

# Gestational age at antenatal booking In lagos, south-west nigeria

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## Abstract

Early booking, prior to fourteen weeks gestation is usually recommended to achieve improved outcome of pregnancy for the mother and the fetus. A survey of information among patients attending post-natal clinic at Lagos State University Teaching Hospital, Ikeja, Lagos Nigeria was carried out using a structured questionnaire. The mean gestational age at booking was 23.5(+6.9) weeks. Only 23(6%) booked before 14 weeks gestation. The reasons given for late booking were mandatory blood donation of one pint of blood to the hospital's blood bank by the husband or the relative (44%), convenience (25%), the logistics involved in registration (24%), affordability (3%) while relocation and assurance of a live fetus (quickening) contributed 2% each. The need to educate women in the reproductive age group on the importance of early booking is recommended. It is also recommended that the logistics involved in registration and blood donation should be reviewed.

## INTRODUCTION

Timely and adequate antenatal care is generally acknowledged to be an effective method of preventing adverse outcomes in pregnant women and their babies<sup>1,2,3,4</sup>. The history of antenatal care gradually evolved over a period of about a century, with the trend changing gradually from in-patient to out-patient form of care that we have today<sup>5,6</sup>. Overtime, this form of care for pregnant women has become an important pillar in the safe motherhood programme, as it aims to improve pregnancy outcome.<sup>6,7,8</sup>

Several studies have shown an association between late gestational age at booking and adverse maternal and fetal outcome<sup>9,10</sup>.

Maternal factors related to this late start of antenatal care include young maternal age<sup>2,11</sup>, low level of education, unwanted and/or unplanned pregnancy<sup>12</sup>

In order to improve the outcome of pregnancy for both mother and fetus it is desirable for booking (first antenatal clinic) to take place in early pregnancy, prior to fourteen weeks. The advantages include accurate determination of the gestational age especially when patient is unsure of her last menstrual period, base-line investigations like urinalysis, blood pressure, body-mass index can be performed. This would give a fair idea of the pre-pregnancy state of the patient<sup>(13,14)</sup>.

The study therefore attempts to establish the factors influencing the patient's decision to book for antenatal care and the perinatal outcome in respect to the gestational age at booking.

## MATERIALS AND METHODS

Between January and June 2007, 400 booked mothers attending the postnatal clinic of Ayinke house, Lagos State University Teaching Hospital Ikeja, Lagos were given a structured questionnaire. This was administered by trained residents in the postnatal clinic and other relevant information were retrieved from the case notes. Inclusion criteria were those who were booked for antenatal care, sure of their last menstrual period and who had an early ultrasound scan to corroborate the gestational age as calculated from last menstrual period. Analysis of data was done using comparative percentages and inferential statistics. Mean gestational age at 0.05 was considered statistically significant.

## RESULTS

Table 1 shows that majority of the patients who attended the antenatal clinic were Yoruba 320 (80%) followed by Igbo 48 (12%). Hausas were 4(1%), and other tribes 28(7%).

The mean gestational age for Hausas was (24 weeks, SD 1.41), Igbo (27.2 weeks, SD 8.4), Yoruba (23.3 weeks SD 6.7), and other tribes (18.3 weeks SD 3.0).

**Figure 1**

Table 1- Tribe distribution in relation to mean GA

Tribe	No of patients	%	Mean GA, SD
Hausa	4	1	24 weeks, 1.4
Igbo	48	12	27.2 weeks, 8.4
Yoruba	320	80	23.3 weeks, 6.7
Others	28	7	18.4 weeks, 3.0

Table II shows that most of the booked mothers fell in the age bracket 26-30 years (42%) followed by 31-35 years (41%). Only 2% of the mothers were above 40 years of age. There was no teenager in the study group.

**Figure 2**

Table II- Age distribution in relation to mean GA

Age (Years)	No of patients	%	Mean GA, SD
≤< 19	0	0	0
20-25	28	7	25.4 weeks, 7.5
26-30	168	42	24.2weeks, 6.6
31-35	164	41	23.3 weeks, 7.0
36-40	32	8	20 weeks, 6.0
>40	8	2	17.5weeks, 2.5

Table III shows that majority (82%) had tertiary education, while 17% had secondary education and only 1% had primary education.

**Figure 3**

Table III – Distribution of Educational level in relation to mean GA

Educational level	No of patients	%	Mean GA, SD
None	0	0	0
Primary	4	1	17weeks, 0.7
Secondary	68	17	28.35weeks, 6.6
Tertiary	328	82	22.52weeks, 6.6

Table IV shows that only 6% of mothers interviewed in the study booked in the first trimester, majority (62%) booked between 14 and 26 weeks while 32% booked during the third trimester.

