ORIGINAL ARTICLE

Antenatal care services utilization among women of reproductive age in semi-urban communities in Orlu LGA, Imo State, Nigeria

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Received: February 22nd, 2015
Accepted: March 9th, 2015

DISCLOSURES: NONE

ABSTRACT

Background: Utilization of antenatal care services is generally associated with improved maternal and neonatal health outcomes.
Objective: The objective of this study is to assess the awareness and utilization of antenatal care services among women of reproductive age in communities in Orlu Local Government Area of Imo State, Nigeria.
Methods: A cross-sectional study was carried out between September and October 2013 among 425 women of reproductive age using a multi-stage sampling technique.
Results: Almost all the respondents (93.9%) were aware of antenatal care services. A good proportion of the mothers (90.1%) used antenatal services, at least, once during their most recent pregnancies, while 80.3% had skilled attendants at delivery. Slightly over half of the respondents (58.8%) booked in the first trimesters. Utilization of antenatal services was influenced by age, marital status, occupation and level of education of mothers ($p<0.05$).
Conclusion: Despite high awareness and utilization observed in this study, the use of skilled attendants during delivery was sub-optimal. Concerted effort should be made to ensure that every pregnant woman has access to skilled attendants during delivery.

Keywords: *Awareness, first trimester, maternal mortality, reproductive age, skilled attendants*

INTRODUCTION

Nigeria is a leading contributor to the maternal death figure in sub-Saharan Africa because of her high maternal mortality ratio. Nigeria's maternal mortality ratio of 560 is higher than the regional average.[1] With an estimated 59,000 maternal deaths annually, Nigeria which has approximately two percent of the world's population, contributes about 14% of the world's maternal deaths.[1]

Scientific evidence has clearly established the inverse relationship between skilled attendants at birth and the occurrence of maternal deaths. Thus, the considerable variation in the maternal mortality estimates between different locations within the same region can be attributed, to a large degree, to the differences in the availability of and access to modern antenatal care services.[2,3,4] Antenatal care, therefore, may be particularly advantageous in resource-poor developing countries, where health-seeking behaviour is inadequate, access to health services and availability of skilled man-power is otherwise limited, and most mothers are poor.

With the strong positive association that has been shown to exist between level of care obtained during pregnancy and the use of safe delivery care, antenatal care also stands to contribute indirectly to maternal mortality reduction.[5] According to the 2013 Nigerian Demographic Health Survey (NDHS), 61% of women who had births within the five years prior to the survey received antenatal care from a skilled attendant for their most recent delivery, while only 38.0% were assisted at delivery by a skilled attendant.[6]

Several studies have assessed the individual and house hold determinants of utilization of maternal services and findings suggest great variations.[7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24]

Thus, the objective of this study was to assess antenatal care services utilization among women of reproductive age in communities in Orlu Local Government Area of Imo State.

METHODOLOGY

Study Area and Population: Imo State is made up of 27 Local Government Areas, out of which Orlu is one. The Orlu Local Government Area comprises of 12 wards, and is bound to the south by Orsu Local Government Area (LGA), to the north by Njaba LGA, and to the east and west by Nkwerre and Oru LGAs, respectively. According to 2006 National Population Census, Orlu has a total population of 423,853 comprising of 196,257 females and 227,595 males.[25,26]

Study Design and Sample Size Estimation: This study is a cross-sectional descriptive type. The study population consisted of 425 women of reproductive age group (15 – 49 years). Using the Cochrane formula for sample size estimation for cross-sectional studies,

Sample size formula; $n = \frac{Z^2 pq}{d^2}$

Where

n = Desired sample size, Z = 95% confidence level = 1.96, P = Proportion of the target population estimated to have access to reproductive health services in Nigeria = 0.61[6], $q = 1 - P = 0.39$, d = 5% sampling error.

Sampling Technique: The sampling technique used was the multi-stage sampling technique.

Data Collection Method and Analysis: Data was obtained using an interviewer administered semi-structured questionnaire. The data were collated, validated manually and analysed using computer software (Epi Info 7.1). *Chi square* was used to test for significant association, and results were considered significant when *p-value* was <0.05. Frequency tables were also generated.

Ethical Approval: Ethical approval for this study was obtained from Imo State University Teaching Hospital Ethics Committee (IMSUTHEC). Verbal informed consent was obtained from each respondent before the interview.

RESULTS

The mean age of participants was 33.1years ± 5.7years. Majority of the respondents (82.1%) were married, of Catholic denomination (47.2%), of Igbo ethnic extraction (100%) and traders (32.2%). Almost all the respondents (93.5%) had post primary education, and majority of their husbands were civil servants (32%) and traders (28.7%), *Table 1*.

