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A Study To Assess The Effectiveness Of Oro-Motor Stimulation In Improving Sucking Reflex Among Preterm Neonates Admitted In Nicu At Smvmch, Puducherry.

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ABSTRACT

Premature neonates and those having low birth weights account for the highest mortality rate among infants during the first year of life. Because weight is often indicative ofprematurity and physiological immaturity, a premature or a low birth weight infant isconsidered to be one who weighs 2500 g (5 pounds ounces) or less at birth. Objectives: To assess the sucking reflex before and after intervention by using breast feeding assessment scale among preterm neonates. To evaluate the effectiveness of Oro-motor stimulation in improving sucking reflex amongpreterm neonates after intervention. To associate the effectiveness of Oro-motor stimulation in improving sucking reflex amongpreterm neonates with their selected demographic variables. A experimental study was conducted among preterm neonates at Sri Manakula Vinayagar Medical college and Hospital after obtaining formal permission from the hospital authority and institutional ethical committee. A study will be conducted using quasi experimental one group pre-test and post-test design. Preterm neonates are selected using purposive sampling technique. The sample size consists of 30 preterm neonates in NICU. The pre-intervention level of sucking reflex was assessed by using breast feeding

assessment scale. Under the sterile aseptic technique, premature infant Oro-motor stimulation was perform with seven techniques. After the seven days of intervention Breast feeding assessment scale was used to interpret. After that data was analyzed by using descriptive and inferential statistics method and interpretations were made on the basis of the objectives of the study. This study was assessed the effectiveness of oral stimulation on improving sucking reflex among pre-term infants. After intervention, the mean score was 7.17 with a standard deviation of 1.367. The calculated 't' value was 9.898, and the p-value was $p<0.01$. Hence it is highly significant. This clearly shows that there is significant difference between before and after intervention mean level of sucking reflex among pre-term neonate. The pre-term neonates who were received oral stimulation had a significant improvement of Sucking reflex compared to the pre-term neonates that who were not received oral stimulation

INTRODUCTION

Premature neonates and those having low birth weights account for the highest mortality rate among infants during the first year of life. Because weight is often indicative ofprematurity and physiological immaturity, a premature or a low birth weight infant is considered to be one who weighs 2500g (5 pounds ounces) or less at birth. The newborn infant's behavior is evidence of immaturity in that the normal reflexes and the ability to carry on vital functions are lacking.

"Preterm birth is now the leading cause of child deaths, accounting for more than 1 in 5 of all deaths of children occurring before their 5^{th} birthday. Preterm survivors can face life long health consequences, with an increased likelihood of disability and developmentaldelays. The premature infant's chances of survival are much smaller than those of the full-term infant. The smaller the infant, the lower are the chances of survival. About half the deaths in the premature group occur on the first day of life.

Preterm infants frequently experience oral feeding difficulties because of their under develop cardiovascular system, central nervous system, and oral musculature. Oral feeding difficulties often affect an infant's ability to reach independent oral feeding, prolong hospital stay and may lead to long term feeding difficulties. Infant born before 37 weeks gestational age are at an increased risk for difficulties associated with oral feeding from the mother's breast or from a bottle.Common oral feeding problems include, Absence of a successful suck-swallow reflex. Oral textural aversions leading to the rejection of food in the oral cavity. administered to the preterm neonates they reach, first oral feeding earlier, have improved sucking frequency,

better feeding performance in terms of overall intake and rate of milk transfer, shorter transition to independent oral feeding, better daily weight gain, earlier transition from spoon-feeding to breastfeeding, a shorter duration of hospital stay, , better score (the instrument used for assessment of early motor development) than the control group to objectively evaluate the potential of PIOMI for improving the current status of oral feeding in preterm infants.

Preterm neonates might face certain problems while oral feeding is attempted such as, weak, irregular rooting reflexes and sucking, inverted lower lips drew inward during breastfeeding, biting pattern, increased perioral muscle tone, hypertonic tongue.

1.1. NEED FOR THE STUDY:

An estimated **13.4 million babies** were born pre-term in **2020**, with nearly 1 million dying from preterm complications, according to a new report released by United Nations agencies and partners today. This is equivalent to around 1 in 10 babies born early (before 37weeks of pregnancy) worldwide. The prevalence rate of preterm birth was **10.86%.** The preterm birth rate is 4% in 2021, From 10.1% in 2020 to 10.5% in 2021**.**

The majority of preterm births occur in southern Asia and sub-Saharan Africa, but preterm birth is truly a global problem. There is a dramatic difference in survival of premature babies depending on where they are born. For example, more than **90%** of extremely preterm babies (less than 28 weeks) born in low-income countries die within the first few days of life, yet less than **10%** of extremely preterm babies die in high-income setting. The United States in 2021, **8.8%** of singleton births were preterm, compared **to 63.0%** of multiple births. Multiple births represent 3.2% of live births in the United States. Current multi-fetal pregnancy is one of the most consistently identified risk factors for preterm birth.

According to UNICEF (2021), **40%** of neonatal deaths in India occur during labor orthe first 24 hours after birth. Prematurity **(35%),** neonatal infections **(33%)**, birth asphyxia **(20%)**, and congenital malformations (9%), are the leading causes of new-born deaths. Premature births account for 3.5 million of the **27 million babies** born in India each year (basedon 2010 data). New born deaths (those in the first month of life) account for 40 percent of all deaths among children under five years of age.

According to the state health department (**2021-22).** In Tamil Nadu, the average low- birth-weight rate ranges between **20 and 22%.** At least 13 out of every 100 babies born weighed less than 2.5 kg, a significant decrease from the city's 8 out of 100 low weight births in 2017-18. The preterm birth rate in **Puducherry is 13 per 1000 live births**. Sleep, comfort, and minimal stress for preterm newborns will improve brain development and prevent long- term complications.

Preterm neonates might face certain problems while oral feeding is attempted suchas, weak, irregular rooting reflexes and sucking, inverted lower lips drew inward during breastfeeding, biting pattern, increased perioral muscle tone, hypertonic tongue. In later life, preterm may show signs of swallowing disorders requiring specialist's attention such as in- coordination between sucking and swallowing, weak feeding, alterations in breathing or apnea during the meal, excessive gagging or frequent coughing during the meal, dysphagia, marked irritability, nasal regurgitation, and lethargy during the meal, feeding time more than 30–40 min, delay in unexplained refusal of food, under-nutrition, cranio-facial anomalies andfailure to thrive, persisting drooling beyond 5 year.

1.2 STATEMENT OF THE PROBLEM:

A study to assess the effectiveness of Oro-motor stimulation in improving sucking reflexamong preterm neonates admitted in NICU at SMVMCH, Puducherry.

