Original Article

Patterns of Antenatal Care Seeking Behavior in South East Nigeria: Exploring Relationship with Age, Education, and Socioeconomic Status

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ABSTRACT

Background: Maternal and infant morbidity and mortality are major public health problems in Nigeria. Although it is well-known that appropriate antenatal care (ANC) is important in reducing maternal morbidity and mortality, there is limited information on inequities on ANC seeking pattern among the pregnant women in Nigeria. **Aim:** The study was designed to explore inequities due to age, education, and socioeconomic status (SES) of women of childbearing age in seeking ANC services in Nigeria. **Subjects and Methods:** A household survey was conducted in 10 randomly selected villages in Nnewi, Anambra State, South-East Nigeria. An interviewer-administered questionnaire was used to collect relevant data from 420 women of childbearing age from the villages. The effects of age, education, SES, and ANC seeking behavior were analyzed. **Results:** It was found that 61.4% (254/420) of the respondents attended ANC clinic at least 6times. Although most of the respondents sought ANC in formal health, a greater percentage utilized private hospitals/clinics more than public health facilities. Age ($P < 0.01$), educational level ($P < 0.001$), and SES ($P < 0.01$) had statistically significant effects on respondents' antenatal clinic attendance and choice of facilities. The highest SES group was more likely to utilize teaching hospitals and private clinics than other SES groups. **Conclusions:** There were inequities due to SES, educational level, and age of respondents in the pattern of ANC seeking behavior. These inequities could negate the achievement of millennium development goals (MDGs). Interventions that would address the inequities should be developed and implemented if the health-related MDGs are to be achieved.

KEY WORDS: Antenatal care, health seeking behavior, inequities, Nigeria, women of childbearing age

INTRODUCTION

Maternal mortality is an important indicator of maternal health and wellbeing in any country.[1] Consequently, the reduction of maternal mortality level is a key millennium development goal (MDG). Most Sub-Saharan African countries are not on the course in meeting the MDG goal of reducing maternal mortality.[2] Timely and appropriate antenatal care (ANC) can be used to improve pregnancy outcomes and hence reduce maternal morbidity and mortality.[3] When women avail themselves of ANC services, pregnancy-associated complications that may affect pregnancy adversely are identified early.[4] Despite the fact that components of ANC have been found to improve pregnancy outcomes, maternal/infant morbidity, and mortality still remain public health problems in most developing countries including Nigeria.[2]

The World Health Organization (WHO) recommends that first antenatal visit should be initiated at ≤12 weeks in focused ANC and <14 weeks in traditional ANC seen in the most developing countries.[5,6] Good ANC starts with early

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Access this article online	
Quick Response Code	**Website:** www.jbcrs.org
	DOI: ***

How to cite this article: ***

booking which is widely believed to improve maternal and fetal outcome.[5-7] Despite the advantages of early booking, late booking is common in Nigeria.[6-9]

Healthcare seeking behavior is an activity undertaken by individuals who perceive they have a health problem or are ill for the purpose of finding an appropriate remedy.[10] It has bearing on maternal morbidity and mortality.[11] The choice of where to seek healthcare depends on many factors which include availability of a skilled provider within the community, type of facility, the cost of treatment, and arrangement for payment.[10,12] In Nigeria, ANC seeking behavior of women remains poor and poses one of the greatest challenges to maternal mortality reduction in the country.[7,9,13-15] Many pregnant women avoid seeking care until they go into labor.[13-15]

This paper presents new evidence about patterns of health seeking behavior of women of childbearing age in Nigeria. It specifically shows the relationship in patterns of antenatal health seeking with some demographic and socioeconomic factors. The evidence is needed to design better context-specific interventions that will improve health seeking for ANC services. The Pattern of ANC seeking behavior as used in this study refers to the gestational age at booking, the number of times of ANC visit during pregnancy, and facilities where women registered for ANC.

