



## VARIATION IN FETAL PRESENTATIONS AND POSITIONS AMONG WOMEN IN WARRI, DELTA STATE, NIGERIA

OLANIYAN O.T.<sup>1\*</sup>, MERAIYEBU A.B.<sup>1</sup>, ALELE J.Y.<sup>1</sup>, DARE J.B.<sup>2</sup>, ATSUKWEI D.<sup>1</sup> AND ADELAIYE A.B.<sup>1</sup>

<sup>1</sup>Department of Physiology, Bingham University, Karu, Nasarawa, Nigeria.

<sup>2</sup>Department of Anatomy, Bingham University, Karu, Nasarawa, Nigeria.

\*Corresponding Author: Email- olugbemiolaniyan@yahoo.com

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**Abstract-** This study investigates the various fetal presentations among women in Warri and the various predisposing factors which may have possibly brought about these variations; the major positions considered were cephalic, breech and transverse, with the considered influencing factors being gestational age of the fetus, maternal age, amniotic fluid volume, parity, and method of previous deliveries. A total of 105 ultrasound fetal biometries with a total of 108 fetuses, between 15-40 weeks of gestational age, and maternal age between 19 and 40 were used for this study. Fetal ultrasound biometry was used to find out information about the fetus including gestational age, amniotic fluid volume, presentation of the fetus and a questionnaire was used to take information about the mother including maternal age, parity, and method of previous delivery (ies). The result showed that a total of 82 fetuses (75.9%) were Cephalic babies, 19 (17.6%) were Breech and 7 (6.5%) are transverse. Out of the 105 women, there were 102 (77.1% cephalic, 18.3% breech, 4.8% transverse) women with adequate amniotic fluid volume and 1 woman (with a cephalic fetus) with average amniotic fluid volume and 2 women (with transverse foetuses) with low amniotic fluid volume. 34 (67.6% cephalic, 26.9% breech, 5.9% transverse) were nulliparous women. Also a total of 72 (81.9% cephalic 13.9% breech, 4.2% transverse) were multiparous women. The most foetuses were in the cephalic presentation, which supports vaginal delivery. Breech and transverse foetuses being lesser and in the absence of abnormalities with influencing factors being favourable these foetuses will turn into cephalic position at term.

**Keywords-** fetal presentations, fetal ultrasound biometry, amniotic fluid volume, warri

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### Introduction

Fetal presentation refers to the part of the fetuses body that leads the way out through the birth canal and towards the end of pregnancy, the fetus moves into appropriate position for delivery [1]. The position of the fetus is the orientation of the fetus in the uterus, identified by the location of the presenting part of the fetus relative to the pelvis of the mother. Majorly, it is the position assumed by the fetus before the process of birth [2]. The uterus is designed to have the fetus in a vertical position in late half of pregnancy. The head becomes heavy enough, between 5 and 7 months, for gravity to bring the head down in a symmetrical uterus [3]. Ultrasonographic fetal biometry is the most widespread method used to establish gestational age, estimate fetal size and monitor its growth and also acquire information about changes in fetal position [4]. Fetal presentations or positions are very important as the position of the fetus determines how it will be delivered and various positions in which the fetus can be presented include the Vertex (cephalic) presentation [2], Breech position and Transverse [5]. Mal-presentation is any presentation other than a cephalic presentation which are Breech presentation, Persistent Occipitoposterior face, and Transverse lie [2]. Fetal mal-positions significantly prolong the second stage of labour and increase the incidence of cesarean delivery [6]. Other

studies have noted postpartum haemorrhage and puerperal infection as a result of malposition [7]. During the second trimester most babies settle head down in the uterus. Between 24 and 29 weeks many babies will be breech and by 30-32 weeks most babies flip head down [3]. Researchers generally cite breech presentation frequency at term of 3-4% at the onset of labour though some claim a frequency as high as 7%. When labour is premature, the incidence of breech presentation is higher. At 28 weeks gestation 25% of babies are found to be in breech position, and this figure decreases approaching term (40 weeks' gestation) [8]. The prevalence of breech presentation decreases from about 15% at 29-32 weeks gestation to between 3-4% at term [9]. Just like other women all over the world, the positions of the fetus in women in Warri, Delta state, Nigeria are subject to the variations; hence this research was aimed to investigate the dominant fetal positions among women in warri and find out the various factors which may likely bring about these variations.