1.3 OBJECTIVES:

- To assess the sucking reflex before and after intervention by using breast feeding assessment scale among preterm neonates.
- To evaluate the effectiveness of Oro-motor stimulation in improving sucking reflex amongpreterm neonates after intervention.
- To associate the effectiveness of Oro-motor stimulation in improving sucking reflex amongpreterm neonates with their selected demographic variables.

1.5. ASSUMPTION:

The investigator assume that,

- The manual Oro-motor stimulation will increase the oral feeding of the pretermneonates.
- The preterm neonates will adequately get good latch-on, sucking frequency and help in maintain the oral feeding after Oro-motor stimulation.

REVIEW OF LITERATURE

Annushree M [2021] has conducted A Study On, Pre-feeding Oro-motor Stimulation for Improving Oro-motor Function in Preterm Neonates. Aim of study was to determine effect of Premature Infant Oral Motor Intervention program on Oro-motor function and time to full independent spoon feeds in preterm infants. Methods- 50 neonates (28-34 weeks) randomized to receive either Oro-motor stimulation along with routine care (n=25, intervention), or routine care alone (n=26, control). Results of this study is spoon-feeding was achieved earlier in the intervention group as well as significantly higher number of babies were on partial breast feed at discharge. The study concludes that it can be practiced in all stable preterm neonates even in moderate preterm with positive effect.

Brenda L (2018) conducted a study on effect of the Premature Infant Oral Motor Intervention (PIOMI) on feeding progression of pre-term infants. The study wasconducted in McGill University. A total of 19 infants from one level III NICU born between 26 and 29 weeks. Ten in the experimental group and nine in the control group. A randomized, clinical trial was conducted to examine outcomes related to the newly developed PIOMI. Beginning at 29 weeks, the experimental group received the PIOMI for seven consecutive days. The control group did not receive any intervention. The PIOMI was well tolerated by 29-weeks as evidenced by physiological and behavioral, infants who received the once-daily 27 PIOMI transitioned from their first oral feeding to oral feedings five days sooner than controls (p=0.043) and were discharged 2.6 days sooner than control group. This work supports further study on the use of the PIOMI with pre-term infants to enhance oral feeding skills of pre-term infant.

METHODOLOGY

The research approach is the most essential part of any study. A Quantitative research approach was used for this study. A study will be conducted using pre-experimental one group pre-test and post-test design. The target population for the study includes all preterm neonates admitted in at Sri Manakula vinayagar medical College and hospital. In this study, the sample comprises of Preterm neonates with gestational age of 28 weeksto 36 weeks admitted in NICU, who full filled the inclusion criteria at SMVMCH. In this study, the sample size consists of 30 preterm neonates. A purposive sampling technique was adopted for this study. The duration of this study is 6 weeks

Inclusion criteria:

- All preterm neonates born with gestational age 28 week to 36 week admitted for a period not less than 7 days.
- All preterm neonates admitted in NICU at level I and level II care.
- Both male and female preterm neonates.

Exclusion criteria:

Preterm neonates admitted in NICU at level III Care (preterm under invasive or non- invasive ventilation support, congenital anomalies, and RDS-respiratory distress syndrome).

3.12. DESCRIPTION OF TOOLS:

Tool consists of the three part are:

PART I: In the first phase of data collection. The participant is selected and obtained consent from the mother delivered preterm baby. Phase I has 3 sections that is section a), b)and c)

a) rder, birth asphyxia, type of feeding.

PART II : BREAST FEEDING ASSESSMENT

It consist of Breast feeding assessment such as Latch-on, length of time before latch and suckle,suckling, Audible swallowing, Mom's evaluation

PART III : PREMATURE INFANT ORAL MOTOR INTERVENTION

It consist of PIOMI (premature infant oral motor intervention) for stimulating the oral feeding. It describes totally 8 components, Cheek C-stretch, lip roll, lip curl or lip stretch, Gum massage, Lateral border of tongue, Mid-blade of tongue, Elicit suck, Support non-nutritive sucking.

STATISTICAL ANALYSIS :

Data analysis done in accordance with the objectives of the study. The data was analyzed by both descriptive and inferential statistics. The data was organized, tabulated, summarized, and analyzed. The plan for data analysis was divided as follows. Frequency distribution, mean and standard deviation is used to assess the demographic Variables and assess the effectiveness of Oro-motor stimulation in improving the sucking reflex among preterm neonates.

ANALYSIS AND INTERPRETATION

Section A: Description of demographic variables among mother of preterm neonates

Table 4.1: Distribution of demographic variables among mother of preterm neonates

(N= 30)

S.no	Demographic variables	Frequency (N)	Percentage (%)
1.	**Age of Mother**		
	a) 18 to 23years	8	26.7%
	b) 24 to 29 years	14	46.7%
	c) 30 to 35 years	7	23.3%
	d) Above 35 years	1	3.3%
2	**Type of Marriage**		
	a) Consanguineous Marriage	12	40%
	b) Non-Consanguineous Marriage	18	60%
3	**Age of Marriage**		
	a) Less than 18 Years	2	6.7%
	a) 19 to 25	23	76.7%
	b) 26 to 30	5	16.7%

Table 4.1: The above table show that, With regards to age of mothers the majority 14 (46.7%) were in age between 24-29 years, 8(26.7%) were in the age group of 18 to 23 years, 7(23.3%) were in the age group of 30 to 35 years, 1(3.3%) were in the age group of above 35 years. With regards to type of marriage the majority 18 (60%) were in non-consanguineous marriage, 12(40%) were in Consanguineous Marriage. With regards to age of Marriage majority 23(76.7%) were in 19 to 25 years, 5(16.7%) were in 26 to 30, 2(6.7%) were in age group of less than 18 years.

