie Kish (1965) formula for cross-sectional studies [19] using a 'p' of 87.1% which was percentage of ANC utilization rate among women receiving antenatal care from a skilled provider in South western Nigeria according to 2008 NDHS. The minimum sample size was estimated to be 288. A cluster sampling technique was used to select study participants. Four out of ten settlements were selected by simple random sampling using the ballot method. All the women in the 4 settlements who delivered in the year preceding the study, had antenatal care in only one site throughout their immediate past pregnancy and gave consent to participate in the study were interviewed.

Data collection method

Data was collected using a semi-structured interviewer administered questionnaire which comprised questions on the socio-demographic characteristics of respondents, their obstetrics and gynaecology history, antenatal care utilization pattern (number of visits and timing of booking), the type of facility chosen for antenatal care, the content of care they received during antenatal care

= 2,6; IC à 95% = 1,4 à 4,9). Les prédicteurs du choix des structures informelles pour l'accouchement étaient les répondants qui n'avaient pas eu de soins prénatals avec du personnel qualifié au moins une fois (OR = 252,4 ; IC 95% = 78,2 - 817,9), et ceux qui n'avaient personne pour les emmener à l'hôpital au moment de labeur (OR = 4,38 ; IC 95% = 1,6 - 12,3). *Conclusion*: Il est nécessaire de promouvoir l'utilisation des services orthodoxes pour les soins prénatals, en particulier chez les femmes moins scolarisées.

Mots-clés: *Utilisation des soins prénatals, Composants des soins prénatals, Établissements de santé informels*

Introduction

Nigeria accounts for 14% of global maternal deaths, with a maternal mortality ratio of 814 deaths per 100,000 live births in 2015 [1,2]. Utilization of skilled antenatal, delivery and postnatal care services is a major strategy for the reduction of maternal mortality and the improvement of maternal health [3]. Antenatal care is the totality of health services rendered to a pregnant woman by a doctor or a health worker in a medical facility or at home, with the aim of achieving good maternal and foetal outcomes. It is an aspect of health care that deals with pre-symptomatic diagnosis of general medical disorders, nutrition, immunology, health education and social medicine in addition to prevention and early detection of pregnancy disorders [4]. In order to achieve the maximum impact, antenatal care services must be provided in accordance with the stipulated recommendations.

Globally, 86% of pregnant women access antenatal care with a skilled health personnel at least once, and 62% of pregnant women had at least four antenatal visits. In sub-Saharan Africa 52% of women had at least four antenatal visits [5]. The proportion of women who had at least four antenatal visits have been reported in various countries in Africa; Gambia, 78% [6]; Tanzania, 62% [7]; Uganda, 59.9% [8] and Kenya 58% [9]. In Nigeria 51% had at least 4 antenatal care visits during pregnancy.

The WHO guidelines for focused antenatal care are specific as regards the timing and content of antenatal care visits according to gestational age [10]. Each ANC visit consists of a well-defined set of activities related to three important general areas:

- Screening for conditions likely to increase the risk of developing adverse pregnancy/delivery outcomes – screening tests/examinations carried out include, measurement of blood pressure, testing of urine for bacteriuria and proteinuria, and blood tests to detect syphilis and severe anaemia. Routine weight

and height measurement at each visit is considered optional in this model [3].

- Providing therapeutic interventions that have been proven to be beneficial. These include; presumptive treatment and case management of malaria in pregnancy, iron and folic acid supplementation, HIV counseling and testing, antiretroviral therapy if required, deworming, tetanus toxoid vaccination and management of preexisting conditions such as diabetes mellitus and sickle cell anaemia.

- Health promotion and education concerning proper nutrition, hygiene and infection prevention, early recognition of danger signs, health seeking behaviour, infant care and feeding and postpartum family planning.

