A Study at Bal Rugnalay in Paratwadha Maharastra to Provide Teaching Program Plan and to Assess Effectiveness of Non Nutritive Sucking or Pacifier in Promoting Physiologic Stability and Nutritional Status among Preterm Infants Admitted in NICU

Rupa Magarde
Obstetric and Gynecological Nursing/ JJT University
Corresponding author- Rupa Magarde[1]

Abstract:- It has been demonstrated that non-nutritive sucking greatly shortens the period between gavage feeding and full oral feeding. Additionally, it might shorten hospital stays. Non-nutritive sucking pre mature infant which makes the baby who is fed through a tube feel a bloating of the stomach. Due to which they do not feel hungry and it calms them down. It also improves the tone of their oral muscles. In this study pretest-posttest experimental one-group research design is employed. Thirty preterm newborns admitted to the NICU make up the sample for this study. Non-probability purposive sampling was the method employed in this investigation. Mothers' average knowledge of nonnutritive sucking in preterm children shows that the majority of preterm infants 20(60.60%) were good 06(20%) knowledge and some preterm infants have 05(16.66) category which are not aware or poor average 04 (13.33%) pretest score in the present study. The mean pre-test score for preterm infants' awareness of non-nutritive sucking was 6+_1.94. Post-test scores revealed preterm infants' knowledge of nonnutritive sucking, and the majority of preterm infants in the current study had good post-test knowledge scores, with a 00 (00%) score. The average outcome of the test was 9.7+_3.6, indicating great understanding of non-nutritive sucking in preterm newborns.

Keywords:- Non Nutritive Sucking, Gavage, Premature, Oral Muscles, Knowledge.

I. INTRODUCTION

Non-nutritive sucking means when a newborn sucks something that is very comfortable for him without getting any kind of nutrition. Like a pacifier or your own finger. This is essential for the development of any newborn baby because the fetus learns the art of sucking in the womb itself. He starts trying to suck and swallow in 13 to 16 week Babies suck on the pacifier when they have no milk to swallow and they can do this at a rate of 2 times per second. Babies suck about 6 to 8 times in one. According to a 2016 WHO review, non-nutritive sucking helps improve the sucking ability and digestion of premature babies. According to WHO, non-nutritive sucking can be used before, during 3E1OR after gavage feedings for premature babies and can be used before or after oral feedings It has been established that non-nutritive sucking greatly shortens the period between gavage feeding and full oral feeding. Additionally, it could minimize hospital stays.

Non nutritive sucking pre mature infant which makes the baby who is fed through a tube feel a bloating of the stomach. Due to which they do not feel hungry and it calms them down. It also improves the tone of their oral muscles.

Non-nutritive sucking is not harmful as long as a child does not stop it by the age of 3 years. Non-nutritive sucking activates many muscles and stimulates and promotes bone growth and increases the physiological stability of the baby. It is useful for the nutrition of the baby and also promotes facial development.

Non-nutritive sucking is very important for the nutrition of the newborn baby. It helps the baby to explore the surrounding world, keeps the baby calm. And strengthens the sucking behavior and digestive system of the baby. It enhances the morphological development, bone development and facial development of the baby. Strengthens the muscles. Provides energy to the baby and helps in saving energy. It is also helpful in increasing the weight of a premature baby.

II. METHODOLOGY

A. Research Approach
The methodology research approach outlines the fundamental steps involved in conducting research.

B. Research Design
A pre-experimental one-group pretest and post-test research design is employed in this study.

C. Setting of the Study

The investigation was carried out in Maharastra's Bal Rugnalay Paratwadha.

D. Population

➢ *Target population*

Preterm infants.

➢ *Accessible population*

Preterm infants admitted in NICU in Bal Rugnalay Paratwadha Maharastra.

E. Sample

The sample for the present study comprise of 30 preterm infants in admitted in NICU at Bal Rugnalay Paratwadha Maharastra.

➢ *Sampling Technique*

Non-probability purposive sampling was the method employed in this investigation.

➢ *Sample Size*

In present study sample comprised 30 preterm infants admitted in NICU at Bal Rugnalay paratwadha Maharastra.