(N= 30)

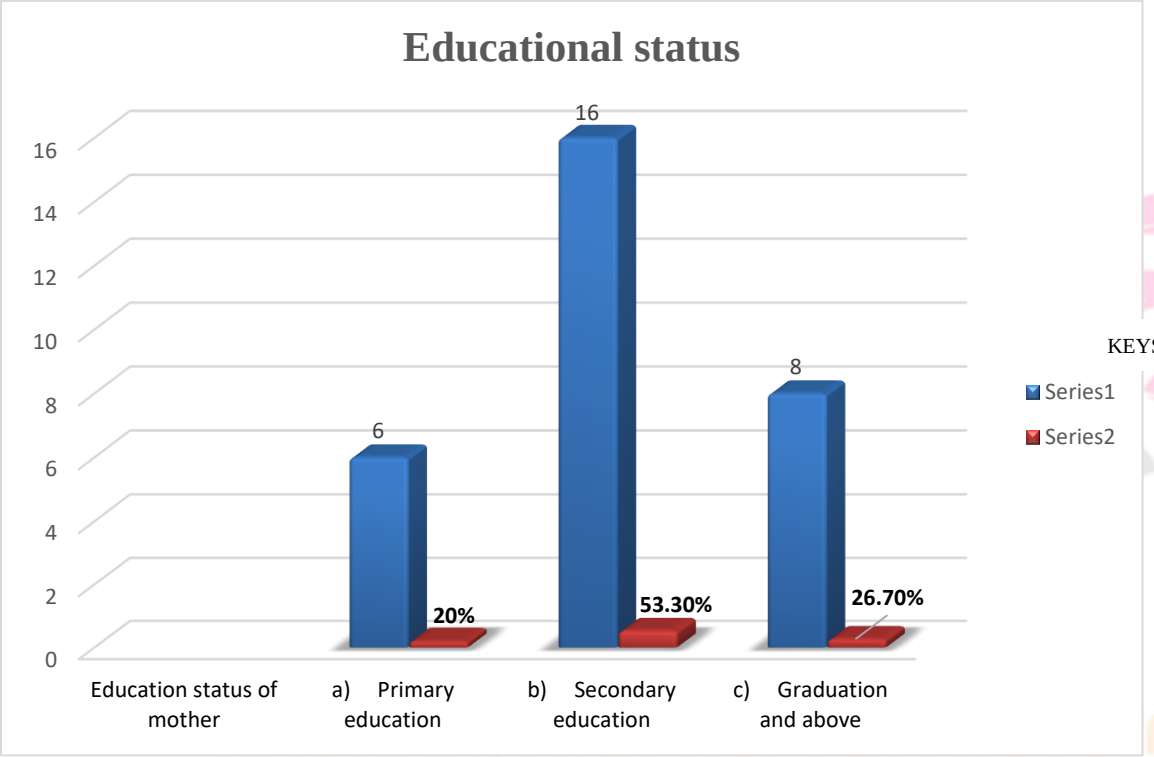

Figure 3 : Distribution of Education among mother of preterm neonates

Figure 3: From the above figure, it is understood that, in aspect of mother educational status, majority 16(53.3%) were in secondary education, 8(26.7%) were in graduation and above, 6(20%) were in primary education

(N= 30)

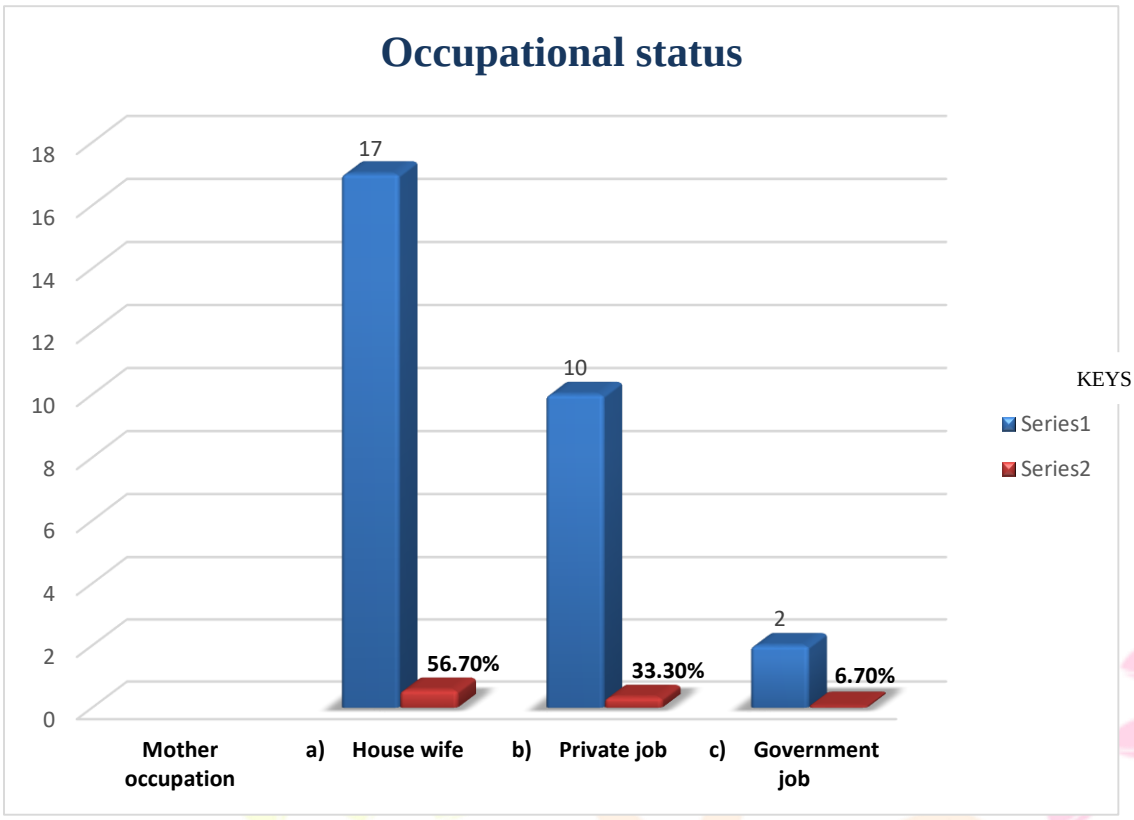

Figure 4 : **Distribution of Occupation among mother of preterm neonates**

Figure 4: The above figure depicts the mothers occupation, the majority 17(56.7%) of mothers were in house wife, 10(33.3%) were in private job, 3(10%) were in government job.

Table 4.2: Distribution of demographic variables among mother of preterm neonates

(N= 30)

S.NO	Demographic variables	Frequency (N)	Percentage (%)
6	**Area of residence**		
	a) Rural	15	50%
	b) Urban	15	50%
7	**Type of family**		
	a) Joint family	14	46.7%
	b) Nuclear family	16	53.3%
8	**Family Income**		
	a) Rs >5000	2	6.7%

	b) Rs 5000- 10,000	9	30%
	c) Rs 10000 - 20000	15	50%
	d) Above 20,000	4	13.3%

Table 4.2: The above table represent that, In the aspect of area of residence the 15(50%) were in rural, 15(50%) were in urban. With regards of type of family of, majority 16(53.3%) belongs to nuclear family, 14(46.7%) belongs to joint family. With regards to family income, majority 15(50%) were in between Rs.10000 to 20000, 9(30%) were in between Rs.5000 to 10000, 4(13.3%) were in between above Rs.20000, 2(6.7%) were in between Rs 5000 of monthly family income

Section B: Description of obstetrical variables among mother of preterm neonates

Table 4.3: Distribution of obstetrical variables among mother of preterm neonates

