Pattern and Determinants of Antenatal Booking at Abakaliki Southeast Nigeria

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Abstract

Background: Antenatal care is one of the pillars of SAFE Motherhood Initiative aimed at preventing adverse pregnancy outcome. Early antenatal booking is recommended for this benefit. **Aim:** The objective of this study was to determine the antenatal booking pattern of pregnant women and its determinants. **Subjects and Methods:** A cross-sectional survey of pregnant women attending the antenatal booking clinic at Federal Medical Centre Abakaliki Ebonyi State between April 6, 2011 to August 5, 2011 was undertaken. Epi info 2008 version was used for analysis. **Results:** The mean age of the respondents was 27.46 (5.81) years and the mean gestational age at booking was 24.33 (5.52) weeks. A total of 83.1% (286/344) of the pregnant women booked after the first trimester while the remaining 16.9% (56/344) booked early. Socio-biological variables and past obstetrics history did not contribute significantly to the gestational age at booking while sickness in index pregnancy, personal wishes, and financial constraint were statistically significant reasons given for seeking antenatal care. Majority of the pregnant women 37.2% (128/344) suggested that the second trimester was the ideal gestational age for booking while 18.3% (63/344) did not know the ideal gestational age for booking. Most pregnant women 81.1% (279/344) knew the benefits of early antenatal care even though they booked late 83.1% (286/344). **Conclusion:** Most pregnant women access antenatal care late at Abakaliki because of misconception and poverty. Health education and subsidization of cost of medical services will help in reversing the trend of late antenatal booking.

Keywords: Abakaliki, Antenatal booking, Determinants, Pattern

Introduction

Antenatal care (ANC) is a specialized pattern of care organized for pregnant women to enable them attain and maintain a state of good health throughout pregnancy and to improve their chances of having safe delivery of healthy infants to a healthy mother at term.[1] Good antenatal care has contributed significantly to the reduction of maternal and fetal morbidity and mortality.[2]

The most recent confidential enquiry into maternal and child health by the Royal College of Obstetrics and Gynaecology (RCOG) has reported that good antenatal care is a significant factor in reducing the chances of a pregnant woman dying from obstetric complications related to pregnancy.[2] This reduction in maternal mortality is from 1 in 290 in 1990 to 1 in 19,020 in 2002.[2] Good antenatal care is the hallmark of preventive medicine.[2,3] This is because pregnancy has to do with a normal physiological event that may be complicated by pathologic processes detrimental to the health of the mother or the fetus.[3] Antenatal care is one of the pillars of SAFE Motherhood lunched in 1987 at Nairobi Kenya with the aim of improving pregnancy outcome for both the mother and the fetus.[1] About 5-20% of all pregnancies are at risk of having poor fetal outcome.[3]

Good antenatal care starts with booking which serves as entry to prenatal care for the index pregnant and affords the pregnant women opportunity for risk assessment and management.[4] It is recommended that first antenatal visit should be initiated at ≤12 weeks in focused antenatal care and <14 weeks in traditional antenatal care seen in most developing countries.[4,5] This early visit for antenatal care helps diagnose the pregnancy early and estimate the expected date of delivery accurately, note previous and current obstetric

problems as well as medical, social, familial, and surgical problems related to the pregnancy.[6,7] The general health condition of pregnant women is accessed and ancillary laboratory investigations done. Furthermore preventive measures are instituted early with the sole aim of having a healthy baby to a healthy mother.[1,6,7]

In spite of all these aforementioned benefits, late antenatal booking is still dominant in developing countries in the 21st century.[5,8,9] The prevalence of late antenatal booking is quite high in developing countries with range of 70.9-86% in Nigeria.[8-12] This is in variant with findings in developed countries where early booking is a common finding.[5]

