

Antenatal Care Services Utilization among Women of Reproductive Age in Urban and Rural Communities of South East Nigeria: A Comparative Study

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ABSTRACT

Background: *Antenatal care is an evidence based intervention that improves maternal and perinatal outcome. Assessment and re-assessment of its utilization by rural and urban women in Nigeria is necessary for planning healthcare programmes and interventions.*

Aim: *This study aims to assess urban – rural differences in antenatal care services utilization among women in South-East Nigeria and factors that influence such.*

Methodology: *This is a cross-sectional study carried out among women of reproductive age in Anambra State, South-East Nigeria. Participants were selected using multistage sampling technique. Data was collected using pre-tested, semi-structured questionnaires which were interviewer-administered. Data obtained was analyzed using SPSS version 17. Tests of significance were done using Chi square test and student T test at 95% confidence intervals.*

Results: *Six hundred women were included in the study; 300 respectively, from urban and rural settings. The mean age of respondents was 33.9±2.7 years. The average month at booking was higher in the rural areas (5.2 months) when compared to the urban (4.4) months, with more respondents in the urban areas booking earlier (P=0.000). More respondents in the urban, 140 (50.8%), attended ANC up to 4 times when compared to their rural counterparts, 102(37.0%) (p= 0.000). Women in the urban areas were more likely to have deliveries supervised by skilled birth attendants (p= 0.000). The estimated cost of antenatal care was higher in the urban areas than the rural (p= 0.000). Satisfaction received from antenatal and delivery services was also higher in the urban settings (p= 0.000).*

Conclusion: *Rural-urban differences exist in the utilization of antenatal care services, with a higher proportion of urban women utilizing these services.*

Increased health education of women, especially in the rural areas, is advocated.

Key Words: *Antenatal utilization, Rural, Urban, Women, Nigeria.*

INTRODUCTION

Antenatal care (ANC), is the clinical assessment of mother and fetus during pregnancy for the purpose of obtaining the best possible outcome for both the mother and child.¹ ANC is an important determinant of maternal mortality and perinatal mortality rate and one of the basic components of maternal care on which the life of mothers and babies depend.² It exposes pregnant women to counseling and education about their own health and the care of their children.

In Nigeria and other developing countries, maternal and perinatal mortality rates are still high and this can be attributed to generally poor utilization of antenatal care services³. For instance, about 600,000 women die of pregnancy related problems globally per year, of this a total of about 52,900 maternal deaths occur in Nigeria. This is approximately 10% of maternal deaths globally, despite the fact that Nigeria is only 2% of world population. A woman's chance of dying, from pregnancy and child birth in Nigeria is 1 in 13.³

The maternal mortality in Nigeria is estimated to be 800/100,000 live births with marked urban-rural variations; 351/100,000 live births for urban dwellers and 828/100,000 live births for rural dwellers³. This is extremely high when compared with some developed countries like Finland, Sweden etc.

However, wide variations exist across the geopolitical zones of Nigeria – The North-East zone has the highest maternal mortality ratio of 1549/100,000 live births, compared to 165/100,000 live births in the South-West zone, an almost a tenfold difference^{4,6}. Also worthy to note is that major causes of maternal mortality, like, postpartum hemorrhages, sepsis, eclampsia, obstructed labour and anemia in pregnancy are largely preventable and this can be achieved through adequate ANC provision and attendance.^{8,9} Strong positive association has been shown to exist between level of care obtained during pregnancy and the use of safe delivery care. Thus antenatal care stands to contribute indirectly to maternal mortality reduction.¹⁰ However, pregnant women enjoy these benefits when she attends ANC adequately and delivers in appropriate health facility. Also, obvious rural-urban differences in

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ANC service utilization exist in Nigeria and most third world countries with low utilization rates among rural women.⁴⁻⁶ In addition, pregnancy must be supervised by a trained health personnel and labour attended by a skilled birth attendant. Also, pregnant women on their part are expected to book early and attend adequate number of ANC prior to delivery. Although ANC attendance has been measured on proportion of women who have attended ANC at least once during pregnancy, WHO recommends that pregnant women should attend ANC at least four times starting from the first trimester.

