

ORIGINAL ARTICLE

A Study to assess the Effectiveness of Nesting on Bio-physiological Parameter and Sucking Response among the Low Birth Weight Babies at Selected Hospitals, Surat, GujaratAarti Patel¹, Alka Tajne²**HOW TO CITE THIS ARTICLE:**

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ABSTRACT

The *birth weight* is not only a critical determinant of child survival, growth and development but also a valuable indicator of maternal health, nutrition and also quality of life. Low birth weight is closely associated with fetal and perinatal mortality and morbidity.

Objectives of The Study: 1. To assess the bio-physiological parameters among the low birth weight babies in experimental and control group. 2. To assess the sucking response among the low birth weight babies in experimental and control group. 3. To assess the effectiveness of Nesting on bio-physiological parameters among low birth weight babies in experimental group. 4. To assess the effectiveness of Nesting on sucking response among low birth weight babies in experimental group. 5. To find out the association between post-test bio-physiological parameters and sucking response in experimental Surat. The sample comprised of 60 LBW babies. Sample was selected by using purposive sampling technique. Formal written permission from selected hospitals authorities group with their selected demographic variables.

Methods: A quantitative research approach with quasi experimental Non randomized control group research design was used for the study. The study was conducted at selected hospitals in was obtained prior data collection process. Bio physiological parameters like temperature, pulse, Spo2 was assessed by thermometer, pulse oximeter and manual count and sucking response was assessed by using modified early feeding skill assessment scale.

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Result: Result of this research study shows that the experimental group bio-physiological parameters and sucking response were more improved as compare to control group. Therefore it can be concluded that Nesting is effective on bio-physiological parameters and sucking response among low birth weight babies.

KEYWORDS:

• Complementary Feeding • Infant Nutrition • Child 6-24 Months • Health Education

INTRODUCTION

Low birth weight is a major public health problem in developing countries including India. The epidemiological observations depicted that infants whose birth weight is less than 2.5 kg are approximately 20 times more likely to die than heavier babies and closely associated with fetal and neonatal morbidity and mortality. In India, 30 – 40 % of babies are low birth weight and more than half of them are full – term babies.

“**Nesting**” is a comfortable measure that stimulates in-utero feeling of lack of space and makes the baby less prone to startle. The infant can be positioned prone or on the side with flexed extremities by providing a ‘nest’ with a rolled blanket. The upper part of the baby’s body is slightly raised, resembling a position as he is “cradled in the arm”.

OBJECTIVES OF THE STUDY

1. To assess the Bio-physiological parameters among the low birth weight babies in experimental and control group.
2. To assess the sucking response among the low birth weight babies in experimental and control group.
3. To assess the effectiveness of Nesting on Bio-physiological parameters among the low birth weight in experimental group.
4. To assess the effectiveness of Nesting on sucking response among the low birth weight in experimental group.
5. To find out the association between post-test Bio-physiological parameters and sucking response in experimental group with their selected demographic variables.

HYPOTHESIS

H1: There is a significant improvement in bio-physiological parameters and sucking response among low birth weight babies who

receive nesting than the babies who do not receive nesting.

MATERIAL AND METHODS

Research methodology is a systematic way to solve a problem. It is the procedure by which researchers go about their work of describing, explaining and predicting phenomena. (Philominathan, 2013).

Research Approach: Quantitative research approach

Research Design: Quasi experimental non randomized control group design.

Variables:

- ❖ **Independent variable:** Nesting for low birth weight babies
- ❖ **Dependent variables:** Bio-physiological parameters and sucking response of low Birth babies.
- ❖ **Confounding variables:** Radiant warmer and warmth from mother.
- ❖ **Demographic variables:**
 - **Mother:** Age, Parity, Risk during pregnancy, Mode of delivery and Birth spacing.
 - **Child:** Age in days, Birth weight, Gestational age at birth, Birth order of child and mode of sucking.

SAMPLE SELECTION CRITERIA

Inclusion criteria

- Low Birth Weight babies whose parents are permitting to provide nesting for their baby.
- Low Birth Weight babies who are admitted in the hospital and stay for more than 3 days or more.

- Mothers of neonates who could understand and speak Gujarati language.

Exclusion criteria

- Neonates who are on CPAP or ventilator.
- Neonates who are diagnosed of severe medical and surgical condition.
- Neonates who are with major congenital anomalies.
- Neonates whose APGAR score is less than 7.

Setting of the study: The study was conducted at selected 3 hospitals of Surat districts.

1. Saachi children hospital
2. Param hospital & NICU
3. Nice children hospital

Population: LBW babies whose birth weight is less than 2.5 kg.

