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Original Research Article

Antenatal care at rivers state university teaching hospital, southern Nigeria: who and when?

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ABSTRACT

Background: Antenatal care prepares pregnant women physically and psychologically for birth and parenthood. It also prevents, detects and manages health problems affecting mothers and their babies. Objectives were to identify and characterise those attending antenatal care at RSUTH and when they register for antenatal care.
Methods: A retrospective study conducted from 1st January, 2015-31st December, 2020 at ANC of RSUTH. Records of 9990 pregnant women who booked for antenatal care were retrieved and reviewed. Socio-demographic characteristics and gestational age at booking were studied. Data was analyzed using SPSS version 23.0. P value <0.05 was statistically significant.
Results: During the study period, 9990 pregnant women booked for antenatal care. Most (23.3%) registered in 2016. Mean age at booking was 31.4±4.7 years. Highest age group (62.4%) was 30-39 years. Modal parity was para 0 and majority (37.5%) were para 2-4. Mean gestational age at booking was 20.5±7.5 weeks. More than 70% had tertiary education and 67.9% were traders and civil servants. More than 97% were married and 58.3% registered in their second trimester. When gestational age at booking was compared with the various socio-demographic parameters, those with the differences statistically significant and associated with late booking were educational level, age, parity, occupation and employment status.
Conclusions: Most women at booking were in their thirties, second trimester, married, multiparous, working class and had tertiary level of education. Most socio-demographic parameters showed statistically significant differences when compared with the gestational age at booking.

Keywords: Antenatal care, Booking, RSUTH, Socio-demographic, Trimesters

INTRODUCTION

Antenatal care (ANC) is the care given to pregnant women by skilled healthcare professionals aimed at identifying risk, prevent and manage pregnancy-related health conditions and provide nutritional and health education to women of reproductive age in other to secure a safe pregnancy and healthy baby.[1] To get optimum care, WHO recommends a minimum of eight visits throughout the pregnancy, with the first visit occurring in the first trimester because late booking leads to increase in maternal, fetal and infant morbidity and mortality.[2,3] According to the WHO, nearly three quarter of maternal deaths in poor countries are preventable, 26% with adequate prenatal care and 48% with increased access to quality obstetric care.[4] During ANC, the women get the opportunity to receive quality care, more contact with health services, more possibility of monitoring their

health status and receiving all procedures, examinations and interventions.[5,6]

Booking clinic is the first antenatal clinic where a detailed history of past and present pregnancies is obtained and pre-existing health conditions if any are identified and management instituted. This forms the foundation of subsequent antenatal visits and care. At booking, height is taken, blood pressure is measured to exclude pregnancy induced hypertension (PIH), blood samples are taken for haemoglobin concentration or packed cell volume, blood group, haemoglobin genotype, HBsAg, HIV 1 and 2, urine testing to exclude proteinuria, monitoring of weight to detect malnutrition and intra uterine growth restriction (IUGR).[7,8] There is also immunization against tetanus and administration of antiretroviral drugs to those that tested positive to HIV to prevent maternal to child transmission (MTCT).[7,8] Also during antenatal care, women are given iron and folic acid supplements to prevent anaemia, puerperal sepsis, low birth weight (LBW) and preterm delivery. Folic acid prevents neural tube defects in babies.[3]

Inadequate antenatal care has been associated with adverse pregnancy outcomes. In sub-Sahara Africa, less than half, 46.8% of the pregnant women seek early antenatal care.[7,8] Antenatal care attendance in Nigeria varies from region to region. The average attendance is said to be about 60% which is lower than those of neighbouring countries.[9] In Benin republic, Burkina Faso, Cameroon and Ghana, average antenatal attendances were 88%, 72.8%, 83.4% and 91.9% respectively.[9,10] In southern part of Nigeria, very few studies have been done on the characteristics of women who attend antenatal care in a tertiary institution and their gestational age at booking. This study has revealed all these in order to educate our women more on the importance of antenatal care and early booking.

METHODS

This was a retrospective study involving pregnant women, who booked for antenatal care (ANC) at RSUTH from 1st January, 2015 to 31st December, 2020. The study was conducted in the department of obstetrics and gynecology, Rivers State University Teaching Hospital Port Harcourt (RSUTH), Rivers State. It is one of the major clinical departments of the hospital. The average daily attendance to the antenatal clinic is 70 women. The RSUTH is the largest state-owned tertiary health facility in Rivers State and provides health care services for residents of the State and neighbouring states like Imo, Abia, Bayelsa, Akwa Ibom and Delta States. and also serves as a training facility for resident doctors, medical students and other allied medical science schools. Rivers State is one of the thirty-six states in Nigeria, created in 1967 and has 23 local government areas with Port Harcourt as its capital and largest city. It is located in the southern region of Nigeria dominated by Christians and has a large reserve of crude oil and natural gas which makes it the hub of oil and gas industry in Nigeria. Rivers State has a population of 7,303,924 according to the 2017 national bureau of statistics projected population making it the sixth most populous state in Nigeria.[11]

Data was obtained from a well preserved and secured laboratory registers where records of investigations done at booking were kept within the study period. Data obtained were socio-demographic characteristics of antenatal clinic attendees and their gestational age at booking.

