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

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**BY**

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**ABSTRACT**

*This study investigated the socio-demographic determinants of antenatal care services' utilization among childbearing women in Akwa Ibom State. Two 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, and t-test was used to test hypothesis 2. Results revealed parity status (women with one child parity status), and location of residence (women in urban location) 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 parity status, and location of residence in Akwa Ibom State Based on findings, it was recommended that the Akwa Ibom State Ministry of Health should provide education on antenatal care to childbearing women having 6 and above children to encourage them to utilize ANC services.*

**KEYWORDS: Antenatal care (ANC), Parity status, Location of residence and Akwa Ibom State**

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**Introduction**

The utilization of antenatal care services is one of the assured means of improving the health and well-being of pregnant women. Antenatal care (ANC) is the quality health care given to pregnant women by trained health care providers to promote the health and survival of the expectant mothers and the unborn babies. Adesokan (2010) described antenatal care as the attention, education, supervision, and treatment given to the pregnant women from the time conception is confirmed until the beginning of labour, in order to ensure safe course of pregnancy and labour. It provides the pregnant women access to quality preventive and curative health services to enable them have safe pregnancy, delivery and healthy babies (Mohammed et al., 2018). The components of ANC include iron supplementation, blood and urine tests, tetanus toxoid (TT) injections, blood pressure measurement, intestinal parasite drugs, Sulphadoxine Pyrimethamine (SP) for intermittent preventive treatment of malaria in pregnancy (IPTp), abdominal and general physical examination, ultrasound as well as health education and counseling on birth preparedness, danger signs /complications of pregnancy,

where to seek help in case of emergency and other pregnancy-related issues. ANC also provides education on proper nutrition and personal hygiene during pregnancy.

An upgraded form of ANC, known as Focused Antenatal Care (FANC) is currently practiced. It is an evidence-based, client-centered, and goal-directed care provided by skilled health providers with emphasis on quality care and services. FANC reduces ANC costs, and the total time spent on antenatal care by pregnant women. For instance, World Health Organization (WHO, 2005) recommends under the new Focused Antenatal Care (FANC) approach, that a woman without complications should have at least four antenatal care (ANC) visits throughout her course of pregnancy, instead of several frequent visits to antenatal clinic. It further recommends that the first antenatal visit should take place during the first trimester of pregnancy.

Regarding parity, Dahiru and Oche (2015) showed that women with higher parity use ANC less than lower parity women. This result was attributed to maternal experience of child birth making high parity women to consider ANC utilization as a worthless exercise, since they can rely on their experiences from previous pregnancies. Some of the higher parity women might also experience difficulties to attend ANC due to time constraints related to their responsibilities for their other children.

On location of residence, Dahiru and Oche (2015) observed that living in rural location affects the utilization of ANC negatively and urban residence confers some advantages on the use of ANC. This is because in most developing countries like Nigeria, there is inequity in the distribution and location of health facilities in favour of urban areas and therefore, women in urban areas have increased accessibility compared to their rural counterparts. The advantaged position of urban areas which attracts more health facilities also enhances proximity. In Akwa Ibom State, although there is no empirical evidence to show the influence of certain socio-demographic factors on utilization of ANC services among childbearing women, the Nigerian Demographic and Health Survey (NDHS, 2013) indicated low utilization of ANC among childbearing women in the State. Given that the utilization of antenatal care services is essential for early detection and treatment of mothers who are at high risk of illness and complications during pregnancy, the researcher considers that it would be improper to ignore the evaluation of determinants of ANC utilization by women. It is therefore fitting to undertake this study in order to provide base-line data for the development of intervention that will scale up utilization of antenatal care services and eventually reduce maternal and newborn morbidity and mortality in Akwa Ibom State.

