



## Estimation of Birth Weight using a Model (Foot Length and Occipitofrontal Circumference) in a Resource Limited Setting

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### ABSTRACT

**Background:** Birth weight is a very important anthropometric parameter in the newborn. It is a very important factor that determines survival in the newborn infants. However, in resource limited settings, the weighing scale may not be readily available, making it necessary that other methods of estimating birth weight should be sought.

**Methods:** This was a cross sectional, descriptive study conducted over a six month period (February to July, 2020) in Enugu state university teaching hospital, Enugu. Foot Length (FL) measurements were made from the heel to the tip of the big toe using a hard transparent plastic ruler. Occipito Frontal Circumference (OFC) was measured as the maximum circumference of the head to the nearest 0.1 cm with a non-elastic, flexible, measuring tape passing above the supra orbital ridges and over the maximum occipital prominence. Birth weight was measured while the babies were naked using a way master infant spring weighing scale to the nearest 50 grams. Gestational age assessment was done using the new Ballard scoring system. Data were documented on a pretested preform designed by the researcher, for this study.

**Results:** Out of 235 infants enrolled, 34 (14%) were preterm. Precisely 51% of the study population was males while the rest (49%) were females. The median foot length in the study population was 8.00 cm (0.50) and the range was 5.10–9.00 cm. The occipito-frontal circumference ranged from 25.50–37.20 cm and the median was 35 cm (2.00). The median birth weight was 3300 g (800.00) and the range was 1000.00 g–4000.00 g. There was a strong significant positive correlation between newborn the newborn FL/OFC model and BW with a correlation coefficients ( $r$ ) of 0.883 ( $p < 0.001$ ). This study also revealed that individually, FL and OFC are good predictors of LBW with AUC of 0.934 and 0.967 respectively. At cut off points of 7.55 and 33.75, FL and OFC, respectively, can predict LBW.

**Conclusions:** The findings in this study show that FL/OFC model is a good proxy for birth weight. This also shows that FL and OFC can individually be used to predict LBW in settings where weighing scales are not readily available.

**Recommendations:** Foot length measurements may be included in the routine anthropometric assessment of newborn babies. Occipito frontal circumference may also be promoted as a proxy for birth weight and where possible, the FL/OFC model should be used to improve the predictive power of the two parameters.

**Keywords:** Foot length; Birth weight; Occipito frontal circumference; FL/OFC model; Gestational age

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**Received:** 27-Sep-2022, Manuscript No. JNB-22-18182; **Editor assigned:** 30-Sep-2022, PreQC No. JNB-22-18182 (PQ); **Reviewed:** 14-Oct-2022, QC No. JNB-22-18182; **Revised:** 27-Jan-2023, Manuscript No. JNB-22-18182 (R); **Published:** 03-Feb-2023, DOI: 10.35248/2167-0897.23.12.425

**Citation:** Nzeduba CD, Asinobi IN, Eneh CI (2023) Estimation of Birth Weight Using a Model (Foot Length and Occipitofrontal Circumference) in a Resource Limited Setting. J Neonatal Bio. 12:425.

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## INTRODUCTION

Newborn anthropometry is very vital in the assessment of newborn infants. Neonatal anthropometry, especially birth weight is a major determinant of survival in the infants. Out of the five countries contributing to half of all global newborn deaths, Nigeria ranks third (9%), preceded by countries such as India (24%) and Pakistan (10%). These countries are considered to be resource restricted and thus, healthcare delivery to grassroots is affected [1]. The major contributors to neonatal mortality worldwide are severe infections (36%), pre term birth (28%) and perinatal asphyxia (23%). Others include Low Birth Weight (LBW) and birth trauma. LBW is an underlying factor in about 70% of neonatal deaths in developing countries [2]. LBW is associated with prematurity (birth weight is directly related to gestational age), increased risk of infections, respiratory difficulties, hypothermia and feeding problems.

Birth Weight (BW) is a major determinant of fetal growth and duration of gestation and serves as an empirical indicator of maturity and neonatal survival [3]. However, weight measurements are affected by changes in water, carbohydrate, fat, protein and mineral levels [4]. It is important to consider some of the inaccuracies in weighing scales plus observer error such as parallax. Similarly, weighing scales are not available in many rural settings and not portable when attending deliveries at home, church or TBAs [5]. Other anthropometric measurements such as Head Circumference (HC), Chest Circumference (CC) and Crown Heel Length (CHL) have also been used as surrogates to BW. These surrogates are affected by factors such as malnutrition leading to underestimation of growth [6,7].

