Socio-Demographic Determinants of Antenatal Care Services' Utilization among Childbearing Women in Akwa Ibom State

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ABSTRACT

This study investigated the socio-demographic determinants of antenatal care services' utilization among childbearing women in Akwa Ibom State. Three research questions and hypotheses were postulated. Cross-sectional research design was adopted. The population consisted of 51,083 childbearing women. A sample of 2544 childbearing women was drawn for the study using multi-stage sampling procedure. "Socio-Demographic Determinants of Antenatal Care Utilization Questionnaire (SDDACUQ)" was used for data collection. The SDDACUQ was validated by five experts. It was subjected to reliability test using Cronbach Alpha, and a reliability index of .96 was obtained after analysis. Data from 2538 completed copies of SDDACUQ were used for analysis. Mean and standard deviation were used to answer research questions, while ANOVA was used to test hypotheses 1 to 3. Results revealed that age (below 15 years), marital status (women separated and never married), educational status (women with tertiary education), were the socio-demographic variables that highly determine the utilization of ANC services among Akwa Ibom women. There were significant differences in the utilization of antenatal care services (ANC) by childbearing women of various age groups, marital status, and educational status of residence in Akwa Ibom State Based on findings, one of the recommendations made was that health educators should transmit adequate information on antenatal care utilization to the women having low utilization of the services, using suitable channels and settings in order to promote their health.

KEYWORDS: Antenatal care (ANC), Age status, Marital status, Educational status, and Akwa Ibom State

Introduction

Considering the quality of antenatal care services rendered to pregnant women, one would expect that all pregnant women are utilizing ANC services, but Fagbamigbe, Hurricane-Ike and Idemudia (2017) observed low utilization of ANC among childbearing women in Nigeria. This includes Akwa Ibom State. Data from Nigerian Demographic and Health Survey (NDHS, 2013) indicated that only 73.3 percent of childbearing women in Akwa Ibom State

received ANC. This percentage is short of the WHO recommended 90 percent ANC coverage required to improve the health and wellbeing of pregnant women (WHO, 2005). Certain factors tend to influence the extent of utilization of ANC services in Akwa Ibom State. In Ibadan, Dairo and Owoyokun (2010) found that the factors affecting the utilization of ANC services were maternal age, tribe, religion, marital status, maternal educational status; husband's education; husband's employment status, cost; location of residence; parity; family type as well as the woman's decision-making power. Of these factors, Awasthi, Awasthi, Thapa, Saud, Pradhan and Khatry (2018) identified maternal age, marital status, maternal education, parity and location of residence as the key socio-demographic factors influencing ANC utilization by majority of women in developing countries.

Maternal age is often indicated as a factor for health care seeking behaviour (Bayou, 2014). Yet, Okedo-Alex et al. (2019) found that in Ethiopia younger women aged less than or equal to 20 years at the time of first pregnancy were nearly three times more likely to use ANC services than those whose age at first pregnancy was more than 20 years. On the contrary, Envuladu et al. (2013) found that older women were more likely to opt for ANC services due to their accumulated experience in using these services.

On marital status, Taylor, Larson and Correa-de-Araujo (2005) found that the never married women differ significantly from those of other women in their pattern of antenatal care utilization. Majority of the never married women including the divorcees and widows, were less likely to have adequate money and support to enhance their utilization of antenatal care services, whereas, the married women enjoy both the financial and moral support from their spouse towards antenatal care utilization. Conversely, Fagbamigbe and Idemudia (2015) reported that 93.0 per cent of non-users of ANC in their study were either currently married or living with sexual partners. Their barrier to antenatal care utilization was due to the low economic and educational level of the woman, and the problem of getting permission from the spouse to attend ANC clinic.

Considering maternal education, Atekyereza and Mubiru (2014) submitted that women who had attained tertiary education reported seeking ANC services from trained medical personnel compared to their counterparts who had never been to school. According to Fagbamigbe et al. (2017), lack of formal education and lower educational levels had been key predictors of poor ANC utilization among women.

Research Questions

Hence, the questions being raised are:

1. Could there be any difference in the extent of utilization of antenatal care services by childbearing women in Akwa Ibom State based on age groups?

2. Could there be any difference in the extent of utilization of antenatal care services by childbearing women in Akwa Ibom State based on marital status?

