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Utilization of obstetric care services in a rural community in Southwestern Nigeria

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Summary

Utilization of Obstetric Services in Nigeria is very low with only a third of the deliveries being conducted under supervision of trained health personnel. Consequently maternal and infant mortality rates are unacceptably high at 1000/100,000 and 100/1000 live births per year respectively. We conducted a cross-sectional survey of 100 randomly sampled women in a rural community in Oyo State in Nigeria to study the pattern of utilization of antenatal, delivery and postnatal care services in the community. Results showed that utilization of antenatal care services to be relatively high but most of the respondents delivered at home without the supervision of trained health personnel. This poor utilization of delivery services was attributed to advanced labour and perceived poor quality of the health facilities in the community. Although postnatal care was given to the respondents, it did not include advice on family planning/child spacing. The variables found to have statistically significant association with seeking antenatal care were age and educational attainment ($P < 0.0005$). Educational attainment also significantly affects the respondents' choice of the place of delivery ($P < 0.005$). We recommend operations research to assess and improve the quality of existing health facilities and training/retraining of antenatal care providers on interpersonal communication skills, early recognition of labour and seeking delivery care. This training should also include providing advice on child spacing and use of obstetrics services provided.

Keywords: *Obstetric services, utilization, rural, Nigeria*

Résumé

L'utilisation des services obstétrique au Nigéria est très faible avec seulement le tiers des accouchements conduite sous la supervision d'un personnel qualifié. Conséquent, les taux de mortalité maternelle et infantine sont inacceptable et élevées à 1000/100,000 et 100/1000 de naissances respectivement. Sur 100 femmes choisies au hasard dans la communauté rurale de la province d'Oyo au Nigéria pour étudier la fréquence des soins prénatales, d'accouchement et postnatales étaient relativement plus élevé mais la plupart des participants accouchaient à la maison sans aucune supervision. La faible fréquence des sous d'accouche

ments sont attribués aux contractions avancées et la manque des facilités de santé dans la communauté. Bien que les soins postnatale était donné aux participants, excluant les conseils de planning familiale. Les variables étaient l'âge l'éducation ($P < 0.005$). Le niveau éducationnel affectait significativement le choix de la place d'accouchement ($P < 0.005$). Nous recommandons des recherches opérationnelles pour améliorer la qualité des facilités de soins de santé existant et entrainer les responsables de soins prénatales sur le technique de communications, reconnaissance précoce des contractions et soins d'accouchement ainsi le planning familial et l'utilisation des services obstétriques.

Introduction

The lifetime chance of dying in pregnancy or childbirth for women in Sub-Saharan Africa is one in thirteen, more than sixty times for a woman in the developed world [1]. Maternal, infant, and under-five mortality, the best indices of the health status of a country remain unacceptably high in Sub-Saharan Africa. In Nigeria, these rates are respectively 700/100,000 live births, 112/1000 live births and 187/1000 live births respectively and are worse than the sub-Saharan African average [1,2,3].

The technologies for preventing the most common causes of maternal mortality are well known and available. Some are long term and related to childhood care, traditional practices, the status of women in the society and care before pregnancy while others are more immediate and include antenatal, delivery and postnatal care [4].

Antenatal care is potentially one of the most cost-effective health interventions for reducing maternal morbidity and mortality. Access to and effective delivery care services (including emergency obstetric care) is also very essential as up to 30% of pregnancies end up with complications [4]. Regarding postnatal care, early detection and prompt treatment of puerperal sepsis may be lifesaving. It is also an important opportunity for education of the mother regarding early childcare and family planning/child spacing.

Despite being the most important causes of maternal morbidity and mortality, pregnancy and its complications also adversely affect the health of babies leading to increased disability and peri-natal mortality. The common causes of maternal mortality include hemorrhage, infections, obstructed labor and anemia [5]. Most of these are easily prevented by available technologies even in the least developed countries through the provision of quality

and accessible antenatal, delivery and post-natal care services at primary health care level with sufficient back up referral services.

Appropriate obstetric health care seeking behavior significantly affects the outcome of pregnancy whilst delay in seeking care may lead to increased risk of morbidity and mortality. In Nigeria, available data indicates that most deliveries occur outside the hospitals/clinics. The proportion of deliveries conducted under the supervision of skilled attendants in Nigeria is 31 percent with most delivering outside the modern health system [6].

Adequate access and utilization of quality obstetric services are important in reducing maternal morbidity and mortality. It is therefore important to study the pattern of utilization of these services among women, to ensure its effectiveness.

