

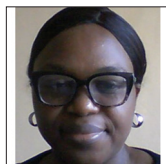


Original Article

Awareness and satisfaction with antenatal care services among pregnant women in Lagos state, Nigeria

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Received : 23 October 2020

Accepted : 29 January 2021

Published : 30 June 2021

DOI

10.25259/CJHS_53_2020

Quick Response Code:



ABSTRACT

Objectives: Despite the growing interest and efforts by government to make popular use of antenatal care (ANC) services in Nigeria as recommended by the World Health Organization, high level of infant and maternal mortality remains a major public health challenge facing the country. Dissatisfaction toward ANC services among pregnant women may be attributed to low level of awareness. This study assessed the level of awareness and satisfaction of ANC services among pregnant women in Lagos state, Nigeria.

Material and Methods: The study adopted a survey research design. A multistage sampling technique was utilized to recruit participants for this study. A validated questionnaire was used for data collection and data were analyzed using both descriptive and inferential statistics. Ethical approval was obtained from Babcock University Health Research Ethics Committee with approval no: BUHREC543/17. Approval was also obtained from health service commission and in the six general hospitals used for the study. Informed consent was taken and respondents were reassured of the privacy and confidentiality of the information obtained.

Results: The results showed that most of the respondents (85.6%) were in their reproductive years, that is, ages 23–37. The results showed that the level of awareness had a significant influence on pregnant women's satisfaction with the services ($\beta = 0.460$, $F_{(1,1313)} = 351.499$, $R^2 = 0.211$, $P < 0.05$). The level of awareness of ANC services was high ($M = 4.31$, $SD = 1.01$) on a scale of 5.

Conclusion: The study concluded that awareness of ANC services positively impacts pregnant women's satisfaction with the services in Lagos state. Efforts should be made to improve the level of awareness of pregnant mothers to achieve greater satisfaction with ANC services in Lagos state.

Keywords: Antenatal care services, Awareness, Pregnant women, Satisfaction

INTRODUCTION

Many women in developing countries experience life threatening and other critical health problems associated with pregnancy or childbirth. Complications of pregnancy and childbirth end up in more deaths and disabilities than the other reproductive health problems in African countries, Nigeria inclusive.^[1] Antenatal care (ANC) presents a chance for recognition and appropriate intervention for a few of the causes of maternal mortality in developing countries, especially in rural areas. The maternal mortality rate in Nigeria between 1999 and 2015 is among the highest in the world ranked 10th out of 183 countries.^[1] Nigeria is a leading contributor to the

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maternal death percentage in Africa south of the Sahara not only because of the size of her population but also because of her high maternal mortality ratio. Nigeria's maternal mortality ratio of 1:100 is beyond the regional average, with an estimated 59,000 annual maternal deaths. Ten-hundredth of global maternal death is contributed by Nigeria which holds just two-hundredth of the world's population.^[2] The World Health Organization also reported that there are wide regional variations with the North East zone having the highest maternal mortality rate with 1549/100,000 live births. Furthermore, it was observed that multipara women displayed poorer knowledge of maternal health when compared with primipara women.^[3] The difference was found not to be statistically significant after adjustments were made for demographic and socioeconomic factors.

Health knowledge is taken into account to be one among the key factors that enable women to bear in mind of their right and health status in order to seek appropriate health services. Studies conducted in numerous parts of the world have discovered that the level of awareness of mothers toward ANC is very important for utilizing ANC service. ANC offers a woman advice and information about appropriate place of delivery, opportunity to communicate adequate information to women on danger signs and symptoms which require prompt attention from health-care providers, assist in abating the severity of pregnancy-related complications through monitoring, and prompt treatment of conditions aggravated during pregnancy such as pregnancy-induced hypertension, malaria, and anemia which exposes mother and unborn baby to risk.^[4] Deo *et al.*^[5] conducted a study in East Nepal on barriers to utilization of ANC services and their findings show that there was poor knowledge of maternal health services due to less media exposure. Adewoye *et al.*^[6] also found out in their study that the respondents were aware of ANC services, out of 355 respondents, 248 had good knowledge on the activities carried out in the ANC services. They also concluded in their study that there was a high level of awareness of ANC services among women of child bearing age in Ilorin, East Local Government. Gitonga^[7] reported in a study conducted on determinants of focused ANC uptake among women in Kenya that the level of uptake of focused ANC was slightly more than half (52%). A study conducted by Fatile *et al.*^[8] who reported that participants' awareness of ANC shows that only 57.5% of the women attending antenatal clinic were aware while the remaining 42.5% were not aware of the new ANC program. They concluded that the awareness and perception of the women were low among Ondo state pregnant women. The level of awareness of ANC services among pregnant women also varies in different parts of the world.^[9]