### **Research Questions**

Hence, the questions being raised are could there be any difference in the extent of utilization of antenatal care services by childbearing women in Akwa Ibom State based on:

1. What is the difference in the extent of utilization of antenatal care services by childbearing women in Akwa Ibom State based on parity status?
2. What is the difference in the extent of utilization of antenatal care services by childbearing women in Akwa Ibom State based on locations of residence?

### **Hypotheses**

**H<sub>0</sub>1:** There is no significant difference in the utilization of antenatal care services by childbearing women of various parity status in Akwa Ibom State.

**H0<sub>2</sub>:** There is no significant difference in the utilization of antenatal care services by childbearing women of various locations of residence 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 per cent 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

## Results

The results were presented and analysed in Tables 1-4

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

S/N	Items	Parity Status								
		I Child (n=716)		2-3 Children (n=1106)		4-5 Children (n=455)		6 and above Children (n=261)		
		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 <sup>st</sup> trimester)?	2.18	.54	1.77	.51	2.01	.68	1.30	.95	
2	You attend antenatal clinic up to 3 times before delivery?	2.45	.39	2.16	.42	1.84	.38	1.77	.77	
3	A nurse/midwife/doctor attend to you?	2.63	.49	2.42	.81	3.00	.30	2.72	.22	
4	You give your pregnancy history to a nurse / midwife / doctor?	2.55	.92	2.88	.93	3.00	.24	2.09	.54	
5	The clinic measure your weight up to two times before delivery?	2.45	.72	1.75	.53	2.43	.70	1.70	.58	
6	You receive abdominal examination on every visit?	2.46	.71	2.01	.31	2.28	.86	1.42	.86	
7	You do ultrasound?	1.72	.36	1.64	.69	1.14	.65	1.50	.61	
8	You receive physical examination?	2.91	.78	2.88	.25	3.00	.29	2.47	.72	
9	They check your blood pressure at the clinic?	2.90	.54	2.88	.34	3.00	.25	2.06	.55	

10	They checked your HIV status?	2.62	.91	2.53	.22	2.85	.06	1.49	.42
11	They carry out test for other sexual transmitted diseases?	1.99	.34	1.58	.77	1.84	.76	1.69	.80
12	You do blood test?	2.46	.64	2.90	.68	2.85	.68	1.70	.94
13	You do urine test?	2.72	.36	2.76	.86	3.00	.30	2.00	.28
14	You receive at least two doses of tetanus toxoid before delivery?	2.81	.45	1.59	.45	2.84	.76	2.11	.71
15	You receive anti-worm tablets?	2.80	.92	4.21	.90	2.42	.36	2.04	.84
16	You receive up to three doses malaria prevention drugs before delivery?	2.03	.56	2.17	.52	1.98	.59	1.47	.57
17	You received maternal routine drugs more 3 times before delivery?	2.30	.59	2.35	.37	2.16	.39	1.63	.58
18	You receive long lasting insecticidal net?	2.62	.83	2.76	.86	2.72	.25	2.51	.73
19	You sleep inside the long lasting insecticidal net every night?	2.17	.70	2.29	.25	2.42	.34	2.52	.42
<b>Overall mean score</b>		<b>2.46</b>	<b>.62</b>	<b>2.20</b>	<b>.53</b>	<b>2.46</b>	<b>.44</b>	<b>1.95</b>	<b>.64</b>

Data in Table 1 show that, in overall, the childbearing women with 1 child parity status ( $X=2.46$ ;  $SD=.62$ ) and those with 4-5 children ( $X=2.46$ ;  $SD=.44$ ) had equal level of utilization of antenatal care services, which is higher compared to those with 6 and above children ( $X=1.95$ ;  $SD=.64$ ).