The mean gestational age of booking among pregnant women in Nigeria are 23.7 weeks in Benin,[9] 23.55 weeks in Sokoto,[13] 23.6 weeks in Niger Delta.[12] 21.82 weeks in Ibadan.[5] Reasons for the late antenatal visit have been inconsistent and vary from one region to the other. Some of the reasons include poor financial state, apparently problem-free pregnancy, ignorance, tight work schedule, perceived enemies who may harm the pregnancy.[5,8]

The aim of this study is to find out the determinants and patterns of antenatal booking visit at Abakaliki, Ebonyi State, and southeast of Nigeria. The need for this first antenatal visit evaluation is based on the fact that early antenatal booking has profound benefits on the fetal and maternal outcome than late antenatal booking. Also studies on the antenatal booking pattern and its determinants are sparse in South East Nigeria.

Subjects and Methods

Ebonyi State was created in 1996 from the old Abakaliki division of Enugu State and old Afikpo division of former Abia State, has 13 local government areas (LGAs); one urban, one semiurban, and the rest rural. It has an estimated population of 4.3 million and occupies a land mass of 5935 km^2, sharing boundaries in the west with Enugu State, Cross River in the east, Abia in the South-east, and Benue in the North. About (¾ of 4.3 million) of the population wells in the rural area with farming as their major occupation.

Federal Medical Centre, Abakaliki is a major tertiary health facility located in the capital city of the state and receives referrals mostly from all parts of the State and also from the neighboring States of Benue, Enugu, Cross River, and Abia State.

The Obstetrics department has 15 specialist obstetricians and gynecologists divided equally into five teams. Each team has two senior registrars and two junior registrars with five to seven house officers. Antenatal booking clinic for all the five teams holds every Wednesday. About 4,000 women booked annually for antenatal care at FMC with delivery rate of about 1,500 deliveries per annum.

This was a cross-sectional descriptive study. The study involved consecutive recruitment of pregnant women at the antenatal booking clinic who came for antenatal care at Federal Medical Centre, Abakaliki, Ebonyi State, southeast of Nigeria from April 6th to August 5th 2011.

Ethical approval for this study was obtained from hospital Ethics and Research Committee. Pregnant women who visited the antenatal booking clinic, who were sure of their last menstrual period were included consecutively for this study. Also those who were not sure of their last menstrual period but have an early ultrasound (within the first trimester) were included after obtaining their verbal consent. Pregnant women who were unsure of their last menstrual period were excluded from this study except those who did an early ultrasound before visiting the booking clinic. Early antenatal booking was taken as booking within the first trimester in this study while pregnant women presenting at the booking clinic for antenatal care after the first trimester are considered as late booking.

The first two authors trained four house officers as research assistants who thereafter administered the pretested questionnaires to the consenting pregnant women and those who are not literate were assisted by the research assistants.

The sample size was obtained using the formula: $N = Z^2aPQ/d$ by Taylor DW,
Z^2a = standard normal deviation at 95% confidence interval = 1.96,
P = proportion or prevalence of late booking = 0.80.
$Q = 1 - P = 0.20$
d = precision limit = 0.55.

This yielded a sample size of 246 but this was increased to 365 in other to increase the power of the study.

The pretested questionnaire contained information on the sociodemographic characteristics, index pregnancy, and past obstetrics pregnancy features. Also it has information on knowledge and perception of booking.

Data were analyzed using the Epi-info software package version 3.5.1 2008, (CDC, Atlanta, USA). Initial univalent analysis was generated by using frequency tables and further bivalent analysis was done by stratification of observed factors against the gestational age at booking. Thereafter the Chi-square (χ^2) analysis was done and level of significance was set at P value <0.05.

Results

The semistructured questionnaire was administered to 365 pregnant women who came for antenatal care within the study period. Of these, 94.3% (344/365) questionnaires were correctly filled and then analyzed. The age range of the respondents was 16–42 years with a mean age of 27 (5.81) years. 16.9% (58/344) booked early (within the first

trimester) while 83.1% (296/344) booked late (after the first trimester). The mean gestational age of booking in this study was 24.33 (5.52) weeks.