Having antenatal care with skilled personnel is one of the strategies for the reduction of maternal mortality and morbidity. According to the World Health Organization (WHO), a skilled health worker 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 post-partum period, and in the identification, management, and referral of complications in women and newborns”[11]. Receiving antenatal care in formal or orthodox health facilities is essential for the promotion of maternal and child health, since skilled personnel will most likely be found in such health facilities. Although a large body of knowledge exists on antenatal care utilization and timing of first antenatal care visits, literature is sparse on the type of facilities women choose to go for antenatal care. In addition to the skills of personnel assisting women with delivery, place of childbirth is a factor that influences birth outcome and the health of both the mother and infant [12]. This is because most skilled care is provided in formal or orthodox health facilities. Increasing the percentage of births delivered in health facilities is an important factor in reducing deaths arising from the complications of pregnancy. This is because if complication arises during delivery, a skilled health worker can manage it or refer the mother to the next level of care [12]. Some studies have reported the place of delivery of women. Utz *et al.*, (2013) reported that 18% of women in Bangladesh, 19% in Nepal, 39% in Pakistan, and 47% in India were attended to by skilled personnel in 2011[13]. In Africa, proportion of women who delivered in health facilities and assisted by skilled personnel have been reported; Gambia, 57% (6); Kenya, 61% [9], Zambia, 64% [14] and Uganda, 78.6% [8]. In Nigeria 61%

Table 1: Socio-demographic characteristics of respondents
N=351

Characteristics	N	%
<i>Age of respondents (n=351)</i>		
<19	9	2.6
20-29	178	50.6
30-39	149	42.5
>40	15	4.3
Mean age: 28.8 (5.6) years		
Age range: 17-49 years		
<i>Marital status (n=351)</i>		
Single	4	1.1
Married/Cohabiting	347	98.9
<i>Type of marriage (n=347)</i>		
Monogamous	303	87.3
Polygamous	44	12.7
<i>Highest level of educational attainment (n=351)</i>		
No formal	5	1.4
Primary	60	17.1
Secondary	239	68.1
Post-secondary	47	13.4
<i>Religion (n=351)</i>		
Christianity	184	52.4
Islam	167	47.6
<i>Ethnicity (n=351)</i>		
Yoruba	319	90.9
Ibo	5	1.4
Hausa	22	6.3
Others (Delta, Edo, Egun, Ghanian, Kogi)	5	1.4
<i>Socioeconomic group (n=351)</i>		
Low	107	30.5
Middle	99	28.2
High	145	41.3
<i>Parity (n=351)</i>		
Primiparous	87	24.8
Multiparous	264	75.2

Factors associated with choice of facility for antenatal care

Table 3 shows bivariate analysis of socio demographic variables and choice of facility for antenatal care. A higher proportion of respondents who had at least primary education (32.3%) chose informal facilities for antenatal care compared to those who had secondary education and above (14.3%). A higher proportion of respondents in the low socio-economic group (27.2%) chose informal facilities for antenatal care compared to those in the middle and high socio-economic groups (13.2% and 11.3% respectively). These results are statistically significant ($p < 0.05$).

Table 2: Type of facility chosen for antenatal care
N=351

Type of facility chosen for antenatal care	N	%
<i>Type of facility (n=351)</i>		
Orthodox facilities	289	82.3
Informal facilities	62	17.7
<i>Type of orthodox facility (n=289)</i>		
Government-owned (public)	179	61.9
Private	110	38.1
<i>Type of informal facility (n=62)</i>		
Mission home	56	90.3
TBA	6	9.7
<i>Main reasons for choosing informal facilities for antenatal care *</i>		
Perception of quality of care	55	88.7
Religious reasons (mainly for prayer)	27	43.5
Affordable	10	16.1
Proximity	6	9.7
Husband's preference	5	8.1

Adequacy of antenatal care components received

Table 4 shows the ratings of the components of antenatal care received by the respondents per health facilities. A total of 317 women (90.3%) had good antenatal care content, 31 women (8.8%) had fair content and 3 (0.9%) had poor antenatal care content. A higher proportion of women who received antenatal care in orthodox facilities (93.8%) reported that the components of antenatal care was good compared to 74.2% of women who received antenatal care in informal facilities ($p < 0.05$, $p = 0.001$).