(N= 30)

S. No	Obstetrical variables	Frequency (N)	Percentage (%)
1	**Gravida of mother**		
	a) Primi gravida	17	56.7%
	b) Elderly primi gravida	6	20%
	c) Multipara	7	23.3%
2	**Mode of delivery**		
	a) Normal Vaginal Delivery	7	23.3%
	b) Caesarean section	22	73.3%
	c) Vacuum delivery	1	3.3%
3	**History antenatal illness**		
	a) Yes	11	36.7%
	b) No	19	63.3%
4	**History Corticosteroid**		
	a) No	30	100%

Table 4.2: The above table represent that, in the aspect of gravida of the mother, majority 17(56.7%) were belongs to primi gravida, 7(23.3%) were belongs to multipara, 6(20%) belongs to elderly primi gravida. With regards to mode of delivery, majority 22 (73.3%) of mother had caesarean section, 7(23.3%) were belongs to normal vaginal delivery, 1(3.3%) were belongs to vacuum delivery. With regards to history of antenatal illness, majority 19(63.3%) were belongs to no category, 11(36.7%) were belongs to no category

Figure 5: Distribution of Previous abortion among mother of preterm neo KEYS

Figure 5: From the above diagram it is understood that, in previous abortion 21 (70%) of mother had no previous abortion, 9(30%) of them had previous abortion.

(N= 30)

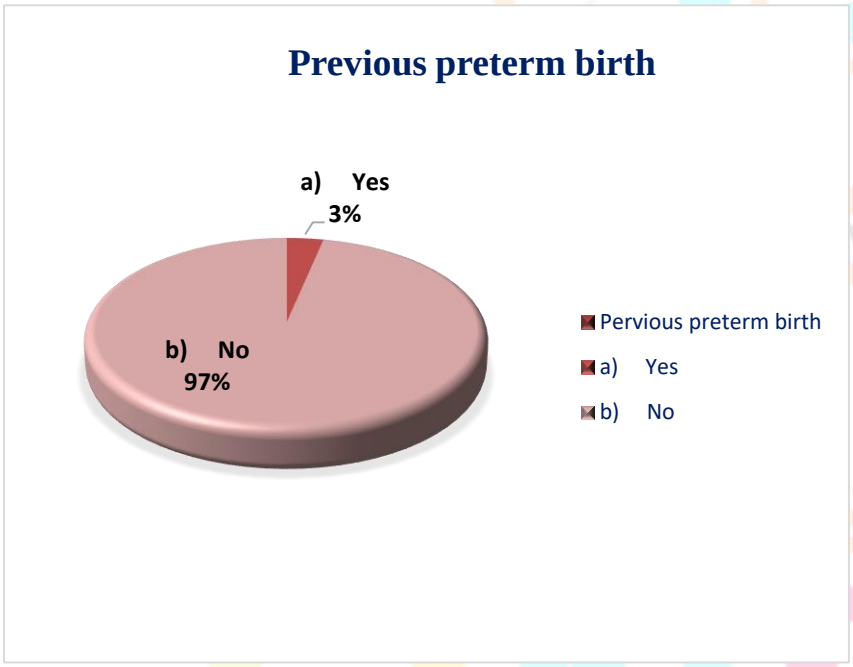

Figure 6: Distribution of Previous preterm birth history among mother of preterm neonates

Figure 6: From the above diagram it is understood that, in previous preterm birth history, majority 29(97%) of mothers had no previous history, 1(3%) had previous history of previous preterm birth.

(N= 30)

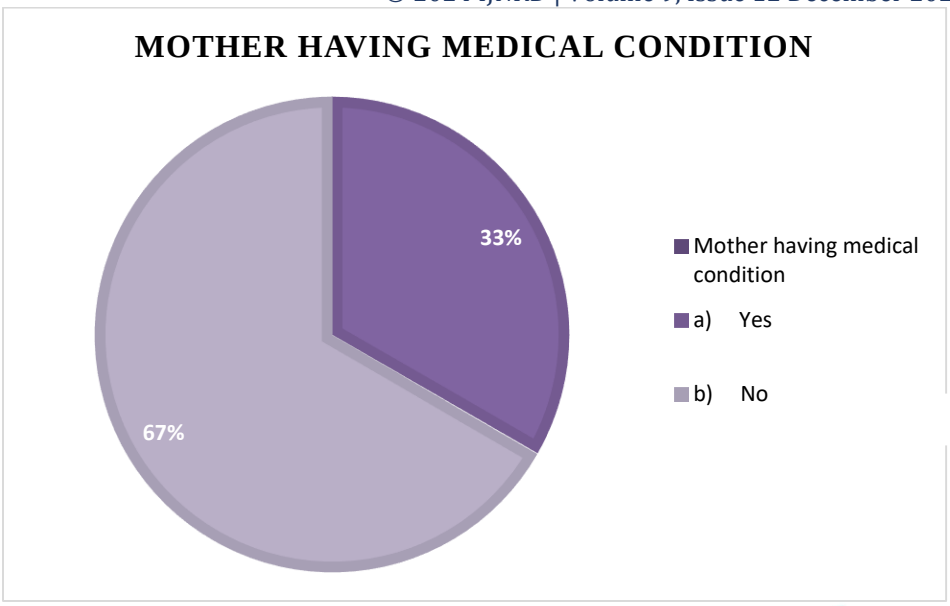

Figure 7: Distribution of Medical condition among mother of preterm neonates

Figure 7: From the above diagram it is understood that, in medical condition of mother majority 20(66.7%) of mother had no medical condition, 10(33.3%) of them had medical condition.

Section C: Description of newborn variables among preterm neonate

Table 4.4: Distribution of newborn variables among preterm neonate

(N= 30)

S.No	Demographic variables	Frequency	Percentage
1	**Gender of child**		
	a) Male	12	40%
	b) Female	18	60%
2	**Week of gestation**		
	a) 28 to 31weeks	3	10%
	b) 32 to 34 weeks	11	36.7%
	c) 35 to 36 weeks	16	53.3%
3	**Birth weight of preterm**		
	a) Less than 1500g	2	6.7%
	b) 1500g to 1750g	8	26.7%

	c) Greater than 1750g	20	66.7%

Table 4.4 : The findings reveals table **s**how that, gender of the child, majority 18(60%) of preterm neonates are female, 12(40%) of preterm neonates are belongs to male. With regards to week of gestation majority 16(53.3%) were in between 35 to 36 week of gestation, 11(36.7%) were in between 32 to 34 week of gestation, 3(10%) were in between 28 to 31 weeks of gestation. In aspect of birth weight of preterm, majority 20(66.7%) were belongs to greater than 1750g, 8(26.7%) were in between 1500g to 1750g, 2(6.6%) were belongs to less than 1500g of birth weight.