Table 1 showed the sociodemographic characteristics and its association with the pattern of booking.

Many of the respondents 40.7%, 140/344 were within the age range of 25–29 years. Late antenatal booking was most common 92.9% (13/14) among the teenagers (<19 years) while early booking was most common 25% (15/60) among those aged 20-24 years.

Most of the respondents 92.9% (13/14) were married but married pregnant women were found to access the antenatal facilities late in a high proportion 83.9% (265/344).

Table 1: Sociodemographic characteristic and booking pattern				
Variables	*n* = 344% = (100)	Early	Late	χ^2 *P*-value
Age (years)				5.88 (0.317)
<19	14 (4.1)	1 (7.1)	13 (92.9)	
20–24	60 (17.4)	15 (25.0)	45 (75.0)	
25–29	140 (40.7)	19 (13.6)	121 (86.4)	
30–34	94 (27.3)	18 (19.2)	76 (80.8)	
35–39	33 (9.6)	5 (15.2)	28 (84.8)	
>40	3 (0.9)	0 (0)	3 (100)	
Marital status				5.053 (0.282)
Engaged	13 (3.8)	5 (38.5)	8 (61.5)	
Not married	12 (3.59)	2 (167)	10 (83.3)	
Widowed	2 (0.6)	0 (0)	2 (100)	
Separated	1 (0.3)	0 (0)	1 (100)	
Married	316 (91.9)	51 (16.1)	265 (83.9)	
Family setting				0.352 (0.553)
Monogamy	311 (90.4)	51 (16.4)	260 (83.6)	
Polygamy	18 (5.2)	2 (11.1)	16 (88.9)	
N/A	15 (4.4)	5 (33.3)	10 (66.7)	
Religion				6.649 (0.355)
Moslem	4 (1.2)	2 (50)	2 (50)	
Pentecostal	130 (37.5)	20 (15.4)	110 (84.6)	
Protestants	41 (11.9)	4 (9.8)	37 (90.2)	
Roman catholic	164 (47.7)	32 (19.5)	132 (80.5)	
Traditional	1 (0.3)	0 (0)	1 (80.5)	
Pagans	1 (0.3)	0 (0)	1 (100)	
Jehovah witness	2 (0.99)	0 (0)	3 (100)	
Educational status				2.158 (0.540)
No formal education	5 (100)	0 (0)	5 (100)	
Primary	29 (8.4)	7 (24.1)	22 (75.9)	
Secondary	148 (43.0)	24 (16.2)	124 (83.8)	
Tertiary	162 (47.1)	27 (16.7)	135 (83.3)	
Socioeconomic status of women				10.500 (0.486)
House wife	38 (11.1)	4 (12.5)	34 (87.5)	
Farmer	10 (2.9)	1 (10)	9 (90)	
Petty trader	30 (8.8)	6 (20)	24 (80)	
Seamstress	12 (8.5)	0 (0)	12 (100)	
Artisan/fashion/ design	10 (2.9)	3 (30)	7 (70)	
Civil servant	112 (32.7)	24 (21.4)	88 (78.6)	
Professional	8 (2.3)	1 (12.5)	7 (87.5)	
Business woman	49 (14.3)	9 (18.4)	40 (81.6)	
Pastor	2 (2.6)	1 (50)	1 (50)	
Student	67 (19.6)	9 (13.4)	58 (86.6)	
Corpers	4 (1.2)	0 (0)	4 (100)	
Politicians	2 (0.6)	0 (0)	2 (100)	
Parity				6.179 (0.289)
0	111 (32.3)	19 (17.1)	92 (82.9)	
1	79 (23.0)	19 (24.1)	60 (75.9)	
2	60 (17.4)	09 (15.0)	51 (85)	
3	41 (11.9)	05 (12.2)	36 (87.8)	
4	33 (9.6)	03 (9.1)	30 (90.9)	
≥5	78 (5.8)	02 (15.2)	17 (85)	