3. Could there be any difference in the extent of utilization of antenatal care services by childbearing women in Akwa Ibom State based on educational status?

Research Hypotheses

Based on these questions, the following hypotheses were raised:

$H0_1$: There is no significant difference in the utilization of antenatal care services by childbearing women of various age groups in Akwa Ibom State.

$H0_2$: There is no significant difference in the utilization of antenatal care services by childbearing women of various marital status in Akwa Ibom State.

$H0_3$: There is no significant difference in the utilization of antenatal care services by childbearing women of various educational status in Akwa Ibom State.

Methods

Cross-sectional research design was used in this study on the bases that the researchers only collected current data from a cross-section of the study population in respect of the variables of the study, and describe the situation of the subjects as they actually existed without controlling the independent (socio-demographic determinants) and the dependent (ANC utilization) variables of the study. The study was conducted in Akwa Ibom State, Nigeria. The State has pregnant women who should utilize ANC, but the extent to which they utilize ANC services and the determinants of ANC utilization among the women have not been empirically determined. The population of the study consisted of 51,083 childbearing women (Akwa Ibom State Ministry of Health, 2021). They possess the characteristics which the present study aimed at investigating.

A sample of 2544 childbearing women representing approximately five percent of the eligible population participated in the study. Multi-stage sampling procedure was adopted to select the sample. In the first stage, Akwa Ibom State was clustered by the three senatorial districts of the State (Uyo, Ikot Ekpene and Eket. In the second stage, four LGAs (2 urban and 2 rural) from each senatorial district (cluster) were selected using stratified random sampling method. Thus, a total of twelve (12) LGAs (6 urban and 6 rural) were drawn for the study. In the third stage, purposive sampling method was used to select 212 childbearing women from each of the sampled LGA. Therefore, 2544 childbearing women participated in the study. Respondents comprised women who were currently pregnant and those who delivered babies not later than two years to this study.

The researcher-developed instrument titled "Socio-Demographic Determinants of Antenatal Care Utilization Questionnaire (SDDACUQ)" was used for data collection. The questionnaire had two sections (A and B). Section A gather the respondents' socio-demographic information, while Section B elicits information on respondents' utilization of antenatal services.

The instrument (SDDACUQ) was given content and face validation by five validators. Three in the Department of Human Kinetics and Health Education, and two from the Department of Educational Foundations, Nnamdi Azikiwe University, Awka, Anambra State. The SDDACUQ was pre-tested for determination of its reliability on 25 childbearing women from Itu LGA, Akwa Ibom State, which was not used in the main study. The scores obtained were computed

using Cronbach Alpha and reliability coefficient of .96 was obtained. The instrument was therefore considered reliable for use in the study.

On methods of data collection, the researcher obtained Ethical clearance from the Research and Ethics Committee of the Ministry of Health, Akwa Ibom State, and permission from the Heads of the various facilities visited for the study to use childbearing women attending the respective facilities for antenatal care as participants. Voluntary participation of the respondents was ensured and their verbal consents were solicited and obtained before engaging them in the study. The respondents were adequately informed of the purpose of the study and the need to be honest in responding by interview to the items in the research instrument.

The researcher and twelve trained female assistants administered the instrument to the respondents. The choice of female assistants was based on the fact that researches on female reproductive health in Nigeria are best attended to by females. The respondents were contacted at various locations (ANC and immunization clinics, TBA homes, public health facilities - secondary and primary, and other women gatherings) within the study area. The instrument was administered to the illiterate respondents by reading the questionnaire items and interpreting them in local dialect (Ibibio, Annang, or Oron). Each of them was helped to complete the questionnaire by ticking the option of each item based on the response of the respective respondent. Copies of completed questionnaires were retrieved from the respondents and examined for completeness of information by the researcher and her assistants.

Initially, 2544 copies of the questionnaire were administered, but six copies were discarded for incomplete responses, leaving 2538 satisfactorily completed copies for analysis. The exercise lasted for one month.

