

**Original Article**

**Late Antenatal Care Booking And Its Predictors Among Pregnant Women In South Western Nigeria**

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**Abstract:**

**Introduction:** Antenatal care is concerned mainly with prevention, early diagnosis and treatment of general medical and pregnancy associated disorders. For it to be meaningful, early booking is recommended, however, late booking is still a major problem.

**Objective:** To determine the prevalence of late booking in our environment and factors related to it.

**Methodology:** A descriptive cross-sectional study using structured interviewer assisted questionnaires.

**Results:** Mean gestational age at booking was 20.3±6.2 weeks. Prevalence of late entry to antenatal care was 82.6%. Maternal education and age remained significant factors influencing late booking.

**Conclusion:** Late booking is still a major problem in this part of the world. Public enlightenment, health education coupled with women empowerment would be helpful in reducing the problem

**Key Words:** Antenatal care, Late booking, Gestational age, Risk factors

### Introduction:

Early entry to antenatal care (ANC) is important for early detection and treatment of adverse pregnancy related outcomes. Antenatal care 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>1,2</sup> This form of care for pregnant women has become an important pillar in the safe motherhood programme, as the aim is to improve the outcome of pregnancy for both the mother and the fetus.<sup>2,3</sup> The usual recommendations nowadays is for booking (first antenatal visit) to take place in early pregnancy, prior to 14 weeks. The World Health Organization (WHO) recommends that pregnant women in developing countries should seek ANC within the first 4 months of pregnancy.<sup>4</sup> In developed countries such as the United Kingdom and the United States, ANC is recommended within the first 12 weeks of pregnancy.<sup>5,6</sup>

Early booking, makes fairly accurate dating feasible, especially in women who are unsure of their last menstrual period, certain baseline measurements, such as blood pressure, body mass index and urinalysis done at this gestational age give a fair idea of the pre-pregnancy state of the patient.<sup>7,8</sup>

Various studies have reported factors associated with late entry to ANC, these include place of residence<sup>9-11</sup>, ethnicity<sup>12</sup>, age<sup>10</sup>, education<sup>11,13,14</sup>, employment status<sup>12,15</sup>, parity<sup>10-12,14</sup>, intention to get pregnant<sup>9,12</sup>, use of contraceptive method<sup>12</sup>, economic status<sup>9,12,13</sup>, health insurance<sup>9-11,13,16</sup> and travel time.<sup>9</sup>

However, in spite of advantages of early booking, late booking is common in the developing world.<sup>17,18</sup> Studies from Benin and Sokoto, in other regions of Nigeria showed that mean gestational ages at booking among the pregnant women were 23.7 and 23.55 weeks, respectively.<sup>17,18</sup>

The aims of this study were to assess the proportion of pregnant women who booked late for Antenatal care in South Western Nigeria during calendar year 2006 and to identify factors related to late booking.

### Materials and Methods:

Structured questionnaires were administered to willing pregnant women attending antenatal clinic at Ladoke Akintola University Teaching Hospital, State Hospital and Primary health Centre, Osogbo, Nigeria. Ethical approval was obtained from ethical committee of the institution and verbal consent was also obtained from the participants. Descriptive statistics was used, mean and standard deviation for continuous variables and frequency for categorical variables. Test of association was carried out using chi-square. Multivariate stepwise logistic regression was performed to identify significant predictors, all at 5% level of significance. Data analyses was done using SPSS version 10 (Statistical Package for Social Sciences, SPSS Inc., Chicago, IL, USA).

### Results:

Four hundred and eighty questionnaires were administered, four hundred and seventy (97.9%) were returned. Mean age of the respondents was  $28 \pm 4.6$  years (17 - 41). Eighty four (18.5%) booked within 13 weeks of gestation while majority, 370(81.5%) booked after 13 weeks. Mean gestational age at booking was  $20.3 \pm 6.2$  weeks. Three hundred ninety three (83.6%) were in monogamous union and sixty four (14.0%) were polygamous. Three hundred and eighty-eight (82.6%) were carrying singleton fetus, 22(4.7%) multiple pregnancies and 60(12.8%) were unsure.