Type of facility chosen for delivery

Table 5 shows the type of facilities chosen by women for delivery during their last pregnancy and the main reasons for delivering in informal facilities. Two hundred and seventy-five women (78.3%) delivered in orthodox facilities. Seventy-six (21.7%) of the women delivered in informal facilities, of which 57(75%) delivered in mission homes, 10(13.2%) at home, 7(9.2%) by traditional birth attendants, one woman (1.3%) delivered by herself in a vehicle while on the way to the hospital, and another woman (1.3%), who had twins, delivered one of the babies in a mission home and the second in a private hospital.

Reasons for delivering in informal facilities were: perception of quality of care 57 (89.1%), religious reasons (mainly to be prayed for) 20 (31.3%), the closeness of the informal facility to the respondents 12 (18.8%) and affordability 10 (16.1%) among others.

visits, the place of delivery and the outcome of their pregnancy. The questionnaire was pretested among 25 women outside the study area and revised to remove ambiguity. Questionnaires were administered in English and Yoruba (the local dialect) by three trained female interviewers.

Ethical considerations

Ethical approval for this study was obtained from the Oyo State Ministry of Health Ethical Review Committee. Participation in the study was completely voluntary and informed consent forms were signed or thumb printed by consenting respondents. Questionnaires were filled anonymously. Information collected was safe guarded and made available only to those who were directly involved in the research.

Data analysis

Data entry and analysis were performed using Statistical Package for the Social Sciences (SPSS) version 15. Univariate analysis was done using frequency tables, means, standard deviations and graphs. Bivariate analysis to compare proportions of discrete variables was done using Chi-square tests or Fisher's exact tests. Bivariate analysis was done to determine the association of certain variables with choice of facility for antenatal care and for delivery. Multivariate analysis to adjust for the effect of potential confounders was done using binary logistic regression analysis. Only the factors which were significantly associated with choice of facility for antenatal care and for delivery were included in the logistic regression. The level of significance for the two-sided tests was 5%.

Government owned (public) health facilities and private hospitals were classified as orthodox facilities while traditional birth attendants and mission homes were classified as informal/unorthodox facilities.

Independent variables

There were three main independent variables in this study: type of facility chosen for antenatal care, content of antenatal care received during antenatal care and type of facility chosen for delivery. Content of ANC: Respondents were asked if they received 30 items recommended by the World Health Organization to be part of the services provided to pregnant women during antenatal care visits. The adequacy of ANC content received by each respondent was determined using an ANC content assessment index (Trinh *et al.*, 2006). Adequacy of

ANC content was determined in terms of the total number of items provided and classified as;

Good if respondents had ≥ 23 items ($\geq 75\%$ of items); Fair if they had 15-22 items (50- $<75\%$ of items); Poor if they had 0-14 items ($<50\%$ of items)

Dependent variables

Key dependent variables for this study were: Socio-economic status of respondents, Respondents' level of educational attainment, parity and having skilled antenatal care at least once during their last pregnancy. The socio-economic classification was determined using a wealth index. The wealth index was created using nine equally scored items with respect to the ownership of household items that are in good working condition, the type of toilet, floor and wall in respondents' homes. Respondents were then categorized into three socioeconomic groups based on their total scores, maximum score was 9; low socioeconomic group - score of ≤ 3 ; middle socioeconomic group - score of 4-6; high socioeconomic group - score of ≥ 7

Results

Socio-demographic characteristics

Table 1 shows the socio-demographic characteristics of respondents. Three hundred and fifty-one (351) women participated in this study. The mean age of respondents was 28.8 ± 5.6 years with a range of 17 to 49 years. Majority of the respondents (91%) were Yoruba and 81.5% had secondary or higher education. Thirty one percent (31%) of respondents were in the low socioeconomic group, 28.2% in the middle socioeconomic group and 41.3% in the high socioeconomic group.

Choice and type of facility for antenatal care

Table 2 shows the type of facilities where women had antenatal care during their last pregnancy, the choice of facility, and the main reasons for choosing informal facilities for antenatal care.

Sixty-two (17.7%) women chose informal facilities for antenatal care of which 56 (90.3%) had antenatal care in mission homes and 6 (9.7%) with traditional birth attendants.

Multiple responses

The main reasons why women chose to have antenatal care in informal facilities included: perception of the quality of care 55 (88.7%), religious reasons 27 (43.5%) and affordability of cost of health care services provided in informal facilities 10 (16.1%).