With all these limitations, the identification and evaluation of low cost and simple assessment methods as surrogates to birth weight has been ranked the number one research priority to reduce global mortality from prematurity and low birth weight.

Foot length has been shown to be a good proxy for birth weight. Studies have also shown occipito frontal circumference to correlate well with birth weight [8-10].

This study intends to determine how a FL/OFC model would perform in estimation of birth weight as against the individual performance of both parameters. The study would also try to determine a cut off point for both parameters at which LBW could be diagnosed. This will aid in the detection of neonates who may either benefit from early and simple life saving interventions, or require referral for more specialized care [11,12].

## MATERIALS AND METHODS

**The subjects were “newborn” babies:** Term and preterm whose weights were appropriate for GA delivered in ESUTH or admitted into the Special Care Baby Unit (SCBU) of ESUTH and who met the criteria for recruitment. Preterm and term babies who were delivered in ESUTH or were referred to ESUTH from other hospitals and babies who were within 96 hours of age were included in the study. Babies with congenital anomalies of the foot, neuromuscular disorders, congenital

anomalies of the chest or skeletal abnormalities and babies with disorders that distorted respiratory rhythm and congenital skeletal abnormalities were excluded. The Lubchenco growth chart was then used to determine appropriateness for GA and babies who were SGA or LGA were similarly excluded. Babies with suspected chromosomal abnormalities and cardiovascular system disorders and babies with suspected intra uterine infections (Toxoplasmosis, Rubella, Cytomegalovirus and Syphilis) were also excluded from the study [13,14].

Ethical approval was obtained from Enugu state university health research ethics committee, Enugu. Written informed consent was obtained from parent after due explanation of the study using the parent’s desired language. Every step in the study was explained to the parents and they were assured that no adverse effects were expected. Only babies whose parents gave consent were recruited into the study [15,16].

Foot length measurements were from the heel to the tip of the big toe using a hard transparent plastic ruler. The foot was placed in a lateral position while the ankle was held and a finger placed at the foot dorsum to avoid eliciting the grasp reflex which would shorten the measurement. Care was taken to ensure that no pressure was exerted on the soft tissue. Both feet were measured. Measurements were performed by the researcher only to ensure a consistent measurement technique. Intra observer error was minimized by taking three measurements and then documenting the mean. Occipito frontal circumference was measured as the maximum circumference of the head between the glabellas anteriorly and along the occipital prominence posteriorly using a non-extendable measuring tape. The measurement was done to the nearest 0.1 cm using a non-elastic measuring tape. The average of three measurements was taken to minimize intra observer error [17,18].

Gestational age was noted from the obstetric admission notes as calculated by LMP (GALMP) and/or early antenatal ultrasound (GAUSS). Based on the gestational age, the babies were grouped as preterm and term. The reference standard for gestational age was the New Ballard Score (NBS). The NBS was done by the principal researcher within 96 hours of birth [19,20].

All the newborns were weighed naked on a way master infant spring weighing scale to the nearest 50 grams. This scale was always set to zero point before each use and standardized at weekly intervals using a known 5 kg weight.

Lubchenco intra uterine growth chart was used to determine growth appropriateness for gestational age. All information obtained was recorded in the preform designed for the study.

Data collated was coded, entered and analyzed using International Business Machine Statistical Package for Social Sciences (IBM-SPSS version 22 Chicago). Descriptive statistics such as frequency and percentages were used to summarize categorical variables (such as sex), while median and interquartile range were used to describe foot length because of non-normality of the data. Comparison of the foot length between term and preterm babies was done using Mann-Whitney U-test due to non-normality of data. The association between foot length, birth weight and gestational age (categorized into extreme preterm, very preterm, moderate late

preterm and term) was analysed using Kruskal-Wallis test. Post-Hoc pairwise comparison was used to identify the areas of significant relationship between the categories of BW. All tests of significance were two tailed at 95% confidence interval. A p-value score of <0.05 is considered significant. Results were presented as prose, tables and figures as appropriate.

## RESULTS

This study was conducted over a six (6) months period, from February to July 2020, with two hundred and thirty five (235) participants enrolled. Three hundred and twenty five (325) mothers were approached during the study period, thirty two (32) refused consent while two hundred and ninety three (293) gave consent. Twenty seven (27) of the babies were either SGA or LGA, 28 were more than 96 hours at the time of measurements and three had congenital malformations. Eventually, 235 newborn babies who met all the inclusion

criteria were recruited for the study. One hundred and ninety three babies (82.1%) were recruited from the maternity ward, while forty two (17.9%) were recruited from the special care baby unit both of ESUTH.