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

S/N	Items	Locations of Residence			
		Urban (n=1271)		Rural (n=1267)	
		X	SD	X	SD
During pregnancy, did:					
1	You register for antenatal care in the first 3 months of pregnancy (1 <sup>st</sup> trimester)?	2.55	.81	1.80	.66
2	You attend antenatal clinic up to 3 times before delivery?	2.81	.62	2.22	.89
3	A nurse/midwife/doctor attend to you?	2.93	.54	2.71	.83
4	You give your pregnancy history to a nurse / midwife / doctor?	2.85	.86	2.66	.76
5	The clinic measure your weight up to two times before delivery?	2.62	.52	2.35	.95
6	You receive abdominal examination on every visit?	2.92	.57	2.26	.59

7	You do ultrasound?	2.44	.54	1.67	.69
8	You receive physical examination?	3.00	.68	2.84	.97
9	They check your blood pressure at the clinic?	3.00	.47	2.84	.64
10	They checked your HIV status?	2.88	.55	2.63	.35
11	They carry out test for other sexual transmitted diseases?	2.44	.86	1.72	.54
12	You do blood test?	2.81	.32	2.67	.93
13	You do urine test?	2.92	.48	2.65	.48
14	You receive at least two doses of tetanus toxoid before delivery?	2.87	.88	2.60	.70
15	You receive anti-worm tablets?	2.59	.38	2.71	.48
16	You receive up to three doses malaria prevention drugs before delivery?	2.81	.94	1.98	.77
17	You received maternal routine drugs more 3 times before delivery?	2.85	.56	2.13	.96
18	You receive long lasting insecticidal net?	2.44	.54	2.62	.49
19	You sleep inside the long lasting insecticidal net every night?	2.37	.29	2.38	.55
<b>Overall Mean Score</b>		<b>2.74</b>	<b>.60</b>	<b>2.39</b>	<b>.69</b>

Table 2 shows that, in overall, the childbearing women in urban location ( $X = 2.74$ ;  $SD = .60$ ) had very high utilization of antenatal care services, compared to the women in rural.

### Testing the Hypotheses

**Table 3: One- Way Analysis of Variance on Parity 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	656.72	3	218.91			
Within group	32984.53	2534	13.02	16.81*	2.60	.05
Total	33641.25	2537				

Table 3 shows that the calculated f-ratio of 16.81 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 parity status in Akwa Ibom State. Therefore, the null hypothesis four was rejected.

**Table 4: t-test Analysis of the Difference in Utilization of Antenatal Care Services by Childbearing Women of Various Locations of Residence (n=2538)**

Location	N	X	SD	df	t-cal.	t-crit.	P
Urban	1271	2.74	.60	2536	5.83*	1.96	.05
Rural	1267	2.39	.69				

\*Significant at .05 alpha level

Table 4 shows that the calculated t-test value was 5.83. This was greater than critical t-value of 1.96 at .05 alpha level, and at df of 2536. The result was significant. This indicates that there was significant difference in the utilization of antenatal care services by childbearing women of various locations of residence in Akwa Ibom State. Therefore, the null hypothesis five stated above was rejected.

### Discussion of Findings

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

Findings revealed that the childbearing women with one child parity status ( $X= 2.46$ ;  $SD =.62$ ) and those with 4-5 children ( $X= 2.46$ ;  $SD =.44$ ) equally had higher level of utilization of antenatal care services, compared to those with 6 and above children ( $X= 1.95$ ;  $SD=.64$ ). This result was expected because both primiparous (a woman who has given birth to one child) and the multiparous mothers (delivered 4 and above babies) are more likely to be at risk of pregnancy complications than women with parity 2-3, so they very highly utilize antenatal services. The finding supported Moronkola and Okonlawon (2016) observation that parity is a “high risk marker” among the primiparous and multiparous women in terms of pregnancy complications. It further supported Okedo-Alex (2019) that the primiparous and multiparous women considered pregnancy as a risky event and they were more likely to use ANC than those who considered it risk free.