(N= 30)

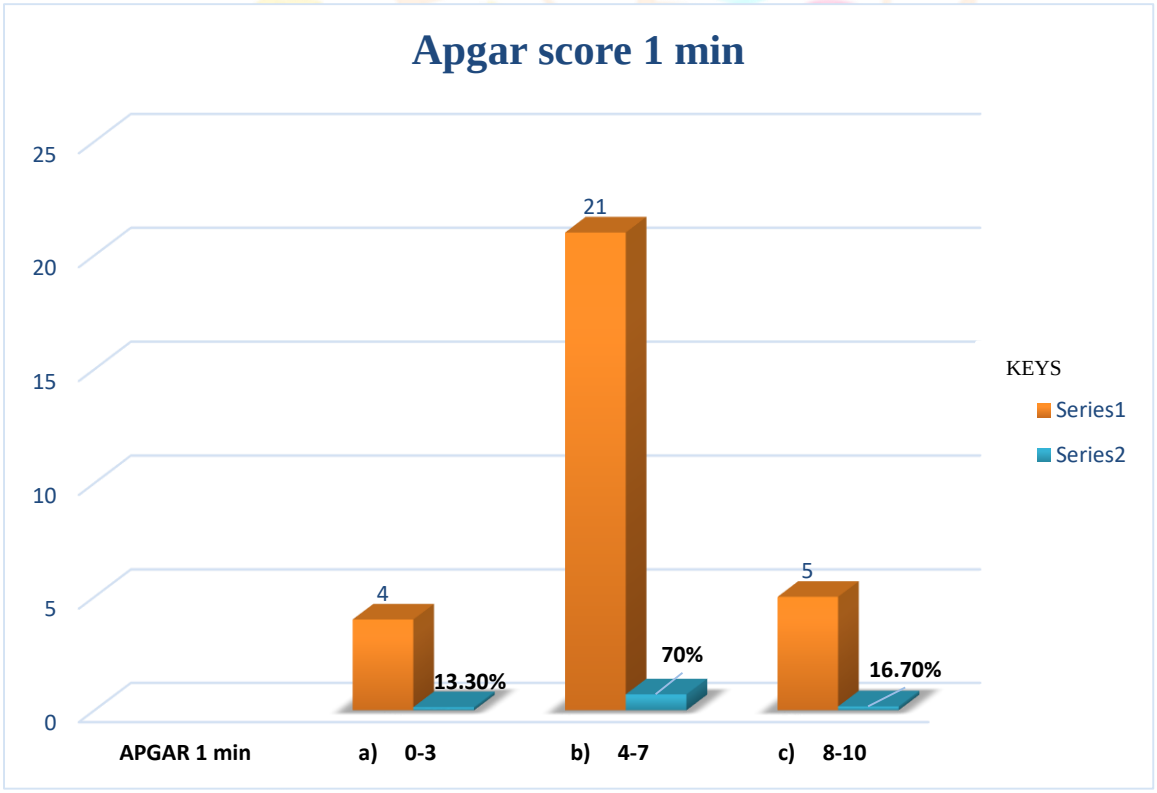

Figure 8: Distribution of Apgar score 1 min among preterm neonates

Figure 8: From the above diagram it is understood that, Apgar score for 1min majority 21(70%) of preterm neonates were in between 8 to 10, 5(16.7%) were in between 4 to 7, 4(13.3%) were in between 0 to 3 range of Apgar score.

(N= 30)

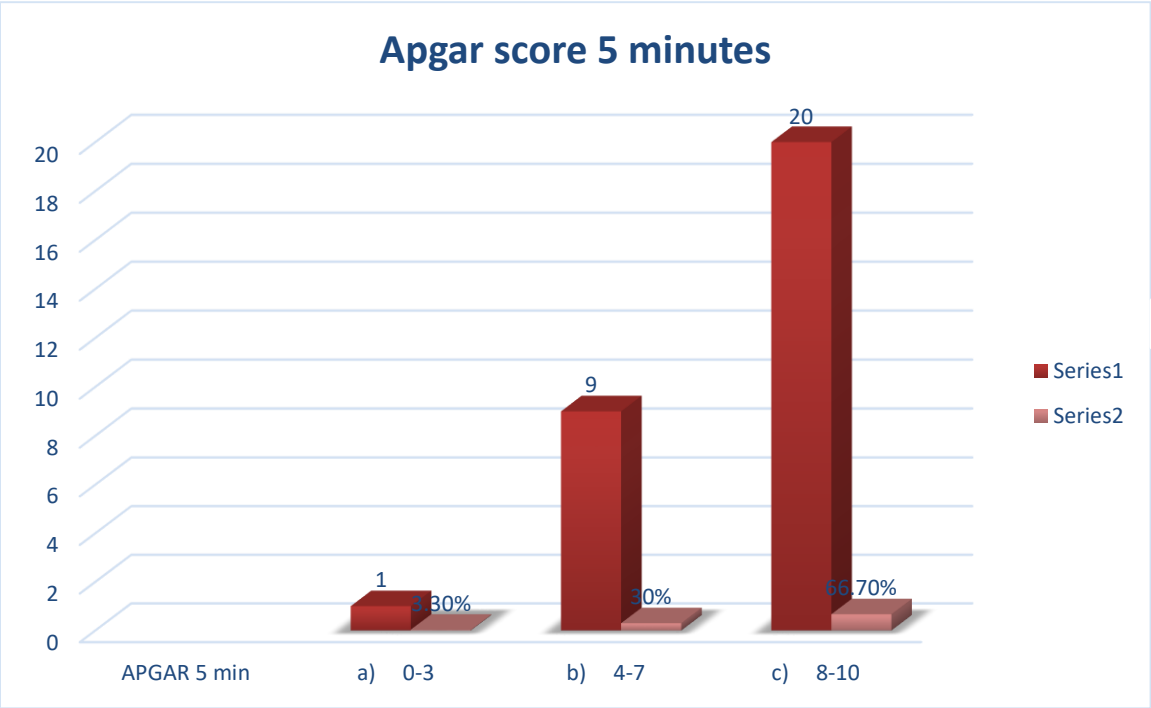

Figure 9: Distribution of Apgar score 5 min among preterm neonates

Figure 9: From the above diagram it is understood that, Apgar score for 5min, majority 20(66.7%) of preterm neonates were in between 8 to 10, 9(30%) were in between 4 to 7, 1(3.3%) were in between 0 to 3 range of Apgar score 5th min.