Satisfaction has been one outcome measure of quality of care. A study on satisfaction of maternal health services

reflects quality of ANC service provided to the patients. Patient satisfaction is a reflection of the patient's judgment of different domains of health care, including technical, interpersonal, and organizational aspects.^[9] Satisfaction with different aspects of ANC services improves health outcomes, continuity of care, and adherence to treatment and relationship with the health provider.^[10] Patient satisfaction is defined as the individual's positive evaluation of distinct dimension of health care. Patient satisfaction questionnaires have their origin in two separate developments to improve compliance and assess consumerism.^[11] Satisfaction with ANC services motivates pregnant women to seek and continue to use the services in a study conducted at primary health care center at Kufa on females' satisfaction and perception about prenatal care^[12]. The author also found that most of the respondents (91.8%) were satisfied with the services given and behavior of services providers, and this also motivates them to use the services. He further reported that pregnant women's awareness correlated with their satisfaction with multiple aspects of care in the health center in the form of clinical examination, laboratory investigations, and health information/education. There are different factors that could be responsible for satisfaction among patients. Demographic characteristics such as age, educational attainment, and socioeconomic status are some of the factors considered to influence measured satisfaction ratings.^[11]

The reasons for measuring patient satisfaction include describing health-care service from the patient's perspective, measurement of the method of care, and evaluation of care as a function of patient satisfaction. Satisfaction is a multidimensional construct involving interpersonal manner, quality of care, accessibility or convenience, finance of care, consistency, physical environment, and availability.^[13] Patient satisfaction is the result of congruent or incongruent orientation toward a specific health care within the community, and patients with higher satisfaction are more likely to stick to medical recommendations.^[14] All women need good quality maternal health services to safeguard the lives of themselves and their and unborn children. High-quality maternal care should be a continuum that spans from the pre-pregnancy to the postpartum period and in which women and health providers are partners in the care provision.^[11] The World Health Organization recommends monitoring and evaluation of maternal satisfaction with public health-care services so as to enhance the quality and efficiency of health care during pregnancy.^[15]

Furthermore, a study conducted on perception of ANC services by pregnant women attending government health centers in the Buea Health District, Cameroon, that knowledge of respondents about ANC was different and a larger percentage of respondents (96.4%) displayed satisfaction with the antenatal services received. However,

there have been elements of dissatisfaction with health center services, poor sitting facilities, amenities, few health education talks, and poor nursing skills. High educational level (high school and university) and first-time pregnancy were significantly related to poor satisfaction.^[16] Galle *et al.*^[17] conducted a study on the expectations and satisfaction with ANC services among pregnant women, they reported that satisfaction with ANC was high, also indicated that women were satisfied with their relationship with the health care worker, meanwhile, the data received were reviewed during the consultation and the organizational aspects of ANC as less satisfactory. In spite of the growing interest and efforts by governments to make popular the use of ANC services as recommended by the World Health Organization in Nigeria, a high level of infant and maternal mortality remains a major public health challenge facing this country. One of the major factors identified as being responsible for this situation is dissatisfaction with ANC services provided for pregnant women. It is perceived that the level of satisfaction with ANC services received among pregnant women is generally low. Hence, this study assessed the level of awareness and satisfaction of ANC services among pregnant women in Lagos state, Nigeria.

