



## Knowledge and Utilization of Antenatal Care Services among Pregnant Women in Isi-Uzo Local Government Area, Enugu State

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### Abstract

The study investigated knowledge and utilization of antenatal care services among pregnant women in Isi-Uzo LGA in Enugu state. The study adopted a cross-sectional survey research design. The study population comprised of 1,398 pregnant women and a sample of 300 pregnant women drawn using a two-stage sampling procedure took part in the study. The instrument for data collection was a researchers' designed questionnaire titled knowledge and utilization of antenatal care services questionnaire. Data was analysed using frequencies, percentages and Chi-square statistics. Results showed that pregnant women in Isi-Uzo LGA in Enugu State had very high knowledge (89.2%) of antenatal care services and majority of pregnant women (87.1%) utilized antenatal care services. There was a significant difference in the level of knowledge of ANC services among pregnant women in Isi-Uzo LGA based on age ( $\chi^2= 12.786$ ,  $p= .002 < .05$ ), parity ( $\chi^2= 27.697$ ,  $p= .000 < .05$ ) and education level ( $\chi^2= 11.356$ ,  $p= .010 < .05$ ). There was no significant difference in the level of utilization of ANC services among pregnant women in Isi-Uzo LGA based on age ( $\chi^2= 2.110$ ,  $p= .348 > .05$ ) and education level ( $\chi^2= 2.856$ ,  $p= .414 > .05$ ). However, there was a significant difference in the level of utilization of ANC services among pregnant women in Isi-Uzo LGA, Enugu State based on parity ( $\chi^2= 28.184$ ,  $p= .000 < .05$ ). Based on the findings, the authors recommended that health education should be promoted by organizing campaign through social media to educate women about antenatal care services and utilization of antenatal care services during pregnancy.

**Keywords:** Antenatal care services, Knowledge, Utilization, Pregnant women

### Introduction

Complications during pregnancy are leading causes of death and disability among women of reproductive age across the globe. In 2010, there were about 287,000 maternal deaths globally and a large majority of these deaths are preventable (World Health Organization WHO, 2012). The WHO (2016) also reported that 830 women die every day from preventable causes related to pregnancy, which is more than 30 women per hour. Out of these deaths, 85 per cent occurred in Sub-Saharan African and South Asia (Namatovu, 2018). The number of women dying due to complications during pregnancy and childbirth decreased by nearly 50 per cent from 1990 to 2013 (WHO, 2015) however, the number of deaths still remain unacceptably high especially in low-income countries such as African countries.



Maternal morbidity and mortality continues to remain a challenge in Africa. There is a rapid increase in maternal mortality with Sub-Saharan Africa countries accounting for 66 per cent of the global maternal mortality rate (United Nations Children's Fund [UNICEF], 2014). According to the UNICEF, 73 per cent of all maternal deaths were associated with direct obstetric causes, and 27 per cent were associated with indirect obstetric causes. Some causes of maternal deaths in Africa are: postpartum haemorrhage, hypertensive disorders of pregnancy, complications of unsafe abortion, obstructed labour, and sepsis (UNICEF, 2014). These obstetric causes of maternal mortality are preventable through the services which pregnant women receive during antenatal care (Rurangirwa et al., 2017). Maternal morbidity and mortality is a great issue of concern in Nigeria. Nigeria follows the World Health Organization's recommendation of initiation of antenatal care (ANC) during pregnancy, yet the maternal mortality ratio is 815 deaths per 100, 000 live births (WHO, 2015). In fact, it is estimated that in Nigeria, one out of every 12 women dies due to pregnancy-related issues (UNICEF, 2014). The situation calls for the adoption of drastic measures to stem the tide.

The knowledge and utilization of antenatal care services among pregnant women is paramount at local government level since they form the units of a state. In Ezeagu LGA Enugu State, Okpala et al. (2019) opines that significant barriers still exists which impedes the knowledge and utilization of ANC among the pregnant women in Ezeagu. There are reports of inadequate utilization of health facilities in Isi-Uzo Local Government Area of Enugu State, Nigeria. This is evidenced by the findings from the antenatal register of Ikem General Health Care Centre (2015) which showed that 1452 women registered in the health centre but only 546 women delivered in the health centre. It was equally observed by he researchers that many pregnant women register late for antenatal care whereas others do not know the benefits of the antenatal care service. The knowledge and utilization of antenatal care is essential for protecting the health of pregnant women.