Majority, 324(69.3%) of the respondents were aged 25 - 34 years and were mostly Yoruba of ethnic group,443(92.5%). Most, 215(46.2%) had secondary education while majority, 207(44.6%) were self-employed. Three hundred and thirty one (70.4%) were multiparous while the remaining 139(29.6%) were nulliparous women (Table 1).

**Table 1.Socio-demographic characteristics**

Variables	Number	Percentage
Age(year)		
≤ 19	13	2.8
20 - 24	88	18.9
25 - 29	185	39.8
30 - 34	139	29.5
≥ 35	40	8.6
Tribes		
Yoruba	443	92.5
Ibo	24	5.1
Hausa	3	0.6
Other tribes	8	1.7
Religion		
Christianity	243	52.0
Islam	221	47.3
Others	3	0.6
Educational Status		
None	50	0.8
Primary	139	29.9
Secondary	215	46.2
Tertiary	61	13.1
Employment Status		
Government employed	86	18.5
Private employed	47	10.1
Self-employed	207	44.6
Unemployed	63	13.6
Students	61	13.1
Husband's Educational Status		
None	18	3.9
Primary	22	4.8
Secondary	144	31.6
Tertiary	272	59.6
Parity		
Para 0	139	29.6
Para 1 and above	331	70.4

On bivariate analysis, those who earned lesser income were more likely to book late compared to those who earned more, ( $p < 0.01$ ). So also, those were less than 25 years, 91(91.1%) were significantly likely to register late compared to those that were older, 276(78.9%),  $p < 0.01$ .

Those who had no previous caesarean delivery, 262(81.9%) would more likely book late compared to those with previous caesarean section, 33(75.0%),  $p > 0.05$ . Those who had no complaints in index pregnancy, 321(82.1%) booked later than those who had complaints, 28(73.7%),  $p > 0.05$ . Those who had no problems in the last delivery, 246(81.7%) were more likely to book late

compared to those who had problems, 50(75.8%),  $p > 0.05$ . Those in polygamous union, 107(78.7%) were more likely to register late compared to those who were in monogamous union, 307(80.8%),  $p > 0.05$ . Multiparous women were more likely book late compared to Nulliparous women, 107(78.7%),  $p > 0.05$ . Those who had primary school education or none, 152(85.4%) were more likely to register late compared to those who had secondary school education and above, 215(79.3%),  $p > 0.05$ . Pregnant women whose husband had primary school education or none, 33(86.8%) would more likely book late compared to those whose husband had secondary school education and above, 325(81.0%),  $p > 0.05$  (Table 2).

**Table 2. Factors influencing late entry into antenatal care.**

Variables	Gestational Age ≤ 13 weeks	Gestational Age > 13 weeks	χ <sup>2</sup>	df	P value
	Number(%)	Number(%)			
<b>Problems in last delivery</b>					
Yes	16(24.2)	50(75.8)			
No	55(18.3)	246(81.7)	1.24	1	0.266
<b>Previous Caesarean section</b>					
Yes	11(25.0)	33(75.0)			
No	58(18.1)	262(81.9)	1.19	1	0.275
<b>Problems in index pregnancy</b>					
Yes	10(26.3)	28(73.7)			
No	70(17.9)	321(82.1)	1.62	1	0.204
<b>Income per month(US dollars)</b>					
< 40	10(10.5)	85(89.5)			
40 - 80	18(17.5)	85(82.5)			
80 - 120	15(21.4)	55(78.6)			
> 120	25(35.2)	46(64.8)	16.06	3	0.007
<b>Type of Family</b>					
Monogamy	73(19.2)	307(80.8)			
Polygamy	7(11.5)	54(88.5)	2.12	1	0.146
<b>Parity</b>					
Para 0	29(21.3)	107(78.7)			
Para ≥ 1	55(17.3)	263(82.7)	1.03	1	0.311
<b>Educational Status</b>					
Primary and below	26(14.6)	152(85.4)			
Secondary and above	56(20.7)	215(79.3)	2.64	1	0.104
<b>Husband's Educational Status</b>					
Primary and below	5(13.2)	33(86.8)			
Secondary and above	76(19.0)	325(81.0)	0.775	1	0.379
<b>Age(years)</b>					
< 25	8(8.1)	91(91.9)			
≥ 25	74(21.1)	276(78.9)	8.82	1	0.003

