Abstract

A Retrospective study of neonatal components relating to birth weight in tertiary care hospital. The objectives were to find out the association between the birth weight & neonatal components. A Sample of 642 neonates who fulfilled the inclusion criteria were selected for the study. An extensive review of literature and guidance by experts formed the foundation to the development of the study. The data collection was done by reviewing the medical records in medical record section. The collected data was tabulated and analyzed. The frequency distribution of the study shows that 83% neonates are belongs to normal birth weight, 12% neonates are belongs to low birth weight, 2.18% neonates are belongs to overweight and 0.98% neonates are very low birth weight. $x^2$ value and ‘p’ value, for the association between birth weight and demographic characteristics significant at 0.05 Level are as follows, Gender - calculated value 10.589 > table value 7.815, Gestational age - calculated value 152.71 > table value 7.815, Parity - calculated value 8.22 > table value 7.815, Type of gestation - calculated value 26.52 > table value 7.815. It indicates that all 4 demographic characteristics are highly associated with newborn birth weight.
I. INTRODUCTION

Birth weight should be measured within the first hour of life before significant postnatal weight loss has occurred. According to WHO technical consultation report on promoting optimal fetal development, birth weight of an infant is dependent on amount of growth during pregnancy and the gestational age, and these components are related to the genetic make-up of the infant and the mother, her lifestyle and her status of health.

Weight have been associated with infant gender, multiple birth factors and maternal factors such as age, race and ethnicity, size, nutrition, current and previous pregnancy, medical risk characteristics. The infant’s health does not only depend on maternal nutrition but also on the infant’s long-term growth pregnancy outcome are affected by other factors as well as nutrient intake. Current study focused on association between newborn birth weight with selected demographic characteristics such as Gender, Gestational age, Parity, Type of gestation (Kogila.p; Moumajumder; S.Dhevadharshini; S.Parameshwari; 2016) (Kogila.P, et al. 2016)

II. OBJECTIVES

To find out the association between the birth weight & neonatal components.

III. METHODOLOGY

- **Research Approach:**
  Quantitative, non-experimental evaluative, retrospective research approach.

- **Research design:**
  Cross sectional retrospective design was used to conduct the study on data obtained on Live births from January 1, 2016 to December 31, 2016.

- **Research Setting:**
  Present study was conducted at Medical Record department, in Chettinad Hospital and Research Institute, Kelambakam, Kanchipuram District, Tamilnadu, India

- **Population:**
  Neonatal data related to birth weight on live births was obtained from the Medical Records at Medical Record Department in CHRI.

- **Sampling Technique:**
  Convenient sampling technique was adopted for this study.

- **Sample size:**
  Data on neonates for live births was collected for the period of 1 year (January 1, 2016 to December 31, 2016). 642 samples were collected.

- **Sampling criteria:**
  **A.Inclusion criteria**
  The study includes data on live birth from January 1, 2016 to December 31, 2016.
IV. PLAN FOR DATA COLLECTION PROCEDURE:

The researcher planned & collected the data for the period of one week. Prior permission and consent was obtained from the Medical Record Department before conducting the study. Written consent was obtained from the Medical Record Department to collect the neonatal necessary data for the present study to copied into data sheet from the birth register & medical record available in the Medical Record Department, cases of live birth over a period of one year.

Selection & development of study instrument:

- Tool Description
  - Part 1: Determine the birth weight
  - Part 2: Neonatal factors which include gender, gestational age, parity & type of gestation.

V. RESULTS

Totally 642 samples were collected. This study was done to determine the frequency distribution and association. Study reveals that 83% neonates are belongs to normal birth weight, 12% neonates are belongs to low birth weight, 2.18% neonates are belongs to overweight and 0.98% neonates are very low birth weight. Parity of above mentioned live birth was more multiparty 401 (63%) than primi 241 (37%). Type of gestation were identified as more single birth than multiple birth as follows single birth 640 (99.69%), multiple birth 02 (0.31%). Gestational age were identified more term babies than preterm babies as follows as the Term 534 (85.3%) than preterm 97 (15.1%).

\[ \chi^2 \text{ value and 'p' value, for the association between birth weight demographic characteristics are as follows, significant at 0.05 Level.} \]

Gender - calculated value 10.589 > table value 7.815, Gestational age- calculated value 152.71 > table value 7.815, Parity- calculated value 8.22 > table value 7.815, Type of gestation - calculated value 26.52 > table value 7.815. It indicates that all 4 demographic characteristics are highly associated with newborn birth weight.