In Nigeria, antenatal policy follows this newest WHO approach to promote safe pregnancies, recommending at least four ANC visits for women without complications. This updated approach, called Focused Antenatal Care (FANC), emphasizes quality of care during each visit.^{7,10} Early detection of problems during pregnancy leads to more timely treatment and referrals in the case of complications. This is particularly important in Nigeria, a large country where physical barriers are a challenge to health care delivery.

In Nigeria, the provision of ANC is in transition from the traditional approach to the FANC approach. The new schedule of visits is as follows: The first visit should occur by the end of 16 weeks of pregnancy; the second visit takes place between 24 and 28 weeks of pregnancy; the third visit is at 32 weeks; and the fourth visit takes place at 36 weeks. However, women with complications, special needs, or conditions beyond the scope of basic care may require additional visits⁷.

Despite all efforts to improve maternal and child health indices and attain the millennium development goals (MDGs) 4 and 5, utilization of ANC services is still low in some parts of the country. Reports from 2008 Nigerian National Survey revealed that only 58% of women aged 15-41 received antenatal care from a skilled provider (doctor, nurse/midwife) during their last pregnancy. Thirty percent of women received ANC services from a Nurse or midwife, while 23 percent received ANC services from a doctor. Three percent of women received ANC services from traditional birth attendants (TBA) and 39% did not receive ANC services at all (11.8% urban, 27.2% rural)⁷. The proportion who obtained ANC services from a skilled health worker is higher among women residing in the urban areas (84%) than among women who reside in rural areas, (46%). The percentage of women receiving antenatal care from a skilled provider varies substantially among the zones, from 31 percent of women in the North West to 87% in South East and South West. Only 45 percent of women who had a life birth in five years preceding the survey reported

visiting antenatal clinics at least four times during pregnancy, and 8 percent reported two or three visits during pregnancy; while 2 percent of women had just one antenatal visit. The median number of months of pregnancy at the first ANC visit was five months⁷. Differences do not vary much by urban and rural residence. Suffice to note that there was no substantial change in proportion of women receiving no antenatal care between the 2003 (37%) and the 2008 (39%) national survey, and the median gestational age at first visit has remained the same, 5 months over 5 years period.^{6,7} Increasing the percentage of births delivered in health facilities is an important factor in reducing deaths arising from the complications of pregnancy. However, despite proven reports about this, 65% of births in Nigeria takes place at home and only 35% of births in Nigeria are delivered in a health facility; 20% occur in public sector facilities while 15% occur in private facilities. Women in urban areas are more than twice as likely to deliver in a health facility as their rural counterparts^{6,7}.

There is limited report on the level of ANC utilization with respect to locality in South East Nigeria. Hence, this survey aims at assessing the levels of utilization of antenatal care services in both urban and rural communities in Anambra state, South East Nigeria as well as make a comparative analysis of the findings. The findings from this study can be used in planning group specific healthcare programs and interventions aimed at improving uptake of antenatal care services and consequently, improve on the national maternal health indices.

METHODOLOGY

This is a comparative cross-sectional survey of the utilization of Antenatal care services among women of reproductive age (15-49 years) in rural and urban communities in Anambra State, South East Nigeria carried out from January to May, 2008. Using the multistage sampling technique, two local government areas (LGA) were selected for the study, each from both the urban and rural local government areas of the state. Thus, Onitsha North was selected from the urban while Anaocha was selected from the rural L G A. The second stage involved the selection of communities of which Inland town was selected from Onitsha North and Agukwu nri was selected from Anaocha L G A using simple random sampling by balloting. The third and last stage involved the selection of respondents from households, in which only one respondent was interviewed. Sample size used for the study was determined using the sample size formula for comparative studies;¹²

$$n = \frac{[A+B]^2 [(P_1(1-P_1) + (P_2(1-P_2))]}{[p_1 - p_2]^2}$$

A total of 600 respondents were interviewed, comprising 300 respondents each, from the rural and urban communities and included in the study.

