

# Original Article

# SOCIO-DEMOGRAPHIC DETERMINANTS AND PREVALENCE OF MULTIPLE PREGNANCIES IN IMO STATE UNIVERSITY TEACHING HOSPITAL, ORLU (A NINE YEAR RETROSPECTIVE STUDY) 1ST JANUARY 2004 TO 31ST DECEMBER 2012.

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### Abstract

**Background:** The relatively high prevalence of multiple gestations together with their contributions to perinatal morbidity and mortality warrants an integrated approach to its management. Age, parity, race are some of the significant factors that affects the prevalence of multiple pregnancy in our environment. The objective is to evaluate the socio-demographic determinants and prevalence of multiple pregnancy in Imo State University Teaching Hospital from 1" January 2004 to 31" December 2012.

**Methodology:** It was a retrospective, analytical cross sectional study. Case folders of all patients who attended antenatal clinic within the period of study were collected from the medical records. Using a data collection proforma, the relevant information was obtained from the case folders. The data was analyzed using simple descriptive statistical methods. Results were presented using frequency tables and bar charts.

**Results:** A total of two thousand, two hundred and thirty-seven (2237) deliveries took place within this period, out of which ninety-seven (97) were twins and three (3) triplets. The prevalence therefore was 44.7 per 1000 births, out of which twins were 43.4 per 1000 births and triplets 1.3 per 1000 births. The age ranges of the mothers were 16-41 years with the mean maternal age being  $28.5 \pm 12.5$  years. The range for parity was 1-7 with a mean of  $3.0 \pm 2.0$ . Non civil servants had the highest prevalence of multiple pregnancies (540/1000). Multiparous mothers with multiple pregnancies were found to have a decrease in attendance to antenatal clinics compared to primiparous mothers.

**Conclusion:** The prevalence of multiple pregnancy in IMSUTH Orlu is quite high (44.7%). Determining risk factors associated with this were age, parity, occupation and attendance to antenatal clinics.

Key Words: socio-demography, prevalence, multiple pregnancies, IMSUTH.

## Introduction

Multiple pregnancies is a type of pregnancy where more than one fetus develops simultaneously in the womb<sup>1</sup>. The most common form of multiple births for humans is twins<sup>2</sup>. Twinning is a multifactorial phenomenon principally attributable to genetic and others factors such as advanced maternal age, increased parity, engagement in a full time occupation and non attendance of antenatal clinic<sup>3</sup>.

Globally, the highest burden of multiple births were found in sub-Saharan Africa, with an average twinning rate of 20 per 1000 deliveries compared to 10 per 1000 deliveries in Europe and 5-6 per 1000 deliveries in Asia. Nigeria has the highest prevalence of multiple births World wide<sup>3,4</sup>.

Generally, the rate of twin pregnancy among the three major ethnic groups in Nigeria is as follows: Yorubas of the South West 1.9 per 1000 births, Hausa/Fulanis of the North 1.25 per 1000 births, and Igbos of the South East 1.33-1.35 per 1000 births<sup>5,6</sup>.

# Methodology

**Study Area:** It was conducted at Imo State University Teaching Hospital Orlu, South East Nigeria. Orlu is located at between latitude 08° and 00° 15N and longitude 04, 15 and 03°, 15E. The hospital serves as a training centre for both undergraduate and postgraduate medical and paramedical programs.

Study Design: A retrospective, analytical cross sectional study of the socio economic determinants and prevalence of multiple pregnancies in Imo State University Teaching Hospital Orlu from 1<sup>st</sup> January 2004 to 31<sup>st</sup> December 2012.

Study population: It included all women with multiple pregnancies who attended antenatal clinic and delivered in Imo State University Teaching Hospital Orlu between 1<sup>st</sup> January 2004 and 31<sup>st</sup> December 2012.

Data Collection: Data was collected from the records of the antenatal registers, delivery registers and antenatal folders. The following socio-demographic parameters were studied; age, parity, occupation, marital status, tribe and address.

**Data Analysis:** Data was analyzed using simple descriptive statistical methods.

Ethical Consideration: Ethical clearance was obtained from the research and ethics committee of Imo State University Teaching Hospital Orlu.

Limitations of study: Poor record keeping was the major limitation of this study.