Table -1: Frequency and percentage distribution of demographic characteristics of neonatal factors related to birth weight.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Characteristics</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Parity</td>
<td>Primi</td>
<td>241</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multi</td>
<td>401</td>
</tr>
<tr>
<td>2.</td>
<td>Type Of Gestation</td>
<td>Single birth</td>
<td>640</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multiple birth</td>
<td>02</td>
</tr>
<tr>
<td>3.</td>
<td>Gestational Age</td>
<td>Preterm</td>
<td>97</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Term</td>
<td>534</td>
</tr>
</tbody>
</table>

Table-1: shows that birth weight among parity, the highest frequency of multi 401 (63%) & the lowest frequency of primi 241 (37%). In Type of gestation, single birth is the highest frequency 640 (99.69%) & multi birth is the lowest frequency 02 (0.31%).
Gestational age, the highest frequency 534 (85.3%) term Babies & Lowest frequency 97 (15.1%) preterm Babies.

**Figure -1** cylindrical graph on birth weight newborn baby among gender.
The highest frequency is 368 (58%) female & the lowest frequency is 274 (42%) male.

**VI. CONCLUSION**
This research project will provide the baseline statistical data of birth weight of babies, which enables the future researchers to conduct evidence based research. They suggested improvement in maternal nutrition during pregnancy for reducing low birth weight among newborns. It results that maternal weight is below 45kg it leads to low birth weight among neonates. Health education are recommended by the researchers for the pregnant mothers to maintain the nutrition status will definitely upgrade the normal birth weight of the newborn and will prevent premature birth. The prevailing project provides an streamline inclusive data on Gestational age, gender, parity, type of gestation of newly born baby. Additionally, these data could be used as a base-line statistics for the comparison.

**VII. RECOMMENDATION**

i. Studies are needed to develop standardized tool on birth weight among new born.

ii. A similar study can be under taken by using larger number of samples.

**VIII. REFERENCES**


AUTHOR’S BIOGRAPHY

Mrs. Kogila P born on 14.09.1981 at Salem district, Tamil Nadu, Associate professor, Chettinad college of nursing, chettinad university and the area of research interest are pediatric research such as infant feeding, immunization, complementary feeding, gastro intestinal disorders, professional activities are published many 18 international and 3 national peer reviewed journal, presented many scientific research paper and poster in international/national journal and attended many workshop, seminars, conferences. I received best educator award. This is to share, I am positive person and I am interested to help others and also love to share my ideas, knowledge and thoughts with others.

Ms. Haripriya S born on 18-3-1997 from Kancheepuram district Tamil Nadu studying Bsc Nursing and the area of research interest among pediatrics including childhood diseases, my professional activities are published one research article in international peer reviewed journal and Delegate in international conference : Transforming Nursing Practice- Research And Dissemination held on 23rd June, 2017 and delegate National Level Nursing Conference “Non Communicable Disease- A Race against Time” held on 30th June 2016. I am awarded by my college during activities as participated in World health day celebration and I got first price in essay writing. This is to share, I am positive person and I am interested to help others also love to share my ideas and thoughts with others. Through this research I gained knowledge and interest among my research study.

Ms. L. KayalVizhi born on 10-6-1997 from Kancheepuram district Tamil Nadu studying Bsc Nursing and the area of research interest are childhood diseases, exclusive breast feeding among mothers my professional activities are published one research article in international peer review journal Delegate in international conference : Transforming Nursing Practice- Research And Dissemination held on 23rd June, 2017 and delegate National Level Nursing Conference “Non Communicable Disease- A Race against Time” held on 30th June 2016. This is to share, I am positive person and I am interested to help others also love to share my ideas and thoughts with others.

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