

Utilization of Antenatal Care and Delivery Services in Sagamu, SouthWestern Nigeria

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Abstract

Objective: We conducted a community based study in South Western Nigeria to determine the pattern of use of maternity services by women in a sub-urban population and assessed some factors that may influence the observed pattern among the women.

Methods: A multi-staged sampling technique was used to choose 392 women who had carried at least one pregnancy to term and information was collected from them.

Results: Majority of the women received antenatal care (84.6%) during their last pregnancy while 11.2% used other sources such as traditional herbal and spiritual healing homes. Majority of those who received ANC first attended the clinic during the second trimester (79.6%). The places of delivery were government facilities (54.8%), private hospital (24.5%), traditional birth attendants (13.5%) and spiritual healing homes (5.6%). Higher educational status and higher level of income positively affected the pattern of use of these services ($p < 0.05$). Perceived quality of service at the facility was the most important factor which influenced the choice of facility for obstetric care. A considerable proportion of those who used traditional birth attendants (36.1%) used it to satisfy their husbands. Of the women who did not use government facilities for delivery, long waiting time (29.4%), poor attitude of the staff (11.3%) and cost of care (11.3%) were the major reasons given, 31.6% gave no reason.

Conclusion: Community education, improving the socioeconomic status of women, the quality of care at government facilities and making maternity care available at none or minimal cost at public health institutions will encourage women to use the available maternity services.

Keywords: Utilization, Antenatal Care, Delivery Services

Introduction

Many women lose their lives in the process of "replenishing the earth". Every year, more than half a million women die from pregnancy related causes and majority of these deaths occur in sub-Saharan Africa¹. Every minute at least one woman dies from pregnancy and childbirth. In Nigeria, an average of 704 women dies per every 100,000 live births. Maternal Mortality Ratio (MMR) ranges from 166 per 100,000 in South

deaths a rare event in Developed countries. While a pregnant woman in developing countries have 1 in 48 risk, a pregnant North American woman has a 1 in 3,200 risk of dying from pregnancy³.

Adequate antenatal care (ANC) and skilled obstetric assistance during delivery are important strategies that significantly reduce maternal mortality and morbidity.

West to 1,549 per 100,000 live births in the North East². Fortunately, most of these deaths are preventable. High quality accessible health care has made maternal

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ANC provides avenue to provide pregnant women with information, treat existing social and medical conditions and screen for risk factors. However it is not enough to receive ANC, since majority of the fatal complications occur during or shortly after delivery⁴. It is therefore important that pregnant women have skilled obstetric attendance during delivery. While an estimate of 97% of the pregnant women in developed countries receive ANC and 99% use skilled obstetric service at delivery, 65% and 53% of women in developing countries use ANC and skilled obstetric care respectively⁴. In Nigeria, National HIV/AIDS and Reproductive Health Survey (2003) showed that 62% of women who gave birth within the past years before the survey received ANC while 34% had skilled attendance during delivery².

At the Safe Motherhood Initiative (SMI) Conference Kenya in 1987 the participating countries agreed to decrease maternal mortality by 50% by the year 2000. Despite all the initiatives to reduce maternal deaths in Nigeria, MMR remains persistently high. Similar to data from other parts of Nigeria⁵, in Olabisi Onabanjo Teaching Hospital, Sagamu the maternal mortality ratio in the past two decades have remained persistently high. A decade review of maternal mortality in the teaching hospital between 1988 and 1997 revealed an average MMR of 1936.1 per 100,000⁶. Between January 2002 and December 2004, Oladapo et al reported a MMR of 2931.4 per 100,000⁷. Majority of the deaths occur among unbooked patients^{6,8}. Some of these authors expressed that the statistic may be worse in the community⁶.

Poor utilization of quality reproductive health service continues to contribute to maternal morbidity and mortality in developing countries^{2,9}. Understanding the preferences of the people and the various

factors that influence it will help to put in strategies that will improve utilization of skilled obstetric services and thereby reduce unnecessary loss of lives. This study therefore assessed the awareness of ANC and delivery services, the preferences and the factors underlying these preferences among child-bearing women in a sub-urban population in South-west Nigeria.

