

Gestational age at booking for antenatal care in a tertiary health facility in north-central, Nigeria

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ABSTRACT

Background: Early initiation of antenatal care is widely believed to improve maternal and fetal outcome. This study was designed to ascertain the gestational age at booking using World Health Organization recommendations for developing countries. **Materials and Methods:** This cross-sectional study was carried out using interviewer-administered questionnaire to 345 willing participants at a booking clinic in a tertiary health facility in North-Central, Nigeria. **Results:** A total of 345 women were interviewed. The average age of the clients was 27.1±5.1 years. Almost (45.8%) had at least secondary level of education. One-third of the women were not working women. The average gestational age at booking was 19.1±7.8. Late booking (≥17 weeks) was significantly influenced by the client's level of education ($P=0.017$). Reasons for booking late were given as follows: Not being sick (26.1%), Lack of knowledge of booking time (22.8%), having booked elsewhere (14.1%), financial constraints (9.2%), fear of too many follow-up visits (4.9%), spouse's un co-operative attitude (3.9%), lack of transport to the health care facility (2.2%), and other minor reasons (16.8%). **Conclusion:** Most women booked for antenatal care (ANC) late. Efforts toward maternal education, public health enlightenment campaigns, poverty reduction, and use of focused antenatal care model should be sustained as measures to encourage early initiation of ANC.

Key words: Antenatal, booking visit, world health organization, gestational age, fetal outcome

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INTRODUCTION

Antenatal care (ANC) is one of the components of safe motherhood.¹ The purpose of this specialized form of care is to assure that every pregnancy ends in the birth of a healthy baby with no impairment in the mother's health.^{1,2} Thus, early initiation of ANC is widely believed to improve maternal and fetal health.³

The ANC services are usually grouped into booking and follow-up visits.³ The booking visit offers the clinician the opportunity to assess the health status of the expectant mother. Early detection of disorders that predate the pregnancy or could be aggravated by the pregnancy is crucial to preventive, therapeutic, and counseling services.^{3,4} Fetal assessment and gestational age estimation are usually carried out in the booking visit. This also allows

expectant mothers to assess the services available in the health care facility and help her decide whether or not to utilize those.³

Several literature reports have stated the first 14 weeks as the generally recommended period for the booking visit.⁵ However, the World Health Organization (WHO) recommends that pregnant women in developing countries should seek ANC within the first 4 months (17 weeks) of pregnancy.¹ In developed countries such as the United Kingdom and the United States, ANC is recommended within the first 12 weeks of pregnancy.^{1,4-7}

The antenatal care policy in Nigeria follows the latest WHO approach to promote safe pregnancies, recommending at least four ANC visits for women without complications.⁸ Many health care centers are transitioning from the traditional approach to this focused ANC approach.⁸ The new schedule of visits is as follows: The first visit should occur by the end of 16 weeks of pregnancy; the second visit should be between 24 and 28 weeks of pregnancy; the third visit is at 32 weeks; and the fourth at 36 weeks. However, women with complications, special needs, or conditions beyond the scope of basic care may require additional visits.⁸

Despite this WHO recommendation and the ANC policy in Nigeria, studies have shown that late booking has

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become a persistent pathology in the country similar to what is being reported for other developing countries of the world.^{1,5} Several reasons have been advanced by expectant mothers for initiating ANC late. These include among others, financial constraint, distance from the health care facility, lack of permission from spouse, and cultural/personal perception of their health status.^{3,5,9,10} This study was designed to assess the average gestational age at which women book for ANC using the WHO recommendation of 17 weeks as to ascertain the proportion of women who book late and the reasons for late initiation of ANC in North-Central Nigeria.

MATERIALS AND METHODS

This was a cross-sectional study carried out at the Obstetrics and Gynaecology department of Federal Medical Centre, Makurdi, Benue State, Nigeria. Approximately, 30 clients are attended to in each booking clinic. The annual delivery rate at the maternity unit is approximately 3000.

The study population consisted of pregnant women attending the first antenatal clinic in the department from June to October 2011. The gestational age of the pregnancies was estimated using the Last normal menstrual period for women who were sure of the date or the first trimester ultrasound estimation of date. Women who were unsure of date, experienced irregular menses before conception, were pregnant within 3 months of hormonal contraception or had lactation amenorrhea were excluded from the study.