**Figure 4**

Table IV – Trimester at booking in relation to birth weight and Apgar score at 5min

GA(weeks)	No of patients	%	Weight	Mean AS
≤< 13	23	6	3.2 kg, SD 0.1	7.3 SD 1.4
14-26	228	62	3.1 kg, SD 0.6	7.6 SD 2.1
= > 27	128	32	3.3kg, SD 0.5	7.8 SD 0.1

Table V shows that 55% of the study groups were made up

of multiparous mothers, 44% were nulliparous and only 1% were gandmultiparous.

**Figure 5**

Table V – Parity in relation to mean GA and Apgar score

Parity	No of patients	%	Mean GA	Mean AS
Nullipara	176	44	22.5 +- 7.3	7.4+- 1.9
Multipara	220	55	24.1 +- 6.5	7.8+- 1.7
Grandmultip	4	1	33 +- 2.1	8 +- 0.7

Table VI shows that majority (44%) of patients gave delay in blood donation by the husband into the hospital's blood bank as the reason for booking when they did, while 25% booked when they did because of convenience, and 24% because of logistics involved in registration .

**Figure 6**

Table VI – Reasons adduced for booking at the time they did.

Reason	No of patients	%
Problem in Index pregnancy	12	3
Convenience	100	25
Relocation	8	2
Quickening	8	2
Logistics of Registration Delay	96	24
The compulsory Blood Donation	176	44

**DISCUSSION**

The mean gestational age at first antenatal attendance amongst the study group was 23.5weeks SD 7.0 weeks. This value is comparable to the 23.5weeks SD 6.0 reported in Sokoto, Nigeria by Ekele et al <sup>15</sup> and not so different from 21.8 weeks SD 7.0 reported at Ibadan, Oyo State, Nigeria by Okunlola M et al <sup>16</sup> . This value is however lower than the 29.7 weeks reported at University of Benin Teaching Hospital, Benin-city, Nigeria by Gharoro EP et al <sup>17</sup> and the 28weeks amongst women in Durban, South Africa.

The Royal College of Obstetrician and Gynaecologist antenatal guideline <sup>13</sup> and the new World Health Organisation antenatal care model for developing countries <sup>14</sup> recommended booking in the first trimester to afford patients the opportunity of early diagnosis of abnormalities and appropriate interventions. Only 6% of those interviewed booked in the first trimester. Since the cardinal objective of antenatal care include early diagnosis of abnormality and appropriate intervention, booking for antenatal care late in pregnancy would limit such benefits. There is a genuine need for health education amongst women of reproductive age group.

The birth weights and apgar scores at 5 minutes for the three trimesters were not statistically significant. This may imply that perinatal outcome is not significantly affected by gestational age at first antenatal booking. This may be attributed to the close monitoring and follow-up of all patients that eventually register for antenatal care. Since majority 62%, booked at second trimester, there was still enough time to evaluate and re-evaluate then before delivery. However it should be noted that this study was done in the postnatal clinic with patients answering a structured questionnaire. Patients with good outcome may be self selected and patients with inadequate or unbooked antenatal care might have come in as an emergency case with higher chance of adverse outcomes but they may not be represented proportionally in the postnatal clinic.

The differences between the gestational age at first antenatal booking of the age group 20-25years, 26-30years and 31-35years were not statistically significant ( $P>0.05$ ) but statistically significant when compared with age group  $>40$ years. Majority (82%) of the study group had tertiary education and the GA at booking was statistically significant compared to those that had only secondary education ( $p<0.05$ ). This is attributed to the fact that highly educated women are more empowered and appreciate the importance of booking early for antenatal care. The quality of care rendered in this centre could have influenced them to book for antenatal care also.

Parity was an important factor in terms of the time of first attendance for antenatal care as demonstrated by this study. Compared with primigravida, the grandmultipara tended to book later in pregnancy (22.45wks SD 7.25) versus (33wks SD 2.12)  $p<0.05$ ). This is in agreement with findings from Sokoto, Nigeria where older women were found not be keen in attending antenatal clinic or attended late when they do because of previous successful pregnancy outcome<sup>15</sup> and so call experience in coping with the usual complaints associated with pregnancy. The need to educate women of reproductive age group who are potential mothers on the benefits of early booking is recommended. It is also recommended that there is the need to speed up the processes involved in the blood donation which is a prerequisite for booking at Ayinke House, Lagos State University Teaching Hospital, Ikeja, Lagos, Nigeria.

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