### Socio-demographic characteristics of the study population

The dominant socio-economic class was class two (53.2%), with 3% and 0% in class four five respectively. Mothers of 150 (63.8%) babies reside in urban areas while mothers of 85 (36.2%) babies reside in rural areas. Majority (99.1%) of the study participants were of the Igbo tribe, while 0.9% was of the Hausa/Fulani tribe (Table 1).

**Table 1:** Socio-demographic characteristics of the study population.

	Frequency (N)	Percentage (%)
<b>Socioeconomic class</b>		
1	56	23.8
2	125	53.2
3	47	20
4	7	3
5	0	0
<b>Domicile</b>		
Urban	150	63.8
Rural	85	36.2
<b>Tribe</b>		
Igbo	233	99.1
Yoruba	0	0
Hausa/Fulani	2	0.9

### Gestational age and sex distribution of the study population

The gestational ages ranged from 26–42 weeks with a mean (SD) of 37.0 (3.4) weeks. Thirty four (14.5%) were preterm while 201 were term. Amongst the 34 preterms, twenty two (64.7%) were

moderate too late. There were 121 males (51%) and 114 females (49%) giving a male to female ratio of 1.1:1 (Table 2).

**Table 2:** Gestational age and sex distribution of the study population.

	Frequency (N)	Percentage (%)
<b>Gestational age (weeks)</b>		
<28	3	1.3

28 to <32	9	3.8
32 to <37	22	9.4
>37 to 42	201	85.5
<b>Total</b>	<b>235</b>	<b>100</b>
<b>Gender</b>		
Males	121	51
Females	114	49
<b>Total</b>	<b>235</b>	<b>100</b>

### Foot length measurements of the study population

The foot length of the study population ranged from 5.10 cm to 9.00 cm with a median (IQR) foot length of 8.00 cm (0.50). The

median (IQR) foot length in the preterm and term subjects were 6.50 cm (1.50) and 8.00 cm (0.60) respectively (Table 3).

**Table 3:** Foot length measurements of the study population.

Foot length (cm)	Overall	Preterm	Term	U-stat p-value
Median (IQR)	8.00 (0.50)	6.50 (1.50)	8.00 (0.60)	472.50<0.001
Min-max	5.10–9.00	5.10–7.8	7.00–9.00	

IQR: Interquartile Range; Min: Minimum; Max: Maximum; cm: centimetres; U: Mann-Whitney U-test

### Birth weight, occipito frontal circumference and chest circumference of the study population

The birth weight of the subjects ranged from 1000 g to 4000 g with a median (IQR) birth weight of 3300 g (800.00). The median (IQR) birth weight was 1500 g (1000) amongst preterm and 3500 g (700) among term babies. This was statistically significant ( $p<0.001$ ).

The occipito frontal circumference of the study population ranged from 25.50 cm–37.20 cm with a median (IQR) of 35 cm (2.00 cm). While preterm babies had a median (IQR) OFC of

30.00 (6.13), term babies had a median (IQR) of 35 cm (2.00). This was also significant ( $p<0.001$ ).

There was a significant increase in the anthropometric variables (e.g. birth weight, OFC and CC) as gestational age increased (Tables 4). This was such that, term babies had significantly higher scores in all the anthropometric variables compared with preterm babies ( $p<0.001$ ).

**Table 4:** Birth weight and occipito frontal circumference of the study population.

Anthropometric parameter	Overall	Preterm	Term	U-stat	P-value
<b>Weight (g)</b>					
Median (IQR)	3300 (800)	1500 (1000)	3500 (700)	192	<0.001
Range	1000–4000	1000–3000	2500–4000		
<b>OFC (cm)</b>					
Median (IQR)	35.00 (2.00)	30.00 (6.13)	35.00 (2.00)	610.5	<0.001
Range	25.50–37.20	25.50–36.50	30.00–37.20		

IQR: Interquartile Range; OFC: Occipito Frontal Circumference; cm: centimeters; Ustat: U-statistic from Mann-Whitney U test



### Prediction of birth weight using OFC and foot length

The model summary table shows a significant linear very strong positive relationship between birth weight and the independent variables (OFC and foot length) as indicated by the correlation coefficient (R=0.883). The coefficient of determination (R<sup>2</sup>=0.780) indicates that 78% of the variation that exists in birth weight is explained by the model (Tables 5-7). The ANOVA table shows the overall significance of the independent variables in predicting birth weight. Foot length and OFC have a significant positive impact on birth

weight as indicated by the regression coefficients (B), (p<0.001). The regression model is as follows:

$$\text{Birth weight} = -5419.317 + 429.054 (\text{foot length}) + 151.854 (\text{OFC})$$

**Table 5:** A significant linear very strong positive relationship between birth weight and the independent variables (OFC and foot length).