Results: In the study period, there was a total of two thousand, two hundred and thirty seven (2237) deliveries, out of which ninety seven (97) were twins and three (3) triplets. The prevalence was 44.76/1000 out of which twins were 43.4/1000 and triplets 1.3/1000. During the study period there was no record of quadruplets and other higher order multiples in Imo state University Teaching Hospital Orlu.

**Table 1:** The total number of deliveries during the study period including the percentage distribution and prevalence of multiple deliveries

Year	Total number of deliveries	Total number of multiple deliveries	Total number of twins	Total number of triplets	% distributions of multiple pregnancies	% distributions of twins	% distributions of triplets	Prevalence of multiple pregnancy	Prevalence of twins	Prevalence of triplets
2004	6					*	15			+
2005	76	4	3	1	5.3	4.0	1.3	53.0	39.0	13.2
2006	174	12	12	*	6.9	6.9	26	70.0	70.0	()%
2007	258	11	11	*	4.3	4.3	1# P	43.0	43.0	100
2008	321	16	16	100	5.0	5.0	Œ.	50.0	50.0	9/4
2009	377	10	10	140	2.7	2,7	(4)	27.0	27.0	39
2010	230	8	7	1	3.5	3.0	0.5	35.0	30.4	4.3
2011	410	19	18	1	4.6	4.4	0.2	16.0	44.0	2.4
2012	385	20	20		5.2	5.2	1	52.0	52.0	1
Total	2237	100	97	3	37.5	35.5	2	376	355	19.9

Table 2: Relationship between maternal age, frequency and prevalence of multiple pregnancies

Age (yrs)	Frequency of Multiple pregnancies	Prevalence of Multiple pregnancies per 1000
15-20	5	50
21-25	21	210
26-30	40	400
31-35	22	220
36-above	12	120
Total	100	1000

Table 3: Influence of parity on multiple pregnancies

Parity	Frequency of Multiple pregnancies	Prevalence of Multiple pregnancies per 1000	
Primigravida (1)	35	350	
Primipara (2)	19	190	
Multipara (3-5)	32	320	
Grand multipara(>5)	14	140	
Total	100	1000	

Table 4: Influence of occupation on multiple pregnancies

Occupation		Prevalence of Multiple pregnancies per 1000
Civil servants(CS)	20	200
Non-civil servants(NCS)	54	540
Non-workers(NW)	26	260
Total	100	1000

**Table 5:** The frequency and percentage distribution of booking in multiple pregnancies

Booking status	Frequency of booking in Multiple pregnancies	% distribution	
Booked	53	53	
Unbooked	47	47	
Booked primigravida	20	37.7	
Booked multigravida	33	62,3	
Unbooked primigravida	15	31.9	
Unbooked multigravida	32	68.1	
Total	200	300	

#### Discussion

The number of multiple pregnancies within the study period was 100 (44.7%) out of which 97 (4.3%) were twins and 3 (0.1%) triplets.

A prevalence of 44.76 per 1000, with 43.4 per 1000 being twins and 1.3 per 1000 being triplets was also recorded.

This was within the normal range of 16-45 per 1000 deliveries quoted by Aisien et al<sup>6</sup>, for black Africans. The result was also in keeping with the finding of Bolajoko et al<sup>3</sup>, in which an average twinning rate of 20/1000 deliveries in Sub-Saharan Africa was recorded, compared to 10/1000 deliveries in Europe or around 5.6/1000 deliveries in Asia<sup>7</sup>.

Nigeria has the highest prevalence of multiple births world wide as was also seen in this study, even when compared with other countries in our sub-region for example Ghana. A higher level of perinatal morbidity and mortality will therefore be expected by the practitioners in Nigeria as a result.

The age range of the mothers was 16-41 years with the mean maternal age being 28.5 ± 12.5.

This was similar to the finding of Aisien et al $^{\circ}$ , in Jos North Central Nigeria in which the mean maternal age was  $28 \pm 5.4$ .

The range for parity was 0-7.0 with a mean of  $3.0 \pm 2.0$ . A parity of 0-14 with a mean of  $3.3 \pm 2.6$  was obtained in Jos, with an association between rising parity and multiple pregnancy. In this study however, the highest prevalence of multiple pregnancies was found among the primigravidae (table 3, figure 3) This could probably be attributed to the increased use of ovulation induction.

#### Recommendation

Since the prevalence of multiple pregnancies is quite high at IMSUTH Orlu, the relevant health workers should be extra cautious when managing them as they are prone to more complications than singletons.

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