Sample / Sample size: 60 LBW babies

Sampling technique: Purposive sampling technique

RECOMMENDATION

Based on the findings of the present study recommendations for the future study are;

1. A similar study can be conducted by using large sample there by the findings of the study can be generalized.
2. A study can be conducted to find out the factors that influence the bio-physiological parameters and sucking response of the low birth weight babies.
3. A comparative study can be conducted to assess the sucking response among low birth weight babies on direct breastfeeding and expressed breast milk or formula feeding.
4. A study can be conducted to assess the effectiveness of structured teaching programme on knowledge and practice regarding handling the low birth weight babies with nesting among NICU staff nurse.
5. A study can be conducted to assess the effectiveness of nesting on length of stay in hospital.

6. A study can be conducted on effectiveness of nesting on neurobehavioral activity among low birth weight babies.

RESULT AND DISCUSSION

The data were analyzed and interpreted in terms of objectives of the study. Descriptive and inferential statistics was utilized for data analysis. After analysis of the data the major findings were as follow:

1. Findings related to demographic variables of samples.

Based on age of mother in experimental group majority of mother belongs to above 30 year of age that was 11 (36.67%). In control group majority 13 (43.33%) were in between 21 to 30 years.

Based on parity in experimental group majority 17 (56.66%) mother were Multipara. In control group also majority, 16 (53.33%) were Multipara.

Based on risk during pregnancy in experimental group 14 (46.67%) had no complication were in majority. In control group 13 (43.33%) mothers had other complication were in majority.

Based on mode of delivery in experimental group majority 18 (60%) mothers had a C – section. In control group 17 (56.67%) mothers had C – section were in majority.

Based on birth spacing in experimental group majority 13 (43.33%) mothers were Primipara. In control group majority 14 (46.67%) mothers were Primipara.

Based on age in days of babies in experimental group there were 13 (43.33%) babies had second day of age, were in the majority. In control group 12 (40%) babies had second day of age, were in majority.

Based on birth weight in experimental group 16 (53.33%) babies had birth weight between 1.5 to 1.9 kg, were in majority. In control group 17 (56.67%) babies had birth weight between 2.0 to 2.4 kg were in majority.

Based on gestational age at birth in experimental group majority 19 (63.33%) babies had gestational age between 35 to 37 week. In control group 18 (60%) babies had gestational age between 35 to 37 week, 12 (40%) babies had gestational age between 32 to 34 week.

Based on birth of child in experimental group majority 15 (50%) babies were second child in their family. In control group majority 14 (46.67%) babies were first child in their family. Based on mode of sucking in experimental group 18(60%) babies had nutritive sucking 100 were in majority. In control group 24 (80%) babies had nutritive sucking were in majority.

2. Findings related to mean and standard deviation of bio-physiological parameters in experimental and control group.

In experimental the mean scores of temperature, in the experimental group there is an increase in post-test (97.80) than pretest (96.98). In the control group also there is an increase in post-test (97.2) than pretest (96.71). Regarding mean scores of pulse, in the experimental group there is a decrease in post-test (147.47) than pretest (157.67). In the control group also there is a decrease in post-test (151.43) than pretest (156.5). Regarding mean scores of respiratory rate, in the experimental group there is decrease in post-test (48.4) than pretest (56.67). In the control group also there is a decrease in post-test (51.8) than pretest (56.07). Regarding mean scores of oxygen saturation, in the experimental group there is an increase in post-test (98) than pretest (93). In the control group also there is an increase in post-test (95.53) than pre-test (93.43).

3. Findings related to frequency and percentage distribution of sucking response score among low birth weight babies in experimental and control group.

In experimental group, concerning about sucking response, in pre-test none of them had good sucking response, 12 (40%) of them had fair sucking response and 18 (60%) of them had poor sucking response. In post-test 13 (43.33%) of them had good sucking response, 17 (56.67%) had fair sucking response and none of them had poor sucking response. In control group, in pre-test none of them had a good sucking response, 10 (33.33%) had a fair sucking response and 20 (66.67%) had a poor sucking response. In post-test 04 (13.33%) had a good sucking response, 26 (56.67%) had a fair sucking response and none of them had poor sucking response.

4. Finding related to mean and standard deviation of sucking response among the LBW babies in experimental and control group.

In experimental group the mean pre-test

score was 10.33 and mean post-test score was 20.27 and standard deviation pre-test score was 1.47 and standard deviation post-test score was 2.80. In control group the mean pre-test score was 10.2 and mean post-test score was 15.63 and standard deviation pre-test score was 1.56 and standard deviation post-test score was 2.85.

