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A comparative study to assess the effect of feeding performance on cheek stimulation versus lip stimulation among the preterm babies in selected hospitals

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Abstract

Introduction: Premature infants are defined as neonates born before 37 weeks gestational age a newborn infant, or neonate, is a baby under 28 days of age. During these first 28 days of life, the baby is at highest risk of dying. It is thus crucial that appropriate feeding and care are provided during this period, both to improve the infant's chances of survival and to lay the foundations for a healthy life. Problem statement a comparative study to assess the effect of feeding performance on cheek stimulation versus lip stimulation among the preterm babies in selected hospitals. **Materials and Methods Research Approach:** quantitative-qualitative integrated approach.

Research Design was used quasi experimental two group pretest-posttest experimental Research design. The General Systems Theory was used for the study which is developed by Ludwig Von Bertalanffy. The setting for this study was the selected hospitals in PCMC, Pune. Non Probability Convenience Sampling Technique was used for 60 sample the tool developed which includes section 1= the demographic variables section 2= Deals with modified Brazelton scale in that total 12 observations included in tool. Tool validity was done and tool found reliable. Study found feasible after pilot study.

Results: It has been observed that effect of feeding performance of preterm babies before lip stimulations pretest mean score is 9.7 and after given lip stimulations mean score is 11.6. This indicates that after stimulations average score rises to 11.6 respectively. It has been observed that effect of feeding performance of preterm babies before cheek stimulations pretest mean score is 10.8 and after given cheek stimulations mean score was 9.7. This indicates that after cheek stimulations mean score was decreased. After comparison cheek & lip stimulation p-value not significant (less than 0.05) hypothesis is rejected.

Conclusion: It has been observed that pretest knowledge average mean score is 11.6 and practice score is 7.8 after stimulation average score rises to 11.6 respectively. This indicates that the knowledge and practice grades improved after stimulation. After comparison cheek & lip stimulation p-value not significant (less than 0.05) hypothesis is rejected.

Keywords: Effect, feeding performance cheek stimulation, lip stimulation, preterm baby

Introduction

Premature infants are defined as neonates born before 37 weeks gestational age a newborn infant, or neonate, is a baby under 28 days of age. During these first 28 days of life, the baby is at highest risk of dying. It is thus crucial that appropriate feeding and care are provided during this period, both to improve the infant's chances of survival and to lay the foundations for a healthy life. The suckling reflex is most intense in the first 20-30 minutes after birth. In some birth cases, the infant is not allowed to suck at the breast at this time, and this delayed gratification may make suckling more difficult later on. The suckling reflex, although a reflex and thus automatic, can be reinforced and aided with chiropractic adjustments (manual manipulation). First, it is necessary to test the reflex and to observe the infant. The suck reflex is taken by the doctor placing a clean small finger into the baby's mouth at the front of the tongue; this is done after stroking around the lips to evoke and test the rooting reflex. Laying the finger on the front lip should cause the baby to go into the full reflex and pull the finger up and into the mouth, wrap the lateral sides of the tongue around the finger creating a medial trough and starting the peristaltic motion from front to back toward the soft palate and pharynx. This helps to improve the feeding program of baby the majority of infants born prematurely are not able to begin feeding from bowl and spoon or breast immediately after

birth due to low muscle tone, immature oral-motor control, and poor coordination of suck, swallow, and breathing. 1-3 Preterm generally need a period of full gavage feeding and then initiate oral feeding between 32 and 37 week of age. However, at this age, preterm infants may be unable to take in all prescribed formula orally for each feeding [5].

One of the limiting factors for early hospital discharge in preterm infants is there inability to feed sufficiently to obtain consistent weight gain. Therefore, feeding difficulty is one of the most significant issues faced by a preterm infants.

Methodology

Research Approach

Quantitative-qualitative integrated approach

Research Design

Quasi experimental two group pretest –posttest experimental Research design

Variables under study

Dependent variable

In this study dependent variable is feeding performance.

Independent variable

In this study independent variable is cheek & lips stimulation.

Research Setting

The setting for this study was the selected hospitals in PCMC, Pune.

Population

The population of the present study conducted in selected hospitals at PCMC, Pune.

Sample

The sample selected for the present study comprised of preterm baby of NICU from Dr. D. Y. Patil Hospital, Y. C. M Hospital at PCMC, Pune.

Sample Selection criteria (Inclusion and Exclusion)

Inclusion criteria

Preterm babies who are admitted in the hospital. Preterm those who born between 32 to 37 weeks of gestation week.

Exclusion criteria

Preterm babies who are critically ill.

Sample Size: 60

Sampling technique

Non Probability Convenience Sampling Technique

Development of tool

Opinions and suggestions were taken from the experts, which helped in determining the important areas to be included.