Structured interviewer administered questionnaires were used to collect the necessary information from willing participants. The questionnaire was divided into two sections: Section A focused on the socio-demographic features of the women. These included; age, occupation, ethnicity, education, religion, address, parity, monthly income, husband's job, and family setting (polygamy or monogamy). Section B focused on: Gestational age at booking, who took the decision to book, client's knowledge of the right time to book, medical problems in the last delivery (if any), medical problems in the index pregnancy (if any) and reasons for booking at that particular gestational age.

Statistical analysis

The data was entered into Statistical Package for Social Sciences (SPSS) version 15.0 (SPSS Inc, Chicago, IL). The Chi-square test was used as a test of statistics. *P* value ≤ 0.05 was considered statistically significant at 95% confidence interval.

Ethical consideration

Verbal consent was obtained from the participants. They were told that they would not be penalized if they chose to opt out of the study.

RESULTS

A total of 345 clients were interviewed; of which 129 (37.4%) were 25-29 years old. The average age of the clients was 27.1 \pm 5.1 years. One hundred and fifty eight (45.8%) had at least secondary level of education. The major ethnic groups were Tiv (44.9%), Idoma (17.1%), Ibo (13.6%) and Igede (9.0%). One-third of the women did not have Jobs. Primigravida constituted 33.6%, multiparas 59.2% and grand multiparas 7.2% [Table 1].

The average gestational age at booking was 19.1 \pm 7.8 weeks. More than half (53.3%) of the women booked late (>17 weeks). Majority (82.6%) of the women took a joint decision with spouse to book for ANC [Table 2]. Further analysis showed that late booking was significantly influenced by the client's level of education (*P*=0.017) and not monthly income, family type (monogamy or polygamy), parity, and medical problem in either previous or index pregnancy [Table 3].

Reasons for booking late were given as; not being sick (26.1%), lack of knowledge of booking time (22.8%),

Table 1: Socio-demographic characteristics of the women

	Frequency	Percentage
Age group		
<20	20	5.8
20-24	90	26.1
25-29	129	37.4
30-34	75	21.7
35-39	25	7.2
≥ 40	6	1.7
Education		
None	7	2.0
Primary	57	14.8
Secondary	158	45.8
Post-secondary	129	37.4
Occupation		
Housewife	118	34.2
Trading	92	26.7
Civil servant	75	21.7
Schooling	50	14.5
Farming	10	2.9
Parity		
0	116	33.4
1-4	204	59.2
≤ 5	25	7.2
Tribe		
Tiv	155	44.9
Idoma	59	17.1
Ibo	47	13.6
Igede	26	7.5
Yoruba	10	2.9
Others	31	9.0
Religion		
Christian	334	96.8
Muslim	11	3.2

having booked elsewhere (14.1%), financial constraints (9.2%), fear of too many follow-up visits (4.9), spouse's un co-operative attitude (3.9%), lack of transport to the healthcare facility (2.2%) and other minor reasons (16.8%) [Table 4].

DISCUSSION

This study found the average gestational age at booking to be 19.12±7.8 weeks. According to the World Health Organization (WHO) recommendation for developing countries, more than half of the women in this study booked late. A similar result was reported by Nhemachena in a study in Cape Town, South Africa.¹¹ The proportion of those who booked after the first trimester (71.6%) is even worse if this commonly used period was the estimate. Similar to that in other studies, this finding has also demonstrated the continuing pathology of late booking in Nigeria and other parts of the developing nations.^{1,3,5,9,12}

The gestational age at which women booked for ANC was significantly related to their level of education. Women with tertiary level of education were more likely to book at or earlier than seventeen weeks of gestation. A study carried out in Riyadh showed that the education of the wife and husband affected the gestational age at booking. The findings of this study and those of others demonstrate the significance of maternal education.^{1,10,13} Education of the girl child is strategic in improving maternal and child health and it should be prioritized.