5. Findings related to comparison of pre-test and post-test score of bio-physiological parameters among low birth weight babies in experimental and control group.

Regarding temperature, in experimental group the mean difference between pre-test and post-test score was 1.34. The calculated paired 't' value was 16.14 and tabulated 't' value was 2.05 at 0.05 level of significance. In control group the mean difference between pre-test and post-test was 0.49. The calculated 't' value was 12.34 and tabulated 't' value was 2.05 at 0.05 level of significance.

Regarding pulse, in experimental group the mean difference between pre-test and post-test score was 10.2. The calculated paired 't' value was 12.14 and the tabulated 't' value was 2.05 at 0.05 level of significance. In control group the mean difference between pre-test and post-test was 5.07. The calculated paired 't' value was 12.00 and the tabulated 't' value was 2.05 at 0.05 level of significance.

Regarding respiration in experimental group the mean difference between pre-test and post-test score was 8.27. The calculated paired 't' value was 17.85 and the tabulated 't' value was 2.05 at 0.05 level of significance. In control group the mean difference between pre-test and post-test was 4.27. The calculated 't' value was 16.00 and the tabulated 't' value was 2.05 at 0.05 level of significance.

Regarding SpO_2 , in experimental group the mean difference between pre-test and post-test score was 5. The calculated 't' value was 24.28 and tabulated 't' value was 2.05 at 0.05 level of significance. In control group the mean difference between pre-test and post-test was 2.1. The calculated 't' value was 21.00 and tabulated 't' value was 2.05 at 0.05 level of significance.

Hence it revealed that there was significant difference in the bio-physiological between experimental and control group. Thus it is concluded that the Nesting was effective on bio-physiological among low birth weight babies.

6. Findings related comparison of pre-test and post-test score of sucking response among low birth babies in experimental and control group.

In experimental group the mean difference between pre-test and post-test score was 9.94. The calculated paired 't' value was 26.12 and tabulated 't' value was 2.05 at 0.05 level of significance. In control group the mean difference between pre-test and post-test was 5.43. The calculated paired 't' value was 16.07 and tabulated 't' value was 2.05 at 0.05 level of significance. Hence it revealed that there was significant difference in the sucking response between experimental and control group. Thus it is concluded that the Nesting was effective on sucking response among low birth weight babies.

7. Finding related to comparison of post-test score bio-physiological parameters among low birth babies between experimental and control group.

Regarding temperature, mean difference between experimental and control group post-test was 0.8. The calculated unpaired 't' value was 8.648 and tabulated 't' value was 2.00 at .005 level of significance.

Regarding pulse, mean difference between experimental and control group post-test was 3.96. The calculated unpaired 't' value was 4.33 and the tabulated 't' value was 2.00 at .005 levels of significance.

Regarding respiration, mean difference between experimental and control group post-test was 3.4. The calculated unpaired 't' value was 3.00 and the tabulated 't' value was 2.00 at 0.05 level of significance.

Regarding Spo₂, mean difference between experimental and control group post-test was 2.47. The calculated unpaired 't' value was 14.11 and the tabulated 't' value was 2.00 at 0.05 level of significance.

Thus it revealed that calculated unpaired 't' value is higher than tabulated value, hence research hypothesis is accepted.

8. Findings related to comparison of post-test score of sucking response among low birth weight babies between experimental and control group.

The mean difference between experimental and control group post-test was 4.64. The

calculated unpaired 't' value was 6.02 and the tabulated 't' value was 2.00 at 0.05 level of significance. Thus it revealed that calculated 't' value is higher than tabulated value, hence research hypothesis is accepted.

9. Findings related to association between post-test of bio-physiological parameters with their selected demographic variables.

Regarding temperature, findings revealed that temperature has significant association with age of mother, age in days of babies, birth weight and gestational week at birth.

Regarding pulse, findings revealed that pulse has significant association with age in days of babies and birth weight.

Regarding respiration, findings revealed that respiratory rate has significant association with birth weight and gestational age at birth.

Regarding Spo₂, findings revealed that Spo₂ has significant association with age in days of babies, birth weight, gestational age at birth and mode of sucking.

10. Findings related to association between post-test of sucking response with their selected demographic variables.

Findings revealed that sucking response has significant association with age in days of babies, birth weight, gestational age at birth and mode of sucking.

CONCLUSION

The main objective of the study was to assess the effectiveness of Nesting on bio-physiological parameters and sucking response among low birth weight babies. The findings indicate that there were significant improvement in bio-physiological parameters and sucking response among low birth weight babies after administration of Nesting. Hence Nesting was an effective intervention for improvement of bio-physiological parameters and sucking response among low birth weight babies.

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