Description of the tool

It includes three sections:

Section I

This section involves items searching the information on demographic profile of a sample such as age, gender, day of life, gestational age, and weight of the baby.

Section II

Deals with modified Brazel tone scale in that total 12 observations included in tool to A comparative study to assess the effect of feeding performance on cheek stimulation versus lip stimulation among the preterm babies in selected hospitals. Total score is divided as poor (0-5), average (6-10) and Good (11-16)

Validity

The data collection tool was sent to experts along with a scoring sheet for content validity. Tool was sent to 20 experts out of whom, 15 were received back with their valuable suggestions and guidance for the perfection. The validity of the tool was established by experts from the different departments i.e. Paediatric Medicine, Paediatric nursing, stastician. They are suggested need to scoring is important for feeding observation tool. The valuable suggestions from the experts were used to receive a positive direction for the study. Certain items were modified as per their suggestions.

Ethical consideration

- Researcher had obtained approval from appropriate review boards to conduct the study.
- Researcher had taken formal permission from the parents of newborn to conduct study.
- Only the samples who had signed the consent form are included in the study.
- Confidentiality of the data is maintained strictly

Reliability

Reliability for knowledge was assessed using Inter rator method. Cohen's Kappa was found to be 0.85. Hence the tool is found to be reliable for the study.

Plan for data collection

- Ethical committee clearance
- Permission from the authorities of the Hospitals.
- Consent from parents of newborn
- The investigator approached the parents of selected samples, informed them regarding the objectives of the study and obtained their informed consent after assuring the confidentiality of the data.
- The data collection was done among selected sample so fpreterm. Modified Brazel tone scalewas used for observation.
- The duration of the data collection for each sample was 30 to 45 minutes.
- In the Group a feeding performance was observed for first 15 min after that cheek stimulation was done.
- In the Group B feeding performance was observed for first 15 min after that lip stimulation was done.

Data analysis and interpretation

- Items related to the background variables were be analyzed in terms of frequency and percentages.
- Scores was graded in 3 categories i.e. Poor, Average and Good
- Frequency distribution were plotted to represent the final score.
- Mean, standard deviation of the test was computed.
- The findings were documented in tables, graphs and diagrams.

Pilot study

After doing pilot study investigator found that it is feasible to carry out actual study. In these study data was done among selected samples of preterm babies.

Result

The major findings of the study were based on the objective of the study.

Section I Demographic characteristics

I have included gestational age, day of life, gender and weight of a baby in Demographic variable.

In lip stimulation group, 43.3% of them had gestational age 32-33 weeks, 30% of them had gestational age 34-35 weeks and 26.7% of them had gestational age 36-37 weeks. In cheek gestational group, 16.7% of them gestational had gestational age 32-33 weeks, 56.7% of them had gestational age 34-35 weeks and 26.6% of them had gestational age 36-37 weeks.

In Lip stimulation group, 0% of them had 1-7 days day of life, 60% of them had 8-14 days of life, 20% of them had 15-21 days of life and 20% of them had 22-28 days of life. In cheek stimulation group, 20% of them had 1-7 days of life, 36.7% of them had 8-14 days of life, 26.7% of them had 15-21 days of life and 16.7% of them had 22-28 days of life.

Section II: Analysis of data related to the effect of feeding performance of preterm babies, before & after cheek stimulation.

In pretest, 43.3% of the preterm babies had average feeding performance and 56.7% of them had good feeding performance.

In post-test, all of them had good feeding performance. On day fifth, 96.7% of them had average feeding performance and 3.3% of them had good feeding performance.

Section III: Analysis of data related to effect of feeding performance of preterm babies, before & after lip stimulation

In pretest, 70% of the preterm babies had average feeding performance and 30% of them had good feeding performance.

In posttest, effect of feeding performance of preterm babies, after lip stimulation on day fifth, 3.3% of them had average

feeding performance and 96.7% of them had good feeding performance.

Section IV: Analysis of data related to association of feeding performance with selected demographic variable. Since

P-value is not significant (less than 0.05), researcher found to have not significant association with feeding performance of preterm babies, so hypothesis rejected

Association of feeding performance with selected demographic variable was assessed using Fisher's Exact Test. The summary of Fisher's Exact Test is tabulated in this research.

After comparing between pre-test and post-test knowledge and practice score, it was proven that there was increase in effect of feeding performance on cheek stimulation and lip stimulation in preterm. Thus it can be concluded that oral stimulation is proved to be effective in effect of feeding performance on cheek stimulation and lip stimulation in Preterm's.