Table 1. Social demographic characteristics of respondents n=425

Variable	Frequency	%
Age (years)		
15-20	26	6.1
21-25	113	26.6
26-30	86	20.2
31-35	61	14.4
36-40	113	26.6
41-49	26	6.1
Total	**425**	**100**
Mean	**33.10± 5.7 years**	
Marital Status		
Married	349	82.1
Single	25	5.9
Divorce	23	5.4
Separated	18	4.2
Widowed	10	2.3
Total	**425**	**100**
Religion / Denomination	***n = 425***	
Catholic	201	47.2
Pentecostal	100	23.5
Orthodox	94	22.1
Others	30	7.0
Total	**425**	**100**
Maternal Occupation	***n = 425***	
Trader	137	32.2
Civil servant	123	28.9
Farmers	61	14.4
Unemployed	54	12.7
Others	50	11.8
Total	**425**	**100**
Level of Education	***n = 425***	
None formal education	11	2.5
Primary education	18	4.3
Secondary education	178	41.9
Tertiary	218	51.6
Total	**425**	**100**

Over ninety percent (93.9%) of the participants were aware of antenatal care and the most common benefit of attending antenatal care mentioned by them was to discover congenital anomalies (35.5%) followed by prevention of complications in pregnancy (25.1%). The most common sources of information regarding antenatal care among respondents were from the mass media as shown in *Table 2*.

Majority of the mothers (71.3%) had skilled attendant at their last antenatal care visit. The mean gestational age at booking was 3.7± 2.7months with majority of respondents booking in the first 3months of pregnancy (58.8%).

Table 2. Awareness and sources of information about antenatal care among respondents

Variable	Frequency	%
Awareness About Antenatal Care	***n = 425***	
Yes	399	93.9
No	26	6.3
Total	425	100
Benefits of Antenatal Care Mentioned (multiple response applicable)		***n = 399***
Discover child abnormality	150	35.3
Prevent complications in pregnancy	100	25.1
Save life of mother and child	72	16.9
Save delivery	17	4.0
Save cost	6	1.4
Sources of Information About Antenatal Services (multiple response applicable)		***n = 399***
Radio	302	71.0
Television	280	65.9
Newspaper	208	48.3
August meeting	201	47.3
Neighbors	199	46.4
Health personnel	193	45.4
School	144	33.9
Seminar	115	27.0

Table 3. Utilization of antenatal care services among respondents

Variable	Frequency	%
Attended antenatal care in your last pregnancy		
Yes	383	90.1
No	42	9.9
Total	425	100
Place of Antenatal Care Attendance	***n = 383***	
Primary health centre	144	37.6
Government hospital	105	24.4
Maternity homes	63	16.4
Private hospital	50	13.1
Church	11	2.9
Traditional birth attendant	10	2.6
Total	383	100
Antenatal Care Provider	***n = 383***	
Nurses/Midwives	155	36.5
Doctors	148	34.8
Auxiliary nurse	30	7.1
Care attendant	29	6.8
TBA	21	4.9
Total	**383**	**100**

Gestational Age at Booking		*n = 383*
1-3 months	225	58.8
4-6 months	93	24.2
7-9 months	65	17.0
Total	**383**	**100**
Mean Month at Booking	**3.7± 2.7 months**	
Antenatal Care Visits		*n = 383*
Once	33	8.6
2-3	142	37.1
≥4	210	54.8
Total	**383**	**100**
The Average Number of Attendance	**3.7± 1.73 times**	

Average number of ANC visit by respondents was 3.7± 1.73 times with more than half of the respondents (54.8%) attending ANC up to 4 times in the last pregnancy, see *Table 3*

Table 4. Use of Postnatal / Delivery Services by Respondents

Variable	Frequency	Percentage (%)
Place of Delivery		***n=425***
Government hospital	117	27.5
Maternity	113	26.6
Primary health care	90	21.2
Private hospital	75	17.6
TBA	15	3.5
Home	11	2.6
No response	4	1.0
Total	**425**	**100**
Care Provider		***n = 425***
Nurses /Midwives	217	51.1
Doctors	124	29.2
Auxiliary Nurses	51	12.0
TBA	15	3.5
Relatives	11	2.6
No Response	7	1.6
Total	**425**	**100**

Table 5. Sociodemographic characteristics of respondents and utilization of antenatal care services (*n = 425*)