Methodology

This is a descriptive cross sectional study that was conducted in Sagamu town between the months of September and October 2005. Sagamu is a suburban town and the local government headquarters of Sagamu local government area, Ogun State, South Western Nigeria. People of the Yoruba tribe mainly inhabit it although people from other tribes also live there. The major occupations of the people are farming and trading. Private and public health institutions as well as local traditional and spiritual healers provide health care services for the people. Health institutions are well distributed in different parts of the town. The public health institutions included a teaching hospital (Olabisi Onabanjo University Teaching Hospital) and three³ primary health care centres. At the public institutions, while booking and ANC services are delivered to pregnant women on specific days of the week, labour cases are attended to any time of the day.

Women of childbearing age who had at least one pregnancy carried to term in the past 5 years were the study population. The sample size for the study population was determined using the formula, $n = z^2pq/d^2$, where z is 1.96 at 95% confidence interval, prevalence (p) of 65%² and d , the tolerable standard error of 0.05. The calculated minimum sample size was 346, a non response rate of 10% was added and rounded up to 390. The town is made up of 11 wards. Using the ballot paper method,

three wards³ were randomly selected out of the 11 wards. Five streets were randomly chosen from each ward, which gave a total of 15 streets. Starting from any house on the selected streets ($n=15$) and moving from one house to another, questionnaires were administered to 26 eligible respondents. In the houses where there were many households with eligible women, a maximum of two eligible women were chosen.

Interviewers were five female Community Health Extension Workers who were trained to collect the data. The questionnaire was initially pre-tested among 20 women of childbearing age in a different community and corrections were subsequently effected. Structured questionnaire was used to gather information about the respondent's awareness of ANC and delivery facilities in their community, the facility used during their last pregnancy and the reason for their choice. Verbal consent was first obtained from the respondents before proceeding on the interview.

The questionnaires were analysed using Statistical Package for Social Sciences version 10. The results are presented as frequency tables and percentages. The chi-square statistic was used to evaluate association between certain variables and use of ANC and delivery services. P value less than 0.05 was accepted as being statistically significant.

Results

A total of 392 women were involved in the study. Table 1 shows that the age range of the women was 18-45 years, majority of them were between 21-39 years of age (73.5%). Three hundred and eight (78.8%) were married, while 2.3% were single. Of the 351 who indicated their type of marriage, almost two-thirds (61.8%) were in monogamous union. The majority (58.9%) were Christians,

34.4% were Muslims and 6.6% practiced the traditional religion. More than four fifths were Yorubas, 9.9% were Ibos while 7.1% were Hausas.

Fifty six (14.3%) had no formal education, 55.1% had more than primary school education. Fifty eight (14.8%) were not gainfully employed. Because many of them were petty traders (63.5%) who lived off daily gains it was not easy for some to estimate their monthly income (42.1%). Almost all (96.7%) reported that their husbands were employed but majority did not know their husbands monthly income (72.3%). Three hundred and thirty (84.2%) had their first pregnancy between the ages of 20-29 years, 12% had the first pregnancy in their teens.

Almost all the women (97.2%) indicated that antenatal care is important for pregnant women; only 0.8% said it was not necessary while 1.8% were not sure. Three hundred and forty one (87%) were aware of antenatal care facilities in the community. The known facilities were government facilities (59.7%), private hospitals (16.3%), traditional/herbal homes (9.9%) and spiritual healing homes (3.1%). The reported sources of information about place of ANC were friends (30.1%), relations (27.0%), health worker (19.1%) and others (12.2%).

Utilization of ANC During Last Pregnancy

Three hundred and seventy two (84.6%) received ANC during their last pregnancy. Most of the women who received ANC used a government facility (63.4%), 21.2% attended a private clinic. Almost one in every ten (9.7%) used traditional herbal home (table 1).