SUBJECTS AND METHODS

Study area

The study was undertaken in ten randomly selected villages of Nnewi North local government area (LGA) of Anambra State, Nigeria from June to July 2013. Nnewi North LGA is a one-town LGA with 49 villages. There are primary health centres (PHCs)/clinics managed by the State Government through the State Hospital Management Board of the State Ministry of Health and the local governments respectively and many private hospitals/clinics in the area. The private sector provides both primary and secondary care services. There is no secondary health facility, and the only tertiary health institution in the state which is owned and managed by the Federal Government through the Federal Ministry of Health is located at the center of the town.

Study design

A household survey was conducted in the ten selected communities of Nnewi North LGA. Nnewi has a total population of 157,569[16] and according to Federal Ministry of Health[17] 22% of the total population are women of childbearing age. Therefore, the target population was computed to be 34,665. A minimum sample size of 400 women was determined using Taro Yamane statistical formula for finite population $n = N/1 + N (e)^2$.[18] The sample size was adjusted to accommodate for attrition and nonresponse using 5% giving the final sample size of 420. To select the respondents, a multistage sampling technique was adopted:

- First stage: The four quarters of Nnewi were used as clusters
- Second stage: Simple random sampling method was used to select two quarters from the four quarters
- Third stage: Simple random sampling was used to select 5 villages each from the two quarters making a total of 10 villages
- Fourth stage: Systematic sampling was used to select the households. This was done by first getting a sample interval and a random start. Every woman of childbearing age who met the inclusion criteria in each of the selected households was included in the sample. The inclusion criteria were women of childbearing age who had just given birth to a child not more than 1-year-old within the period of the study and willingness to participate. This was done in each of the 10 villages until 42 women were selected from each village making a total of 420 women. Four hundred and twenty women were interviewed after obtaining informed consent using semi-structured pretested interviewer-administered questionnaires. The instruments were validated by two specialists one from Measurement and Evaluation Department and the other from Community Health Nursing Department from the Nnamdi Azikiwe University, Awka, Nigeria. Corrections were used to modify the final instrument before administration. The reliability of the instrument was determined by test-retest method using 40 women from a neighboring community not part of the study group. Responses obtained were subjected to Pearson Product Moment Correlation test, and a reliability coefficient score of 0.815 was obtained. Information was collected on the personal profile of respondent and healthcare seeking pattern for ANC. Data were also collected on the socioeconomic status (SES) of the respondents using household asset ownership and type of living accommodation to enable classification of respondents into socioeconomic groups (see attached).

Ethical approval was obtained for the study from the Ethics Review Board of a tertiary health institution in the state. Each respondent gave a signed informed consent and was assured that all information given would be handled confidentially. The participants who were willing and who could write signed their signatures, while others thumb-printed the consent forms. Participants were informed that participation is voluntary, and they could withdraw from the study any time they felt uncomfortable.

Data analysis

Descriptive statistics was used to analyze the personal profile of respondents and health seeking pattern for ANC. Principal component analysis in STATA software package[19] was used to create continuous SES index[20,21] using information from household assets together with information from education and other sociodemographic characteristics. The SES index was used to divide the households into four equal sized SES groups (quartiles): Q1 = poorest; Q2 = very poor; Q3 = poor; and Q4 = least poor. Influence of age, level of education, and SES on patterns of ANC seeking behavior of respondents was tested. Chi-square (χ^2) tests for trend were used to examine statistical differences in the distribution of the variables across the different SES groups. All statistical analysis was done using the statistical package for social sciences version 17.0 (SPSS Statistics for Windows, Version 17.0. 2008. Chicago: SPSS Inc)[22] at 0.05 level of significance.

RESULTS

Sociodemographic characteristics of respondents from the household survey

The mean age of respondents was 30 years, and majority of the respondents (96.8%) were married with 34.8% having primary education and 53.8% of the respondents having completed secondary education [Table 1].

Health seeking pattern for antenatal care

The results show that the mean gestational age at booking was 4.29 (1.86) months, mean ANC attendance was 5.21 (1.38) visits, and the facility most utilized was private clinic/hospital [Table 2].

Relationship between age and health seeking pattern for antenatal care

The age of respondents showed a significant relationship with the number of antenatal visits ($P < 0.01$). However, there was no significant relationship between age and the facilities used for ANC [Table 3].