Table 4.5 : Distribution of newborn variables among preterm neonate

(N= 30)

S.No	Newborn variables	Frequency	Percentage
6	**Birth order**		
	a) First	18	60%
	b) Second	9	30%
	c) Third and above	3	10%
7	**Birth asphyxia**		
	a) No	30	100%
8	**Type of feeding**		
	a) Direct feeding	20	66.7%
	b) Paladai feeding	10	33.3%

Table 4.5: The finding reveals that, majority 18(60%) were in first birth order, 9(30%) were in second order of birth, 3(10%) were in third and above order of birth. With regards of birth asphyxia, 30(100%) of preterm neonates had no birth asphyxia. With regards to type of feeding, majority 20(6.7%) were in direct feeding, 10(33.3%) were in paladai feeding, no child had NG tube feeding.

Section D : Assessment on level of sucking reflex among preterm neonates

Table 4. 6: Assessment on level of sucking reflex among preterm neonates

N =30

S.NO	Level of sucking reflex	Before Intervention		After Intervention	
		N	%	N	%
1.	Poor sucking reflex	6	20%	0	0%
2.	Moderate sucking reflex	16	53.3%	9	30%
3.	Good sucking reflex	8	26.7	21	70%

Table 4.6: The finding reveals that**,** before intervention the level of sucking reflex of pre-term neonates, majority 53.3% of pre-term neonates had moderate sucking reflex, 26.7% had good sucking reflex and 6 % had poor sucking reflex. In after intervention the level of sucking reflex of pre-term neonates, majority 21% of pre-term neonates had good sucking reflex, 9% had moderate sucking reflex.

(N= 30)

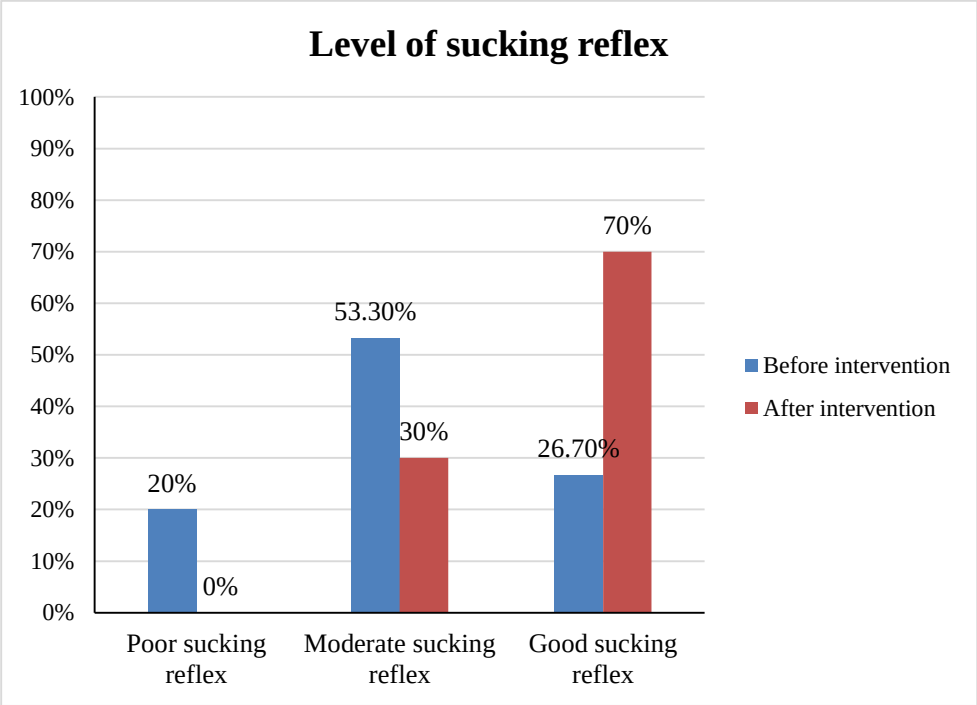

Figure 10: Represents distribution of sucking reflex among preterm neonates

Section E: Effectiveness of Oro-motor stimulation on level of sucking reflex among preterm neonates

Table 4.7 : Effectiveness of Oro-motor stimulation on level of sucking reflex among preterm neonates (N = 30)

S.NO	Level of sucking reflex	Mean	SD	't' value	'p' Value
1.	Before Intervention	4.67	2.339	t = 9.898	p = 0.000* (S)
2.	After Intervention	7.17	1.367		

***p<0.05 - Significant; p<0.01 - Highly Significant**

Table 4.7: The above table shows that comparison of mean score on level of sucking reflex before and after intervention among preterm neonates. Before intervention the mean score was 4.67 with a standard deviation of 2.339. After intervention, the mean score was 7.17 with a standard deviation of 1.367. The calculated 't' value was 9.898, and the p-value was p<0.01. Hence it is highly significant. This clearly shows that there significant difference between before and after intervention mean level of sucking reflex among pre-term neonate.

(N= 30)

