

## Trends in the Age of Primigravidae in Enugu, Nigeria

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### Abstract

**Objective:** To assess the trend in the age of primigravidae at a tertiary care centre in Enugu, Eastern Nigeria.

**Study Design, Setting and Subjects:** An analysis of the birth records of all primigravidae who delivered in the hospital over a twenty-one year period. Trends were assessed by chi-square and one-way analysis of variance (ANOVA) tests at the 95% confidence level.

**Results:** The proportion of primigravidae significantly increased from 17.4% of all parturients in 1980 to 24.1% in 2000. The proportion of teenage primigravidae significantly decreased while that of elderly primigravidae significantly increased ( $p < 0.001$  for each variable). The mean age of the primigravidae also significantly increased from  $21.0 \pm 4.1$  years in 1980 to  $27.6 \pm 4.5$  years in 2000.

**Conclusion:** Over the last twenty-one years, there has been a significant increase in the mean age of primigravidae and the proportion of elderly primigravidae and a significant decrease in the proportion of teenage primigravidae in Enugu, Nigeria.

**Key Words:** Trends, Temporal, Primigravida, Maternal Age. [Trop J Obstet Gynaecol, 2002, 19: 71-73]

### Introduction

Age and parity are important determinants of obstetric outcome. With respect to age, the best outcomes occur in the 20-30 year age group while the worst outcomes are found at the extremes of reproductive age<sup>1,2,3,4</sup>. As for the influence of parity, second pregnancies have the best maternal and perinatal outcome. Primigravidity is a high-risk pregnancy with the risk particularly increased in teenage and elderly primigravidae<sup>3,4</sup>. A teenage pregnancy is one occurring between the ages of 13 and 19 years<sup>1</sup> while an elderly primigravida is a woman going through her first pregnancy at the age of 35 years or more<sup>4</sup>.

Complications of teenage pregnancies especially those within the age group 13 to 15 years include anaemia, spontaneous abortions, preterm labour, pre-eclampsia and eclampsia, and fetopelvic disproportion<sup>1,3</sup>. Elderly primigravidae also have greater predisposition to abortion, pregnancy-induced hypertension, preterm delivery, uterine fibroids, malpresentation, antepartum haemorrhage, operative delivery, fetal abnormality and poor perinatal outcome<sup>4</sup>. From the above, it follows that the less the proportion of deliveries occurring at these extremes of reproductive age, the better the obstetric outcomes.

Nigeria has gone through several socio-economic changes since independence. Could these changes have had any impact at the age at which young people marry and start their family lives? The objective of the present study was to assess the trend in the age of primigravidae at the University of Nigeria Teaching Hospital (UNTH), Enugu, Nigeria over the last twenty-one years. The UNTH, Enugu

was established in 1970. It is a 400-bed hospital. Women of the Ibo ethnic origin constitute over 99% of its antenatal population. There is no selective booking policy, care being available to all who can afford the cost.

### Materials and Methods

The study was retrospective. The study population consisted of all primigravidae who delivered at the UNTH Enugu from 1st January 1980 to 31st December 2000. To take care of temporal changes in the hospital during the period of study, a systematic sampling technique was used to select five out of the twenty-one years for study. In order to choose the first year of commencement, the years 1980, 1981, 1982, 1983, and 1984 were written in pieces of paper and put in a bag, which was shaken thoroughly. By a lucky dip, one of the papers was chosen and contained the year 1980. Using a sampling interval of 5, other years selected were 1985, 1990, 1995 and 2000. Using similar techniques and a sampling interval of 4, the specific months studied for each of those years were April, August and December. From the hospital's delivery register, the ages of all primigravidae who delivered within the above specified months and years were obtained. The total numbers of deliveries for those months were also recorded. The data were analysed by simple percentages and descriptive and inferential statistics including chi-square and One Way ANOVA tests at the 95% confidence level using the statistical package SPSS for Windows.