Responses were elicited from the study using pre-tested, semi-structured, interviewer administered questionnaire on socio-demographic characteristics, pattern of ANC and post natal service utilization. Ethical clearance for this study was obtained from the department of Community Medicine, Nnamdi Azikiwe University, Nnewi and verbal consent was extracted from the women after due explanation of the procedure, risks and benefits of the survey. Data collected from this survey analyzed using SPSS version 17.0. Tests of comparison of qualitative data were done using the chi square test at 95% confidence intervals. Comparison of means was done using the Student t test.

RESULTS

The overall mean age of respondents in the survey was 33.9 ± 2.7 years with mean age of respondents in the urban area (35.2 ± 3.4 years) being higher than that of their counterparts in the rural area (32.7 ± 2.2 years). Majority of respondents in both urban, 286 (95.3%) and rural, 272 (90.7%), areas were Christians with Catholic denomination having the greater number in both areas, 148 (49.3%) and 136 (45.3%), respectively. Also, majority of respondents in both urban, 262 (87.7%), and rural areas, 245 (81.7%), were currently married, with a greater proportion of them having at least two or more deliveries prior to this survey, 273 (90.0%) and 264 (88.0%) in urban and rural areas respectively. Most respondents in the urban areas were traders, 116 (38.7%) and public servants, 92 (30.7%), while the unemployed, 110 (36.7%) and farmers, 77 (25.5%) were commoner in the rural areas. Also the level of education was higher in the urban areas than the rural areas, $p < 0.05$, with more people having tertiary education in the urban, 112 (37.3%) than the rural, 20 (6.7%) while the reverse was the case in those with no formal education, 20 (6.7%) and 53 (17.6%) respectively. (Table I)

During the last confinement, 24 (8.0%) women in each of the settings did not attend ANC services. In the urban area, most of the respondents received ANC services in government hospitals, 152 (55.1%) and private hospitals, 66 (23.9%) while in the rural areas, most of the clients received theirs from the Primary

Health Care Centers (PHC), 113 (40.9%), and maternity homes/TBA 91 (33.1%).

The average month at booking was higher in the rural areas (5.2 months) when compared to the urban which was 4.4 months ($P = 0.000$), with more respondents in the urban areas booking in the 1st trimester 106 (38.4%), and second trimester, 143 (51.8%), while that of their rural counterparts was at 2nd and 3rd trimesters; 149 (54.0%) and 70 (25.4%) respectively. More respondents in the urban 140 (50.8%) attended ANC up to 4 times when compared to their rural counterparts, 102 (37.0%). The average number of visits were 4.5 in the urban and 3.5 for the rural respondents ($p = 0.000$); See Table II. Many women in the rural, 107 (35.5%) and urban 101 (33.7%) settings had some degree of problems during the course of their last pregnancy. The difference is however, not statistically significant ($p = 0.606$).

Table III shows delivery services used by respondents. The commonest place that respondents in the urban delivered during their last pregnancy was government hospital (44.0%), this was followed by private hospital (23.3%) and maternity home/TBA (17.3%); while, in the rural areas, it was maternity home/TBA (45.7%), followed by PHC (27.0%) and private hospital, (12.3%). More women delivered at home and church in the urban 16 (5.3%) than in the rural areas 9 (3.0%). These differences were found to be statistically significant ($p = 0.000$).

Most deliveries in the urban areas were conducted by doctors (41.8%), and nurses/midwives/CHEWS, (28.0%) while in the rural area it was conducted mostly by nurses/midwives/chews, (37.7%) and Auxiliary nurses, (37.7%), with more traditional birth attendants attending to delivery in the rural areas, 24 (8.0%) than in the urban areas 16 (5.3). The difference in delivery attendance by skilled birth workers between the rural and urban areas is statistically significant ($p = 0.000$). The major reason for not delivering in a health facility among the urban respondents was husband and family decisions, 18 (52.9%); while it was transportation difficulty, 20 (60.7%) and cost of services, 12 (36.4%), among the rural respondents. The estimated cost of care was higher in the urban than the rural areas ($p = 0.000$). Also, more patients in the urban areas, 228 (76.0%), were satisfied with level of care received than their rural counterparts, 165 (55.0%); ($p = 0.000$).