This survey was aimed at studying the obstetric health care seeking behavior during the antenatal, delivery and postnatal period and factors affecting them among mothers in a rural community in Nigeria.

Materials and methods

Study area: The study area was Lagun village, a rural area in Lagelu Local Government Area of Oyo State located about 25km from Ibadan along Ibadan-Iwo expressway. The village had an estimated population of 3102 (1420 males and 1682 females) with 342 households [7]. About 2180 (70.3%) were Moslems while 782 (25.2%) were Christians. The main occupation of the inhabitants is farming and trading. Others are blacksmithing, carpentry and tailoring.

Health care services are provided to the community by a health post and a maternity centre located in the village. A village health worker who is supervised, on weekly basis by Resident Doctors and Nurses from the Department of Community Health, College of Medicine, University of Ibadan runs the health post. The clinic session is used for treatment of common ailments and health education. The maternity center is run by midwives from the Local Government and renders antenatal, delivery and postnatal services.

Study design: This was a community-based descriptive (cross sectional) study using a semi-structured questionnaire as the measuring tool. It yielded information on the knowledge, referral system and utilization of obstetric services among women of childbearing age in the community. It was conducted between January and February 1998.

Inclusion criteria: All women of child bearing age (15-49) who delivered a live born child within the last 2 years, and were regular residents who must have spent the antenatal, delivery and postnatal period of their last confinement in the study area. They also must have given their informed consent to take part in the study.

Sample size estimation: The minimum sample size was determined using the EPI 6, Stat Calc programme for population survey or descriptive study using random sampling [8]. The target population (i.e. women of reproductive age group), derived from the projected population of the community was used for the estimation of the minimum sample size as follows: -

Projected Population of Women of Reproductive Age (1998)	= 1407
Expected frequency (proportion of home deliveries, NDHS 1991)	= 63%
Worst acceptable	= 73%
Confidence interval	= 95%
Minimum sample size	= 84
This was approximated to 100	

Sampling procedure: The total number of households from each of the communities was used as the sampling frame. This was obtained from the Lagun community project [7]. The systematic random sampling technique was used to get the required sample size from the sampling frame.

Methods of data collection: Data collection was done using a semi-structured questionnaire, which was administered by trained research assistants. The questionnaire explored issues regarding antenatal, delivery and postnatal care during the women's' last pregnancies. They were also asked about their knowledge of family planning and attitudes to maternity services in the community.

Ethical consideration: Approval to conduct the survey was obtained from the Baale of Lagun. The heads of the families were approached for similar approval. The women sampled were assured of strict confidentiality of the information they were volunteering to give.

Limitations of the study: Women, who had abortion, still birth or peri-natal deaths were not included in the study because in the Yoruba culture, it is very difficult for women to disclose information on the death of their child or a still birth. This affected the data on pregnancy outcome and utilization pattern of this category of women.

Data analysis: Data was entered and analyzed using the EPI info version 6.0 software package [8]. Frequencies were generated and appropriate tests of significance applied to test for associations between variables.

Results

A total of one hundred respondents that fulfilled the inclusion criteria were administered the instrument by trained research assistants. Table 1 shows the socio-demographic characteristics of the respondents. Sixty-

nine percent were in their twenties. Eight percent and 18% were respectively teenage girls and women in their thirties. Their highest educational attainments were completed primary school for (45%), some secondary school (24%) and completed secondary school (9%). Eleven percent had no education at all. Their primary occupation was petty trading (68%) with a few of them being farmers and full time house wives. Seventy-seven (77%) of the respondents were Muslims whilst 22 (22%) were Christians. All, except two of the respondents, were Yorubas.

Table 1: Demographic characteristic of respondents

Characteristic	Number %
<i>Age</i>	
<20 years	8 (8.0%)
20-29 years	69 (69.0%)
30-39 years	18 (18.0%)
40-49 years	5 (5.0%)
<i>Marital status</i>	
Married	91 (91.0%)
Separated	9 (9.0%)
<i>Ethnic group</i>	
Yoruba	98 (98.0%)
Hausa	1 (1.0%)
Igbo	1 (1.0%)
<i>No. of children</i>	
One	35 (35.0%)
Two	28 (28.0%)
Three	16 (16.0%)
Four	6 (6.0%)
>Five	15 (15.0%)
<i>Religious affiliation</i>	
Islam	77 (77.0%)
Christianity	22 (22.0%)
<i>Educational attainment</i>	
None	11 (11.0%)
Primary (uncompleted)	6 (6.0%)
Primary (completed)	45 (45.0%)
Secondary (uncompleted)	24 (24.0%)
Secondary (completed)	9 (9.0%)
Tertiary	5 (5.0%)
<i>Occupation</i>	
None (full time housewife)	7 (7.0%)
Petty trading	68 (68.0%)
Farmers	4 (4.0%)

Ninety-one percent of respondents were married women whilst 9% were separated. There were no single or divorced women among the respondents. On the parity of the respondents, 35% had one child while only 15% had more than 5 children.