Table 5: Type of facilities chosen for delivery

Place of delivery (for all respondents)	N	%
<i>Choice of facility for delivery (n= 351)</i>		
Orthodox facility	275	78.3
Informal facility	76	21.7
<i>Type of orthodox facility (n=275)</i>		
Government-owned hospital	163	59.3
Private hospital	112	40.7
<i>Type of informal facilities (n=76)</i>		
Mission home	57	75
TBA	10	13.2
Others		
At home	7	9.2
In a vehicle, on the way to the hospital	1	1.3
Gave birth to twins – one in a mission house and the second in a private hospital, when the delivery became complicated		
<i>Main reasons for delivering in informal facilities*</i>		
Perception of quality of care	57	89.1
Religious reasons (mainly for prayer)	20	31.3
Affordable	10	16.1
Proximity	12	18.8
Husband's preference	4	6.3
Healthcare providers' attitudes	2	3.1
Government-owned hospitals were on strike	2	3.1

* Multiple response

(6.2%). A higher proportion of those who did not have support from family members (especially husband) during labour (37%) delivered in informal facilities compared to those who did (19.4%).

Predictors of utilization of informal facilities for antenatal care and choice of informal facilities for delivery

Table 7 shows multivariate analysis of predictors of choice of informal facilities for antenatal care and delivery. Respondents who had no formal or primary education were three times more likely to choose informal facilities for antenatal care than those who had secondary education (OR = 2.6; 95% CI= 1.4-4.9; p= 0.002).

Respondents who did not have skilled attendant at least once in the last pregnancy were about two hundred and fifty times more likely to deliver in informal facilities (OR= 252.8. 95% CI= 78.2- 817.9). Respondents who did not have someone to take them to the hospital during labour were four times more likely to deliver in informal facilities (OR= 4.4; 95% CI= 1.6- 12.3).

Discussion

Choice of facility for antenatal care

Majority of respondents had antenatal care in orthodox facilities and more than half of the women had antenatal care in government owned (public) health facilities. Majority of pregnant women in the study population made good choices with regards to the type of facilities where they received antenatal care. One third of the respondents received antenatal care in private hospitals. This shows that the private sector plays a key role in the delivery of antenatal care services. The World Bank report shows that the private sector accounts for approximately 50% of health service delivery in Africa [21]. Health industry stakeholders need to create an enabling environment for optimal private sector involvement in the delivery

of health services to ensure increased coverage of the population.

NDHS 2013 reported that 87.3% of women received antenatal care from orthodox (skilled birth attendants) [12], 1.9% from traditional birth attendants, and 10.6% did not receive antenatal care at all. A study conducted in Sagamu, Southwest

Table 3: Socio-demographic characteristics and choice of facility for antenatal care

Socio-demographic characteristics	Type of facility chosen for antenatal care			N= 351 p value
	Orthodox n=289 n(%)	Informal n=62 n(%)	Total	
<i>Age</i>				
Below 35	242(82.0)	53(18.0)	295	0.73
35 and above	47(83.9)	9(16.1)	56	
<i>Respondent's educational attainment</i>				
Primary or no formal	44(67.7)	21(32.3)	65	0.001*
Secondary or post-secondary	245(85.7)	41(14.3)	286	
<i>Husband's educational attainment</i>				
Primary or no formal	19(86.4)	3(13.6)	22	0.78
Secondary or post-secondary	266(82.45)	57(17.6)	323	
<i>Socio-economic groups</i>				
Low	91(72.8)	34(27.2)	125	0.002*
Middle	112(86.8)	17(13.2)	129	
High	86(88.7)	11(11.3)	97	
<i>Parity</i>				
Monoparous	69(79.3)	18(20.7)	87	0.39
Multiparous	220(83.3)	44(16.7)	264	
<i>History of obstetric Complication</i>				
Yes	176(85.0)	31(15.0)	207	0.11
No	113(78.5)	31(21.5)	144	

*p < 0.05

Table 4. Adequacy of overall antenatal care components received by respondents N=351

Type of facility	Good	Fair	Poor	Total
Orthodox facilities	271 (93.8%)	17(5.9%)	1(0.3%)	289(100%)
Informal facilities	46 (74.2%)	14(22.6%)	2(3.2%)	62(100%)
All respondents	317(90.3%)	31(8.8%)	3(0.9%)	351(100%)

X²=23.24 p value=0.00**Socio-demographic characteristics and choice of facility for delivery**

Table 6 shows bivariate analysis of factors associated with choice of facility for delivery. A higher proportion of respondents who had primary school education (35.4%) delivered in informal facilities compared to those who had secondary education and above (18.5%).