Table I: Socio-demographic characteristics of respondents (n=600)

Demographic	Urban n=300 freq(%)	Rural n= 300 freq(%)	Total n=600 freq (%)	Statistics	p value
Age group					
>20 years	6(2.0)	12(4.0)	18(3.0)		
21 – 30	96(32.0)	113(37.7)	205(34.2)		
31 – 40	128(42.7)	115 (38.3)	243(40.5)		
>40	66(22.0)	60(20.0)	126(21.0)	t-test	
NR	4(1.3)	0(0.00)	4(0.67)	31.11	0.000*
Total	300(100.0)	300(1000)	600(100.0)		
Marital Status					
Currently married	262(87.3)	245(81.7)	507(84.5)		
Previously married	8(2.7)	42(14.0)	50(8.3)	$\chi^2 =$	
				30.09	
Single	28(9.3)	12(4.0)	40(6.7)	df = 2	0.000*
NR	2(0.7)	1(0.3)	3(0.5)		
Total	300(100.0)	300(100.0)	600(1000)		
Religion of respondents					
Christianity					
Catholic	148(49.3)	136(45.3)	284(47.3)		
Orthodox	80(26.7)	74(24.7)	154(25.7)		
Pentecostal	58(19.3)	62(20.7)	120(20.0)		
Islam	6(2.0)	0(0.0)	6(1.0)		
Others	6(2.0)	24(8.0)	30(5.0)		
NR	2(0.7)	4(1.3)	6(1.0)		
Total	300(100.0)	300(100.0)	600(100.0)		
Educational Status of Respondents					
None	20(6.7)	53(17.6)	73(12.1)	$\chi^2 =$	
Primary	34(11.3)	135(45.0)	169(28.2)	147.35	
Secondary	132 (44.0)	90(30.0)	222(37.0)	df = 3	0.000*
Tertiary	112(37.3)	20(6.7)	132(22.0)		
NR	2(0.7)	2(0.7)	4(0.7)		
Total	300(100.0)	300(100.0)	600(100.0)		
Occupation of Respondents					
Trading	116(38.7)	71(23.5)	187(31.2)		
Public servant	92(30.7)	31(10.3)	123(20.5)		
Farming	12(4.0)	77(25.5)	89(14.8)		
Artisan	6(2.0)	9(3.0)	15(2.5)		
Unemployed	73(24.3)	110(36.7)	183(30.5)		
No Response	1(0.3)	2(0.7)	3(0.5)		
Parity					
Primiparous	26(8.7)	35(11.7)	61(10.2)		
Multiparous	163(54.3)	150(50.0)	313(52.2)		
Grandmultiparous	110(36.7)	114(38.0)	224(37.3)		
NR	1(0.3)	1(0.3)	2(0.3)		
Total	300(100.0)	300(100.0)	600(100.0)		