MATERIAL AND METHODS

The study adopted descriptive survey research design. A multistage sampling technique was used to recruit participants for the study. Simple random sampling technique was first used to select three out of six zones. Thereafter, two general hospitals were selected from each zone. Six general hospitals were used for the study and these are; Lagos Island Maternity, Onikan Health Centre, Gbagada General Hospital, Randle General Hospital, Alimosho Maternal and Child Health Hospital, and Ifako Ijaiye Maternal and Child Health Hospital. Finally, convenient sampling technique was used to select 1500 respondents for the study. Yamane^[18] formula was used to calculate the sample size of each selected hospital at a 95% confidence level since the population sample is known for each selected hospital. The Yamane formula was used to calculate the sample size for each hospital based on the average number of patients estimated per month. A pre-test sample was conducted among 30 pregnant women in Mushin General Hospital in Lagos state, which was not included in the final research settings. The result of the analysis of the pre-test, the Cronbach's alpha reliability coefficient was from 0.94 to 0.97. Section A of the questionnaire focused on demographic data. This aimed at gathering data on the demographic information of the respondents such as age, marital status, and ethnicity among others, Section B of the questionnaire was designed to measure level of awareness during pregnancy. The scale was ranged on a 5-point Likert-type scale: 5 = Very high awareness, 4 = High awareness, 3 = Low awareness, 2 = Very

low awareness, and 1 = Not aware. The respondents indicated their level of awareness received on the ANC services. This section has 20 items and section C measured the level of satisfaction with ANC services. Five-point Likert-type scale: 5 = Very high satisfaction, 4 = High satisfaction, 3 = Moderately satisfied, 2 = Low satisfaction, and 1 = No satisfaction the respondents indicated their level of satisfaction with antenatal care services. This section has 20 items.

The researcher obtained ethical approval for the study from the Babcock University Health Research Ethical Committee (BUHREC NO: 543/17) and from the Health Service Commission, Lagos Island, Lagos state. Informed consent was obtained from the respondents after thorough explanation of the study processes. The respondents were also assured of privacy and confidentiality of the information obtained from them. The return rate was 87%. The data were coded and entered into the Statistical Package for the Social Sciences version 20. The data were analyzed using descriptive and inferential statistics. Regression analysis was used to establish the influence of variable for hypothesis at 0.05 level of significance.

RESULTS

Table 1 presents the demographic characteristics of the respondents used for this study. The results show that most of the respondents (85.6%) were in their reproductive years (23–37) years. About 61.5% of the respondents were Yoruba's. It is not surprising that the majority of respondents were Yoruba's because the study area belongs to the Yoruba ethnic group. The vast majority (90%) of respondents (pregnant women) were married. However, few pregnant women were single (8.0%), hence, this reflected the much respected value of the institution of marriage in Lagos state. The religious distribution of pregnant women in Lagos state showed that majority (72.1%) were Christians.

Table 2 shows that the level of awareness of ANC services among pregnant women in Lagos state was high ($M = 4.31$, $SD = 1.01$). The level of awareness was the highest for exclusive breastfeeding ($M = 4.49$) on a scale of 5, followed by awareness on maintenance of environmental hygiene ($M = 4.49$), followed by awareness on personal hygiene ($M = 4.48$) and awareness on scheduled ANC classes ($M = 4.43$). Awareness of family planning methods/choices had the lowest score ($M = 3.90$) all other information are shown in Table 2.

Table 3 shows that the level of satisfaction with ANC services among pregnant women in Lagos state was high ($M = 4.32$, $SD = 0.88$) on a scale of 5. For all parameters measured the level of satisfaction with ANC services was high; respondents were particularly satisfied with blood pressure monitoring in pregnancy ($M = 4.40$), they were

Table 1: The stages involved in the selection of respondents across the study areas.

Lists of the general hospitals	Hospitals selected after simple random sampling	Population of the selected hospitals (estimated per month)	Sample size using Yamane (1967) $n=N/1+N(e)^2$
Zone A			
Lagos Island Maternity Hospital	Lagos Island	500	222
Onikan Health Centre	Onikan Health Centre	420	205
Ibeju Lekki General Hospital			
Zone B			
Ikorodu Maternal and Child Health	Not selected		
Ijede General Hospital			
Epe General Hospital			
Agbowo Health Centre			
Kejeojinrin Health Centre			
Zone C			
Gbagada Maternal and Child Health	Gbagada GH	720	257
Isolo Maternal and Child Health Hospital	Randle GH	1760	326
Randle Maternal and Child Health Hospital			
Mushin General Hospital			
Zone D			
Somolu General Hospital	Not selected		
Harvey General Hospital			
Ebute-Metta Health Centre			
Zone E			
Alimosho Maternal and Child Health Hospital	Alimosho GH	670	250
Orile Agege General Hospital	Ifako-Ijaiye	600	240
Ifako-Ijaiye Maternal and Child Health Hospital			
Zone F			
Ajeromi General Hospital	Not selected		
Badagry General Hospital			
Amuwo-Odofin Maternal and Child Health			
Apapa General Hospital			
Total			1500