The widowed and separated pregnant women usually access the antenatal late with percentage of 100% (2/2 and 1/1 respectively) in this study. The engaged pregnant women had the highest percentage 38.5% (5/13) of early visits for antenatal care. Majority of the polygamous and monogamous pregnant woman accessed antenatal care late with percentage of 88.9% (16/18) and 83.6% (260/311) respectively. Christianity is the dominant religion with Roman Catholic being the most common 47.7% (164/344) denomination of the respondents. Late antenatal booking is common among Christians with percentages of 80.5% (132/164) for Roman Catholic, 84.6% (110/130) for Pentecostal, and 90.2% (37/41) for the Protestants. All 100% (1/1) of pagan and traditionalists booked late for antenatal care. Moslems had the highest percentage (50% (2/4)) of early antenatal booking in this study.

Most of the respondents had secondary education 43.0% (148/344) or tertiary 47.1% (162/344) education. Compared to respondents with no formal education, more of the respondents with primary education booked early (0.0% vs 24.1% (0/5 vs 7/29)) respectively.

Civil Service 32.7% (112/344) was the most common occupation of the respondents and most of them booked late 78.6% (88/112). Corpers, politician, and seamstress all 100% (4/4, 2/2 and 12/12 respectively) book late for antenatal care. Early antenatal booking was most common among the Pastors/Evangelist 50% (1/2).

Primigravidae 32.3% (111/344) was the most common parity that visited the antenatal clinic for booking however they accounted for a high proportion 82.9% (92/111) of late antenatal booking. Primiparous women have the highest percentage of pregnant women 24.1% (19/79) who came early for antenatal booking whereas Para 4 has the highest percentage 90.9% (30/33) that came late for antenatal booking. Sociodemographic factors did not influence the booking pattern in this study. The *P*-values for the age, marital status, family

setting, polygamy, religion, educational status of women, socioeconomic status of women, and parity were 0.317, 0.282, 0.583, 0.103, 0.355, 0.540, 0.486, and 0.289, respectively.

Table 2 showed the events of previous pregnancy and its influence on the booking pattern. Of those 25.9% (60/233) who had complications in previous pregnancy, majority 80% (48/60) booked late while the remaining 20% (12/60) booked early for antenatal care. A total of 55% (33/60) of pregnant women who had complication in previous pregnancy accessed antenatal care in this index pregnancy due to that complication they had in the previous pregnancy. However, most of them 78.8% (26/33) still booked late for antenatal care. A significant proportion 68.2% (159/233) were counseled on early booking in previous pregnancy but only 17.6% (28/159) of them booked early in this index pregnancy. Majority of the respondents 62.3% (228/233) booked in previous pregnancy; however a significant proportion of them 83.3% (190/228) still booked late in this index pregnancy. All those who were unbooked in previous pregnancy 1.5% (5/233) booked late in this index pregnancy 100% (5/5). Among all those who had chronic ill-health 4.9% (17/344) in previous pregnancy most of them still booked late 76.5% (13/17) in this index pregnancy.

All the respondents 100% (3/3, 2/2, 3/3, and 2/2 respectively) who had abnormal babies, postpartum hemorrhage, neonatal deaths, and difficult delivery assessed the antenatal care late in this their index pregnancy. A small percentage of those who had preterm delivery, difficult labor, ceserean section, intrauterine fetal deaths, and miscarriage booked early for antenatal care in the percentages of 50% (1/2), 40% (2/5), 28.6% (6/21), 20% (2/8), and 8.3% (1/12) respectively. These complications in previous pregnancies did not have impact on the booking pattern in this study, *P* value = 0.587.