Inclusion criteria

All the women who registered for antenatal care between from 1st January, 2015 to 31st December, 2020 were included in the study. None was excluded.

RESULTS

Total number of women who registered for ANC during the study period was 9,990 women. The yearly distribution of the women is shown in Figure 1. The mean age ±SD of the women was 31.44±4.72 years, modal age was 30 years, age range was 15-48 years and most, 6,234 (62.4%) were in age group 30-39 years. The mean gestational age (GA) during the study period was 20.51±7.50 weeks and the GA range was 6-40 weeks. Modal parity was Para 0, most women, 3,751 (37.5%) were para 2-4. Most, 9,975 (99.8%) had formal education. Fifty-eight (0.6%) women had primary education while 2,871 (28.7%) and 7,046 (70.5%) had secondary and tertiary levels of education respectively. Few, 237 (2.4%) were single while 9,753 (97.6%) were married. Majority, 5,822 (58.3%) registered for antenatal care in their second trimester. Women who registered for ANC in the first trimester were 1,925 (19.27%); 5,822 (58.28%) in second trimester and 2,243 (22.45%) in third trimester. Most of the women, 3479 (34.8%) were civil servants and this is closely followed by traders accounting for 3305 (33.1%). The socio-demographic characteristics of the women in their trimesters is shown in Table 1.

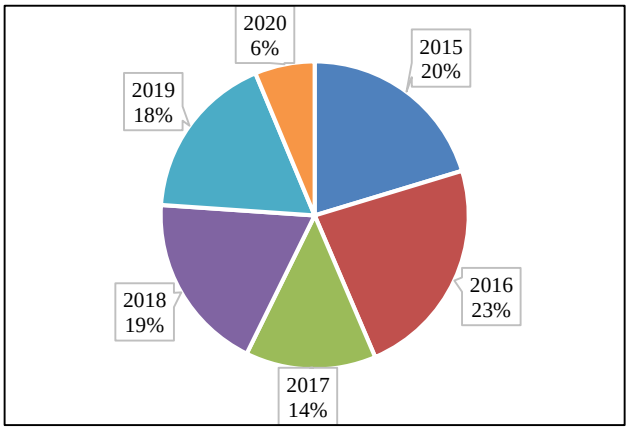

Figure 1: The yearly distribution of the women.

Table 1: Socio-demographic characteristics of women.

	1st trimester	2nd trimester	3rd trimester
Number	1925	5822	2243
Year	**N (%)**	**N (%)**	**N (%)**
2015	350 (18.2)	1179 (20.3)	501(22.3)
2016	401 (20.8)	1317 (22.6)	605(27.0)
2017	224 (11.6)	847 (14.6)	298 (13.3)
2018	369 (19.2)	1113 (19.1)	397 (17.7)
2019	441 (22.9)	998 (17.1)	322 (14.4)
2020	140 (7.3)	368 (6.3)	120 (5.3)
GA (weeks)	≤13	14-26	>26
Mean	10.45	19.7	31.26
Median	11	20.0	31
Mode	11	21	29
Range	7	12	13
Maximum	13	26	40
Minimum	6	14	27
Standard deviation	2.23	3.58	3.03
Educational status			
No formal education	0 (0)	12 (0.2)	3 (0.1)
Primary	10 (0.5)	31 (0.5)	17 (0.8)
Secondary	472 (24.5)	1718 (29.5)	681 (30.4)
Tertiary	1443 (75)	4061 (69.8)	1542 (68.7)
Occupation			
Civil servants	699 (36.3)	2137 (36.7)	643 (28.7)
Hair stylist	54 (2.8)	123 (2.1)	43 (1.9)
Housewife	291 (15.1)	1012 (17.3)	502 (22.4)
Lawyer	2 (0.1)	9 (0.2)	4 (0.2)
Make-up artist	5 (0.3)	9 (0.2)	16 (0.7)
Medical doctor	0 (0)	3 (0.1)	3 (0.1)
Seamstress	54 (2.8)	104 (1.8)	68 (3.0)
Students	142 (7.4)	397 (6.8)	151 (6.8)
Teacher	38 (2)	139 (2.4)	37 (1.6)
Trader	640 (33.2)	1889 (32.4)	776 (34.6)
Marital status			
Married	1866 (96.9)	5701 (97.9)	2186 (97.5)
Single	59 (3.1)	121 (2.1)	57 (2.5)

Table 2: The significance of the socio-demographic variables with respect to the gestational age at booking.