The pattern of utilization of antenatal care services during last pregnancy is shown in Table 2. Eighty-eight of the respondents attended antenatal clinic whilst 12 (12%) did not. For those who sought antenatal care, the source of information for antenatal care included relative among

(47.7%), friend (19.3%), neighbor (11.4%), husband (8.0%) and health worker (4.5%).

Table 2: Antenatal care utilization of the respondents during last pregnancy

Variable	Number (%)
<i>Sought antenatal care</i>	
Yes	88 (88.0%)
No	12 (12.0%)
<i>Source of information about antenatal care (N=88)</i>	
Friend	17 (19.3%)
Relative	42 (47.7%)
Neighbor	10 (11.4%)
Husband	5 (8.0%)
Health worker	7 (8.0%)
Radio	3 (3.4%)
<i>Place of antenatal care (N=88)</i>	
Primary health center	62 (70.5%)
Secondary center	8 (9.0%)
Tertiary center	2 (2.3%)
Private clinic	9 (10.2%)
Church	3 (3.4%)
Home of TBA	4 (4.6%)
<i>Reason for seeking antenatal care (N=88)</i>	
Check the progress of the pregnancy	65 (73.8)
To ensure safe delivery	13 (14.3%)
Because I had problems	6 (6.8%)
No response	4 (4.6%)
<i>Reasons for not seeking antenatal care (N=10)</i>	
I felt everything was normal	4 (40.0%)
Poor attitude of the health workers at the facility	3 (30.0%)
Financial reasons	3 (30.0%)
<i>Distance from the nearest health facility (kilometersw) (N=88)</i>	
<5 Km	57 (64.8%)
>Five km	31 (35.2%)
<i>Gestation age at first visit (Booking) in months (N=88)</i>	
<3 month	14 (15.9%)
4 to 6 months	57 (64.8%)
7 to nine months	17 (19.3%)
<i>Number of visits to place of antenatal care (N=88)</i>	
1-3 visits	(6.9%)
4-6 visits	(27.6%)
7-9 visits	(20.7%)
10 or more visits	(44.8%)

Antenatal care was sought from the primary health care (PHC) center by 62 (70.5%) of the respondents whilst 8 (9.0%) sought from the secondary health care facility. Nine (10.2%) went to private clinic, 3 (3.4%) went to the church, whilst 4 (4.6%) were visited by a traditional birth attendant (TBA) at home.

Fourteen respondents (15.9%) started antenatal visits during the first trimester whilst 57 (64.8%) and 17 (19.3%) first attended antenatal clinic during the second and third trimesters of pregnancy respectively. The number of ANC visits were between four to six among 27.6%, 7 to 9 among 20.7% and ten or more visits amongst 44.8%.

Table 3: Quality of antenatal care

Variable	Number (%)
<i>Supervising personnel during antenatal period (n=88)</i>	
Doctor	3 (3.4%)
Midwife/nurse	82 (93.3%)
Trained TBA	1 (1.1%)
Untrained TBA	2 (2.1%)
<i>No. of does of tetanus toxoid received during antenatal period (n=88)</i>	
None	7 (8.0%)
One dose	15 (17.0%)
Two doses or more	66 (75.0%)
<i>Referral during antenatal period</i>	
Yes	10 (10.0%)
No	85 (85.0%)
No response	5 (5.0%)
<i>Referring personnel (n=10)</i>	
Midwife/nurse	5 (50.0%)
Doctor	5 (50.0%)
<i>Place referred (n=10)</i>	
Secondary health facility (govt.)	2 (20.0%)
Private clinic/hospital	8 (80.0%)
<i>Reason for referral (n=10)</i>	
Laboratory tests	8 (80.0%)
Not stated	2 (20.0%)
<i>Cost of booking (Naira)*</i>	
None (free)	9 (10.2%)
≤100	11 (12.5%)
101 to 200	55 (62.5%)
201 to 300	7 (8.0%)
301 to 400	4 (4.5%)
401 to 500	2 (2.3%)
<i>Cost of consultation (Naira)*</i>	
None (free)	40 (45.0%)
<50	46 (52.3%)
51 to 100	2 (2.3%)
<i>Source of payment for antenatal care</i>	
Self	9 (10.2%)
Husband	77 (87.5%)
No response	2 (2.3%)