A higher proportion of respondents in the low socio-economic group (32%) delivered in informal facilities compared to those in middle and high socio-economic groups (16.3% and 15.5% respectively).

A higher proportion of those who did not have skilled attendant at antenatal care (93.5%) delivered in informal facilities compared to those who did

Table 7: Predictors of choice of informal facilities for antenatal care and delivery

	OR	95% CI Lower	Upper	p value
Predictors of choice of informal Facilities for ANC				
<i>Respondent's educational attainment</i>				
Primary or no formal	2.6	1.4	4.9	0.002*
Secondary or post-secondary			1	
<i>Socioeconomic group</i>				
Low socioeconomic group	1.7	0.8	3.4	0.152
High socioeconomic class	1			
<i>Predictors of choice of informal Facilities for delivery</i>				
<i>Respondent's educational attainment</i>				
Primary or no formal	0.99	0.32	3.08	0.99
Secondary or post-secondary	1			
<i>Socio economic group</i>				
Low socioeconomic group	1.04	0.38	2.92	0.93
High socioeconomic group	1			
<i>Had ANC with a skilled attendant at least once</i>				
No	252.4	78.2	817.9	0.000*
Yes	1			
<i>Availability of someone to take respondent to the hospital during labour</i>				
No	4.38	1.6	12.3	0.005*
Yes	1			

* $p < 0.05$

had at least secondary education. This is comparable to findings from NDHS 2013 where 20.5% of women who had no formal education and had no antenatal care of which 6.3% chose informal facilities for antenatal care and 50.7% of women who had primary education, had no antenatal care and 4.8% chose informal facilities for antenatal care [12]. This finding underscores the importance of maternal education in the promotion of good health seeking behaviours and highlights the need for the government and other relevant stakeholders to invest in the improvement of the educational status of Nigerian women.

Choice of facility for delivery

Majority of respondents 78% delivered in orthodox facilities and 22% delivered in informal facilities, mainly in mission homes. The proportion of women that delivered in orthodox facility in this study is higher than the national figure of 36% but comparable to 74.7% of women who delivered in orthodox facility in Oyo state [12]. The proportion of women who delivered in orthodox facilities was

also higher than that obtained in Thailand (12%), Lebanon (32.4%), and Kenya (61%) [9,24,25].

In this study, one-fifth of women delivered in informal facilities. This is much lower than the national figure of 63% but comparable to 24.7% of women who delivered at home in Oyo state according to NDHS (2013) (12). The proportion of women delivered in informal facilities is lower than that reported in Kenya (38%), Lebanon (52.5%) and Thailand (88%) [9,24,25].

In our study, women who had no antenatal care with a skilled provider at least once were significantly more likely to deliver in an informal facility compared to those who had antenatal care with skilled attendant. This is similar to findings from a health facility-based study conducted in Sokoto (in Northern Nigeria) in which 68.5% of women that had 4 antenatal care visits in a health facility delivered there [26]. Research has shown that majority of women who had the recommended four or more antenatal care visits while pregnant usually delivered in health facilities, with access to skilled providers [3]. The high rate of utilization of orthodox health facilities for delivery