Relationship between educational level and health seeking pattern for antenatal care

Educational level showed a strong relationship with the number of antenatal visits in their last pregnancy $P < 0.001$. Majority 91.7% (134/146) of respondents with tertiary education attended antenatal clinic 4 times and above. There were significant relationships with respondents' level of education and the use of PHC, teaching hospital, and maternity home $P < 0.01$, $P < 0.01$, and $P < 0.001$, respectively [Table 4.]

Relationship between socioeconomic status and antenatal care seeking pattern

Table 5 shows that there was a significant relationship between SES of the respondents and the number of antenatal visits in their last pregnancy $P < 0.01$. Similarly, significant relationships existed between the respondents'

Table 1: Sociodemographic characteristics of respondents (*n*=420)

Characteristics	F	Percentage
Age (years)		
15-24	80	19.0
25-34	244	58.1
35-44	83	19.8
45-49	13	3.1
Marital status		
Single	28	6.7
Married	373	89.0
Divorced	5	1.2
Widowed	14	3.3
Education level		
None	7	1.7
Primary	41	9.8
Secondary	226	53.8
Tertiary	146	34.8

Table 2: Pattern of ANC seeking behavior

Item	F	Percentage
Number of ANC visits during pregnancy (*n*=420)		
Nil	10	2.3
Once	7	2.0
Twice	19	4.5
Three	37	8.3
Four	40	9.5
Five	53	12.6
Six and above	254	61.4
Mean (SD)	5.21 (1.38)	
Gestational age in months at first ANC visit (*n*=326)		
First trimester (1-3 months)	112	34.4
Second trimester (4-6 months)	164	50.3
Third trimester (7-9 months)	50	15.3
Mean (SD)	4.29 (1.86)	
Facility where women registered during pregnancy*		
Private	188	44.8
Teaching hospital	150	35.7
PHC	79	18.8
Maternity home	41	9.8
Faith-based	5	1.2
Herbal home	2	0.5

*Multiple responses. ANC=Antenatal care, SD=Standard deviation, PHC=Primary health center

Table 3: Relationship between age and pattern of ANC seeking behavior

Pattern of ANC seeking behavior	Age of the respondents				χ^2 (*P*)
	15-24	25-34	35-44	45-49	
Number of ANC visit for last pregnancy *n* (%)					
Nil	5 (6.3)	2 (0.8)	3 (3.6)	0 (0.0)	35.3 (<0.01)*
Once	1 (1.3)	3 (1.2)	3 (3.6)	0 (0.0)	
Twice	6 (7.5)	10 (4.1)	0 (0.0)	1 (7.7)	
Thrice	6 (7.5)	19 (7.8)	10 (12.0)	0 (0.0)	
4 times	10 (12.5)	22 (9.0)	4 (4.8)	2 (15.4)	
5 times	8 (10.0)	35 (14.3)	9 (10.8)	1 (7.7)	
>6 times	44 (55)	153 (62.7)	54 (65.1)	9 (69.2)	
Total	80 (100)	244 (100)	83 (100)	13 (100)	
Facility in which woman registered *n* (%)					
PHC	19 (25.47)	44 (19.6)	12 (16.4)	4 (33.3)	3.28 (0.35)
Private hospital	34 (45.3)	114 (50.7)	33 (45.2)	7 (58.3)	1.49 (0.68)
Teaching hospital	30 (40)	95 (42.2)	22 (30.1)	3 (25)	4.41 (0.22)
Maternity	5 (6.7)	22 (9.8)	11 (15.1)	3 (25)	5.53 (0.14)
Herbal home	1 (1.3)	0 (0.0)	1 (1.4)	-	3.07 (0.38)

*Significant *P*=0.05. ANC=Antenatal care, PHC=Primary health centre

Table 4: Relationship between educational level with pattern of ANC seeking behavior