The data from completed questionnaires were collated and analysed using Mean and standard deviation to answer the research questions. ANOVA was used to test hypotheses 1 to 4, while t-test was used to test hypothesis 5 at 0.05 level of significance

The results were presented and analysed in Tables 1-6

Results

Table 1: Mean Scores on Utilization of Antenatal Care Services by Childbearing Women of Various Age Groups (n = 2538)

S/N	Items	Below 15years (n=201)		16-25years (n=678)		26-35yrs (n=905)		35^{+} years (n=754)	
		X	SD	X	SD	X	SD	X	SD
	During pregnancy, did:								
1	You register for antenatal care in the first 3 months of pregnancy?	1.40	.83	1.65	.92	1.72	.65	2.23	1.04
2	You attend antenatal clinic up to 3 times before delivery?	2.28	.58	2.23	.88	2.00	.58	2.15	.84
3	Nurse/midwife/doctor attends to you?	2.71	.44	2.85	.76	2.45	.92	2.54	.46
4	You give your pregnancy history to a nurse / midwife / doctor?	2.90	.97	2.85	.64	2.79	.45	2.69	.77

5	The clinic measure your weight up to two times before delivery?	2.27	.60	2.36	.72	2.23	.96	2.15	.61
6	You receive abdominal examination on every visit?	2.38	.59	2.38	.57	2.08	.84	2.08	.92
7	You do ultrasound?	2.03	.82	1.39	.67	1.44	.89	1.31	.69
8	You receive physical examination?	3.00	.41	2.84	.82	2.89	.95	2.85	.53
9	They check your blood pressure at the clinic?	2.86	.96	2.89	.96	2.80	.95	2.69	.86
10	They checked your HIV status?	2.88	.57	2.65	.74	2.67	.82	2.62	.65
11	They carry out test for other sexual transmitted diseases?	1.99	.49	1.65	.92	1.56	.94	1.54	.58
12	You do blood test?	2.65	.71	2.53	.54	2.41	.09	2.38	.85
13	You do urine test?	2.76	.19	2.85	.80	2.12	.99	2.54	.64
14	You receive at least two doses of tetanus toxoid before delivery?	2.90	.72	2.61	.95	2.33	.71	2.69	.76
15	You receive anti-worm tablets?	2.73	.18	2.56	.76	2.17	.53	2.62	.85
16	You receive up to three doses malaria prevention drugs before delivery?	1.82	.70	1.99	.60	1.34	.70	2.00	.47
17	You received maternal routine drugs more 3 times before delivery?	2.72	.39	2.29	1.06	1.53	.19	2.31	.92
18	You receive long lasting insecticidal net?	3.00	.82	2.81	.95	2.76	.82	2.69	.76
19	You sleep inside the long lasting insecticidal net every night?	2.17	.93	2.54	.86	2.06	.65	2.54	.58
	Overall mean score	**2.50**	**.73**	**2.42**	**.65**	**2.18**	**.57**	**2.35**	**.83**

Table 1 shows that, in overall, the childbearing women below 15years of age had very high utilization of antenatal care services with an overall mean score of 2.50 and standard deviation of .73. Those within the age brackets of 16-25 years (X=2.42; SD=.65), and above 35 years (X = 2.35; SD=.83), had high level of utilization of antenatal care services, compared to those in the age bracket of 26-35 years (X=2.18, SD=.57).

Table 2: Mean Scores on Utilization of Antenatal Care Services by Childbearing Women of Various Marital Status (n = 2538)

S/N	Items	Married (n=846)		Widow (n=585)		Separated (n=454)		Never married (n=653)	
		X	SD	X	SD	X	SD	X	SD
	During pregnancy, did:								
1	You register for antenatal care in the first 3 months of pregnancy?	1.69	.93	1.89	.52	1.72	.31	2.21	.73
2	You attend antenatal clinic up to 3 times before delivery?	2.15	.85	1.99	.92	1.99	.92	2.39	.32
3	Nurse/midwife/doctor attends to you?	2.69	.75	2.80	.82	3.00	.38	2.59	.70
4	You give your pregnancy history to a nurse / midwife / doctor?	2.71	.79	2.78	.65	3.00	.37	2.51	.87
5	The clinic measures your weight up to two times before delivery?	2.08	.23	2.22	.72	2.57	.45	2.60	.73
6	You receive abdominal examination on every visit?	2.00	.42	2.33	.27	2.43	.51	2.39	.93
7	You do ultrasound?	1.45	.66	1.22	.74	1.86	.81	1.69	.42