### Subjects and Methods

#### Method of Data Collection and Experimental Procedure

A total of one hundred and five (105) pregnant women with a total of 108 fetuses, were used for the study, between the ages of 19

and 40, and gestational ages of between 15 to 40 weeks. The study was done in the Radiology Department of Central Hospital Warri, Delta state, Nigeria. An ultrasound machine was also employed from which the presentation of the fetus was shown via its monitor with the informed consent of the patient. Questionnaires were used to collect data which included certain information about the mother.

### Ultrasound Examination

Ultrasonographic fetal biometry is the most widespread method used to establish gestational age, growth and estimate fetal size. Ultrasound examinations were performed prospectively at the Department of Radiology, Central Hospital, Warri, Delta state. All the scans were performed trans-abdominally; Ultrasonographic measurements were performed using standard methodology.

### Statistical Analysis

All statistical analyses were performed using SPSS Version 15 statistical package. The significant level was limited to P-values less than 0.05.

### Result and Discussion

From the total of 108 fetuses, 75.9% were cephalic, 17.6% breech and 6.5% transverse. This shows that among fetuses in Warri, there are more cephalic lies than breech and transverse predisposing women to more normal deliveries [Table-1].

Table 1- Percent distribution of the different fetal position and the presentation of the fetus with the factors influencing them

	Cephalic (%)	Breech (%)	Transverse (%)	Total
	75.9	17.6	6.5	108
%AD AF	77.1	18.3	4.8	100.2
%AVG AF	100	0	0	100
%RDCD AF	0	0	100	100
%NP	67.6	26.5	5.9	100
%MP	81.9	13.9	4.2	100
%2ND TRIMESTER	55.6	33.3	11.1	100
%3RD TRIMESTER	80	13.3	5.6	98.9

ADAF: Adequate amniotic fluid volume; AVG AF: average amniotic fluid volume; RDCD AF: reduced amniotic fluid volume; NP: nulliparid; MP: multiparid;

The study was done using a total of 105 women and a total of 108 fetuses. Among these fetuses, there were 82 (75.9%) of them with cephalic presentation and out of these there were 52 cephalic longitudinal lie with anterior face and 38 with cephalic longitudinal with posterior face and 2 with cephalic and oblique lie. There were 19 (17.6%) fetuses with breech presentation and 14 of these were in the longitudinal lie and 5 of them in oblique lie. There were 7 (6.5%) fetuses in transitional lie. Out of the 105 women, there were 102 (77.1% cephalic, 18.3% breech, 4.8% transverse) women with adequate amniotic fluid volume and 1 woman (with a cephalic fetus) with average amniotic fluid volume and 2 women (with transverse fetuses) with low amniotic fluid volume. As the baby grows he or she will move in the uterus with the help of the amniotic fluid, therefore with adequate amniotic fluid volume, the fetus has a greater tendency of turning in a favourable position for delivery but with too much or too little amniotic fluid, the fetus has a tendency of remaining in an abnormal position [10]. From the result obtained, 77.1% of the fetuses with adequate amniotic fluid volume were in a favourable (cephalic) position. In accordance with Anderson and Cook [10], severe oligohydraminous is a possible cause of transverse lie, and from the result obtained, all the fetuses with reduced amniotic fluid volume were in a transverse lie. Therefore with adequate amniotic