Model summary				
Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.883 <sup>a</sup>	0.78	0.778	329.8563

a. Predictors: (Constant); OFC: Foot Length

**Table 6:** The overall significance of the independent variables in predicting birth weight.

Anova <sup>a</sup>					
Model	Sum of squares	df	Mean square	F	Sig.
Regression	89297254.296	2	44648627.148	410.354	0.000 <sup>b</sup>
Residual	25242794.214	232	108805.147		
Total	114540048.511	234			

a. Dependent variable: Birth weight (grams)  
 b. Predictors: (Constant); OFC: Foot Length

**Table 7:** Foot length and OFC have a significant positive impact on birth weight as indicated by the regression coefficients.

Coefficients <sup>a</sup>					
Model	Unstandardized coefficients		Standardized coefficients		
	B	Std. error	Beta	t	Sig.
Constant	-5419.32	310.628		-17.446	0
Foot length	429.054	54.154	0.408	7.923	0
OFC	151.854	14.977	0.522	10.139	0

a. Dependent variable: Birth weight (grams)

### Prediction of low birth weight using foot length

Table 9 show that Foot length is a good predictor of low birth weight. An Area Under the Curve (AUC) of 0.934 shows that the test is accurate and better than a guess work. The best cut off that maximizes (sensitivity+1-specificity) is 7.55 cm. It is the optimal threshold point that gives the maximum correct prediction of low birth weight. The ROC curve shows this maximum point. At this cut off, the sensitivity is 72%, specificity is 93%, positive predictive value is 99% and negative predictive value is 31%. Foot length equal or below 7.55 would

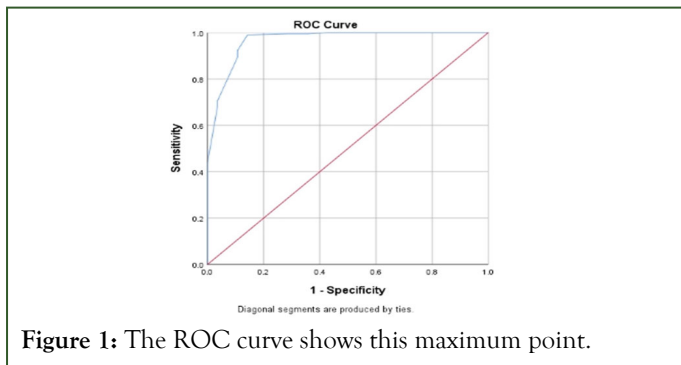
indicate low birth weight. Note that the low percentage of the NPV was as a result of the low prevalence of low birth weight babies (Tables 8 and 9, Figure 1).

**Table 8:** An Area Under the Curve (AUC) of 0.934 shows that the test is accurate and better than a guess work.

Area under the curve				
Test result variable(s): Foot length				
Area	Std. error <sup>a</sup>	Asymptotic sig <sup>b</sup>	Asymptotic 95% confidence interval	
			Lower bound	Upper bound
0.934	0.032	0	0.872	0.997

The test result variable(s): Foot length has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

- a. Under the nonparametric assumption
- b. Null hypothesis: True area=0.5



**Table 9:** Show that Foot length is a good predictor of low birth weight.

Foot length	Sensitivity	Specificity	1-specificity	Positive Predictive Value (PPV %)	Negative Predictive Value (NPV %)
7.25	0.957	0.75	0.25	97	70
7.4	0.952	0.786	0.214	97	69
7.55	0.72	0.929	0.071	99	31
7.65	0.691	0.964	0.036	99	30
7.75	0.676	0.964	0.036	99	29

### Prediction of low birth weight using OFC

Table 11 shows that OFC is a good predictor of low birth weight. An Area Under the Curve (AUC) of 0.967 shows that the test is accurate and better than a guess work. The best cut off that maximizes (sensitivity+1-specificity) is 33.75 cm. It is the optimal threshold point that gives the maximum correct