Respondents whose interpregnancy interval were ≥6 years were the lowest 7.7% (1/58) to initiate early antenatal care while the highest 23.9% (11/58) early antenatal booking were

Table 2: Events of previous pregnancy and its influences on the booking pattern

Variables	Total	Early	Late	χ^2 (*P*-value)
Complication in previous pregnancy				0.617 (0.432)
Yes	60 (25.9)	12 (20)	48 (80)	
No	173 (74.1)	27 (15.6)	146 (84.4)	
Complication in previous was reason for booking now				0.067 (0.795)
yes	33 (55)	7 (21.2)	26 (78.8)	
No	27 (45)	5 (18.5)	22 (81.5)	
Counseling on early booking in previous pregnancy				0.273 (-0.601)
Yes	159 (68.2)	28 (17.6)	131 (82.4)	
No	74 (31.8)	11 (14.9)	63 (85.1)	
Booking status in previous pregnancy				0.996 (0.318)
Booked	228 (62.3)	38 (16.7)	190 (83.3)	
Un-booked	5 (1.5)	0 (0)	5 (100)	
Chronic illness diagnosed in previous pregnancy				0.567 (0.451)
Yes	17 (4.9)	4 (23.5)	13 (76.5)	
No	327 (95.1)	54 (16.5)	273 (83.5)	

seen among pregnant women with an interpregnancy interval of 3 years. Interpregnancy interval did not attain statistical significance, *P* value = 0.476. Most of the respondents had their last child birth at the Federal Medical Centre 60.1% (137/228) and at the Teaching Hospital 11.0% (25/228). However most of them assessed antenatal care late with percentages of 82.5% (113/137) and 80% (20/25), respectively. Those who delivered at private, missionary, and state general hospital accounted for the highest proportions of late antenatal care initiation with percentages of 95.2% (20/21), 95.8% (23/24) and 90.9%(10/11), respectively. Place of last child birth did not attain statistical significance, *P* value = 0.173.

Table 3 shows suggested ideal gestational age for booking by the respondents.

One hundred and twenty eight of the respondents 37.2% (128/344) suggested that the second trimester was the ideal gestational age for booking, while 34.9% (120/344) correctly identified that the ideal gestational age for booking should be within the first trimester, and 18.3% (63/344) had no idea of the ideal gestational age for booking.

Table 4 showed the determinants of timing of antenatal booking. A significant percentage of respondents who booked early in this index pregnancy were mainly due to sickness 52.2% (12/23), parents' advice 25% (2/8), friends' advice 33.3% (1/3), doctors' advice 21.3% (20/94), and nurses advice 20% (2/10). All respondent 100% (19/19) who had financial constraints,

no perception of problem in index pregnancy as well as those advised by Pastor and others booked late for antenatal care. The determinants or reasons for early or late antenatal booking attained statistical significance with *P*-value < 0.001. Sickness in index pregnancy was statistically significant for early booking with *P*-value = 0.001. Personal wish and financial constraints were statistically significant for late booking (*P*-value = 0.049) and (*P*-value = 0.043), respectively.

Table 5 showed suggested benefits of early antenatal booking among the 92.4% (318/344) respondents who supported early antenatal booking.

The benefits were early detection of problem in pregnancy 56.4% (194/318), early prevention and treatment of diseases 24.7% (85/318) and adhere to doctors' advice 7.6% (26/318). Other benefits suggested include accruing savings from husband 1.5% (5/318), heading to parents' advice 0.6% (2/318), making more friends, and heading to friends' advice 0.9% (3/318). Few of the respondents 7.6% (26/344) do not support early antenatal booking. The reasons for not supporting early antenatal care by the respondents include, personal opinion 3.5% (12/344), pregnancy perceived to be too early 1.5% (5/344), perception that nothing is done by doctors 1.5% (5/344), and avoidance of too frequent visits as well as fear of early revelation of pregnancy 0.6% (2/344) each.