highly satisfied with blood testing activities ($M = 4.39$), they were highly satisfied with information given on adequate diet in pregnancy ($M = 4.38$), they were highly satisfied with information given on personal hygiene ($M = 4.38$), they were highly satisfied with information on exclusive breastfeeding ($M = 4.35$), they were also highly satisfied with information on urine testing ($M = 4.35$), and other information are shown in Table 3.

Table 4 shows that the level of awareness of ANC services significantly influenced pregnant women's satisfaction with ANC services in Lagos state ($P < 0.05$). Furthermore, Table 5 shows that there was a significant correlation coefficient ($r = 0.460$) and a positive slope ($B = 0.427$). This implies that an increase in level of awareness of ANC services would lead to an increase in pregnant women's satisfaction with ANC services. However, low level of awareness of ANC services would lead to a reduction in pregnant women's satisfaction with ANC services. Therefore, to improve pregnant women's satisfaction with ANC service, all aspects and details of ANC services should be made known to pregnant women in Lagos

state. The model illustrates that the level of awareness of ANC services explains 21.1% variation of pregnant

women's satisfaction with ANC services ($R^2 = 0.211$). The model accounts for a significant amount of pregnant women's satisfaction with ANC services ($F_{(1,1313)} = 351.499, P < 0.05$). Hence, the hypothesis that there is no significant influence of level of awareness on satisfaction with ANC services among pregnant women in Lagos state was rejected.

DISCUSSION

The findings of this study revealed that the level of awareness of ANC services among pregnant women in Lagos state was high. This means that the awareness arising from information provided on exclusive breastfeeding, maintenance of environmental hygiene, maintenance of personal hygiene, antenatal schedule classes, importance of adequate diet in pregnancy, urine tests, care of the baby after birth, blood testing, malaria prevention, preparation for delivery, blood pressure monitoring, and other parameters. A study carried

out in Kenya shows that three out of five women were found to have good knowledge of ANC while their knowledge on

Table 2: Demographic characteristics of respondents, n=1316

Variable	Category	Frequency (n)	Percentage (%)
Age	18–22	103	7.8
	23–27	375	28.5
	28–32	489	37.2
	33–37	262	19.9
	38–42	67	5.1
	43–49	20	1.5
Ethnicity	Yoruba	809	61.5
	Hausa	79	6.0
	Igbo	338	25.7
	Others	90	6.8
Marital status	Single	106	8.0
	Married	1184	90.0
	Widowed	18	1.4
	Divorced	8	.6
Religion	Christianity	949	72.1
	Islam	338	25.7
	Traditional	19	1.4
	None of the above	8	.6
	Others	2	.2
	Total	1316	100.0

certain aspects of ANC was poor.^[19] This finding contradicted the finding of this present study. Another study conducted in Ekiti state, findings showed that pregnant women's knowledge of ANC services was good and favorable,^[20] and this finding is in agreement with our study. Another study conducted by Yadav; the author reported that the knowledge of pregnant women was low due to low socioeconomic status and low educational level,^[21] the findings of his study are not in conformity with our study.

The finding of this study also revealed that the level of satisfaction with ANC services among pregnant women in Lagos state was high. A study conducted in Malaysia was in consonance with the finding of this present study, the authors reported that women had high level of satisfaction with the ANC services received.^[10] Furthermore, the present study is in contrary with the study by Galle *et al.*,^[17] they found that satisfaction with ANC services of pregnant women was high and they also evaluated that the information received during ANC services were less satisfactory,^[11] which is in contrast with the finding of this study. On the other hand, the finding found out that pregnant women were satisfied with the ANC services in Malaysia.^[11] The regression analysis was used to determine the influence of level of awareness on satisfaction with ANC services and the result revealed that there was a positive significant influenced of the level of awareness on

Table 3: Level of awareness of antenatal care services among pregnant women in Lagos state.