* = Significant

NR = No response

Table II: Antenatal Services Utilization

Variable	Urban n(%)	Rural n(%)	Total n(%)	χ^2	P value		
Attended any form of ANC services during your last pregnancy?(n=300)							
Yes	276(92.0)	276(92.0)	592(92.0)	0.00	1.00		
No	24(8.0)	24(8.0)	48(8.0)				
Total	300(100.00)	300(100.0)	600(100.0)				
Place received ANC services (n = 276)							
Source							
Govt. Hospitals	152(55.1)	26(9.4)	178(32.3)	37.59 df = 2	0.000*		
Private Hospitals	6(23.9)	34(12.3)	99(17.9)				
PHC	20(7.3)	113(40.9)	133(24.2)				
Maternity/TBA home	23(8.3)	91(33.1)	114(20.7)				
Church	9(3.3)	2(0.7)	11(2.0)				
Home	4(1.4)	8(2.9)	12(2.2)				
NR	2(0.7)	2(0.7)	4(0.7)				
Total	276 (100.0)	276(100.0)	552(100.0)				
Age of last pregnancy at booking (n = 276)							
1 st Trimester	106(38.4)	55(19.9)	161(29.2)			11.37 df = 1	0.000*
2 nd Trimester	143(51.8)	149(54.0)	292(52.9)				
3 rd Trimester	25(9.1)	70(25.4)	95(17.2)				
NR	2(0.7)	2(0.7)	4(0.7)				
Total	270(100.0)	276(100.0)	552(100.0)				
Frequency of ANC attendance in the last pregnancy (n= 276)							
0 – 3	128(46.3)	168(60.9)	296(53.6)	11.37 df = 1	0.000*		
≥ 4	140(50.8)	102(37.0)	242(43.0)				
Can't Remember	6(2.2)	4(1.4)	10(1.8)				
NR	2(0.7)	2(0.7)	4(0.7)				
Total	276(100.0)	276(100.0)	552(100.0)				
Ever had problems during last pregnancy/delivery (n=300)							
No	191(63.8)	197(65.6)	388(64.7)	0.27 df = 1	0.606		
Yes	107(35.5)	101(33.7)	208(34.6)				
NR	2(0.7)	2(0.7)	4(0.7)				
Total	300(100.0)						

*significant, NR= no response

Table III: Delivery Services Used

Variable	Urban n(%)	Rural n(%)	Total n (%)	X ²	p value
Place of last delivery (n = 300)					
Govt. hospital	132(44.0)	33(11.0)	165(27.5)	142.68 df = 4	0.000*
Private hospital	70(23.3)	37(12.3)	107(17.8)		
PHC	22(7.3)	81(27.0)	103(17.2)		
Maternity/TBA	52(17.3)	137(45.7)	189(31.5)		
Church/Home	16(5.3)	9(3.0)	25(4.2)		
NR	8(2.8)	3(1.0)	11(1.8)		
Total	300 (100.0)	300(100.0)	600(100.0)		
Most senior staff that attended to your last delivery (n=300)					
Doctor	124(41.8)	46(15.3)	170(28.3)	22.7 df = 1	0.000*
Nurse/Midwife	84(28.0)	113(37.7)	197(32.8)		
Aux. nurse	48(16.0)	107(35.7)	155(25.8)		
TBA	16(5.3)	24(8.0)	37(6.2)		
Neighbor	8(2.8)	6(2.0)	14(2.3)		
Others	8(2.8)	3(1.0)	16(2.7)		
NR	10(3.3)	1(0.3)	11(1.9)		
Total	300(100.0)	300(100.0)	600(100.0)		
Reason for not delivering in a Health facility (urban(n = 32; Rural (n = 33)					
Husband/family decision	18(52.9)	9(27.2)	27(40.3)		
Transportation difficulty	9(26.5)	20(60.7)	29(43.3)		
Cost of service	6(17.6)	12(36.4)	18(26.9)		
Against my religion	6(17.6)	2(6.1)	8(11.9)		
NB Multiple responses applicable					
Estimated cost of care (delivery) (n=300)					
1000 – 10,000	202(67.3)	266(88.7)	468(78.0)	15.1 df = 1	0.000
>10,000	30(10.0)	10(3.3)	40(6.7)		
Can't remember	44(14.7)	8(2.7)	52(8.7)		
NR	24(8.0)	16(5.3)	40(6.6)		
Total	300(100.0)	300(100.0))	600(100.0)		
Satisfaction with the services rendered in the facility used (n=300)					
Yes	228(76.0)	165(55.0)	393(65.5)	39.6 df = 1	0.000*
No	28(9.3)	86(28.7)	114(19.0)		
I don't know	30(10.0)	33(11.0)	63(10.5)		
No response	14(4.7)	16(5.3)	30(5.0)		
Total	300(100.0)	300(100.0)	600(100.0)		

Others =clergy, church and family members.