Discussion

In this study just about one-sixth (16.9%) of the respondents came for antenatal booking within the WHO recommended the first trimester while the rest five-sixth booked late. The late booking of 83.1% found in this study is higher than 66.7% of Addis Ababa by Alemayehu *et al*.,[14] 81% by Adekanle *et al*.,[11] 59.8% by Lamina[7] but lower than 85.9% of Ibadan by Okunlola *et al*.[10] The mean gestational age at booking was 24.3 (5.52) weeks. This is higher than mean gestational age at booking of 23.5 (6.0) weeks in Sokoto,[13] 23.7 weeks in

Table 3: Suggested ideal gestational age for booking

Variables	*n* = 344	% = 100	C/I
Gestational age			
1–3 months (1st trimester)	120	34.9	29.9–40.2
4–6 months (2nd trimester)	128	37.2	31.8–42.3
7–9 months (3rd trimester)	33	9.6	6.8–13.3
I don't know	63	18.3	14.5–22.9

Table 4: Determinants of timing of antenatal booking

Variables	*n* (%)	Early	Late	χ^2 (*P*-value)
Sickness	23 (6.7)	12 (52.2)	11 (47.8)	21.927 (0.001)
Doctors' advice	94 (27.3)	20 (21.3)	74 (78.7)	1.880 (0.180)
Nurses' advice	10 (2.9)	2 (20.0)	8 (80.0)	0.072 (0.788)
Friends' advice	3 (0.9)	1 (33.3)	2 (66.7)	0.586 (0.444)
Parents' advice	8 (2.3)	2 (25.0)	6 (75.0)	0.387 (0.534)
Ideal period	34 (9.9)	5 (14.7)	29 (85.3)	0.125 (0.724)
Just felt like	52 (15.1)	6 (11.5)	46 (88.5)	01.238 (0.266)
Husbands' advice	34 (9.9)	6 (17.7)	28 (82.3)	0.017 (0.897)
Personal wish	53 (15.4)	4 (7.6)	49 (83.0)	3.877 (0.049)
Financial constraint	19 (5.5)	0 (0)	19 (100.0)	4.078 (0.043)
Do not have any problem in pregnancy	9 (2.6)	0 (0)	9 (100.0)	1.874 (0.171)
Pastors' advice	1 (0.3)	0 (0)	1 (100)	0.203 (0.652)
***Others	4 (1.2)	0 (0)	4 (100)	0.821 (0.365)

Column summation χ^2=33.94 *P* value < 0.001.
***Distant rural settlements, Registered in a private hospital, Registered in maternity home

Table 5: Suggestions/reasons for or against early antenatal booking

Variables (reasons)	n=344	%=100	C/I
Reasons for early booking (318)			
Gets more			
Savings from husband	5	1.5	0.5–3.6
Gives time to make friends	3	0.9	0.2–2.7
Doctors advice	26	7.6	5.1–11.0
Friends advice	3	0.9	0.2–2.70
Early detection of problem	194	56.4	51.0–61.7
Parents advice	2	0.6	0.1–2.30
Helps prevent and treat			
Some diseases early	85	24.7	20.3–29.7
Reasons for not supporting early booking (26)			
Pregnancy is still too early	5	1.5	0.5–3.6
Nothing is done by doctor	5	1.5	0.5–3.6
Makes one visit too frequently	2	0.6	0.1–2.3
Makes one reveal her			
Pregnancy too early	2	0.6	0.1–2.3
Personal opinion	12	3.5	1.9–6.2

Benin,[9] 21.4 (5.1) weeks Sagamu by Lamina,[7] 23.59 weeks in Ibadan,[15] 16 (7.2) at Addis Ababa,[14] 20.3 (6.2) in Sagamu Lagos by Adekanle *et al.*[11] but lower than that in the finding at Enugu of 29.16 (7.6) weeks gestational age by Nwagha *et al.*[16]

In most developed countries and in some developing countries the mean gestational age at booking is within the (13 weeks) first trimester.[4,14,17] This early antenatal care visit affords lots of benefits to the pregnant woman.[4,6,18] These benefits include screening for chromosomal and other fetal abnormalities with maternal serum alpha fetoproteins (MSAFP), β-human chorionic gonadotrophin (βhCG), urinary estriol (uE3), inhibin A, pregnancy associated plasma protein A (PAPP-A), and chorionic villous sampling. Other benefits include selection for surgical procedures like cervical cerclage, advice, administration, and counseling on prophylactic drugs and adequate diet.[1,4,6,18]