Antenatal care is the care given to pregnant women. Hamdi and Mohamed, (2021) defined antenatal care as an umbrella term used to describe the medical procedures and care that are carried out during pregnancy. The WHO (2017) defined antenatal care as a dichotomous variable with a pregnant woman having one or more visit to a trained person during the pregnancy. The ANC frequently provides the first contact opportunity for a female to connect with services, thus imparting an entry factor for built-in care, merchandising healthful domestic practices, influencing care-seeking behaviours, and linking women with pregnancy complications to a referral system (WHO, 2017). Receiving antenatal care at least four times, within the period of pregnancy increases the likelihood of receiving effective maternal health interventions throughout the antenatal period (Tunçalp et al., 2017). Antenatal care is provided in form of antenatal care services.

Antenatal care services are services given to pregnant women so that they can have safe delivery. Hollowell et al. (2011) defined antenatal care service as encompassing pregnancy related assistance provided between conception and the onset of labour with the aim of improving pregnancy outcomes, the health of the mother and child. The ANC services involve tetanus toxoid immunization service, counselling services, physical examination like foetal heart sound, laboratory tests including urine to check for protein and sugar, blood test usually for malaria and HIV/AIDS, and preventive services which include taking of iron and folic tablets (WHO, 2017). According to WHO, (2017) the standard quality service of ANC is comprised of three components: the first one is assessment (that is, history taking, physical examination, and laboratory tests), the second one is health promotion (that includes nutrition advice, planning the birth, information regarding pregnancy, subsequent contraception and



breastfeeding, and immunization), and the last one is care provision (that is comprised of tetanus toxoid immunization, psychosocial support, and recordkeeping).

The ANC services enable early identification of pregnancy related risks and complications; and ensure access of services including health education, vaccines, diagnostic tests and treatments (Gross et al., 2014). During the first ANC visit, an ANC card is given to the pregnant woman with the first record of her pregnancy. The first visit to the ANC is also important since during this time a woman has a complete health check-up for pregnancy complications and gestational age (Finlayson & Downe, 2013). After the first visit, the woman is thought to be seeking future ANC visits to detect possible risks (such as preterm delivery and adequately handle these complications among others (Finlayson & Downe, 2013). The WHO (2016) recommended that women should receive their first visit within the first 12 weeks of gestation, with subsequent visits at 20, 26, 30, 34, 36, 38, and 40 weeks. Knowledge of antenatal care services among pregnant women is vital to enhance the usage and reduce the complications associated with pregnancy.

Knowledge refers to general understanding or familiarity with a subject. Gregg (2013) defined knowledge as the awareness of or familiarity with various objects, events, ideas or ways of doing things. Health knowledge denotes information and understanding acquired education of subjects related to proper health. Dhahi et al (2015) asserted that the level of awareness of knowledge of ANC is very important for utilizing ANC services. Accurate knowledge of antenatal care services leads to positive child and maternal health. However, knowledge of antenatal care services alone is not enough to guarantee safe and sound delivery of babies. The utilization of antenatal care services by pregnant women is also important in reducing maternal morbidity and mortality. Carrasquiallo, (2013) defined health care utilization as the quantification or description of the use of services by persons for the purpose of preventing and curing health problems, promoting maintenance of health and well-being, or obtaining information about one's health status and prognosis. The utilization of maternal health service definitely is essential strategy in reducing the risks associated with pregnancy and child bearing (Rurangirwa et al., 2017). A pregnant woman needs to utilize antenatal care service on time in order to improve maternal health.

A pregnant woman is a woman who has a foetus developing in her uterus. Spong (2013) defined pregnancy as the period in which a foetus develops inside a woman's womb or uterus. Pregnancy usually occurs by sexual intercourse, but can also occur through assisted reproductive technology procedures. A pregnancy may end in a live birth, a spontaneous miscarriage, an induced abortion, or a stillbirth. Pregnancy lasts for about nine months, measured from the date of the woman's last menstrual period (LMP). It is conventionally divided into three trimesters, each roughly three months long. The knowledge and utilization of ANC among pregnant women may be influenced by certain socio-demographic factors. Such factors include age, parity and educational level.