Table 2 summarizes the reasons for their choice of ANC. The highest consideration for their choice of facility was that the service was good (71.5%). While 8% used the facility

Table 1: Socio-demographic characteristics of respondents

Variables	Characteristics of women	
	Freq	Percent
Age range		
18-20	21	5.4
21-29	141	36.0
30-39	147	37.5
40-45	83	21.2
Marital status		
Married	308	78.6
Single	10	2.6
Divorced/separated	74	18.8
Education		
Nil	56	14.3
Primary	120	30.6
Secondary	154	39.3
Tertiary	62	15.8
Husband's Educational status		
Nil	33	8.4
Primary	64	16.3
Secondary	166	42.3
Tertiary	101	25.8
Others	2	0.5
Don't know	26	6.6
Religion		
Christianity	231	58.9
Islam	135	34.4
Traditional	26	6.6
Occupation		
Employed		
Housewife/	334	85.2
Unemployed	58	14.8
Income/month ^a		
>20000	33	8.3
10,000-20,000	51	13.0
< 10,000	139	35.5
Don't know	162	41.3
No income	7	1.8

Income is expressed in Naira. Exchange rate at the period of study was N135 for a dollar.

Table 2: Respondent distribution according to place of ANC and delivery

	Place of ANC N - 392 %	Place of delivery N 392 %
Govt. Facility	60.2	54.4
Private hospital	20.2	24.5
Spiritual home	5.4	5.6
Traditional/Herbal home	9.2	13.5
None	5.1	-
Home	-	1.5

of their husband's choice, 6.9% chose the facility because of proximity to their house. Women who used government facilities were most likely to indicate that the service was good (83.9%). Considerations for choosing private clinics were good service (64.6%), privacy (12.7%) and nearness (10.1%). Irrespective of their primary consideration, 94.3% still sought their husband's permission before using a facility. Compared to users of other facilities, more women who used traditional birth attendant (TBA) facilities (36.1%) and spiritual homes (19.1%) indicated that they did so to please their husbands (table III).

During their last pregnancy, majority of those who received ANC first attended the clinic during the second trimester. Almost half (49.6%) at 3-4 months of gestation, 30% at 5-6months, 8.2% at 7-6months. Few booked at the extremes of gestation, 6.1% at 9months and 5.6% at 1-2 months. Most women (46.4%) visited the clinic more than 4times, 14.8% made three to four visits, 3.6% made one to two visits while 30.6% could not remember the number of ANC attendances. Sixty eight percent (68%) received two doses of tetanus toxoid, 9% received one while 13% received none.

A higher proportion of women less than 20years did not use ANC facilities compared to older women ($p < 0.05$). The proportion of the women that had ANC increased with respondent's educational status ($p < 0.0001$) and the husband's educational level ($p < 0.005$). The traditional worshippers were less likely to have received ANC compared to Christians and Muslims ($p < 0.010$). All the women who earned more than N10,000 (\$74) per month received ANC while 6.5% of those who earned less than N10,000 (\$74) per month did not receive any ANC (table IV). Majority of the women did not know their husband's income. Compared to those who were employed, women who indicated that their husband was unemployed were less likely to use ANC ($p < 0.05$). Fifty percent (50%) of those who reported that their husbands were unemployed did not use ANC service.

Education and income affected pattern of use of ANC by the respondents. Uneducated women had fewer ANC attendances compared to the well educated women. Thirty nine percent (38.7%) of the women who had no formal education had four or less antenatal attendances compared to (18.1%) of the women with tertiary education.