* = Significant NR = No response

DISCUSSION

Some variations were observed in the socio-demographic characteristics of respondents in urban and rural areas in this survey with regard to mean age which was lower among rural women, level of education which was higher among the urban

population, and occupations which showed that more women were working in the urban setting. This variation exist in several other studies and could have some form of influence on utilization of ANC services as reported in these studies^{6,7,13-16}

The study revealed that most women studied in both urban (92%) and rural (92%) areas attended some form of Antenatal Care Services during their last pregnancy. The figure is higher than the national average which stood at 63% in 2003 NDHS and 62% in 2008 NDHS^{6, 7}. The figures were also higher than figures from the South East region of Nigeria reported in the 2008 NDHS data which stood at 70.2% and 79.5%, for rural and urban respectively but was consistent with figures obtained from the South West which stood at 94.1%⁷. It was also higher from values reported from studies in India, (74.5% urban and 62% rural), Vietnam, (80%) and Nepal (27%)¹⁶⁻²¹. This high figure is likely due to the inclusion of other places where ANC was accessed other than formal health facilities as was not the case in all the reviewed studies. If this was put into consideration, it will fall within the proportion for the South East in the NDHS of 2008. This is encouraging because the high ANC attendance level can help ensure that a good proportion of the population has access to quality healthcare service during pregnancy and delivery.

There was no observed difference in ANC attendance between women in the urban and rural settings. This finding differs from reports in most of the reviewed studies. For example, in Nigeria, a study by Dairo and Owoyokun in 2010 revealed that urban women in Nigeria use antenatal care services more than rural women.²³ Also the National survey in 2008 revealed that the proportion of urban women who used antenatal care, was higher than that of rural women^{7,25}. Studies in other countries of sub Saharan Africa revealed urban-rural differential in the pattern of antenatal care utilization. For instance, urban-rural differential in the utilization of antenatal care was established in Kenya as more urban women utilized antenatal care than rural women²⁴. This was still the pattern in studies in Vietnam; 72.6%, in urban and 48.4% in rural areas²¹, and India.¹⁸ Despite the observed variations in some studies, a few other studies reported no significant difference between urban and rural areas, or that urban women were significantly less likely to use ANC^{26,27}. The finding of this study could be due to the likely cosmopolitan nature of the state coupled with widespread health education using mass media.

The cadre of healthcare facilities in which the women received their ANC services in this survey differed between the rural and urban areas, though more women in both locations patronized public health institutions, i.e. government hospital and PHC centers, (urban, 62.4% and rural, 50.3%). In the rural areas also, sizeable proportion (33.1%) of clients patronized maternity homes and traditional birth attendants. This finding is similar to what was observed at the national

level where more people in the urban areas patronized public health facilities than their rural counterparts⁷, but differs from report from Dhaka, Bangladesh where utilization of government maternity services was relatively low, (less than 15%) when compared to urban areas. Similar to findings in Dhaka are findings from studies in other countries in South Asia such as India and Nepal^{17, 22}. The place of attendance of ANC will likely determine the type of health personnel that attended to the women and also the quality of care. Those in the rural areas of this survey are likely to be attended to by unskilled care givers as a high proportion of them attended ANC with the TBAs. This might in part, explain the reason for higher infant and maternal mortalities experienced in the rural areas of Nigeria when compared to the urban⁷.