Pattern of ANC seeking behavior	Level of education				χ^2 (*P*)
	None	Primary	Secondary	Tertiary	
Number of ANC visit for last pregnancy					
Nil	2 (28.6)	3 (7.3)	5 (2.2)	0 (0.0)	55.7 (<0.001)*
Once	1 (14.3)	4 (9.8)	1 (0.4)	1 (0.7)	
2 times	0 (0.0)	2 (4.9)	15 (6.6)	2 (1.4)	
3 times	2 (28.6)	6 (14.6)	20 (8.8)	9 (6.1)	
4 times	1 (14.3)	5 (12.2)	22 (9.7)	12 (8.2)	
5 times	0 (0.0)	3 (7.3)	32 (14.2)	18 (12.3)	
6 times	2 (28.6)	18 (43.9)	131 (57.9)	104 (71.2)	
Total	7 (100)	41 (100)	226 (100)	146 (100)	
Facilities registered					
PHC	1 (14.3)	6 (15.8)	55 (22.5)	17 (9.8)	9.991 (0.02)*
Private hospital	2 (28.6)	17 (44.7)	93 (38.1)	76 (43.7)	5.255 (0.15)
Teaching hospital	1 (14.3)	10 (26.3)	73 (29.9)	66 (37.9)	10.565 (0.01)*
Maternity home	4 (57.1)	4 (10.5)	22 (9.0)	11 (6.3)	18.662 (<0.001)*
Faith based	-	1 (2.6)	1 (0.4)	2 (1.1)	1.921 (0.59)
Herbal home	-	-	-	2 (1.1)	3.771 (0.29)
Total	8	38	244	174	

*Significant *P*=0.05. ANC=Antenatal care, PHC=Primary health centre

Table 5: Relationship between SES with pattern of ANC seeking behavior

Pattern of ANC seeking behavior	SES of respondents				χ^2 (*P*)
	Poorest	Very poor	Poor	The least poor	
Number of ANC visit during last pregnancy					
Nil	4 (3.5)	1 (1.1)	1 (1.0)	2 (2.0)	38.335 (<0.01)*
Once	4 (3.5)	1 (1.1)	0 (0.0)	1 (0.9)	
2 times	7 (6.2)	3 (3.3)	4 (3.9)	2 (2.0)	
3 times	13 (15.5)	9 (9.8)	8 (7.8)	4 (3.9)	
4 times	11 (9.7)	5 (5.4)	15 (14.7)	6 (5.9)	
5 times	17 (15.0)	9 (9.8)	15 (14.7)	12 (11.8)	
6 times	57 (50.4)	64 (69.6)	59 (57.8)	75 (73.5)	
Total	113 (100)	92 (100)	102 (100)	102 (100)	
Facility registered for ANC in the last pregnancy					
PHC	30 (31.6)	19 (18.8)	23 (19.0)	5 (4.3)	19.9 (<0.001)*
Private hospital	41 (43.2)	44 (43.6)	42 (34.7)	56 (47.9)	7.90 (0.05)
Teaching hospital	23 (24.2)	28 (27.7)	47 (38.8)	49 (41.9)	24.3 (<0.001)*
Maternity home	17 (17.8)	10 (9.9)	6 (5.0)	8 (6.8)	5.82 (0.12)
Faith based	1 (1.1)	1 (1.0)	2 (1.7)	1 (0.9)	1.96 (0.58)
Herbal home	0 (0.0)	0 (0.0)	1 (0.8)	1 (0.9)	1.97 (0.58)
Total	95	101	121	117	

*Significant at *P*=0.05. ANC=Antenatal care, PHC=Primary health centre, SES=Socioeconomic status

SES and use of PHC, teaching hospital, and private hospital $P < 0.001$, $P < 0.01$, and $P < 0.001$, respectively.

The poorest SES group utilized PHC and maternity homes most compared to other SES groups while the least poor utilized teaching hospitals most. Although the use of private hospital was not significant almost half of each SES group utilized it for their ANC.