Variable	Use of Antenatal Services				
	Yes %	**No %**	**Total %**	χ^2	**p-value**
Age					
15-20	19(73.1)	7(26.9)	26(100.0)	24.795	0.000*
21-25	103(91.2)	10(8.8)	113(100.0)	df = 3	
26-30	68(79.1)	18(20.9)	86(100.0)		
31-49	193(96.5)	7(3.5)	200(100.0)		
Total	**383(90.1)**	**42(9.9)**	**425(100)**		
Marital Status					
Single	15(60.0)	10(40.0)	25(100.0)		
Married	329(94.3)	20(5.7)	349(100.0)	30.628	0.000*
Divorced	18(78.3)	5(21.7)	23(100.0)	df = 3	

Widowed	6(60.0)	4(40.0)	10(100.0)		
Separated	15(83.3)	3(16.7)	18(100.0)		
Total	**383(90.1)**	**42(9.9)**	**425(100)**		
Maternal Occupation					
Trader	117(85.4)	20(14.6)	137(100.0)		
Civil servant	111(90.2)	12(9.7)	123(100.0)	47.756	0.000*
Farmers	26(42.6)	35(57.4)	61(100.0)	df = 3	
Unemployed	51(94.4)	03(5.6)	54(100.0)		
Others	48(96.0)	02(4.0)	50(100.0)		
Others (Artisans, students, housewife)					
Total	**383(90.1)**	**42(9.9)**	**425(100.0)**		
Level of Education					
None	8(72.7)	3(27.2)	11(100.0)		
Primary	12(66.7)	6(33.3)	18(100.0)	21.087	0.000*
Secondary	156(87.6)	22(12.4)	178(100.0)	df = 3	
Tertiary	207(95.0)	11(5.0)	218(100.0)		
Total	**383(90.1)**	**42(9.9)**	**425(100.0)**		
Religious Denomination					
Catholic	181(90.0)	20(10.0)	201(100.0)		
Pentecostal	93(93.0)	07(7.0)	100(100.0)	0.1339	0.715
Orthodox	84(89.4)	10(10.6)	94(100.0)	df = 3	
Others	25(83.3)	5(16.7)	30(100.0)		
Total	**383(90.1)**	**42(9.9)**	**425(100.0)**		

A greater proportion of the mothers (90.1%) had skilled attendant during delivery. The most common places of delivery patronized by respondents were government hospitals 27.5%, maternity homes 26.6% and PHC 21.2%. Most of the respondents (80.9%) were attended to by skilled birth attendants, as shown in *Table 4*.

On bivariate analysis, statistically significant association were observed with maternal age (χ^2 = 24.795, df = 3, *p-value* = 0.000*), marital status(χ^2 = 30.628, df = 4, *p-value* = 0.000*), maternal level of education (χ^2 = 21.087, df = 3, *p-value* = 0.000*) and maternal occupation (χ^2 =47.756, df =3, *p-value* = 0.000*). However, the association between religion denomination and antenatal care utilization was not statistically significant, as shown in *Table 5*

DISCUSSION

Our results show that the level of utilization of orthodox health care facilities for antenatal care services is comparable to what obtained in many countries in sub-Saharan Africa and Imo State. However, it is significantly higher than the 60.3% antenatal care services utilization among all Nigerian mothers found by Babalola, *et al*, in their analysis of the 2005 National HIV/AIDs and Reproduction Health Survey (NARHS) data.[27,28]

The finding that utilization of antenatal services is higher than use of skilled assistance is consistent with the results of previous studies conducted in Nigeria and elsewhere.[29,30,31,33] One of the reasons that have often been advanced for the lower coverage of skilled and institutional delivery compared to antenatal care coverage is the unpredictable nature of the onset of labour in the face of difficulty in accessing health facilities in resource poor environments, however, the shortfall in midwives and doctors is a major contributory factor.[34]

The role of traditional and religious beliefs as well as the perception of women with respect to comparative efficiency of the orthodox versus traditional birth attendants may also be contributory to failure to have skilled

attendants at births as widely reported.[22,34,35 37,]

Our finding regarding the positive association between education and maternal antenatal services utilization agrees with previous reports.[7,11,28,38,39] Education serves as a proxy for information, cognitive skills and values, and exerts positive effects on health-seeking behaviour through a number of pathways.[9,11,40,41] Educated mothers are more likely to take advantage of public health care services than their uneducated counterparts.[42,43,44,45] Whereas some previous Nigerian studies had reported a significant relationship between age and antenatal care services utilization, others had shown no such difference; yet, our study showed a significant relationship between age, occupation and marital status of mothers with the utilization of antenatal care services.[27,28,46,47]

CONCLUSION

Factors influencing antenatal services utilization operate at various levels – individual, household and community. To be optimally effective, interventions to promote antenatal care services utilization need to take these various levels into consideration.

ACKNOWLEDGEMENT

We wish to thank all the mothers who participated in the study.

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