The average number of ANC visits was higher in the urban (4.5) than the rural (3.0) areas with the cumulative number of visits being 3.75. The urban was higher than the 4 times minimum visits prior to delivery recommended by WHO, while that of the rural was lower than the recommended average by WHO. More people booked for ANC services in the urban areas (38.3%) in the first trimester than their rural counterparts (19.9%); while more rural women (25.4%) booked in the 3rd trimester than their urban counterparts (9.1%). The mean age at booking was higher in the rural than the urban areas, 5.5 and 4.4 months respectively. The pattern of ANC visits was similar to that reported in 2008 NDHS which revealed that urban women (68.8%) had more (four and above) visits than their rural counterparts (34.4%)⁷. Also, the pattern of first visit was similar with finding in the National survey of 2008 as more patients in this survey booked in the 2nd trimester in both locations. The higher median month of booking reported among rural women in this survey was not consistent with findings at the national and regional levels where no differences exist.^{6,7} Gharoro EP and Igbafe AA³⁰ reported a median booking gestational period of 27.7 weeks among ANC attendees in Benin. Metgud et al³¹ reported that 56.9% of ANC attendees in Ethiopia booked at 4-6months gestation. The finding of this survey is in keeping with results from studies in Nepal and Ecuador but in contrast to a study in Guatemala^{26,27}. Similar results were also found in some studies in Vietnam in which urban women had early booking and higher frequency of visits^{13, 28, 29}. Most people in the rural areas booked late and Kessner index classifies women who book at 28 weeks or later as high risk pregnancy and are considered as not having adequate care, even though they are booked pregnancies³². In line with this, WHO emphasizes early booking rather than number of ANC attendance³². Late ANC registration and inadequate ANC attendance predispose pregnant women to increased risk of

maternal morbidity and mortality and poor pregnancy outcome. Women who book late for ANC lose opportunity to benefit from early detection, effective control and treatment of some disease conditions that may impair their pregnancy outcome.

More respondents in the urban areas delivered in public health facilities (mainly secondary) when compared with rural women in this survey who mainly delivered in private health facilities, with most of them having their deliveries at maternity homes and traditional birth attendants. Findings in the study revealed that more women in the urban area (74.6%) delivered in a health facility than their rural counterparts, (39.3%). This is consistent with that reported in both 2003 and 2008 National Demographic and Health Surveys.^{6,7} Also to note is that the number of women in both areas in this survey who delivered in a health facility was higher than the national average which stood at 59.4% and 24.7% in the urban and rural areas respectively. Furthermore, rural – urban variation in place of delivery was also reported in some of the reviewed studies with more urban women patronizing health facilities than their rural counterparts in Vietnam^{13,14}, India^{18,19}, Nepal and Ecuador²⁶.

The Proportion of deliveries attended to by skilled birth attendants was higher among the urban women (69.8%) when compared with their rural counterparts (53.0%), in this survey. This difference was also found to be statistically significant ($p= 0.000$). This rural-urban variation is also similar with findings at the National level which revealed higher attendance to births by skilled birth attendants more in the urban than rural areas. In Nigeria, about seven in ten births by urban women are attended by a skilled provider, compared with three in ten births for women in the rural area⁷. This is one of the most striking differences in assistance during child birth as this can influence the outcome of the delivery process, especially for a high risk pregnancy. Generally, the presence of skilled birth attendants at delivery in the South Eastern part of Nigeria has been high being estimated at 81.1% in 2008^{6, 7}. This rural urban variation to attendance to skilled care providers was reported in other surveys^{13, 14, 18, 19, 26}. These variations could partly account for the differences in maternal and perinatal mortality indices which are higher in the rural areas with poor health infrastructure and manpower.

The main reason for not delivering in a health facility in the urban area was mainly their husband's decision while it was transportation difficulty among the rural women. Generally, these two reasons together with the cost of service played a major role on why these women could not access health facility during delivery. The role

of males in our society has great influences in health care seeking behaviors of their spouses. Nigeria is a male dominated society with such beliefs embedded deep into the cultural fabrics; and this will be very complex to address except with continued health education, advocacy and dialogue. The role of males in reproductive health therefore cannot be overemphasized.

CONCLUSION

In conclusion, obvious rural-urban differences exist in the utilization of ante-natal care and post-natal care services with higher proportion of urban women utilizing services more than their rural counterparts. This plays a vital role in contributing to higher infant and maternal mortalities found in the rural areas of Nigeria.

We, therefore, recommend that adequate provision of health care services by government at all levels with proper implementation of Primary Health Care in the country, as this is a major thrust to improving our maternal and child health indices. Antenatal care services should be provided free at all levels with sustained massive public health education, training and retraining of staff, and advocacy to relevant stakeholders.

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