Comparison of Effect of feeding performance of preterm babies, before & after lip s stimulation vs cheek stimulation

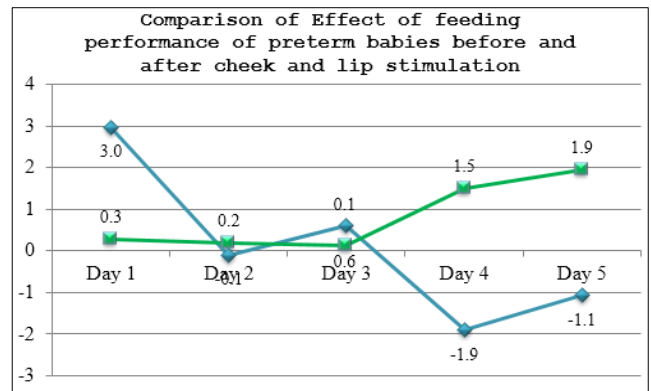


Fig 5: the line graph showing association of lip s stimulation vs cheek stimulation

Description of samples (babies) based on their personal characteristics

Table 1: Description of samples (babies) based on their personal characteristics in terms of frequency and percentages N=60

| Demographic variable | Lips stimulation | | Cheek stimulation | |
|----------------------------------|------------------|----------------|-------------------|----------------|
| | Frequency (f) | Percentage (%) | Frequency (f) | Percentage (%) |
| Gestational age | | | | |
| 32-33weeks | 13 | 43.3 | 5 | 16.7 |
| 34-35weeks | 9 | 30.0 | 17 | 56.7 |
| 36-37week | 8 | 32.1 | 8 | 26.6 |
| Day of life | | | | |
| 1-7day | 0 | 0.0 | 6 | 20.0 |
| 8-14day | 18 | 60.0 | 11 | 36.7 |
| 15-21day | 6 | 20.0 | 8 | 26.7 |
| 22-28 day | 6 | 30.0 | 5 | 16.6. |
| Gender | | | | |
| Male | 16 | 53.3 | 17 | 56.7 |
| Female | 14 | 46.7 | 13 | 43.3 |
| Weight of a baby 1.6-2 kg | 10 | 33.3 | 21 | 70.0 |
| 2.1-2.5kg | 20 | 66.7 | 9 | 30.0 |

Conclusion

It has been observed that pretest knowledge average mean score is 11.6 and practice score is 7.8 after stimulation average score rises to 11.6 respectively. This indicates that the knowledge and practice grades improved after stimulation. After comparison cheek & lip stimulation p-value not significant (less than 0.05) hypothesis is rejected.

Discussion

This study involved two group pre-test and post-test designs, non-probability convenient sampling technique used to draw samples. The size of the sample was 60 preterm.

A similar study was conducted on Effects of Pre feeding Oral Stimulation on Feeding Performance of Preterm the Objective was to investigate the effects of a pre feeding oral stimulation program on the feeding performance of preterm infants. The Methods a crossover design was used. Nineteen preterm infants who were in the transitional time to full oral feeding served as their own controls. A 5-min oral stimulation program was applied to infants prior to feeding in two of 4 feedings on two consecutive days. The Results was There were two significant findings: (1) Compared to the control condition, infants in the intervention condition achieved a greater intake rate in the initial 5 min of the feeding ($P=0.021$). (2) After receiving oral stimulation, a higher percentage of infants moved to the drowsy or quiet alert state from sleep or restlessness before feeding, both on Day 1 ($P=0.016$) as well as Day 2 ($P=0.016$). No significant differences were found in other feeding parameters, feeding-induced physiological changes (peripheral oxygen saturation levels and pulse rate) and Behavioural states between two feeding conditions. The Conclusions was Oral stimulation had a modulating effect on the pre feeding Behavioural states and short-lived beneficial effects on the feeding efficiency of preterm infants.

In this study in pre-test, 70% of the preterm babies had average feeding performance and 30% of them had good feeding performance. In day first post-test, all of them had good feeding performance. In this my study in pretest, 43.3% of the preterm babies had average feeding performance and 56.7% of them had good feeding performance. In post-test, all of them had good feeding performance. On day fifth, 96.7% of them had average feeding performance and 3.3% of them had good feeding performance.

Limitations

The study is limited to:

- Care takers who can understand English Marathi Hindi.
- Limited setting and samples.
- Duration of data collection.

Recommendations

Following study can be undertaken in relation to present study.

- A similar study can be replicated by taking larger sample of care givers with different demographic characteristics.
- The study can be undertaken in different settings and different target population such as Parents and family members.

- A case study can be done to assess the effect of feeding performance A Comparative study can be done between the oral stimulation and intraoral stimulation.
- A similar study may be repeated with a control group for more generalization.
- A study can be conducted by using different oral stimulation technique like soother, finger.

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“Lord, thank you for walking with us through the seasons of our lives. Let us be grateful to the people who make us happy; they are the charming gardeners who make our souls blossom.”

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