This study was carried out among pregnant women in Isi-Uzo Local Government Area (LGA) of Enugu state. Isi-Uzo LGA is one of the 17 LGAs in Enugu State. Knowledge and utilization of antenatal care among pregnant women in Isi-Uzo is a matter of concern because there have been several cases of still births and miscarriages which have been attributed to poor maternal care during pregnancy. However, the situation is highly deplorable considering the fact that most of these complications can be averted or minimized by having good knowledge and proper utilization of ANC services. The present study therefore sought to investigate the level of knowledge and utilization of ANC among pregnant women in Isi-Uzo LGA. Specifically, the study determined pregnant women's level of knowledge of ANC services, level of utilization of ANC services and socio-demographic



factors (age, parity and education level) associated with knowledge and utilization of ANC services. It was hypothesized that there is no significant difference in the level of knowledge of ANC services among pregnant women based on age, parity and education level. Also, there is no significant difference in the level of utilization of ANC services among pregnant women based on age, parity and education level.

## Methods

**Study Design:** The cross-sectional survey research design was employed to achieve the objectives of the study.

**Area of the Study:** The study was conducted in Isi-Uzo Local Government Area (LGA), Enugu State. Isi-Uzo LGA is one of the 17 LGAs in Enugu State. Its headquarters is in the town of Ikem. Health facilities are widely distributed in throughout the LGA. According to Uzor, Idoko and Nwobodo (2021), the Government of Enugu State introduced a free maternal and child health (FMCH) care programme in January 2008. Included in the health package of the FMCH programme are maternal health services consisting of antenatal care (ANC) of 12–40 weeks, routine laboratory investigations and drugs, all deliveries, such as safe delivery, basic emergency obstetric care (EOC), comprehensive EOC, postpartum care up to six weeks (Uzor, Idoko & Nwobodo, 2021). In spite of this effort, maternal deaths continues to be prevalent in the LGA. Hence, the need to investigate knowledge and utilization of antenatal care services among pregnant women in Isi-Uzo LGA, Enugu State.

**Study Population and Sample:** The population for the study consisted of 1398 registered pregnant women attending antenatal clinics in different health facilities in Isi-Uzo LGA of Enugu State. The sample for this study comprised of 300 pregnant women in Isi-Uzo LGA determined using Cohen, Manion, and Morrison (2018) Standardized Table for Sample Size, Confidence Levels and Confidence Intervals for Random Samples, which states that when a population size is 1300 and above at 95 per cent confidence level (5% interval), the sample size should be 297 and above. Two stage sampling procedure was employed to draw the sample of the study. Stage one involved simple random sampling of balloting without replacement to draw out twelve health facilities out of the 24 health facilities located in Isi-Uzo LGA. Stage two involved simple random sampling techniques of balloting without replacement to select 25 pregnant women from each of the twelve health facilities that were sampled in stage one, which gave a total of 300 pregnant women.

**Method of Data Collection:** The instrument used for data collection was a self-structured Knowledge and Utilization of Antenatal Care Services Questionnaire (KUACSQ). The KUACSQ consisted of three sections that sought to elicit information on respondents' socio-demographic characteristics, knowledge and utilization of ANC services. The face validity of KUACSQ was established through the judgment of three experts from Department of Human Kinetics and Health Education, University of Nigeria, Nsukka. A reliability index of .782 was obtained using split half (spearman's rank order correlation) and adjudged reliable for the study based on the guidelines of Cohen, Manion and Morrison (2018) that if the reliability coefficient yields 0.70 and above, the instrument should be considered reliable for the study.

The researchers explained the objectives of the research to the participants and the participants were assured about the privacy of their data. After their consent was gotten, 300 copies of the questionnaire were administered to the respondents in each health facility by the researchers, out of which 278 were returned, which gave a return rate of 89.2 per cent. The returned copies of the questionnaire were properly filled out and used for data analysis.

**Data Analysis:** Data were analysed using frequency counts and percentage to answer the research questions. The null hypotheses were tested using Chi-square ( $\chi^2$ ) statistics at .05 level of significance.



## Results

**Table 1: Level of Knowledge of ANC Services among Pregnant Women (n=278)**

S/N	Knowledge of antenatal care services	Yes f(%)	No f(%)
1.	Antenatal care services are services given to pregnant women in the hospital	242(87.1)	36(12.9)
2.	ANC services are services that provide opportunity for pregnant women to detect diseases that affect pregnancy	201(72.3)	77(27.7)
3.	ANC services helps in reducing pregnancy complication	236(84.9)	42(15.1)
4.	ANC services reduce maternal mortality and morbidity	237(85.3)	41(14.7)
5.	Antenatal provides an opportunity for detecting pregnancy complication early.	245(88.1)	33(11.9)
6.	ANC services provides an opportunity to develop a healthy baby and prepare for emergency	247(88.8)	31(11.2)
7.	ANC services involve tetanus toxoid immunization service, physical examination like foetal heart sound, laboratory tests including urine to check for protein and blood test usually for malaria and HIV/AIDS.	246(88.5)	32(11.5)
8.	ANC services offers preventive services such as taking of iron and folic tablets	246(88.5)	32(11.5)
9.	Poor information of ANC services can expose pregnant women to poor health status during and after pregnancy	234(84.2)	44(15.8)
10.	ANC services helps maintain a proper weight for mothers and the baby through direction on adequate nutrition	256(92.1)	22(7.9)
	<b>Overall %</b>	<b>89.2</b>	<b>10.8</b>