Table 3: Distribution of women according to the reasons for choosing the place of ANC during their last pregnancy

Place of ANC	Good Service	Privacy	To satisfy Husband	Nearness	Cheap	No specific reason	Culture	Religion	Total
Govt. Facility	83.9	2.1	4.2	5.1	3.4	1.3	-	-	236
Private Hospital	64.3	12.7	3.8	10.1	1.3	7.6	-	-	79
Spiritual Home	33.3	9.5	19.1	9.5	14.3	9.5	2.8	4.8	21
Traditional /Herbal Home	33.3	5.6	36.1	8.3	2.8	8.3	2.8	2.8	36
Total	72.0	5.1	8.0	6.7	3.5	3.8	0.3	0.5	372

Women who earned less than N20,000 (\$148) per month also had fewer ANC attendances compared to women who earned more than that. Only 3.9% of the women who earned more than N20,000 (\$148) per month had four or fewer ANC attendances compared to 23.5% of those who earned less than N10,000 (\$74).

Place of Delivery

Of all the women, only six (1.5%) delivered at home. The preferred places of delivery were government facilities (54.8%), private hospital (24.5%) and traditional/herbal homes (13.5%). Few women delivered at spiritual healing homes (5.6%). A lower proportion of women who received ANC at government facilities eventually delivered there while the proportion of the women who delivered at private clinics and TBA increased compared to ANC attendance (table II). Women who had none or primary education, traditional worshippers and those who had low income were more likely to use traditional birth attendants/herbal (TBA) home for delivery compared to other women (table V).

Of the 177 who did not deliver in

government facilities, 31.6% gave no reason, 29.4% complained of the long waiting time, bad attitude of staff (11.3%), non-availability of government facility in their community (10.2%) and transportation problem (8.0%).

Discussion

Antenatal care and skilled obstetric care are important strategies for improving maternal and newborn health but many women in developing countries continue to go through pregnancy and delivery without using these services.

In this study, there was a high level of awareness of the need for special care for women during pregnancy and majority of the women knew where they could receive ANC in their community. This can be attributed to the high proportion of women who had formal education and that the study was located in a semi-urban community where there was easy access to the mass media.

Majority of the women received ANC, booked during the second trimester and had more than 4 ANC visits. However many of the women who received ANC did not attend antenatal clinic until the second or third

trimester by which time it may be too late to benefit maximally from some of the services delivered at the clinic. The reported widespread use of ANC (84.6%) in this study supports the findings of the National HIV/AIDS Reproductive Health Survey in 2003 where 89.4% of the women from South Western Nigeria reported that they received ANC during their last pregnancy². This is much higher than the rate of use reported in other parts of Nigeria such as Northern Nigeria¹⁰, Eastern Nigeria¹¹ and rural South-South Nigeria¹². In a study of 107 women in rural Kano, Northern Nigeria, 88% did not attend ANC and 96.3% had delivered or planned to deliver at home¹⁰. The disparity in use of maternity services in various parts of Nigeria may partly account for the vast difference in maternal mortality in the different regions, varying from 166/100,000 in South-West to over 1500/100,000 in Northern Nigeria².

Despite the relatively high rate of use of maternity services in this study, hospital statistics show that some women in this area still die from complications of pregnancy and child bearing^{7,8}. Use of ANC maternity services in this study is relatively higher than in many other parts of Nigeria but it is much lower than what is reported from other countries or regions such as East Asia or North America¹³ where all or almost all pregnant women received ANC and deliver in health institutions. In this study, one in five women (20%) did not use ANC service at all or they used non-health institutions such as TBA or spiritual homes. The rate of non-use of maternity services may also be much higher in the rural areas compared to suburban and urban areas. Bawa et al in a study of a rural area in South west Nigeria found that although many women attended at least one ANC, most of them refused to deliver in the hospital¹⁴. It is important that

Table 4: Utilization of ANC service by the women during their last pregnancy according to selected characteristics