F. Sample Selection Criteria

➢ *Inclusion Criteria*

- Pre term infants admitted in NICU at Bal Rugnalay Paratwadha maharastra.
- Parents or guardian of pre term infants who are permitting their babies to participate in the study.
- Pre term infants with the gestation age between 32-37 weeks.

➢ *Exclusion Criteria*

- Pre term infants who are not admitted in NICU.
- Those who are unwilling to take part in this research
- Pre term infants suffering from congenital anomalies or other surgical and medical complications.

G. Tools for Data Collection

➢ Section A:- Socio demographic variables like age, sex, gender, types of family, previous knowledge regarding non nutritive sucking etc.

➢ Section B:- Multiple choice question are used for assessing physiological stability and nutrition among pre term infants.

➢ Section C:- Observation checklist.

H. Plan for Data Analysis

Knowledge and skill score will analysed in term of frequency, percentage, mean and standard deviation.

III. RESULT

Table 1:- Distribution of the Analyzed Subjects' Pretest Scores by Frequency and Percentage

Category and test score	Frequency (N)	Frequency Percentage (%)
Poor	04	13.33%
Good	20	66.66%
Excellent	06	20%
Total	30	100%

Figure table 1 concerned with the information on marks scored in pretest by studied subject awareness of non-nutritive sucking in premature babies. Test results revealed the preterm infants' current understanding of nonnutritive sucking, and it was shown that the majority of the premature 20 (66.66%) were good 06 (20%) were excellent knowledge and some preterm infants have 04 (13.33%) were poor category which are not aware or pretest score in the present study.
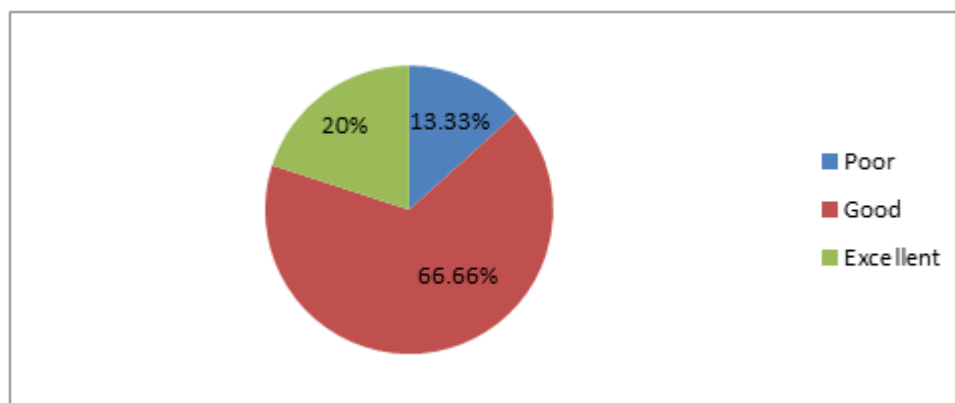

Fig 1 Distribution of the Analyzed Subjects' Pretest Scores by Frequency and Percentage

Table 2 Knowledge Score Mean as Well as Standard Deviation

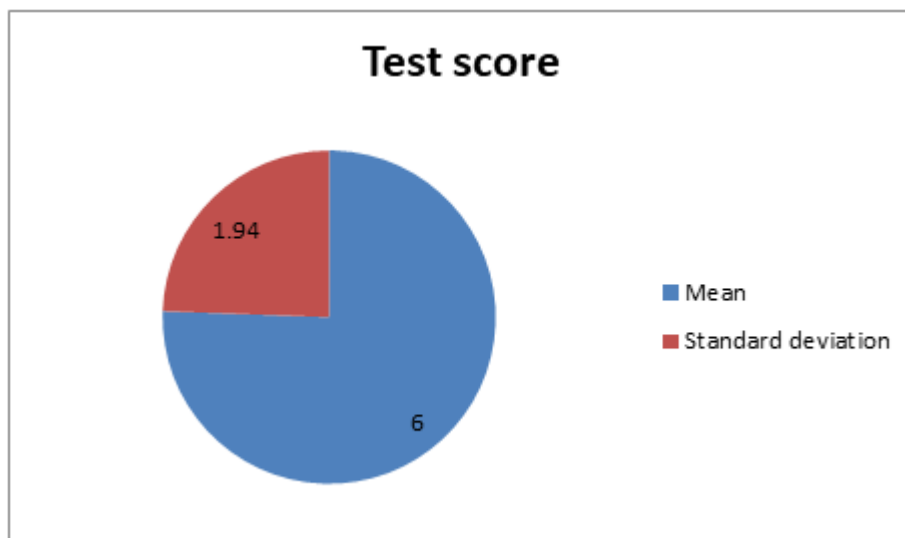| Knowledge test	Mean	Standard Deviation
Test score	6	1.94