Table 6: Socio-demographic characteristics and choice of facility for delivery

Socio-demographic characteristics	Type of facility chosen for delivery			N= 351	p value
	Orthodox (275) n(%)	Informal (76) n(%)	Total		
<i>Age of respondents</i>					
Below 35	229(77.6)	66(22.4)	295	0.45	
35 and above	46(82.1)	10(17.9)	56		
<i>Respondent's educational Attainment</i>					
Primary or no formal	42(64.6)	23(35.4)	65	0.00*	
Secondary or post-secondary	233(81.5)	53(18.5)	286		
<i>Socio-economic groups</i>					
Lowest	85(68.0)	40(32.0)	125	0.002*	
Middle	108(83.7)	21(16.3)	129		
Highest	82(84.5)	15(15.5)	97		
<i>Had ANC with a skilled Attendant at leastonce</i>					
Yes	271(93.8)	18(6.2)	289	0.00*	
No	4(6.5)	58(93.5)	62		
<i>Time of the day when labour started</i>					
Day	143(80.8)	34(19.2)	177	0.24	
Night	130(75.6)	42(24.4)	172		
<i>Availability of someone To take respondents to The hospital during labour</i>					
Yes	245(80.6)	59(19.4)	304	0.007*	
No	29(63.0)	17(37.0)	46		

* $P < 0.05$

Nigeria reports that 84.2% women had antenatal care in orthodox facilities [22]. The proportion of women that had antenatal care with a traditional birth attendant in this study is however slightly lower, 9.2% than those of the other studies. This may be due to the availability of a good number of health facilities in this community, minimizing access-related barriers. The tertiary and secondary hospitals and several private clinics are within easy reach of members of this community.

Reasons for choice of facility for antenatal care

Reasons that influenced women's preferences with regards to choice of facility for antenatal care were respondents' perception of quality of care provided in different centres, preference of respondents' husband/partner, proximity, cost and religious reasons. These findings were similar to reports by

Iyaniwura and Yussuf (2009), in which the main reasons for the choice of facility for antenatal care were perception of quality of care, distance/proximity and husband's preference [22]. In this study, affordable cost of healthcare and desire to be prayed for during antenatal care (by 1/6th of the women) were major reasons why respondents chose informal facilities especially mission homes for antenatal care. It is likely that women preferred traditional birth homes because of cultural beliefs passed down from their mothers or mothers-in-law because they themselves utilized 'traditional birth attendant care' when they were pregnant. This is similar to reports by Idowu *et al.* (2005) [23].

Educational attainment of respondents was found to be a predictor of choice of facility for antenatal care. Women who had no formal or primary education were three times more likely to choose informal facilities for antenatal care than those who

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in this study is encouraging and is evident that good health seeking behaviour and its attendant benefits are achievable in low resource settings in urban areas.

A point of concern however is that in spite of several orthodox facilities around them, one-sixth of all the women interviewed in our study delivered in mission homes, where the skills/qualifications of the personnel that attend deliveries are doubtful. Women delivered in informal facilities because of their perception of the quality of care they would receive, availability of opportunity to be prayed for, affordability of cost of health care and how close they were to the hospital. Qualitative studies need to be carried out to understand what women considered as quality care. Other reasons given by women who delivered in informal facilities include husband/partner's preference, poor attitude of health workers, industrial action by health workers in public facilities and cost of hospital-based care. These results are similar to findings from studies conducted in Zambia [17], Rural Uganda [18] and Northern Nigeria [26]. Women in Zambia delivered in informal facilities because of long distances, lack of transport, user fees, inadequate health education given during antenatal care attendances, poorly staffed and ill-equipped orthodox health facilities with poorly skilled personnel [17]. Waiswa *et al* (2008) reported that rural Ugandan women delivered in informal facilities because of the high cost of drugs and supplies in orthodox facilities [18]. In Northern Nigeria, women in Sokoto delivered in informal facilities because of privacy and lack of transportation to orthodox facilities [17].

These reasons provide a basis for measures to be put in place to improve utilisation of orthodox facilities for delivery such as improved accessibility to orthodox facilities.

Factors associated with delivering in informal facilities

In this study, women who did not have antenatal care in health facilities (at least once) in their last pregnancy were significantly more likely to deliver in informal facilities. Also, women who did not have someone around to take them to the hospital when labour started were four times as likely to deliver in informal facilities as those who had help. Although one-third of the respondents are of low socio-economic status, their socioeconomic status was not a significant predictor of delivering in informal facilities, perhaps because the study area is a low-income community where health facilities are within a walking distance for all the community members.

These findings are major contributions to the existing body of knowledge on antenatal care and delivery practices among urban women and highlights the determinants and reasons for utilization of informal facilities.

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