NB *\$1.00 = 63 naira

The reasons for seeking antenatal care were to check the progress of pregnancy (73.8%) and to ensure safe delivery (14.3%). For those who did not attend antenatal clinics, their reasons included the belief that everything was normal with the pregnancy among 40%

and perceived poor attitude of health workers at the facility among 60 % of the respondents.

Table 4: Care received by the respondents during last delivery

Variable	Number (%)
<i>Place of delivery</i>	
Home	81 (81.0%)
Primary health facility	14 (14.4%)
Secondary health facility	2 (2.0%)
Church	3 (3.0%)
<i>Reasons for choice of place for delivery</i>	
Financial	4 (4.0%)
Advanced labor	55 (55.0%)
Perceived quality of care (availability of personnel and facilities)	15 (15.0%)
Negative staff attitude	6 (6.0%)
Distance	1 (1.0%)
Felt I can deliver at home	11 (11.0%)
No response	8 (8.0%)
<i>Supervising personnel during delivery period</i>	
Doctor	5 (5.0%)
Midwife/nurse	15 (15.0%)
VHW	1 (1.0%)
Trained TBA	1 (1.0%)
Untrained TBA	2 (2.0%)
Relative	63 (63.0%)
None (self delivery)	11 (11.0%)
No response	2 (2.0%)
<i>Had problems during delivery</i>	
Yes	5 (5.0%)
No	94 (94.0%)
No response	1 (1.0%)
<i>Amount paid for delivery (Naira)*</i>	
None (free)	89 (89.0%)
<500 Naira	6 (6.0%)
501 to 1,000 naira	3 (3.0%)
>1,000 naira	2 (2.0%)
<i>Postnatal advice given before or during delivery</i>	
Yes	74 (74.0%)
No	24 (24.0%)
No response	2 (2.0%)
<i>Postnatal advice was given on</i>	
Self and baby care	62 (83.8%)
Breastfeeding	9 (12.2%)
Postnatal check up	3 (4.0%)

NB *\$1.00 = 63 naira

The distance to the nearest health facility offering antenatal care was less than 5 kilometers for 57 (64.8%) of the respondents and more than 5 kilometers for 31 (35.2%) of the respondents. The quality of care received during ANC period is shown by variables in Table 3. A midwife was the supervising personnel during the ANC for 82 (93.3%) respondents. Sixty-six (75.0%) of the respondents had at least two doses of tetanus toxoid (TT) during the ANC period. Ten (10%) respondents were referred during the ANC to a secondary health facility for laboratory tests.

The cost of booking for ANC ranged from free to five hundred Naira, with 55 (62.5%) respondents paying between one to two hundred Naira. Consultation was free for 40 (45%) respondents, less than fifty Naira for 46 (52.3%) respondents and fifty to one hundred Naira for 2 (2.3%) respondents respectively.

Eighty-one (81%) respondents delivered at home whilst 14 (14.4%) delivered at the PHC facility as shown in Table 4. The reasons for choice of delivery included advanced labor (55%) and perceived quality of care (15%). The supervising personnel during delivery were a relative (63%) and midwife/nurse (15%). Eleven (11%) women delivered on their own without any attendant. Delivery charges was free for 89 (89%) of the respondents.

The variables found to have statistically significant association with seeking antenatal care were the age, education and religious affiliation ($P < 0.0005$). Also level of educational attainment was found to be statistically associated with the respondents of the place of delivery ($P < 0.005$).