χ<sup>2</sup> = Chi-square; df = degree of freedom

After adjusting for other factors, pregnant women who had primary school education or none were more likely to book late compared to those who had secondary school education and above (OR = 2.6, 95% CI, 1.28 – 5.38). Those women who were aged less than 25 years were more likely to register late compared to those who were older (OR = 8.3, 95% CI, 1.10 – 62.65) (Table 3).

**Table 3. Multivariate analyses of factors associated with late booking.**

Variables	Crude OR(95% CI)	Adjusted OR(95% CI)
<b>Problems in last delivery</b>		
Yes	1	1
No	1.431(0.759 – 2.699)	2.042(0.933 – 4.472)
<b>Educational Status</b>		
Secondary and above	1	1
Primary and below	1.522(0.915 – 2.533)	2.631(1.287 – 5.378)**
<b>Maternal age(years)</b>		
< 25	1	1
≥ 25	3.050(1.416 – 6.5.66)**	8.306(1.101 – 62. 653)*

\* p < 0.05; \*\* p < 0.01; OR = Odd ratio; CI = Confidence interval

### Discussion:

The study attempted to assess the prevalence of women who entered antenatal care (ANC) late in South Western Nigeria in 2006 and identify related factors. Eighty one percent of women entered ANC after 12 weeks of gestation. This was double the Australian study in 2004,<sup>20</sup> but similar to studies reported in other parts of the country.<sup>19</sup> The mean gestational age at booking was still very high but slightly lower than reports from studies in other parts the country.<sup>17,19</sup> This is far away from the recommendation of World Health Organization thus the benefits of early booking is not yet well appreciated.

Our results were similar to the findings from other studies on significance of age<sup>10</sup>, and maternal education.<sup>11</sup> Women that were less than 25 years old, were less educated, earning lesser income and more unemployed than the older women and were more likely to register late; though after adjusting for other factors, income became insignificant, this may still be due to traditional practice of late booking in this environment due to the belief that since pregnancy is not a diseased condition, thus reason for indifference to early booking. Women that had lower education or none booked later than those with higher education, this agrees with studies in developed countries<sup>11,13,14</sup> better educated women would likely appreciate the importance of early booking more than the less educated ones. This emphasizes the importance of education on antenatal care. Previous obstetric complications such as still birth, eclampsia, intrauterine fetal death; and caesarean section have no influence on gestational age at booking which were also reported in another study in the country.<sup>19</sup> This might be due to the negative effect of ignorance which had been demonstrated in vicious circle of disease, ignorance and poverty.

In contrast to other studies in the country, illness in index pregnancy and nulliparity that were found to be significantly associated with early booking had no influence on gestational age at booking in this study,<sup>17,19</sup> this might be due to poor counseling of those who had illness in the index pregnancy by the health workers they first had contact with which were usually in low cadres that may not necessarily have midwifery skill. Traditionally, nulliparous women in our environment would first seek counseling from multiparous women who were considered to be more experienced and would eventually in most instances discourage early booking as seen in this study.

In conclusion, late booking still remain significantly high in our environment indicating that the importance of early booking is yet to be appreciated. Maternal education and age which had been associated with better income earning had been found to improve booking status. There is need for public enlightenment and incorporation of the benefits of early booking in the routine antenatal health education. Women empowerment through

qualitative education and gainful employment were also major factors that would contribute significantly to early booking.

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