Variables	GA (weeks)				
	<13 (%)	14-26 (%)	>26 (%)	Total (%)	
Education level					
No formal education	0 (0.0)	12 (80.0)	3 (20.0)	15 (100.0%)	
Primary	10 (17.2)	31 (53.4)	17 (29.3)	58 (100.0)	χ^2=27.76
Secondary	472 (16.4)	1718 (59.8)	681 (23.7)	2871 (100.0)	Df=6
Tertiary	1443 (20.5)	4061 (57.6)	1542 (21.9)	7046 (100.0	P<0.01
Total	1925 (19.3)	5822 (58.3)	2243 (22.5)	9990 (100.0)	
Marital Status					
Married	1866 (19.1)	5701 (58.5)	2186 (22.4)	9753 (100.0)	χ^2=6.43
Single	59 (24.9)	121 (51.1)	57 (24.1)	237 (100.0)	Df=2
Total	1925 (19.3)	5822 (58.3)	2243 (22.5)	9990 (100.0)	P=0.40
Age					
<19	9 (11.0)	49 (59.8)	24 (29.3)	82 (100.0)	χ^2=31.10
20-29	701 (21.6)	1785 (55.0)	761 (23.4)	3247 (100.0)	Df=6

Continued.

Variables	GA (weeks)				
	<13 (%)	14-26 (%)	>26 (%)	Total (%)	
30-39	1149 (18.4)	3725 (59.8)	1360 (21.8)	6234 (100.0)	P<0.01
40+	66 (15.5)	263 (61.6)	98 (23.0)	427 (100.0)	
Total	1925 (19.3)	5822 (58.3)	2243 (22.5)	9990 (100.0)	
Parity					
0	909 (25.3)	1989 (55.5)	688 (19.2)	3586 (100.0)	
1	396 (16.4)	1426 (58.9)	597 (24.7)	2419 (100.0)	χ^2=143.02
2-4	585 (15.6)	2267 (60.4)	899 (24.0)	3751 (100.0)	Df=6
≥5	35 (15.0)	140 (59.8)	59 (25.2)	234 (100.0)	P<0.01
Total	1925 (19.3)	5822 (58.3)	2243 (22.5)	9990 (100.0)	
Employment status					
Employed	739 (19.9)	2288 (61.6)	687 (18.5)	3714 (100.0)	
Self employed	753 (19.9)	2125 (56.2)	903 (23.9)	3781 (100.0)	χ^2=62.26
Unemployed	433 (17.4)	1409 (56.5)	653 (26.2)	2495 (100.0)	Df=4
Total	1925 (19.3)	5822 (58.3)	2243 (22.5)	9990 (100.0)	P<0.01
Occupation					
Civil servant	699 (20.1)	2137 (61.4)	643 (18.5)	3479 (100.0)	
Hair stylist	54 (24.5)	123 955.9)	43 (19.5)	220 (100.0)	
House wife	291 (16.1)	1012 (56.1)	502 (27.8)	1805 (100.0)	
Lawyer	2 (13.3)	9 (60.0)	4 (26.7)	15 (100.0)	
Make-up artist	5 (16.7)	9 (30.0)	16 (53.3)	30 (100.0)	χ^2=111.98
Medical doctor	0 (0.0)	3 (50.0)	3 (50.0)	6 (100.0)	Df=18
Seamstress	54 (23.9)	104 (46.0)	68 (30.1)	226 (100.0)	P<0.01
Student	142 (20.6)	397 (57.5)	151 (21.9)	690 (100.00	
Teacher	38 (17.8)	139 (65.0)	37 (17.3)	214 (100.0)	
Trader	640 (19.4)	1889 (57.2)	776 (23.5)	3305 (100.0)	
Total	1925 (19.3)	5822 (58.3)	2243 (22.5)	9990 (100.0)	

Table 2 shows the significance of the socio-demographic variables with respect to the gestational age at booking. Level of education, age group, parity, occupation and employment status had statistically significant association with late antenatal care booking. There was no significant relationship between marital status and late antenatal care booking of the women.