fluid the fetus has a tendency of being in a favourable position, but otherwise can lead to abnormal positions for birth. Out of the 105 women, there were 34 (67.6% cephalic, 26.9% breech, 5.9% transverse) nulliparous women. There was also a total of 72 (81.9% cephalic 13.9% breech, 4.2% transverse) multiparous women. Nulliparity has been linked to breech presentation [11], which is a possible reason why 26.9% of nulliparous mothers had their children in the breech presentation and also, Multiparity has been found to be a possible cause of transverse lie, this may be a reason for the transverse lie of the 4.2% of multiparous women in our study. According to Walker, et al [12], with multiparity there is decreased possibility of caesarean section, implying that with multiparity there are increased chances of the fetus being in a cephalic presentation, this may possibly be the reason why 81.9% of the foetuses in multiparid mothers were in cephalic presentation. Out of the 108 fetuses, there were 18 (55.6% cephalic, 33.3% breech, 11.1 transverse) in second trimester gestational age and 90 (80% cephalic, 13.3% breech, 5.6% transverse) in third trimester gestational age. According to Valerie, et al [13], the fetus normally stays in whatever position he or she wants until about the second or third trimester which it then turns to a position which favours vaginal delivery, therefore with increasing gestational age, there is a greater possibility of the fetus turning into a favourable position and from the result obtained, it was seen that 80% compared to the 13.3% in the breech position of the foetuses were already in the cephalic position which favours vaginal delivery, which is in line with Onwere, et al [14] who reported that there were more foetuses in the cephalic presentation at the third trimester, (88.4% at 37-40 weeks) with lesser foetuses in the breech presentation (8.5% at 37-40 weeks) showing that with increasing gestational age more foetuses turn into a favourable position. The women were grouped in 0-20 (50% cephalic and 50% breech) 21-30 (82.5% cephalic, 14.3% breech, 3.2% transverse) and > 30 (74.3% cephalic, 17.1% breech and 8.6% transverse). It was reported by Sae-kyung, et al [15] that increasing age with increasing BMI predisposes malpositions and also it can be seen that the younger women between 21 and 30 had 82.5% foetuses in the cephalic position which is more than the 74.3% cephalic foetuses in the older women of above 30. Also the women above 30 had more malpositions than the younger women between 21 and 30 having 17.1% breech and 8.6% transverse compared to 14.3% breech and 3.2% transverse in the younger women. Hence it is suggested that with increasing age and body mass index comes malpositions. The women who had previously given birth were grouped into the ones with normal deliveries (85.1% cephalic, 11.9% breech, 3% transverse) and previous caesarean section (20% cephalic, 40% breech, 40% transverse). The shape of the uterus, the tone and presence of a septum affects the position of the fetus [3]. The possible reason for a previous caesarean section may be due to an unfavourable structure of the uterus which may also be the reason for the malposition of the present fetus and 85.1% of women who have had previous normal deliveries had their babies in the cephalic presentation which may be due to a favourable structure of the uterus, and also 40% of women with previous caesarean section had their babies in the breech presentation and also another 40% in the transverse lie compared to the 11.9% and 3% breech and transitional presentation in women who have had previous normal deliveries.

### Clinical Implications

These studies include the various positions a fetus can be presented before delivery. At about the first and second trimester, the position of a fetus causes less trouble as there is still time for the fetus

to turn in position that will favour normal vaginal delivery. But by third trimester, the baby should have turned into a cephalic presentation which supports normal vaginal delivery; otherwise it predisposes the mother to a greater risk of delivering via a caesarean section.

### Conclusion

Just like women all over the world, fetal presentation among women in warri can be grouped into cephalic, breech and transverse lie. And the influencing factors which affect these presentations are same with women all over the world which include gestational age, parity, amniotic fluid volume, maternal age. According to the results obtained and with factors influencing the different presentations, there were more cephalic presentations, which favour vaginal birth, followed by breech and transverse which if factors are favourable will turn into cephalic position before birth.

**Conflicts of Interest:** None declared.

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