Fig 2 Knowledge Score Mean as Well as Standard Deviation

Table 2 displays the mean, percentage of mean, and standard deviation of test scores. The mean pretest score for knowledge was 6+_ 1.94, while in knowledge regarding non-nutritive sucking in premature babies. The first second goal of the current study is partially met by the tables in section II, which confirm show there is a substantial difference in the mean test score.

Table 3 -Distribution of Post-Test Scores by Frequency and Percentage for the Patients Under Study

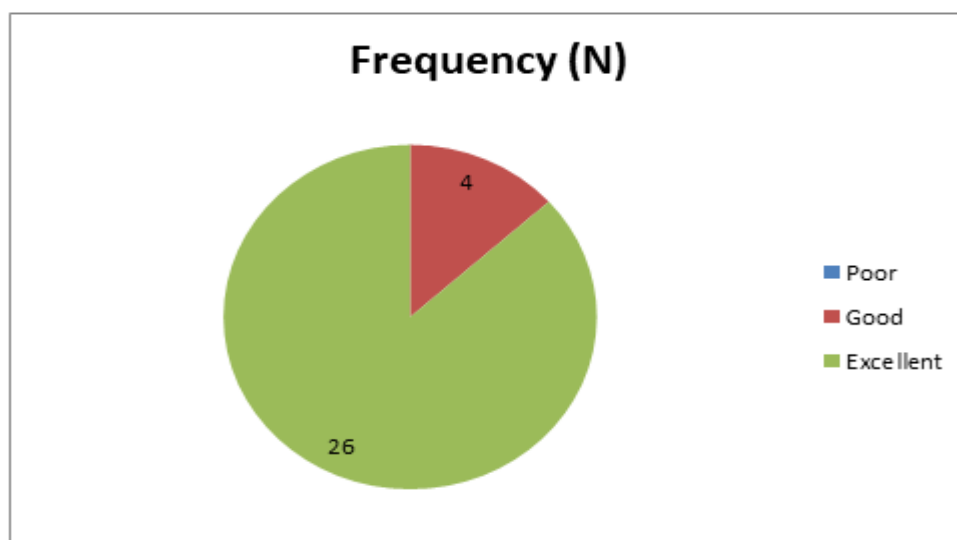| Category and test score	Frequency (N)	Frequency Percentage (%)
Poor	00	00%
Good	04	13.33%
Excellent	26	86.66%
Total	30	100%

Fig 3 Distribution of Post-Test Scores by Frequency and Percentage for the Patients Under Study

Figure table 3 concerned with the information on marks scored in post test by studied subject knowledge regarding non nutritive sucking among preterm infants. The existing knowledge regarding awareness of nonnutritive sucking in premature babies. Post-test results demonstrated the current understanding of nonnutritive sucking in preterm newborns, and it was shown that the majority of the pre term infants mothers 26 (86.66%), other postnatal mothers have 04 (13.33%), and 00 (00%) were poor and no any poor knowledge score after the test in the current study.