DISCUSSION

Most women registered for the antenatal care in 2016 and the least numbers were in 2019 and 2020 because of the COVID-19 pandemic which started in 2019. Most women registered for antenatal care late. In this study, 80.8% women registered for antenatal care after the first trimester. In a similar study done in western Uganda, 90.1% of the women registered late for antenatal care at an average of 5.5 months.[7] This finding is similar to our finding of 20.51 weeks as the mean gestational age at booking. Our finding of 80.8% is similar to the findings from other centres in Ethiopia where they got 82.6% and 87% respectively.[12,13] It is also similar to findings in other studies in Uganda and Tanzania.[14-16] Our study is at variance with studies done in Egypt where 53% of the women registered in the third trimester and in Ireland where prevalence of late booking is low at 26.6%.[6,17] This late booking seen in this study and other African countries could contribute to high maternal and foetal morbidity and mortality seen in these regions. In Uganda, a cross sectional study determining antenatal clinic attendance noted that lack of knowledge about dangers of not seeking antenatal care and delivery at a health facility including inability to make independent decisions were major barriers to seeking health care among pregnant women in Uganda.[7] World Health Organization recommends pregnant women to register for antenatal care in the first trimester of pregnancy, this assists the women to obtain the best care and health outcomes for women and their babies.[2]

The study found out that the number of women who booked for antenatal care increased with an increase in age and decreased with further increase in age. A similar finding was also seen in other studies.[1,7,18] Most women in this study belonged to age group 30-39 years and this could be explained that our women are deferring marriage and child bearing to go to school and improve on their educational status.[19,20] In other studies most of the women were in age group 20-29 years.[1,7,10] Across all age groups, the women sought antenatal care late as also seen in other studies.[1,6,7,10,18] Most women in this study were married and sought antenatal care late as in other similar studies.[1,6,7,10,18] This is not surprising as most women who register for antenatal care are married women.

Most women in this study were civil servants and traders while housewives came third with prevalence rate of 18%. This is at variance with a study by Komuhangi where most women (86.2%) were housewives and 66.1% had no formal education.[7] A similar study by Mbee et al showed that 41% of the women were farmers/artisans and this is followed by traders accounting for 31.1% of the women.[21] The findings by Khalil et al showed that most women (65.9%) where housewives though they were educated.[6]

In our study, most of the women were multiparae which is closely followed by nulliparae. This finding is similar to other findings from similar studies.[6,10] It is noted that multigravidae are more likely to utilize antenatal care services as compared to primigravidae without prior antenatal care services experience. It is also noted that multiparae are more likely to book late for antenatal care. Wolde HF et al also found out that an increase in parity decreases the likelihood of uptake of antenatal care.[22] This could be explained by the multiparae perceiving themselves as having experience with pregnancies hence could not value the significance of making an early and timely booking. They are also less interested in booking early due to experience gained from previous pregnancies and deliveries.[7] Also having knowledge of health care enables women to be aware of the health status in order to seek appropriate health services.[23] Our study also confirms the findings by other studies that parity is significantly associated with late booking of antenatal care.[7,15]

Evidence from several studies suggests that maternal education may also be associated with early booking of antenatal care compared to those without education.[1,22,24] This is as a result of exposure to information and knowledge of health in the media and other means of information dissemination. Also educated women have better jobs compared to uneducated ones which improves their financial capacity, health care seeking behaviour and chances of receiving qualified care.[1,22,24] Educated women have the greater confidence to take actions regarding their health and have awareness on advantages of utilizing health services compared to uneducated women.[6,25] This is not the case in our study where more than 70% of the women had tertiary level of education, yet majority, 80.8% registered late for antenatal care. In some studies, majority of the women who registered for antenatal care had secondary level of education.[1,6,21] In our study, the level of education among the women had statistically significant relationship with late booking as seen in other studies.[7,22]

Various studies have suggested the factors related to late booking include level of education, maternal age, distance to the nearest health facility with antenatal care services. Overall, the level of education, age, parity, occupation and employment status had statistically significant relationship with late booking of the patients. Marital status does not have any statistically significant relationship with late booking. In a similar study by Komuhangi et al, there was no statistically significant relationship between age, marital status and late booking but there was significant relationship between level of education, religion, parity and late booking.[7,26]

This was a retrospective study where only the information in medical records were used.

CONCLUSION

The women attending antenatal care at RSUTH were mostly in their thirties, married, multiparous, working class and had tertiary level of education. Most women also registered late for antenatal care. Level of education, age, parity, occupation and employment status had statistically significant relationship with late booking of the patients.

Recommendations

There should be increased awareness of health care programs and education of our women to improve their knowledge about antenatal care services and the usefulness of registering early for antenatal care. This will significantly reduce maternal and fetal morbidity and mortality.

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