8	You receive physical examination?	2.87	.99	2.79	.85	3.00	.42	2.87	.90
9	They check your blood pressure at the clinic?	2.70	.57	2.80	.70	3.00	.40	2.86	.73
10	They checked your HIV status?	2.45	.86	2.44	.56	3.00	.45	2.60	.90
11	They carry out test for other sexual transmitted diseases?	1.18	.52	1.55	.49	2.28	.96	1.90	.77
12	You do blood test?	2.53	.70	2.54	.63	2.85	.55	2.41	.47
13	You do urine test?	2.55	.44	2.81	.46	3.00	.55	2.50	.69
14	You receive at least two doses of tetanus toxoid before delivery?	2.69	.54	2.46	.72	3.00	.37	2.80	.50
15	You receive anti-worm tablets?	2.60	.75	2.56	.79	2.72	.90	2.81	.44
16	You receive up to three doses malaria prevention drugs before delivery?	1.67	.98	1.99	.73	2.55	.76	2.09	.79
17	You received maternal routine drugs more 3 times before delivery?	2.86	.99	2.08	.91	2.29	.63	2.39	.75
18	You receive long lasting insecticidal net?	3.00	.54	2.54	.91	2.29	.95	2.49	.44
19	You sleep inside the long lasting insecticidal net every night?	2.46	.90	2.31	.93	2.16	.95	2.31	.70
Overall mean score		**2.33**	**.67**	**2.32**	**.78**	**2.56**	**.63**	**2.44**	**.68**

Data in Table 2 show that, in overall, the separated childbearing women (X=2.56; SD =.63) had very high utilization of antenatal care services. Those never married (X=2.44; SD =.68), had high utilization of antenatal care services, compared to the married (X=2.33; SD =.67) and the widows (X=2.32; SD =.78).

Table 3: Mean Scores on Utilization of Antenatal Care Services by Childbearing Women of Various Educational Status (n = 2538)

S/N	Items	No formal education (n=258)		Primary education (n=912)		Secondary Education (n=1,171)		Tertiary education (n=197)	
		X	SD	X	SD	X	SD	X	SD
	During pregnancy, did:								
1	You register for antenatal care in the first 3 months of pregnancy	2.1	.75	0.92	.72	2.00	.94	2.03	.68
2	You attend antenatal clinic up to 3 times before delivery?	1.74	.86	2.08	.40	2.23	.97	2.68	.46
3	A nurse/midwife/doctor attend to you?	2.53	.83	2.74	.28	2.78	.96	3.00	.68
4	You give your pregnancy history to a nurse / midwife / doctor?	2.50	.98	2.81	.30	2.67	.95	3.00	.76
5	The clinic measure your weight up to two times before delivery?	2.24	.78	2.28	.66	2.39	.94	2.34	.52
6	You receive abdominal examination on every visit?	1.98	.67	2.07	.44	2.38	.96	3.00	.59
7	You do ultrasound?	1.48	.62	1.35	.63	1.83	.91	1.67	.76
8	You receive physical examination?	2.49	.83	3.00	.43	2.83	.62	3.00	.72
9	They check your blood pressure at the clinic?	2.51	.79	2.48	.58	2.89	.98	3.00	.58
10	They checked your HIV status?	2.49	.61	2.58	.33	2.61	.73	3.00	.66
11	They carry out test for other sexual transmitted diseases?	1.69	.65	1.69	.71	1.61	.73	2.31	.95
12	You do blood test?	2.29	.76	2.75	.96	2.60	.95	3.00	.42
13	You do urine test?	2.50	.62	2.65	.41	2.92	.86	3.00	.85
14	You receive at least two doses of tetanus	2.26	.89	2.79	.45	2.55	.95	3.00	.41

	toxoid before delivery?								
15	You receive anti-worm tablets?	2.31	.77	2.64	.26	2.61	.93	3.00	.53
16	You receive up to three doses malaria prevention drugs before delivery?	1.74	.64	2.06	.88	1.94	.51	3.00	.90
17	You received maternal routine drugs more 3 times before delivery?	2.50	.59	2.10	.55	2.01	.62	3.00	.48
18	You receive long lasting insecticidal net?	2.47	.86	2.14	.64	2.78	.96	3.00	.55
19	You sleep inside the long lasting insecticidal net every night?	2.44	.60	2.29	.68	2.10	.54	3.00	.69
Overall mean score		**2.22**	**.74**	**2.29**	**.55**	**2.41**	**.84**	**2.79**	**.64**

Table 3 shows that, in overall, the childbearing women with tertiary education (X= 2.79: SD =.64) had very high utilization of antenatal care services, compared to those with no formal education (X=2.22; SD=.74).