The finding concerning the low level of utilization of antenatal care services by mothers with parity 6 and above children ( $X= 1.95$ ;  $SD=.64$ ), tend to support previous investigation by Chama-Chiliba and Koch (2013) who reported that higher parity is a barrier to adequate use of ANC. It might seem difficult to advance convincing reason for the observed result, but one might assume that the grand multiparous women do not feel the need to use ANC services due to their accumulated pregnancy experiences and knowledge of birthing process. In this regard, Gupta et al. (2014) reported that the perceived lower risk associated with births of higher parity order may explain the greater odds of inadequate visits to ANC among grand multiparous women.

The reason, according to Emelumadu et al. (2014), had been that the grand multiparous women were more likely to book for ANC after the first trimester and attended ANC less than four times prior to delivery. They rarely receive adequate health education while attending antenatal clinic.

The result of the test of hypothesis four using one-way ANOVA confirmed that there was significant difference in the utilization of antenatal care services by childbearing women of various parity status in Akwa Ibom State. The difference was between women with one child parity status and those with parity 6<sup>+</sup> children. This finding aligned with that of Chakraborty

et al. (2003) who opined that women with a large number of children underutilize available health services because they feel that such services tend to place too much demands on their time and other competing interests.

### **Locations of residence and utilization of antenatal services by childbearing women in Akwa Ibom State**

Findings showed that the childbearing women in urban location ( $X = 2.74$ ;  $SD = .60$ ) had very high utilization of antenatal care services, compared to the women in rural location ( $X = 2.39$ ;  $SD = .69$ ). The reason might be that childbearing women in urban location have a lot of advantages in terms of economic, information, proximity, and other enabling factors that enhance their accessibility and utilization of antenatal services than the rural women. This observation is in line with the data earlier reported by NDHS (2013), that 86 per cent of childbearing women living in urban location received ANC in Nigeria than the 46.5 per cent of their rural counterparts. The present finding also corroborates that of Tiruaynet and Muchie (2019) who found that women living in rural areas were less likely to attend ANC than women in urban areas. The present finding is worrisome since Akwa Ibom State has 70 per cent of the population dwelling in the rural areas (Ibok & Daniel, 2013). This implies that higher percentage of childbearing women in Akwa Ibom State concentrate in rural areas, and they have low utilization of ANC, with diminishing maternal health outcome. The urban-rural disparity in the utilization of ANC services by childbearing women explains why Nigeria is still registering unacceptable maternal mortality rates. The present findings, however, contradicted that of Nwosu et al. (2012) who found that living in urban area reduces ANC visits in the South East zone of Nigeria. Similar contradiction occurred in the findings of Okedo-Alex et al. (2019) who reported that childbearing women residing in rural area made at least four ANC visits before delivery which is higher than those of the women residing in the urban area.

The t-test results in Table 10 confirmed that there was significant difference in the utilization of antenatal care services by childbearing women of various locations of residence in Akwa Ibom State. This finding revealed that although primary health centres are located in all the political wards throughout the State, and secondary health facilities are cited in all Local Government Areas across the State, the utilization of ANC by rural women remains low. The rural women may not be able to access ANC because of sundry charges for laboratory investigations or transportation. Furthermore, there is serious problem of inadequate staffing of health facilities in rural areas of Akwa Ibom State. Hence, the rural women may not likely receive satisfactory ANC if there are no skilled ANC providers. In addition, some LGAs in the State are riverine, which are characterized with hard-to-reach areas. Health facilities are not located in these difficult terrain and health workers hardly access these areas for outreach services making it extremely difficult for childbearing women to access and utilize ANC services. This may contribute to the high maternal mortality rates still registered in the State.

### **Conclusion**

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 parity status (women with one child parity status), and location of residence (women in urban location). It was further concluded that significant differences existed in the utilization of antenatal care services (ANC) by childbearing women of parity status, and location of residence in Akwa Ibom State.



### **Recommendations**

1. The Akwa Ibom State Ministry of Health should provide education on antenatal care to childbearing women having 6 and above children to encourage them to utilize ANC services.
2. The Ministry of Health should create awareness on the complications associated with multiparity among this sub population to motivate their utilization of ANC services.

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