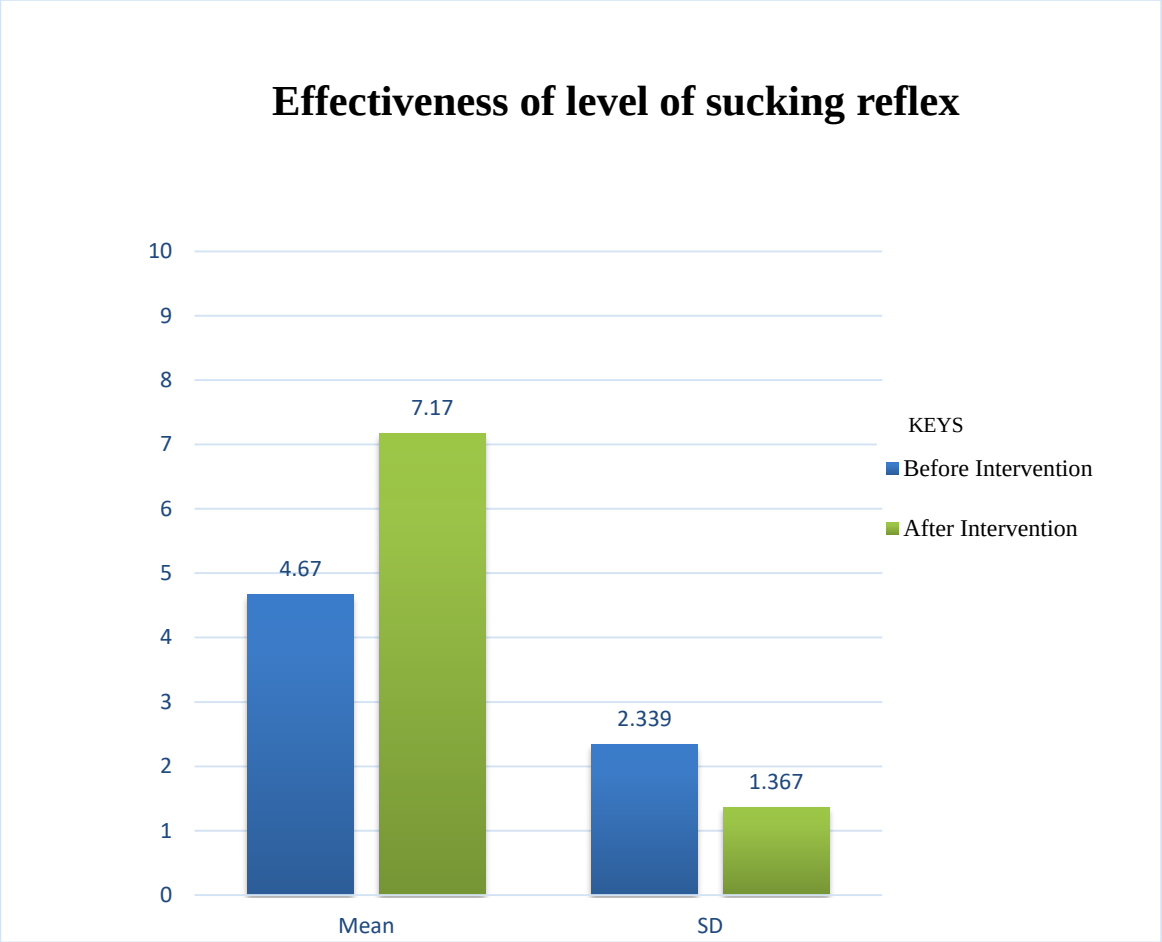

Figure 10: The above bar diagram represents the effectiveness of Oro-motor stimulation on level of sucking reflex among preterm neonates

CONCLUSION

The present study findings reveals that, before intervention the level of sucking reflex of pre-term neonates, majority 53.3% of pre-term neonates had moderate sucking reflex, 26.7% had good sucking reflex and 6 % had poor sucking reflex. After intervention the level of sucking reflex of pre-term neonates, majority 21% of pre-term neonates had good sucking reflex, 9% had moderate sucking reflex.

This study was supported by **D. Babitha Christobel.,(2021)** has conducted a study on the effectiveness of oral stimulation on improving sucking reflex among pre-term infants in selected hospitals at

Kanyakumari District". The quantitative research approach was used. The study was conducted in Flemi Grace Hospital and William's hospital at Kanyakumari district. The design adopted for the study was quasi experimental pre-test and post-test control group design to evaluate the effectiveness of oral stimulation on improving sucking reflex among pre-term infants. Purposive sampling techniquewas used to select 60 pre-term infants with 28-32 weeks of gestation. The data collection tool was used for this study was Pre-term Infant Breast Feeding Behavior Scale. The conclusion ofthe study, mean difference between pre-test and post-test level of sucking reflex among pre- term infants in experimental group

The study results show that there was a significant improvement in sucking reflex after Oro-motor stimulation for pre-term neonates. After intervention the level of sucking reflex of pre-term neonates, majority 21% of pre-term neonates had good sucking reflex, 9% had moderate sucking reflex.

The mean score was 7.17 with a standard deviation of 1.367. The calculated t value was 9.898, and the p-value was $p<0.01$. Hence it is highly significant. This clearly shows that there is significant difference between before and after intervention mean level of sucking reflex among pre-term neonate.

With regards to association of level sucking reflex among pre-term infants with their demographic variables. The calculated chi –square value showed that there was significant association between area of residence, weeks of gestation, birth weight of preterm, AFGAR 1 min, APGAR 5 min and types of feeding with the level of sucking reflex at $p<0.05$ level.

MAJOR FINDINGS OF THE STUDY

With regard to age most of the 14 (46.7%) were in the age between 24-29 years, and majority 18(60%) were had non consanguineous marriage, also 23 (76.7%) were got married at the age of 19 to 25 years. Majority 16 (53.3) of the mother had secondary education and majority 17 (56.7%) of them were housewife. In the aspect of mode of delivery, majority 22 (73.3%) had caesarean section. With regards to previous abortion, 21 (70%) of them had no previous abortion. With regard to gender of child, majority 18 (60%) were female. Majority 18 (60%) of neonates were in first birth order. With regard to types of feeding 20 (66.7%) were had direct feeding. No neonates had birth asphyxia. The study results showed that there was a significant improvement in sucking reflex after oro-motor stimulation for pre-term neonates. After intervention the level of sucking reflex of pre-term neonates, majority 21% of pre-term neonates had good sucking reflex, 9% had moderate sucking reflex.

CONCLUSION

This study was assessed the effectiveness of oral stimulation on improving sucking reflex among pre-term infants. After intervention, the mean score was 7.17 with a standard deviation of 1.367 which was higher than the pre-interventional level 4.67. The calculated‘t’ value was 9.898, and the p-value was $p<0.01$. Hence it is highly significant. This clearly shows that there is significant difference between before and after intervention mean level of sucking reflex among pre-term neonate. The pre-term neonates who were received oral stimulation had a significant improvement of sucking reflex compared to the pre-term neonates that who were not received oral stimulation. Hence the researcher achieved the objectives and stated that oromotor stimulation will improve the sucking reflex of preterm neonates.

NURSING IMPLICATIONS

Investigator has derived from the study that the following implications are of vital concern in the field of nursing practice, nursing education and nursing administration and nursing research.

NURSING PRACTICE

- Nurses should be equipped with updated knowledge about improvement of sucking reflex among pre-term infants.
- Pediatric nurses need to take the responsibility create awareness among the mothers of pre-term infants regarding oral stimulation.
- Nurse should use wide variety of intervention for improve the sucking reflex.
- Nurses and health care providers play a vital role in normalizing the oral motor reflexes.
- Nursing practice in the community should focus on improve sucking reflex and diminish abnormal sucking signs.

NURSING EDUCATION

- The Nurse educator should emphasize health education on oral stimulation program.
- Students should be encouraged to identify the abnormal sucking signs and to teach the mothers of pre-term infants.
- The Nurse educators should arrange for the in-service education programme (seminars, workshops) for student nurses regarding oral stimulation program.

NURSING ADMINISTRATION

- Collaborate with the governing bodies as well as the hospital administration to formulate standard protocols and policy to emphasize nursing care.
- Nursing administration ensures that the implementation of nursing intervention which is research based and clinically effective in promoting the health and to introduce evidence-based practice based on the research finding

NURSING RESEARCH

- Nurse researcher should disseminate the findings of the studies through conference, seminar and publishing in professional journals.
- As there is a limited study on this area, nursing researcher should encourage and conduct further researches related to oral stimulation on improving sucking reflex among pre-term neonates.