Testing the Hypotheses

Table 4: One-way Analysis of Variance on Utilization of Antenatal Care Services by Childbearing Women of Various Age Groups (N = 2538)

Source of Variation	Sum of squares	df	Mean square	Computed F-ratio	Critical F-ratio	p
Between group	1204.21	3	401.40			
Within group	25674.36	2534	10.13	39.63*	2.60	.05
Total	26878.57	2537				

*** Significant at .05 alpha level**

Table 4 shows that the calculated F-value of 39.63 was greater than the critical F-value of 2.60 at .05 level of significance and at degrees of freedom of 3 and 2534. The result was significant. This means that there was significant difference in the utilization of antenatal care services by childbearing women of various age groups in Akwa Ibom State. Therefore, the null hypothesis one was rejected.

Table 5: One-way Analysis of Variance on Utilization of Antenatal Care Services by Childbearing Women of Various Marital Status (N = 2538)

Source of Variation	Sum of squares	df	Mean square	Computed F-ratio	Critical F-ratio	p
Between group	952.61	3	317.33			
Within group	29846.36	2534	11.78	26.94*	2.60	.05
Total	30798.87	2537				

*** Significant at .05 alpha level**

Table 5 shows that the calculated F –value of 26.94 was greater than the critical F-value of 2.60 at .05 level of significance and at degrees of freedom of 3 and 2534. This result indicated that there was significant difference in the utilization of antenatal care services by childbearing women of various marital status in Akwa Ibom State. Hence, the null hypothesis two was rejected.

Table 6: One -Way Analysis of Variance on Educational Status and Utilization of Antenatal Care Services by Childbearing Women (N = 2538)

Source of Variation	Sum of squares	df	Mean square	Computed F-ratio	Critical F-ratio	p
Between group	738.32	3	246.11			
Within group	45369.24	2534	17.00	13.75*	2.60	.05
Total	46107.56	2537				

Table 6 shows that the calculated f-ratio was 13.75, which was greater than the critical F-value of 2.60 at .05 level of significance and at degrees of freedom of 3 and 2534. This result indicated that there was significant difference in the utilization of antenatal care services by childbearing women of various educational levels in Akwa Ibom State. Therefore, the null hypothesis three was rejected.

Discussion of Findings

Age and utilization of antenatal services by childbearing women in Akwa Ibom State

Finding revealed that childbearing women below 15years of age in Akwa Ibom State had very high utilization of antenatal care services, compared to those in the age bracket of 26-35 years. This result was surprising because it contradicted previous investigations that consistently reported low level of utilization of antenatal services among teenage mothers (NDHS, 2013; Emelumadu et al., 2014; Jacobs et al., 2017). NDHS (2013), for example, reported national statistics of antenatal clinic attendance with only 47.8 per cent being childbearing women below 20 years, compared to 63 per cent of those between 20-34 years and 61 per cent of women 35-49 years receiving ANC in Nigeria. Jacobs et al. (2017) also reported that older women were four times more likely to attend ANC, compared to younger ones.

However, the reason for present result might be that the childbearing women below 15 years in Akwa Ibom State had considered the health benefits of antenatal services, and stayed committed to utilizing the services. The present result is consistent with that of Gupta et al. (2014) who found that younger women preferred to visit antenatal clinic often, mainly to be reassured that the baby in-utero is growing well and is in proper position. The finding also supported Okedo-Alex et al. (2019) who observed that younger women registered earlier and attended ANC clinics more than older ones, because they lacked experience of pregnancy and childbirth, so they tended to depend more on hospital antenatal services for care during pregnancy.