Variables	Yes %	Attended ANC %	Nu %	Nos. of women	p value
Age range					
18-20	81.0	19.0*	21	21	p > 0.05
21-29	94.3	5.7	141	141	
30-39	95.6	4.4	147	147	
40-45	90.4	9.6	83	83	
Education					
Nil	78.6	21.4**	56	56	p < 0.0005
Primary	93.3	6.7	120	120	
Secondary	97.1	2.6	151	151	
Tertiary	98.4	1.6	62	62	
Husbands Education					
Nil	69.7	30.3**	33	33	p < 0.0005
Primary	90.6	9.4	64	64	
Secondary	96.8	3.2	156	156	
Tertiary	98.0	2.0	101	101	
Religion					
Christianity	95.7	4.3**	231	231	p < 0.05
Islam	92.6	7.3	135	135	
Traditional	80.8	19.1	26	26	
Income^a					
>20000	100.0	-	33	33	p > 0.05
10,000-20,000	100.0	-	51	51	
< 10,000	93.5	6.5	139	139	
Don't know	91.4	8.6	162	162	

P < 0.05, p < 0.0005, Characteristics significantly associated with ANC use.

^a chi square analysis only involved those who knew their income

Table 5: Place of delivery of the women during their last pregnancy according to selected characteristics

Variable	Govt (%)	Priv (%)	Spiritual (%)	TBA (%)	Home (%)	Total	pvalue
Age range							
18-20	66.7	19.1	-	9.5	4.8	21	>0.05
21-29	49.6	23.4	9.2	15.6	2.1	141	
30-39	55.8	27.9	5.4	10.2	0.7	147	
40-45	59.0	21.7	1.2	16.9	1.2	83	
Education							
Nil	42.9	12.5	7.1	28.6	8.9	56	< 0.0005
Primary	53.3	20.0	5.0	20.8	0.8	120	
Secondary	53.9	34.4	5.8	5.8	-	154	
Tertiary	71.0	19.4	4.8	4.8	-	62	
Religion							
Christianity	60.2	25.1	6.5	7.4	0.9	231	< 0.0005
Islam	52.6	25.2	3.7	17.0	1.5	135	
Traditional	19.2	15.4	7.7	50.0	7.7	26	
Income							
>20,000	75.7	12.1	6.1	6.1	-	33	>0.05
10,000-20,000	56.9	27.5	9.8	5.9	-	51	
< 10,000	54.0	27.3	5.0	12.2	1.4	139	
I dont know	51.2	24.1	4.9	18.5	1.2	162	

Govt government facilities, Priv Private clinics
p value < 0.0005, very significant

all pregnant women access quality ANC and have skilled attendant at delivery.

Perceived quality of service is a major factor that influences people's decision to use health care facility^{16,17}. Though many of those who used the services expressed that the service was good, the main reasons given for non-utilization of government services for delivery by those who used other facilities were linked to quality of care. Similarly, in a community based survey in Eastern Nigeria, Uzochukwu et al found that 94.3% and 95.8% of the women were satisfied with the ANC and delivery services at the health centres. However, they also complained of long waiting queues, provider behaviour and lack of doctors as factors which militate against use¹⁵. Government facilities are usually associated with long waiting time and poor staff attitude which discourages many women from using these facilities^{14, 15}. In

Enugu, South-Eastern Nigeria, promptness of care and friendliness of staff featured prominently as factors which encourage maternity utilization¹⁶. Effort should be made to reduce waiting time at the hospitals, train health workers to be empathetic, improve the facilities at the health clinics and make the system as patient responsive as much as possible. These improvements will reduce the problem of 'empty bed syndrome' in Nigerian public hospitals.

A lower proportion of the women who received ANC at the government facility eventually delivered there while more women delivered at private clinics and TBA centres compared to those who received ANC at these facilities. This may be due to easier accessibility of these facilities. The increased proportion of deliveries at TBA home may also be associated with the prevalent supernatural concept of diseases

in many African communities. Twenty nine percent (29%) of ANC attendees in Equatoria Guinea expressed that TBAs were better than orthodox practitioners in some respects because they have spiritual powers and can intervene in certain situations where medical interventions will not work¹⁷. While some people insist that in the interest of maternal health, empowering TBA through training and retraining is the best option because community members will continue to patronise them, others express that they have little role in obstetric care¹⁸. Similarly, spiritual healing centres are also well patronised by women in many parts of Nigeria¹⁶ and therefore should receive due attention by policy makers and programme planners who seek to reduce maternal and neonatal mortality.