Table 1 shows that overall, pregnant women in Isi-Uzo LGA in Enugu State had very high knowledge (89.2 %) of antenatal care services.

**Table 2: Level of Knowledge of ANC Services among Pregnant Women based on Socio-demographic Factors of Age, Parity and Education Level (n=278)**

Socio-demographic Factors	Knowledge of antenatal care services	
	Yes %	No %
<b>Age</b>		
15-24 Years (n=104)	80.8	19.2
25-34 Years (n=97)	92.8	7.2
35 Years and Above (n=77)	96.1	3.9
<b>Parity</b>		
Nullipara (n=38)	89.5	10.5
Primipara (n=76)	73.7	26.3





Multipara (n=110)	96.4	3.6
Grand multipara (n=54)	96.3	3.7
<b>Education Level</b>		
No Formal Education (n=21)	85.7	14.3
Primary Education (n=45)	91.1	8.9
Secondary Education (n=126)	83.3	16.7
Tertiary Education (n=86)	97.7	2.3

Table 2 shows that pregnant women aged 35 years and above (96.1%) had very high knowledge of antenatal care services than pregnant women aged 25-34 years (92.8%) and 15-24 years (80.8%) respectively. Also, pregnant women who are multipara (96.4%) possessed very high knowledge of antenatal care services than pregnant women who are grand multipara (96.3%) nullipara (89.5%) and primipara (73.7%). Pregnant women with tertiary education (97.7%) had very high knowledge of antenatal care services than pregnant women with primary education (91.1%), no formal education (85.7%) and secondary education (83.3%).

**Table 3: Utilization of ANC services among pregnant women (n=278)**

S/N	Utilization of antenatal care services	Yes f(%)	No f(%)
1.	Have you ever visited antenatal clinic during pregnancy?	251(90.3)	27(9.7)
2.	Do you visit ANC clinic on the days you are given appointment?	212(76.3)	66(23.7)
3.	Did you attend your first visit within the first three month of your pregnancy?	208(74.8)	70(25.2)
4.	Did you receive tetanus toxoid immunization?	232(83.5)	46(16.5)
5.	Did you receive physical examination on each visit?	234(84.2)	44(15.8)
6.	Did you receive laboratory test of urine for protein?	228(82.0)	50(18.0)
7.	Did you receive blood test for HIV/AIDs?	228(82.0)	50(18.0)
8.	Did you receive routine drugs during your visits?	232(83.5)	46(16.5)
9.	Did you receive laboratory blood test for malaria?	227(81.7)	51(18.3)
10.	Did you receive laboratory urine test for sugar?	219(78.8)	59(21.2)
	<b>Overall %</b>	<b>87.1</b>	<b>12.9</b>

Table 3 shows that majority of pregnant women (87.1%) utilize antenatal care services.

**Table 4: Level of Utilization of ANC Services among Pregnant Women based on Socio-demographic Factors (age, parity and education level) (n=278)**

Socio-demographic factors	Utilization of antenatal care services	
	Yes %	No %
<b>Age</b>		
15-24 Years (n=104)	83.7	16.3
25-34 Years (n=97)	87.6	12.4
35 Years and Above (n=77)	90.9	9.1
<b>Parity</b>		



Nullipara (n=38)	60.5	39.5
Primipara (n=76)	89.5	10.5
Multipara (n=110)	90.9	9.1
Grand multipara (n=54)	94.4	5.6
<b>Education Level</b>		
No Formal Education (n=21)	81.0	19.0
Primary Education (n=45)	86.7	13.3
Secondary Education (n=126)	90.5	9.5
Tertiary Education (n=86)	83.7	16.3

Table 4 shows that majority of pregnant women in Isi-Uzo LGA aged 35 years and above (90.9%) utilized antenatal care services than pregnant women aged 25-34 years (87.6%) and 15-24 years (83.7%). Also, pregnant women who are grand multipara (94.4%) utilized antenatal care services than pregnant women who are multipara (90.9%), primipara (89.5%) and nullipara (60.5%). Majority of pregnant women with secondary education (90.5%) utilized antenatal care services than those with primary education (86.7%), tertiary education (83.7%), and no formal education (81.0%).