Table 5: Factors affecting utilization of obstetric services

Variable	Test value, degrees of freedom (P value)
<i>Seeking antenatal care</i>	
Age (<25, 25-43 and >=35 yrs.)	$\chi^2=6.45$; df=2; p=0.04
Parity (<5 vs. >=5 children)	$\chi^2=0.05$; df=1; p=0.83
Education (nonr vs. pry vs secondary)	$\chi^2=39.42$; df=2; p=0.00
Religion (Christian vs Islam)	$\chi^2=213.33$; df=1; p=0.00
<i>Gestational age at first booking</i>	
Age (<25, 25-43 and >=35 yrs.)	$\chi^2=4.76$; df=2; p=0.09
Parity (<5 vs. >=5 children)	$\chi^2=0.53$; df=1, Fischer exact p=0.23
Education (nonr vs. pry vs secondary)	$\chi^2=2.80$; df=2; p=0.247
Religion (Christian vs Islam)	$\chi^2=0.01$, df=1, p=0.90
<i>Place of delivery</i>	
Distance from health facility (<5km vs. > 5km)	$\chi^2=0.92$; df=2; p=0.63
Parity (<5 vs > 5 children)	$\chi^2=0.49$; df=1; p=0.78
Education (none vs pry vs secondary)	$\chi^2=27.18$; df=4; p=0.00
Religion (Christian vs. Islam)	$\chi^2=8.37$; df=2; p=0.02

Discussion

We studied the health care seeking behavior of 100 women in a rural community in Southwestern Nigeria. The respondents were mostly married young women in their twenties and thirties. Eighty eight percent of them sought antenatal care from a trained health worker during their last pregnancy, especially the primary health care facility. This is higher than the national figure reported by the National Demographic and Health Survey [6], which observed that 67% of mothers sought ANC during their last pregnancy. It was however very similar to the zonal average of 89 percent for the southwest region where this community is located [3,6]

The gestational age at first booking was during the second trimester for about two thirds of the women. This is higher than the national average in which it was reported that less than half of the respondents surveyed booked before the second trimester [6]. This may be due to lack of disaggregation of the data for this variable by zones in the NDHS survey. For almost all health and other social indicators, there is a very wide variation between the regions, being worse in the northeast and northwest zones and much better in the southern zones, especially the southwest zone.

On antenatal care, a high proportion of women had less than 10 visits to the health facility during the last pregnancy. The recommended number of visits for ANC during a pregnancy is between 12-13 [4] Thus there is a need for improving the knowledge and awareness of women regarding this issue in order to get the maximum benefit of ANC services for both the mother and her baby. Seventy-five percent of the respondents had received at least 2 doses of tetanus toxoid during the ANC period. This is encouraging, but about 25% did not get the minimum of two doses and they and their neonates were at a risk of contracting tetanus, one of the major causes of neonatal mortality in Nigeria.

Eighty-one percent of the respondents delivered at home and only sixteen percent delivered at a health facility. This does not compare favorably with the findings of the NDHS 1999 [6] which reported a much lower proportion (26%) of the respondents in the southwest delivered at home. Again, this could be explained by the non-disaggregation of findings by rural-urban status at zonal level. Three quarters of the respondents delivered without the supervision of a trained (skilled) health worker, with one tenths of them without any supervision at all. This is in contrast to, and much lower than the southwest zone average reported from the NDHS and the multiple indicator cluster survey (MICS) [6,9], which reported that about two-thirds of deliveries in the southwest were conducted at the health facilities.

The major reasons given by the respondents in the present survey for their choice of place of delivery were advanced labour, availability (or its lack) of trained personnel and equipment and negative attitude of health personnel at the facilities. Education and being a Christian had a statistically significant association ($P < 0.05$) with delivery at a health facility whilst distance from the facility did not. This is similar to findings reported from several studies in Nigeria [10,11,12,13], which observed a positive correlation between utilization of health facilities with education.

The cost of booking for ANC ranged from free to five hundred Naira with about two thirds paying between one to two hundred Naira. The charges for ANC consultations were also similar. These are likely to be for specific laboratory tests required for screening and

monitoring the pregnancy as obstetrics services were free in Oyo state at the time of this survey. Delivery services were also free in the public facilities as well as by the TBAs/relatives in this survey.

Advice on postnatal care was given to 74% of the respondents before or during delivery, especially regarding breastfeeding, child care and postnatal check up. Unfortunately none of the respondents had any advice on family planning/child spacing, a missed opportunity during this crucial period to introduce or reinforce this important aspect of reducing maternal mortality and morbidity.

In summary, utilization of ANC services in this rural community is relatively high with most of respondent receiving at least 2 doses of TT. Utilization of delivery services with the supervision of trained health worker is grossly inadequate, mainly due to advanced labor, perceived poor quality of the health facilities (unavailability of personnel and/or equipment, poor staff attitude) and the believe that the respondents can deliver safely at home.

We recommend operational research to assess and improve the quality of the health facilities in these communities and improved health education and promotion for women attending ANC on the recognition of the early signs of labor and to seek care from trained personnel early in labor.

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