Table 4 - Knowledge Score Mean and Standard Deviation

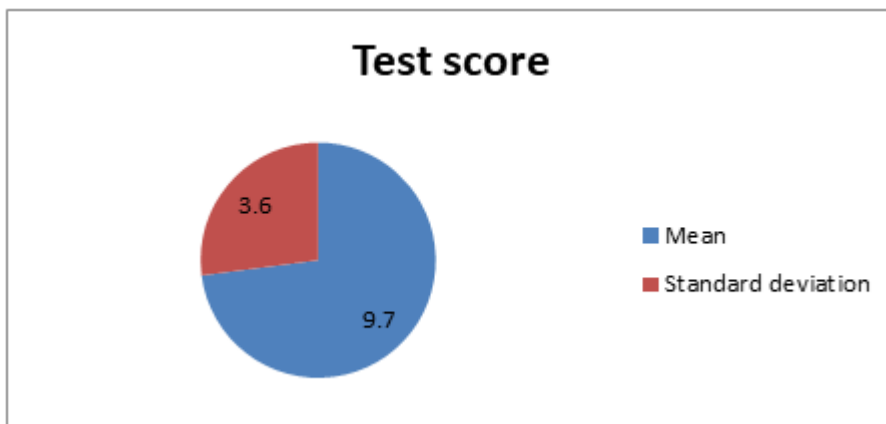| Knowledge test	Mean	Standard Deviation
Test score	9.7	3.6

Fig 4 Knowledge Score Mean and Standard Deviation

The data pertaining to the mean, percentage of mean, and the standard deviation of post-test scores are displayed in table 4 The mean post-test score for knowledge of non-nutritive sucking in preterm infants was 9.7+_3.6. The first second goal of the current study is partially met by the tables in section II, which confirm indicate there is indeed an important variation in the mean test scores.

➢ **Section III-** *Relationship between Test Knowledge Results and Particular Demographic Factors:*

Table 5 Relationship between Age and Pretest Score:

Age	Test Scores			Total
	POOR	GOOD	EXCELLENT	
1-3 days	03	14	04	21
4-6 days	00	05	02	07
7-9 days	01	00	01	02
Total	04	19	07	30
X=263.65		p>0.05 (Insignificant)		

Table 5 displays the correlation between age test results. The Chi-Square test probability value, for four degrees of freedom, is 263.65, indicating an insignificant value (p>0.05).

Table 6 Association of Gender with Pretest Score:

Gender	Test Scores			Total
	POOR	GOOD	EXCELLENT	
Male	01	08	03	12
Female	03	11	04	18
Total	04	19	07	30
X=55.797		p>0.05 (Insignificant)		

The current table 6 displays the correlation between test scores by gender. For two degrees of freedom, the chi-square test probability value is 55.797, indicating an important value (p>0.05).

Table 7 Association of Family Type with Pretest Score

Family Type	Test Scores			Total
	POOR	GOOD	EXCELLENT	
Nuclear	02	17	01	10
Joint	02	12	06	20
Total	04	19	07	30
X=61.389		p>0.05 (Insignificant)		

The current table 7 displays the correlation between family type test scores. For two degrees of freedom, the chi-square test probability value is 61.389, indicating a significant score (p>0.05).

Table 8 Association of Previous Knowledge Regarding Non Nutritive Sucking with Pretest Scores:

Previous Knowledge	Test Scores			Total
	POOR	GOOD	EXCELLENT	
Yes	00	01	02	03
No	04	18	05	27
Total	04	19	07	30
X= 445.328		p>0.05 (Insignificant)		

Table 8 displays the correlation between prior knowledge and non-nutritive sucking test scores. For two degrees of freedom, the chi-square test probability value is 445.328, indicating a significant value (p>0.05).

Table 9 Association of Educational Status of Mother with Pretest Scores

Educational Status	Test Scores			Total
	POOR	GOOD	EXCELLENT	
Illiterate	01	01	00	02
Primary education	04	05	00	09
Secondary education	01	11	04	16
Graduate	00	00	13	03
Total	06	17	07	30
X= 135.85		p>0.05 (Insignificant)		

Table 9 displays the correlation between test scores and educational status. For two degrees of freedom, the chi-square test probability value is 135.85, indicating a significant value (with a p>0.05).

Table 10 Association of Living Area with Pretest Score:

Living Area	Test Scores			Total
	POOR	GOOD	EXCELLENT	
Rural	02	09	01	12
Urban	02	10	06	18
Total	04	19	07	30
X= 51.01		p>0.05 (Insignificant)		

Table 10 displays the correlation between living area test scores. For two degrees of freedom, the chi-square test probability value is 51.01, indicating a significant score (p>0.05).