DISCUSSION

In this study, 65.6% of the respondents booked late for ANC. However, this result is lower than the one that was reported by Okunlola *et al*.,[14] in Ibadan, Onoh *et al*.,[9] in Ebonyi and by Adekanle and Isawumi.[8] in Shagamu Lagos in their various studies. Only (34.4%) respondents booked within the WHO[5] recommended first trimester period. The mean gestational age at booking was 4.29 months or 17.16 weeks. This is lower than the mean gestational age at booking reported by Okunlola *et al*.,[14] in Ibadan 5.45 months or 21.82 weeks, Onoh *et al*.,[9] in Ebonyi 7.29 months or 24.33 weeks and Nwagha *et al*.[23] in Enugu 7.29 months or 29.16 weeks.

The study showed that majority of the respondents attended ANC during their last pregnancy. The increased attendance at antenatal clinic may be attributed to the introduction of the Anambra State Health Emergency Rapid Response (ASHERR) to deal with obstetric emergencies in rural areas thereby creating awareness on ANC attendance. Our finding is in contrast with the study on "Maternal Health Seeking Behavior and Associated Factors in a rural Nigeria Community" where only 9.9% attended ANC.[7]

Although most of the respondents sought ANC in a formal health facility, a greater percentage (44.8%) was in private clinics. The finding is not surprising as Nnewi has many private hospitals and one tertiary health institution. Our finding agrees with the findings of Osubor *et al*.[7] where private clinics/maternity was the most preferred place for antenatal and childbirth. All the SES groups in this study utilized private clinics more than PHC and maternity homes. This calls for further investigation as to why private clinics were preferred more than the public health facilities.

Age of mothers was significantly related to the number of ANC visit. Mothers' age may sometimes have an influence on utilization of maternal services due to experience and accumulated knowledge. Thus the older the woman, the more likely she may utilize ANC services. Similar studies[7,9] showed no association with respect to age and attendance to ANC.

The level of education had a significant relationship with the number of ANC visit. Respondents with tertiary and secondary education were more regular with antenatal clinic attendance than those with primary and no formal education. Similarly, there was a significant relationship between education and use of health facilities. Respondents with tertiary education utilized teaching and private hospitals most while those with no formal education were most likely to utilize maternity homes. The level of education of the respondents may have contributed to seeking antenatal, and care in health facilities as most of them had secondary and tertiary education. These findings are consistent with reports in the literature which showed that higher educational

status and a higher level of income positively affect the pattern of use of antenatal services.[7,24]

SES was statistically significant with ANC visit. The higher the level of SES of the respondents the greater the number of clinic attendance. The least poor attended antenatal clinic more than other SES groups. The least poor utilized teaching hospital and private hospitals most compared to other SES groups. SES and education are strong factors in determining individual, family or community choice of health care. This finding is in support of previous studies where a higher level of income positively affect the pattern of ANC seeking behavior.[24] On the other hand, socioeconomic factors such as poverty, poor literacy, and overall living standard, residing area (urban/rural) have negative effects on ANC seeking behavior among pregnant women.[4] Improving the educational level and SES of women in the community may improve pattern for ANC.

This study has some limitations. It was confined to Nnewi, and therefore, cannot be generalized to all the women in Anambra State or the whole country. A qualitative approach such as focus group discussions or in-depth interview may have enriched findings of the study by exploring issues on the choice of health facility especially with a greater percentage of the respondents utilizing private clinics. This is a study limitation, which future studies should incorporate when collecting data so that the information on health seeking will be more robust. Also, a bias that may have been introduced in the study was the fact that data were collected based on the last pregnancy which the respondents had to recall.

CONCLUSIONS

This study has demonstrated the existence of SES inequities in ANC clinic attendance and choice of health facility for ANC. Age, educational level, and SES have significant relationships with patterns of health seeking behavior of women of childbearing age. The higher the level of SES, educational level, and the age of women the higher the number of ANC clinic attendance. Based on the findings, better community-based interventions that would address and reduce the variables responsible for inequities are needed if the health-related MDGs are to be achieved in Nigeria.

Acknowledgement

The authors are grateful to Prof. Obinna Onwujekwe for his useful contributions and suggestions in this work. We thank the management of Nnamdi Azikiwe University Teaching Hospital (NAUTH) Nnewi for the permission to conduct the study. We are also grateful to all the women who participated in this study for their cooperation and support.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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