Though majority of the women received ANC and sought assistance during delivery, some women were more likely to receive maternity care or use non-health institutions compared to others. Our result is consistent with findings from other studies that formal education has a positive effect on use of ANC services^{16, 17}. Educated women in this study were more likely to have received ANC during pregnancy, had more frequent visits and used health facilities for delivery. The effect was more significant among women with at least secondary school education. The effect of education may be associated with better exposure to information and higher income. A well-educated woman may have a good job and earn more money, which improves economic access and reinforces the effect of adequate information.

Though very few women indicated cost consideration as the reason for their choice of ANC facility, our findings suggest that high income is associated with good obstetric behaviour. All the women who earned more than N20, 000 (\$148) per month received ANC, had more frequent antenatal visits,

were more likely to use orthodox facilities for delivery and none of them delivered at home. However this amount is almost thrice the official minimum wage of N7,500 (\$55.6) in the state and few women do earn that much. It was interesting to note that the low-income women were more likely to use private clinics compared to women with higher income. This may be because low cadre workers may have less control over their time at work and therefore have to seek ANC outside the normal clinic hours. Due to the long waiting time at government institutions, petty traders may consider the opportunity cost of leaving their trade for long hours. Cost of care varies widely at private facilities; low cadre workers may find low cost, small scale maternity homes more affordable. Mode of payment may also be more flexible than the public sector and therefore more convenient for low-income workers. It is therefore important that quality of care in private maternity homes should be well monitored. The influence of education and income suggests that with adequate education and improvement of the economic status of women in this community, near universal use of orthodox maternity services may be achieved.

Although across age group, majority of the women used ANC services, young women less than 20 years were less likely to use ANC facilities than older women. This pattern has been described in most developing countries although the difference is not much. Youngest and oldest age groups are less likely to use ANC services. Young women may be unmarried, unsupported and unable or unwilling to use maternity health services¹⁹. It is unfortunate that women who may be at higher risk such as young, uneducated and poor women are less likely to access the appropriate services.

Religion was also found to influence the choice of place of delivery by the women.

The traditional worshippers were more likely to deliver with TBAs. A similar relationship was found between religion and place of delivery among women in Eastern Nigeria¹⁶. This relationship can be partly explained by the fact that those who are traditional worshippers may be less educated than Christians and the less educated are more likely to use non-health institutions. However, the effect of religion has been found to be significant even after education is controlled for²¹. Onah et al further suggested that the quest of non-Christians for privacy and the fact that most of them are unskilled workers who may not be able to afford the cost of care may make them seek care at non-health institutions¹¹.

Data from this study has further emphasised the need for male involvement in women reproductive health issues. Almost all the married women usually seek spousal approval of their choice of ANC and delivery facilities. Majority of the women who used TBA facility indicated that it was to satisfy their husband. Therefore in patriarchal societies like Nigeria, efforts to decrease maternal deaths should increasingly target men with necessary information about appropriate obstetric services. This is quite different from the situation in Kenya where most women made independent decision to attend ANC²¹.

In conclusion, the women in this study are

aware of the need for antenatal care and assistance during labour. Most use orthodox health facilities for ANC and delivery services but a considerable proportion still use non-medical institutions or do not use at all. The major factors that deter women from using government facilities for delivery include long waiting time and perceived poor attitude of the staff. Effort should therefore be made to improve the quality of services at the health facilities, minimise waiting time and train health care providers to communicate better with patients. Information about positive changes should be disseminated to the community since friends and relations (community members) are important sources of information about ANC and delivery facilities in the community. Community education should also emphasise the need to book early for ANC for maximum benefit from the services. The World Health Organization recommendation of the minimum of four visits should be encouraged (especially for eligible women of low socio-economic status) so that their few visits will be appropriately timed and maximised. Universal education at least to secondary school level, improvement of the economic status of women and targeting men with appropriate information will significantly improve utilization of appropriate obstetric services with resultant reduction in maternal deaths in this community.

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