Table 11 Association of Age with Post Test Score:

Age	Test Scores			Total
	POOR	GOOD	EXCELLENT	
1-3 days	00	03	19	22
4-6 days	00	00	06	06
7-9 days	00	01	01	02
Total	04	19	07	30
X=26.93		p>0.05 (Insignificant)		

The current table 11 displays the correlation between age test scores. For four degrees of freedom, the Chi-Square test probability value is 26.93, indicating an insignificant value (p>0.05).

Table 12 Association of Gender with Post Test Score:

Gender	Test Scores			Total
	POOR	GOOD	EXCELLENT	
Male	00	01	11	12
Female	00	03	15	18
Total	00	04	26	30
X=62.908		p>0.05 (Insignificant)		

The current table 12 displays the correlation between test scores by gender. For two degrees of freedom, the chi-square test probability value is 62.908, indicating a significant result (p>0.05)

Table 13 Association of Family Type with Post Test Score:

Family Type	Test Scores			Total
	POOR	**GOOD**	**EXCELLENT**	
Nuclear	00	01	07	10
Joint	00	03	19	20
Total	00	04	26	30
	X=38.638	p<0.05 (significant)		

The current table 13 displays the correlation between family type test scores. For two degrees of freedom, the chi-square test probability value is 38.638; this indicates an important value (p<0.05).

Table 14 Association of Previous Knowledge Regarding Non Nutritive Sucking with Post Test Scores:

Previous Knowledge	Test Scores			Total
	POOR	**GOOD**	**EXCELLENT**	
Yes	00	00	03	03
No	00	04	23	27
Total	00	04	26	30
	X= 28.08	p<0.05 (significant)		

The current table 14 displays the correlation between prior knowledge and non-nutritive sucking test scores. For two degrees of freedom, the chi-squared test probability value is 28.08, indicating an important value (p<0.05).

Table 15 Association of Educational Status of Mother with Pretest Scores

Educational Status	Test Scores			Total
	POOR	**GOOD**	**EXCELLENT**	
Illiterate	00	02	00	02
Primary education	00	02	07	09
Secondary education	00	00	16	16
Graduate	00	00	03	03
Total	00	00	26	30
	X= 181.62	p<0.05 (significant)		

The current table 15 displays the correlation between test scores and educational status. For two degrees of freedom, the chi-square test probability value is 181.62, indicating an important value (p<0.05).

Table 16 Association of Living Area with Pretest Score:

Living Area	Test Scores			Total
	POOR	**GOOD**	**EXCELLENT**	
Rural	00	02	10	12
Urban	00	12	16	18
Total	00	04	26	30
	X= 53.29	p>0.05 (insignificant)		

The current table 16 displays the correlation between living area test scores. For two degrees of freedom, the chi-square test probability value is 53.29, indicating a significant outcome (p>0.05).

IV. DISCUSSION

The majority of preterm newborns (20, or 60.60%) had good 06 (20%) knowledge of nonnutritive sucking, whereas other preterm infants had 05 (16.66) category, which is not aware of it, or had a poor averaged 04 (13.33%) the prior test score in the current study.

At BAL RUGNALAY, Paratwadha, Maharastra, the mean pre-test score for preterm infants' awareness of non-nutritive sucking was 6+_1.94. Therefore, the tables in section II confirm that there is any major disparities in the mean test scores, which helps to partially meet the study's first and second objectives.

Post-test scores revealed preterm infants' knowledge of nonnutritive sucking, and the majority of preterm infants in the current study had good post-test knowledge scores, with a 00 (00%) score.

At BAL RUGNALAY Paratwadha Maharastra, knowledge of non-nutritive sucking in preterm newborns is excellent, whereas the mean post-test score was 9.7+_3.6. Therefore, the tables in section II confirm that there is an important variance in the mean test scores, which partially satisfies the study's first and second objectives.

V. CONCLUSION

In order to evaluate the participants' knowledge and abilities beyond demographic variables like age, gender, family type, prior knowledge of non-nutritive sucking, mother's educational status, and family living area, a self-structured questionnaire consisting of eleven questions was given to them. The investigator then reviewed the participants' answers.

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