In this study all the sociodemographic characteristics considered did not have any influence on the gestational age at booking. This is at variance with finding by Gharoro *et al.*, Adegbola *et al.*, Okonlola *et al.*, Ekele *et al.*, and Nwagha *et al.*, where parity was found to significantly influence the gestational age at booking.[9,15,16,19] In the above-mentioned studies primigravidae were shown to book earlier than other parities. Similarly, level of education and family income significantly favored early antenatal booking (visit) in the studies done by Adekanle *et al.*,[11] al-Shammari *et al.*,[17] Alemayehu *et al.*[14], and Navaneethan *et al.*[20]

Events of previous pregnancies considered in this study include complication, booking, status, counseling on early booking, illness in previous pregnancy. All these events did not affect the gestational age at booking. These findings are rather surprising because it was expected that they would have

influenced early booking. This indicates that the counseling on early booking could be vague or misleading or women were adamant on their perceived concept of late antenatal booking. This is further supported by the findings in this study where the highest percentage (37.2%) of respondents suggested that the second trimester was the ideal gestational age for booking. This suggestion is in keeping with other finding in Africa and most developing countries were the second trimester was the average timing of antenatal booking.[7-12,15,16,19,21] Also a significant percentage of the respondents (18.3%) did not know the ideal gestational age for booking. Early antenatal booking should be emphatically and categorically stated as booking within the first trimester. In other studies where early booking was categorically stated as booking within the first trimester most pregnant women booked within the recommended time.[9,14] However our findings collaborated closely with Okunlola *et al.*, Ebiegbe *et al.*, and Adeyemi *et al*, where previous obstetric complication and pre-existing medical condition did not influence the gestational age at booking.[10,15] Adekanle *et al.* had similar findings on previous obstetric complication and postulates that this may be due to negative effects of ignorance which plays a pivotal role in the vicious cycle of disease, ignorance, and poverty.[11]

Among the reasons for initiation of antenatal care in index pregnancy, illness in index pregnancy, personal wish, and financial constraints were found to be the significant determinants for antenatal booking. Illness in index pregnancy was the only factor that significantly contributed to early booking (52.2% $P = 0.001$). The same observation was made by Ekele *et al.*, and Okunlola *et al.*[10,13] However a contrasting observation was made by Adekanle *et al.*[11] Personal wish and financial constraints significantly contributed to late antenatal booking in this study. This still supports the vicious cycle of disease, ignorance, and poverty proposed by Adekanle *et al.*,[11] as well as the finding of ignorance and financial constraints as significant underling factors by Gharoro *et al.*[9]

Reasons given for late booking in this study included personal opinion, pregnancy still too early, fear of revealing once pregnancy, avoidance of frequent visit, and no treatment is given by the health workers. This still buttressed the fact that ignorance is a relevant factor in late antenatal booking.[9,11] Also antenatal care is still viewed by some women (who complain that no treatment is given to them on booking early) as curative rather than preventive which is and remains the goal of antenatal care.[12]

Limitation

Thisstudy was a hospital-based study and may not reflect what happens in the state as some of the pregnant women do not access the tertiary institution. A community-based study is advocated as this will help determine the actual determinants of antenatal booking peculiar to the pregnant women within and around the state. Also some pregnant women book in more than one

healthcare facilities with the tertiary institution being the last place since privacy is more guaranteed in other health centers and in traditional birth attendant homes with no facilities for determining fetal anomaly.

Conclusion

The benefits of early antenatal booking are known to majority of the respondents (>80%) but surprisingly they still do not access antenatal care early. Misconception and financial constraints were the significant promoters of late antenatal booking in this study. As such subsidized or free healthcare and health education with emphasis on accessing the antenatal care within the first trimesters with its benefits well elucidated is paramount.

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