Further analysis revealed that women between 26-35 years had the lowest utilization of antenatal services in Akwa Ibom State. This finding aligned with that of Onwurah et al. (2015) who found that mothers aged 25-34 years recorded the least percentage of antenatal service utilization among childbearing mothers in Anambra State, Nigeria. This result is worrisome because bulk of childbearing mothers is among this age group. Their failure to utilize ANC may contribute to the proportion of pregnant mothers with poor maternal outcome, as observed by Fagbamigbe and Idemudia (2015), the poor maternal outcome in Nigeria could be a result of poor ANC utilization.

The result of analysis using one-way ANOVA confirmed that there was significant difference in the utilization of ANC by childbearing women of various age groups in Akwa Ibom State. The difference existed specifically between women below 15 years and 26-35 years. These results paved way for the development of intervention.

Marital status and utilization of antenatal services by childbearing women of various in Akwa Ibom State

Findings showed that the separated childbearing women (X=2.56; SD =.62) had very high utilization of antenatal care services. Those never married (X=2.44; SD =.68) had high utilization of antenatal care services, compared to the married (X=2.33; SD =.67) and the widows (X=2.32; SD =.78). These results were surprising because one would think that the married women should be having very high utilization of antenatal care services for the reason that they always receive support from their husbands to attend antenatal clinic. The separated women and the never married women do not seem to have such support. These findings support that of Fagbamigbe and Idemudia (2015) who found that 93.0 per cent of non-users of antenatal services were the married women. The present findings also agree with Babalola (2014), who found that the highest percentage of antenatal care users were the never married women followed by the separated women. In addition, Okedo-Alex (2019) submitted that the never married and the formerly married (separated) women were having more likelihood of utilizing ANC services from skilled attendants.

However, the present findings negate that of Rurangirwa et al. (2017) who reported that married women were more likely to attend antenatal clinic than the women who were single, separated or divorced. These women (the never married, widowed, divorced and separated), according to Mohammed et al. (2018), utilized lower level of health care and non-formal health care at minimal costs since they may not enjoy financial leverage from male partners like their married counterparts. The contradiction may be due to the socio-economic support enjoyed by the married women.

The result of hypothesis testing using one-way ANOVA confirmed that there was significant difference in the utilization of antenatal care services by childbearing women of variousmarital status in Akwa Ibom State. The difference was mainly between separated women and the married women.

Educational status and utilization of antenatal services by childbearing women in Akwa Ibom State

Findings showed that the childbearing women with tertiary education (X= 2.79: SD =.64) had very high utilization of antenatal care services, compared to those with no formal education (X=2.22; SD=.74). This finding was expected because women with tertiary education understand the importance of utilizing antenatal care services during pregnancy. The result was in consonance with that of Hijazi et al. (2018), who found that women with higher level of education had increased likelihood of attending antenatal clinic and utilizing antenatal services.

The present findings aligned with the observation of NDHS (2013) that 36.2 per cent of women with no formal education; 71.5 per cent of women with primary education; 87.6 per cent of women with secondary education and 97.3 of women with tertiary education, receive ANC in

Nigeria. The findings further corroborated with Tiruaynet and Muchie (2019) that maternal education is an enabling factor for utilization of maternal health services, and recommended the need for special effort to improve formal education level for mothers and girls.

The result of one-way ANOVA confirmed that there was significant difference in the utilization of antenatal care services among childbearing women of various educational status in Akwa Ibom State. The difference was very clearly observed between women with no formal education and those with tertiary education.

Conclusions

Based on findings, it was concluded that the socio- demographic variables that highly determine the utilization of antenatal care services (ANC) by childbearing women in Akwa Ibom State were age (below 15years), marital status (single women, particularly those separated and never married), and educational status (women with tertiary education). It was further concluded that significant differences existed in the utilization of antenatal care services (ANC) by childbearing women of various age groups, marital status, and educational status in Akwa Ibom State.

Recommendations

1. Public health educators should develop education package on importance of antenatal care utilization for childbearing women (26-35 years) with low utilization of ANC services and channeled it through primary health care providers and health educators to the women.

2. Health educators should transmit adequate information and knowledge on antenatal care utilization to the married women, who are found in this study to have low utilization of ANC services, using suitable channels and settings.

3. The Akwa Ibom State government should set up ANC counselling unit with the responsibility of providing counseling on ANC utilization to the childbearing with no formal education.

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