Further analysis showed that maternal income and parity did not significantly influence gestational age at booking for ANC. The financial status and previous experience at childbirth also did not influence their decision to book, indicating that late booking could be an attitudinal problem in our community. However, women who did not have medical problems in either previous or index pregnancy were more likely to book late for antenatal care. This finding is similar to the report of Adekanle *et al.*¹ Their perception of not being sick could have accounted for this. There is, therefore, the need to enlighten the women of the holistic benefits of early initiation of ANC.

In the African culture decisions in the family are male dominant.¹⁴ However, the study showed that 82.6% of the women jointly decided with their spouses to book for ANC. Only few of the women reported lack of permission from their husbands for early initiation of ANC. The campaign for male involvement in issues of reproductive health should be sustained. Promoting education, public health enlightenment, reduction in poverty and modification of certain cultural practices could be helpful in mitigating hindrances resulting from men thereby contributing towards the improvement in maternal and child health.

Table 2: Decision to book for antenatal care

Decision by	Frequency	Percentage
Self	47	13.6
Husband	3	0.9
Self and husband	285	82.6
Self and friend	10	2.8

Table 3: Analysis of some determinants and gestation at booking

Variable	≤17 weeks	>17 weeks	Total	Statistics
Monthly income (\$)				
<30	34 (43.0)	45 (57.0)	79 (100)	X ² =1.084 P=0.9
30-89	63 (45.7)	75 (54.3)	138 (100)	
90-149	28 (50.9)	27 (49.1)	55 (100)	
150-210	10 (50.0)	10 (50.0)	20 (100)	
>210	26 (49.1)	27 (50.9)	53 (100)	
Education				
None	2 (28.6)	5 (71.4)	7 (100)	X ² =10.19 P=0.017
Primary	19 (37.3)	32 (62.7)	51 (100)	
Secondary	66 (41.8)	92 (58.2)	158 (100)	
Post-secondary	74 (57.4)	55 (42.6)	129 (100)	
Family type				
Monogamy	157 (46.9)	178 (53.1)	335 (100)	X ² =0.184 P=0.67 OR=1.32 (0.32-5.69)
Polygamy	4 (40.0)	6 (60.0)	10 (100)	
Parity				
0	56 (48.3)	60 (51.7)	116 (100)	X ² =4.529 P=0.61
1	42 (49.4)	43 (50.6)	85 (100)	
2	28 (46.7)	32 (53.3)	60 (100)	
3	19 (48.7)	20 (51.3)	39 (100)	
4	5 (25.0)	15 (75.0)	20 (100)	
5	6 (40.0)	9 (60.0)	15 (100)	
Problems in last delivery				
Yes	31 (50.0)	31 (50.0)	62 (100)	X ² =0.46 P=0.50, OR=1.21 (0.67-2.18)
No	119 (45.2)	144 (54.8)	263 (100)	
Problems in index pregnancy				
Yes	23 (57.5)	17 (42.5)	40 (100)	X ² =2.134 P=0.144, OR=1.64 (0.80-3.36)
No	138 (45.2)	167 (54.8)	305 (100)	

Table 4: Reasons for booking after 17 weeks of gestation

Reasons	Frequency	Percentage
Am not sick	48	26.1
Ignorance of booking time	42	22.8
Booked elsewhere	26	14.1
Financial constraint	17	9.2
Fear of too many follow-up visits	9	4.9
Lack of permission from husband	7	3.9
Lack of transport	4	2.2
Others	31	16.8
Total	184	100.0

Most of the obstacles to assessing ANC were observed with those who booked late. Lack of transport, financial constraints, and the wrong perception of the right time to book for ANC were among some of the reasons provided for late booking. Similar studies have reported some of these factors.^{3-5,10} This may be a reflection of the negative effect of ignorance, poverty and backwardness in infrastructural development prevalent in developing countries. There is need to step up the pursuit of realizing the millennium development goals by all countries. Some women booked late due to the fear of too many follow-up visits. There is need for transitioning from the traditional approach of ANC to the focused ANC model recommended by WHO. Quality rather than quantity should be the goal in offering ANC services.

In conclusion, the study showed that more than half of the women booked late for ANC. Efforts should be made to promote maternal education, public health enlightenment, poverty reduction and use of a focused ANC model in Nigeria. This will go a long way to encourage women to initiate ANC early thereby improving both maternal and child health.

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