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**Table 1****Trends in Some Parameters Pertaining to Primigravidae in Enugu**

Variable	1980	1985	1990	1995	2000	<i>p</i>
<i>Number of Deliveries</i>	1425	1661	537	188	224	---
<i>Number of Primigravidae</i>	248	278	130	51	54	---
<i>Proportion of Primigravidae (%)</i>	17.4	16.7	24.2	27.1	24.2	0.0001*
<i>Proportion of Teenagers (%)</i>	43.5	46.8	10.8	13.7	3.7	0.00001*
<i>Proportion of Elderly Primigravidae (%)</i>	0.0	0.4	0.8	7.9	7.6	0.00001*
<i>Mean Age (years)</i>	21.0	20.5	23.6	25.8	27.6	0.0001**
<i>Modal Age (years)</i>	20.0	18.0	20.0	25.0	28.0	----
<i>Median Age (years)</i>	20.0	20.0	23.0	26.0	27.5	----

\* *Chi-Square Test*\*\* *One Way ANOVA***Results**

The results are summarised in Table 1. The study sample included a total of 761 primigravidae out of 4035 deliveries (i.e. over the period of study, primigravidae constituted 18.9% of the parturients). Within this period, the absolute number of primigravidae fell, while their proportion increased from 17.4% of all parturients in 1980 to 24.1% in 2000. The proportion of teenage primigravidae significantly decreased while that of elderly primigravidae significantly increased ( $p < 0.0001$  for each variable). The mean age of the primigravidae also significantly increased from  $21.0 \pm 4.1$  years in 1980 to  $27.6 \pm 4.5$  years in 2000 ( $F$ -ratio = 55.3,  $p = 0.00001$ ). Post-hoc analysis using the Scheffe test showed that although the mean ages of the parturients for the years 1980 and 1985 did not differ significantly, these were significantly lower than for the years 1990 - 2000. The mean ages of the women for the years 1990 was significantly lower than for the years 1995 and 2000. Their mean ages for 1995 and 2000 did not differ significantly. Their modal and median ages also increased.

**Discussion**

The above findings are consistent with a recent study, which showed a current tendency towards a lower mean parity at a higher mean maternal age in Nigeria<sup>5</sup>. The trends observed in the present study can be explained by the increase in female education within the catchments area of the hospital over the previous two decades. Approximately 98.1 percent of the present antenatal population at the UNTH completed secondary education<sup>6</sup>. Another probable explanation is the increasing socio-economic difficulties in Nigeria over the last two decades. The evidence for this has been presented in an earlier

study<sup>7</sup>. These difficulties, taken together with the associated uncertainties of the future and the current high cost of marriage among the Ibos make it difficult for their young ones to marry early.

The findings in the present study have implications for future obstetric practice in Nigeria. The problem of elderly primigravidae is gradually replacing the earlier problem of teenage pregnancies seen in the 1980s, at least in the urban areas of Nigeria. If this trend continues, it is likely to be accompanied by a decrease in the incidence of grandmultiparity, which also contributes to the current high maternal mortality ratio in Nigeria<sup>7</sup>. We hope that these changes will be associated with a decrease in maternal mortality ratio. It will be interesting to find out if the pattern observed in this study is applicable to the rural areas of Nigeria whose population dynamics differ from those of the urban ones.

The systematic sampling technique used in this study deserves some comment. If the obstetric records in the authors' hospital had been computerized, it would have been possible to study all the primigravidae seen in the hospital within the study period. The absence of such records made sampling necessary. A simple randomised sample would have been ideal. However, compared to the systematic sampling technique used in the present study, a simple randomised sample would not have addressed the temporal changes that occurred within the institution of study during the study period as documented previously<sup>7</sup>. These changes included worker dissatisfaction leading to high turnover rate of health personnel, industrial actions in the hospital. A decrease in the annual number of deliveries consequent upon the industrial actions and the high hospital fees<sup>7</sup> is evident in Table 1. The extent to which the dwindling number of deliveries

affected the parameters calculated in Table 1 is difficult to say. However it seems unlikely that this was much since the primigravid population is unlikely to have been affected to any greater or less extent than the other gravidas.

We conclude that over the last twenty-one years, there has been a significant increase in the mean age of primigravidae and the proportion of elderly primigravidae and a significant decrease in the proportion of teenage primigravidae in Enugu, Nigeria.

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