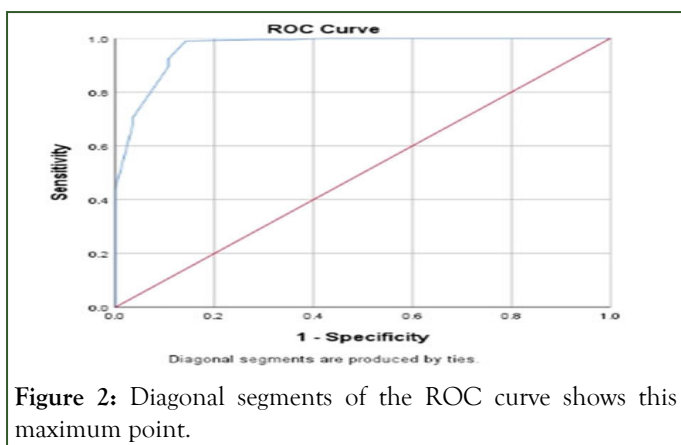
prediction of low birth weight. The ROC curve shows this maximum point. At this cut off, the sensitivity is 89%, specificity is 89%, positive predictive value is 98% and negative predictive value is 53%. OFC below 33.75 would indicate low birth weight (Table 10 and 11, Figure 2).

**Table 10:** Area under the curve of this table shows test result variables.

Area under the curve				
Test result variable (s): OFC				
Area	Std. Error <sup>a</sup>	Asymptotic Sig. <sup>b</sup>	Asymptotic 95% confidence interval	
			Lower bound	Upper bound
0.967	0.019	0	0.93	1

The test result variable(s): OFC has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

- a. Under the nonparametric assumption
- b. Null hypothesis: True area=0.5



**Figure 2:** Diagonal segments of the ROC curve shows this maximum point.

**Table 11:** Data showing sensitivity, specificity etc at various cut-off points of OFC to predict low birth weight.

OFC	Sensitivity	Specificity	1-specificity	Positive Predictive Value (PPV %)	Negative Predictive Value (NPV %)
32.5	0.99	0.857	0.143	98	92
33.25	0.923	0.893	0.107	98	61
33.75	0.894	0.893	0.107	98	53
34.25	0.705	0.893	0.036	98	29
34.65	0.686	0.964	0.036	99	29

## DISCUSSION

This present study demonstrated cut off points of 7.55 and 33.75 for FL and OFC respectively to predict LBW. The study also found that a FL/OFC model can correctly estimate birth weight using a model equation  $BW = -5419.317 + 429.054 (FL) + 151.854 (OFC)$ .

This study found a cutoff point of 33.75 for OFC to correctly predict LBW. This is similar to findings in some studies. Ndu, et al. in a 2014 study found that a cutoff point of 33.80 cm for OFC could predict birth weight less than 2500 g. A study by

Ezeaka, et al., in 2003, found a significant correlation between OFC and BW with a cutoff point of 33.6 predicting LBW (BW<2500 g). Olafimihan, et al., studied the use of anthropometric parameters to determine LBW. They found a cutoff point of 31.89 for OFC to be a good predictor of LBW. Among all anthropometric parameters studied, OFC was found to be the best surrogate for birth weight.

Mukherjee S, et al. in 2013 found a cutoff point of 7.85 cm for foot length to predict LBW. Similarly, Folger, et al., found a cutoff point of 7.9 cm for foot length to correctly predict LBW. Ashish et al, in a study done in Nepal, found a cutoff point of 7.2 cm for FL to correctly predict LBW.

## CONCLUSION

In the setting of the present study, There was a strong positive correlation between birth weight and a FL/OFC model with a correlation coefficient of 0.883 ( $R^2=0.78$ ). This study also revealed that individually, FL and OFC are good predictors of LBW with AUC of 0.934 and 0.967 respectively. At cut off points of 7.55 and 33.75, FL and OFC, respectively, can predict LBW. At a cutoff point of 7.55 cm for FL the sensitivity is 72%, specificity is 93%, positive predictive value is 99% and negative predictive value is 31%. Foot length below 7.55 would indicate low birth weight. Similarly, at a cutoff point of 33.75 cm for OFC, the sensitivity is 89%, specificity is 89%, positive predictive value is 98% and negative predictive value is 53%. OFC below 33.75 would indicate low birth weight.

## RECOMMENDATIONS

The recommendations, based on the findings of this study are as follows:

- Foot length measurements may be adopted to be part of routine examination of newborn babies.
- The FL/OFC model can be used to estimate birth weight when the weighing scale is not available.
- Using the determined cut off points, both FL and OFC can be used to predict LBW in newborn babies.