Item I am aware of	VHA 5	HA 4	LA 3	VLA 2	NA 1	Mean	SD
Exclusive breastfeeding	923 (70.1)	182 (13.8)	160 (12.2)	32 (2.4)	19 (1.4)	4.49	0.90
Maintenance of environmental hygiene	903 (68.6)	210 (16)	160 (12.2)	26 (2.0)	17 (1.3)	4.49	0.88
Maintenance of personal hygiene	923 (70.1)	185 (14.1)	155 (11.8)	29 (2.2)	24 (1.8)	4.48	0.91
Antenatal schedule classes	892 (67.8)	187 (14.2)	180 (13.7)	31 (2.4)	26 (2.0)	4.43	0.95
Adequate diet in pregnancy	879 (66.8)	212 (16.1)	163 (12.4)	40 (3.0)	22 (1.7)	4.43	0.94
Importance of blood supplement, for example, folic acid in pregnancy	877 (66.6)	200 (15.2)	174 (13.2)	45 (3.4)	20 (1.5)	4.42	0.95
Importance of urine testing in pregnancy	853 (64.8)	209 (15.9)	191 (14.5)	45 (3.4)	18 (1.4)	4.39	0.95
Care of the baby after birth	848 (64.4)	219 (16.6)	181 (13.8)	49 (3.7)	19 (1.4)	4.39	0.95
Importance of blood testing in pregnancy (blood group, PCV, etc.)	833 (63.3)	212 (16.1)	209 (15.9)	37 (2.8)	25 (1.9)	4.36	0.97
Malaria prevention in pregnancy	823 (62.5)	230 (17.5)	187 (14.2)	50 (3.8)	26 (2.0)	4.35	0.99
Preparation for delivery	802 (60.9)	237 (18)	198 (15)	56 (4.3)	23 (1.7)	4.32	0.99
Importance of blood pressure monitoring in pregnancy	816 (62)	212 (16.1)	206 (15.7)	57 (4.3)	25 (1.9)	4.32	1.01
Importance of weight and height monitoring/measurement	795 (60.4)	238 (18.1)	198 (15)	56 (4.3)	29 (2.2)	4.30	1.02
Importance of tetanus toxoid in pregnancy	785 (59.7)	242 (18.4)	188 (14.3)	57 (4.3)	44 (3.3)	4.27	1.07
Prevention of infection in pregnancy	747 (56.8)	260 (19.8)	213 (16.2)	61 (4.6)	35 (2.7)	4.23	1.05
Harmful practices in pregnancy	720 (54.7)	289 (22)	203 (15.4)	60 (4.6)	44 (3.3)	4.20	1.07
Care for myself after delivery	717 (54.5)	267 (20.3)	224 (17)	73 (5.5)	35 (2.7)	4.18	1.07
Danger signs in pregnancy	663 (50.4)	297 (22.6)	237 (18)	70 (5.3)	49 (3.7)	4.11	1.11
Importance of abdominal examination in pregnancy (inspection, palpation, etc.)	662 (50.3)	270 (20.5)	229 (17.4)	94 (7.1)	60 (4.6)	4.05	1.17
Family planning methods/choices	600 (45.6)	279 (21.2)	239 (18.2)	95 (7.2)	103 (7.8)	3.90	1.27
Average weighted mean						4.31	1.01

Table 4: Level of satisfaction with antenatal care services among pregnant women in Lagos state.