**Table 5: Chi-Square Test of No Significant Difference in the Level of Knowledge of ANC Services among Pregnant Women based on Socio-demographic Factors of Age, Parity and Education Level) (n=278)**

	N	Yes O(E)	No O(E)	$\chi^2$	df	p-value
<b>Age</b>						
15-24 years	104	84(92.8)	20(11.2)	12.785	2	.002
25-34 years	97	90(86.5)	7(10.5)			
35 years and above	77	74(68.7)	3(8.3)			
<b>Parity</b>						
Nullipara	38	34(33.9)	4(4.1)	27.697	3	.000
Primipara	76	36(67.8)	20(8.2)			
Multipara	110	106(98.1)	4(11.9)			
Grand multipara	54	52(48.2)	2(5.8)			
<b>Education level</b>						
NFE	21	18(18.7)	3(2.3)	11.356	3	.010
PE	45	41(40.1)	4(4.9)			
SE	126	105(112.4)	21(13.6)			
TE	86	84(76.7)	2(9.3)			

Table 5 shows that there was a significant difference in the level of knowledge of ANC services among pregnant women in Isi-Uzo LGA, Enugu State based on age ( $\chi^2=12.786$ ,  $p=.002 < .05$ ), parity ( $\chi^2=27.697$ ,  $p=.000 < .05$ ) and education level ( $\chi^2=11.356$ ,  $p=.010 < .05$ ).

**Table 6: Chi-Square Test of No Significant Difference in the Level of Utilization of ANC Services among Pregnant Women in Isi-Uzo LGA, Enugu State Based on Socio-demographic Factors of Age, Parity and Education Level (n=278)**

	N	Yes O(E)	No O(E)	$\chi^2$	df	p-value
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<b>Age</b>						
15-24 years	104	87(90.5)	17(13.5)			
25-34 years	97	85(84.4)	12(12.6)	2.110	2	.348
35 years and above	77	70(67.0)	7(10.0)			
<b>Parity</b>						
Nullipara	38	23(33.1)	15(4.9)			
Primipara	76	68(66.2)	8(9.8)	28.184	3	.000
Multipara	110	100(95.8)	10(14.2)			
Grand multipara	54	51(47.0)	3(7.0)			
<b>Education Level</b>						
NFE	21	17(18.3)	4(2.7)			
PE	45	39(39.2)	6(5.8)	2.856	3	.414
SE	126	114(109.7)	12(16.3)			
TE	86	72(74.9)	14(11.1)			

Table 6 showed that there was no significant difference in the level of utilization of ANC services among pregnant women in Isi-Uzo LGA, Enugu State based on age ( $\chi^2= 2.110$ ,  $p= .348 > .05$ ) and education level ( $\chi^2= 2.856$ ,  $p= .414 > .05$ ). However, there was a significant difference in the level of utilization of ANC services among pregnant women in Isi-Uzo LGA, Enugu State based on parity ( $\chi^2= 28.184$ ,  $p= .000 < .05$ ).

## Discussion

Table 1 showed that overall, pregnant women had very high knowledge of antenatal care services. The finding agrees with Shafqat, Fayaz, Rahim, and Saima (2015) who reported that pregnant women had very high knowledge of antenatal services in Peshawar, Pakistan. However, the finding contradict the finding of Igbokwe (2012) who reported that pregnant women had moderate level of knowledge of concept of antenatal services in rural Nsukka in Enugu State. The contradiction in the findings may be due to the difference in time frame between the current study and Igbokwe's study. The finding have implication for pregnant mothers who need to continuously seek the right knowledge about ANC services.

Table 2 showed that pregnant women in Isi-Uzo LGA had high knowledge of antenatal care services irrespective of age, parity and education level. Also, the findings in Table 5 showed that there was a significant difference in the level of knowledge of ANC services among pregnant women in Isi-Uzo LGA, Enugu State based on age, parity and education level. The findings on age agree with Firda, Lilik and Wayan (2020) that pregnant women who are older have very high knowledge of antenatal care services in East Nusa Tenggara, Indonesia. The findings disagree with Afaya et al. (2020) who reported that pregnant women aged 25-34 had more knowledge of antenatal care services than pregnant women aged 30 and above in rural Ghana. The findings on parity is in line with Garg and Divvya (2020) who revealed that pregnant women who had many children were more knowledgeable about antenatal care services. However, the findings disagree with Patel, et al. (2016) who reported that parity had no influence on knowledge of antenatal care services in Pune, Maharashtra. The findings on education level agree with that of Jesuyajolu (2022) who reported that pregnant women had very high knowledge of antenatal-care services in Ido Ekiti, Nigeria. However, the findings is in contrast with Ahmed and Manzoor (2019) who reported that pregnant women with tertiary education had moderate level of knowledge of antenatal services in Labore. The outcome of findings may have been as a result of changing times and the ability to access information easily on the internet, social media and other