## COMPETING INTERESTS

The authors have declared that no competing interests exist.

## AUTHOR'S CONTRIBUTIONS

Principal researcher, Dr Nzeduba designed the work, collected the data and wrote up the article. Dr Asinobi supervised the research while Dr Eneh reviewed the writing of the work.

## REFERENCES

1. WHO. Levels and Trends in child mortality Report 2017. WHO. 2017.
2. WHO. National and perinatal mortality. In: Safer MP, editor. Country, regional and global estimates 2004. Geneva, Switzerland: WHO. 2007.

3. UNICEF. Monitoring the situation of children and women. UNICEF. 2009.
4. Chimbira TH. Uncertain gestation and pregnancy outcome. *Cent Afr J Med.* 1989;35(2):329-333.
5. Cooke RW, Lucas A, Yudkin PL, Pryse-Davies J. Head circumference as an index of brain weight in the fetus and newborn. *Early Hum Dev.* 1977;1(2):145-149.
6. Bahl R, Martinez J, Bhandari N, Biloglav Z, Edmond K, Iyengar S, et al. Setting research priorities to reduce global mortality from preterm birth and low birth weight by 2015. *J Glob Health.* 2012;2:10403.
7. Lawn JE, Kinney MV, Belizan JM, Mason EM, McDougall L, Larson J, et al. Born too soon: Accelerating actions for prevention and care of 15 million newborns born too soon. *Reprod Health.* 2013;10(1):1-20.
8. Mullany LC, Darmstadt GL, Khattry SK, Leclercq SC, Tielsch JM. Relationship between the surrogate anthropometric measures, foot length and chest circumference and birth weight among newborns of Sarlahi, Nepal. *Eur J Clin Nutr.* 2007;61(1):40-46.
9. Sasidharan K, Dutta S, Narang A. Validity of New Ballard Score until 7th day of postnatal life in moderately preterm neonates. *Arch Dis Child Fetal Neonatal Ed.* 2009;94(1):39-44.
10. Wyk LV, Smith J. Postnatal foot length to determine gestational age: A pilot study. *J Trop Pediatr.* 2016;62(2):144-151.
11. Srivastava A, Sharma U, Kumar S. To study correlation of foot length and gestational age of new born by new Ballard score. *Int J Res Med Sci.* 2015;3:3119-3122.
12. Gowri S, Kumar GV. Clinical study of the correlation of foot length and birth weight among newborns in a tertiary care hospital. *Int J Contemp Pediatr.* 2017;4(3):979.
13. Hadush MY, Berhe AH, Medhanyie AA. Foot length, chest and head circumference measurements in detection of low birth weight neonates in Mekelle, Ethiopia: A hospital based cross sectional study. *BMC Pediatrics.* 2017;17(1):1-8.
14. Gaur NL, Aneja PS, Devi D, Garg S, Garg S. The Correlation between Foot Length and Birth Weight among Newborns. *Clin Diagnostic Res.* 2021;15(11).
15. Gavhane S, Kale A, Golawankar A, Sangle A. Correlation of foot length and gestational maturity in neonates. *Int J Contemp Pediatr.* 2016;3(3):705-708.
16. Raj AA, Maheswari K. A cross sectional study on the correlation between postnatal foot length and various other anthropometric parameters along with the gestational age. *Pediatric Rev Int J Pediatr Res.* 2020;7(8):414-419.
17. Mukherjee S, Roy P, Mitra S, Samanta M, Chatterjee S. Measuring new born foot length to identify small babies in need of extra care: A cross sectional hospital based study. *Iran J Pediatr.* 2013;23(5): 508-512.
18. Ndu IK, Ibeziako SN, Obidike EO, Adimora GN, Edelu BO, Chinawa JM, et al. Chest and occipito frontal circumference measurements in the detection of low birth weight among Nigerian newborns of Igbo ethnicity. *Ital J Pediatr.* 2014;40(1):1-8.
19. Ezeaka VC, Egri-Okwaji MT, Renner JK, Grange AO. Anthropometric measurements in the detection of low birth weight infants in Lagos. *Niger Postgrad Med J.* 2003;10(3):168-172.
20. Folger LV, Panchal P, Eglavitch M, Whelan R, Lee AC. Diagnostic accuracy of neonatal foot length to identify preterm and low birth weight infants: A systematic review and meta analysis. *BMJ Global Health.* 2020;5(11):002976.