Item satisfaction with	VHS 5	HS 4	MS 3	LS 2	NS 1	Mean	SD
Importance of blood pressure monitoring in pregnancy	708 (53.8)	416 (31.6)	153 (11.6)	28 (2.1)	11 (0.8)	4.40	0.82
Importance of blood testing in pregnancy, for example, blood group, PCV, etc.	756 (57.4)	366 (27.8)	156 (11.9)	26 (2.0)	12 (0.9)	4.39	0.84
Adequate diet in pregnancy	739 (56.2)	392 (29.8)	147 (11.2)	22 (1.7)	16 (1.2)	4.38	0.84
Importance of blood supplement in pregnancy, for example, folic acid	750 (57)	369 (28)	158 (12)	24 (1.8)	15 (1.1)	4.38	0.85
Maintenance of personal hygiene in pregnancy	730 (55.5)	401 (30.5)	148 (11.2)	23 (1.7)	14 (1.1)	4.38	0.83
Exclusive breastfeeding	708 (53.8)	416 (31.6)	153 (11.6)	28 (2.1)	11 (0.8)	4.35	0.83
Importance of weight and height monitoring/measurement	724 (55)	391 (29.7)	158 (12)	29 (2.2)	14 (1.1)	4.35	0.85
Importance of urine testing in pregnancy	725 (55.1)	385 (29.3)	162 (12.3)	32 (2.4)	12 (0.9)	4.35	0.85
Maintenance of environmental hygiene	714 (54.3)	406 (30.9)	154 (11.7)	26 (2.0)	16 (1.2)	4.35	0.85
Importance of tetanus toxoid in pregnancy	732 (55.6)	359 (27.3)	179 (13.6)	32 (2.4)	14 (1.1)	4.34	0.88
Preparation for delivery	716 (54.4)	382 (29)	167 (12.7)	37 (2.8)	14 (1.1)	4.33	0.88
Care of the baby after birth	700 (53.2)	406 (30.9)	162 (12.3)	34 (2.6)	14 (1.1)	4.33	0.87
Malaria prevention in pregnancy	708 (53.8)	379 (28.8)	181 (13.8)	38 (2.9)	10 (0.8)	4.32	0.87
Importance of abdominal examination in pregnancy, for example, inspection, palpation, etc.	679 (51.6)	421 (32)	163 (12.4)	35 (2.7)	18 (1.4)	4.30	0.88
Harmful practices in pregnancy	674 (51.2)	411 (31.2)	180 (13.7)	38 (2.9)	13 (1.0)	4.29	0.88
Antenatal schedule classes	660 (50.2)	434 (33)	177 (13.4)	29 (2.2)	16 (1.2)	4.29	0.87
Care for myself after delivery	685 (52.1)	391 (29.7)	180 (13.7)	42 (3.2)	18 (1.4)	4.28	0.91
Prevention of infection in pregnancy	661 (50.2)	419 (31.8)	182 (13.8)	36 (2.7)	18 (1.4)	4.27	0.90
Danger signs in pregnancy	662 (50.3)	403 (30.6)	196 (14.9)	35 (2.7)	20 (1.5)	4.26	0.91
Family planning methods/choices	589 (44.8)	404 (30.7)	190 (14.4)	77 (5.9)	56 (4.3)	4.06	1.10
Average weighted mean						4.32	0.88

Table 5: Simple linear regression testing for significant influence of the level of awareness on satisfaction with ANC services.

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	SE	Beta		
1 (Constant)	47.322	1.908		24.808	0.000
Level of awareness of ANC services	0.427	0.023	0.460	18.748	0.000 ^a

^aDependent variable: Satisfaction with ANC services. Source: Field survey, 2017. ANC: Antenatal care

ANOVA testing for significant influence of the level of awareness on satisfaction with antenatal care services

Model	Sum of squares	Df	Mean square	F	Sig.
1 Regression	51,414.138	1	51,414.138	351.499	0.000 ^b
Residual	192,054.080	1313	146.271		
Total	243,468.218	1314			

R=0.460. R²=0.211. Adjusted R²=0.211. ^bDependent variable: On satisfaction with antenatal care services

satisfaction with ANC services among pregnant women in Lagos state. This means that when awareness of ANC services increases among pregnant women in Lagos state, their satisfaction with ANC services will also increase. The findings of this study corroborate with findings of the study conducted at Ethiopia and the findings showed a positive relationship between the awareness and satisfaction with ANC services,^[12] which is in agreement with the findings of our study.

Despite the findings in this study, there are limitations. The convenient sampling technique adopted for recruitment of the respondents may suggest bias and also not given everyone equal chance of being selected or participated in the study.

CONCLUSION

This study has shown conclusively that the level of satisfaction with ANC services among pregnant women was high, the

level of awareness of ANC services was also high, and there was a positive significant influence of the level of awareness on satisfaction with ANC services among pregnant women in Lagos state. It is recommended that efforts should be made to improve the level of awareness of pregnant women even better to achieve greater satisfaction with ANC services in Lagos state.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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How to cite this article: Ademuyiwa IY, Opeke RO, Farotimi AA, Ejidokun A, Olowe AO, Ojo EA. Awareness and satisfaction with antenatal care services among pregnant women in Lagos state, Nigeria. *Calabar J Health Sci* 2021;5(1):21-7.