sources. The findings have implications for healthcare providers and health educators who should educate all pregnant mothers on the need for antenatal care regardless of age, parity and education level.

Table 3 showed that majority of pregnant women in Isi-Uzo LGA Enugu State utilize antenatal care services. The finding is in line with that of Aziz et al. (2020) who reported that majority of pregnant women utilize antenatal care services in the rural Thatta, Pakistan. However, the finding contradict the findings of Awasthi et al, (2018) who reported that more than half of pregnant women did not utilize of antenatal services in Gorkha, Nepal. The high level of utilization found may be due to the high level of knowledge the pregnant mothers have. The findings have implication for government to ensure that proper and adequate antenatal care services are made available to pregnant mothers for easy utilization.

The findings in Table 4 showed that pregnant women in Isi-Uzo LGA in Enugu State utilize antenatal care services irrespective of age, parity and education level. Also, Table 6 showed that there was no significant difference in the level of utilization of ANC services among pregnant women in Isi-Uzo LGA, Enugu State based on age and education level. The hypothesis also showed a significant difference in the level of utilization of ANC services among pregnant women in Isi-Uzo LGA, Enugu State based on parity. The findings on level of utilization of ANC services based on age agree with Akhtar, Hussain, Majeed, and Afzal (2018) who reported that higher odds for the utilization of antenatal care among women aged 35 years and above than those below the age in Labore. These findings disagree with Rurangirwa (2017) who revealed that there was poor utilization of antenatal care services among women of 35 years and above in Rwanda. The findings on level of utilization of ANC services based on parity was in line with Dutamo, Assefa and Egata (2015) who revealed that pregnant women who had many children were more likely to utilize antenatal care services in Ibadan, Nigeria. The findings contradict with Ensor et al. (2014) that parity was negatively associated with antenatal care services in Zambia which implied that those that have a number of children at an early age are less likely to utilize antenatal care services than older women in Zambia. The findings on level of utilization of ANC services based on education level was in line with that of Adedokun and Yaya (2020) who reported that pregnant women with secondary education utilizes antenatal care services than pregnant women with tertiary education in Sub-Sahara, Africa. The findings however disagree with Nxiweni et al. (2022) reported that pregnant women with tertiary education are majority who utilizes antenatal care services. The findings of could be as a result of high knowledge and availability of the needed antenatal services. The findings have implications for health educators in educating mothers to ensure that these antenatal services are adequately utilized.

### **Conclusion**

The findings of the study showed that pregnant women in Isi-Uzo LGA in Enugu state had very high knowledge of antenatal care services irrespective of age, parity and education level. Majority of pregnant women in Isi-Uzo LGA Enugu State utilize antenatal care services irrespective of age, parity and education level. There was a significant difference in the level of knowledge of ANC services among pregnant women in Isi-Uzo LGA, Enugu State based on age, parity and education level. Also, there was no significant difference in the level of utilization of ANC services among pregnant women in Isi-Uzo LGA, Enugu State based on age and education level. However, there was a significant difference in the level of utilization of ANC services among pregnant women in Isi-Uzo LGA, Enugu State based on parity.

### **Recommendation**



Based on the findings and discussion of the study, the following recommendations are made:

1. Health education should be promoted by organizing campaign through social media to educate women about antenatal care services and utilization of antenatal care services during pregnancy.
2. Health educators and state government should work together in order to design and sponsor antenatal care programmes that are aim to increase knowledge and hence result to utilization of antenatal care services for pregnant women in Isi-Uzo irrespective of age, parity, and educational level.
3. The ministry of health should enhance health-seeking behaviours to modify the attitude of nulliparous women and encourage better participation of nulliparous women towards utilizing antenatal care services.
4. The state government should provide effective sensitization, seminar and workshops by Federal Ministry of Health and Information and Ministry of Women Affairs to create understandable awareness for women of reproductive age about pregnancy related problems irrespective of educational level.

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