5.5. RECOMMENDATIONS

Based on the findings of the present study the following recommendations are made:

1. Study can be replicated on a large sample.
2. A comparative study can be conducted by using different intervention such as oral stimulation and music reinforcement on improving sucking reflex of pre- term infants.
3. A further study can be conducted to assess the knowledge, attitude, and practice of oral stimulation among nursing personnel
4. A study can be conducted by control group and experimental group.
5. Study could be replicated in different setting with large sample to validate thefindings.

REFERENCE

BOOK REFERENCE:

1. Achar's "Textbook of pediatrics", edited by swamnare khabhat, 4th edition, published by universities press india private limited P.no 111,181 Arvind R. "Pediatric nursing", 2013 published by Emmess medical publishers. P.no 111, 181

2. Arvind. R. "Clinical case in pediatrics". 3rd edition, published. Elsevier, ND. Indian private limited. P.no ; 36, 503

3. Assumabeevi, T. M. "Textbook of pediatrics nursing", reed Elsevier India private limited. P.no24

4. Burns Catherine.E, "Pediatric primary care", 4 edithion (2009), published by saunders Elsevier. P.no;299

5. Datta Parul, "pediatric nursing" 2nd edition, published by jaypee. P: no 56-57, 64-66 Goel Kishna M. "Hutchinson's pediatrics". (2009) published by jaypee brothers (p) Ind p.no-57

6. Hayfield Nancy T "Broadribb's introductory pediatric nursing published by lippincott's practical nursing p.no240, 243

7. Joshi N.C. "Clinical pediatrics", (2007) published by Evsevier. P.no; 147

8. Kliegman, "Nelson textbook on pediatric", 18th edition, volume-1 (2008), published by saunders Elsevier P.no; 214

9. kyle Terri, "Essentials of pediatric nursing". Ist edition (2009), published by Walter Kluwer (India) pvt. ltd, New Delhi. P.no 654

10. Manivannan.c. Text book of pediatric nursing", published by Emmess, P.no;56

11. Manojyaray, "A text book of child health nursing with procedures, edited by R.K Gupta. published by PV hooks. P.no; 35, 42

12. Marino Bradley S., "Blueprints of pediatrics", 4th edition published by Lippincon Williams and wilkins, wottersklumers business. P.no;259

13. Moralo "Text book of pediatric nursing. 2nd edition, published by Elsevier pvt ltd.

14. Partharasarathy A. "IAP text book of pediatrics", 4th edition, published by Jaypee brothers medical publishers (p) Itd, new delhi. P.no;432, 602

15. Panchali pal. Text book of pediatric nursing for the nursing students, 2nd edition, published by panchali pal. ISBN number: 9788194869320. P.no : 46

16. Shar Nitis. Dr.k... "Indian academy of pediatrics, pediatric infectious disease", (2006) published by Jaypee brothers medical publishers (p) ltd, New delhi. P.no; 196

17. Sharma Madhu, "Basic pediatric nutrition", publication by jaypee, brothers (p) Itd. Pno:44 Surajgupte, "The short textbook of pediatrics". 11th edition published by Jaypee brothers.

18. Williams Lippincott & Wilkins. "Text hook of Maternal Neonatal Nursing", published by Judith A. Schilling. P.no;95

19. Wilson and Ross," anatomy and physiology" , published by evalove new delhi.

20. Wong's "Essentials of pediatric nursing" 7th edition, published by Mosby an imprint of Elsevier. P.no 45

JOURNAL REFERENCE

- Arora K. Goel S. Manerkar S. Konde N. Panchal H. Hegde D. Mondkar J. Prefeeding
- Oromotor Stimulation Program for Improving Oromotor Functionin Preterm infants. Indian Pediatric 2018 Aug 15:55(8):675-678.https://pubmed.ncbi.nlm.nih.gov
- Benny AM, et al. Pre-feeding Oro-motor stimulation for improving oromotor function in preterm neonates Indian journal of research, 2021 Apr 1:104http/www.world wide journals.com/paripes/article/prefeeding-oromotor-stimulation-for- improving-oromotor-function-in-preterm-neonates/M/MOOTY-/
- Babitha D. Appavu Santhi, Effectiveness of Oral Stimulation on improving Sucking Reflex among Pre-Term Infants. Asian journals of pediatric 2021:11(1) https://ajner.com
- Chandran R. Alagesan J. Oro-Motor Intervention Protocol to Improve Sucking Behavior among Neonates with Immature Sucking: An Experimental Protocol. Int J Surg Protoc.2021 Jul23;25(1):12 9-134https://pubmed.ncbi.nlm.nih.gov
- Ghada M El Mashad. Hanan M El Saied'. Nadia A Mekawy Effect of an early oral stimulation program on oral feeding in preterm neonates. Menoufia medical journals 2021:34(1)226-230https://www.mmj eg.net

- **G.Muthamilselvi,** et.al, international journal of nursing education and research 1(1), 01-04
- **G.Muthamilselvi,** et.al, journal of emerging technologies and innovative research 6(3), 618-623
- Guha S, A Mekawy Effect of an early oral stimulation program on oral feeding in preterm neonates. Menoufia medical journals 2021:34(1)226- 230https://www.mmj eg.net.
- M Sandesh, Pre-feeding Oro-motor stimulation for improving oromotor function in preterm neonates Indian journal of research, 2021 Apr 1:104
- Nath A. Mukherjee A, Effect of oromotor stimulation on feeding performance and weight gain of preterm babies in selected hospital, Kolkata. IP Journals od Pediatric Nursing Sep2020,3(1):30-30https://doi.org/10.18231pms 2020.006
- Negi D. Swain D. Som TK. Effectiveness of multi-stimulation approach on feeding habits of low- birth-weight babies Pubmed 2022 Jul5:15:100159.https://pubmed.ncbi.nlm.nih.gov
- Rodriguez GonzalezP. Perez-Cabezas V. Chamorro-Moriana G. Ruiz Molinero C. Vazquez-Casares AM. Gonzalez-Medina G, Effectiveness of Oral Sensory-Motor Stimulation in Premature Infants in the Neonatal Intensive Care Unit (NICU) Systematic Review. Children (Basel). 2021A ug31:8(9):758https://pubmed.ncbi.nlm.nih.gov
- Topkar. Pushkar Metgud. Deepa Machakanur. Vishwanath 2019/01/01.85, Effect of follow-uphome-based oromotor stimulate on breast feeding performance in preterm low-birth-weight infants: Research gate 2019: 12(1), https://www.research gate.net
- Şen Aras Doğan Oral Motor Stimulation, Feeding and Sucking Success in Preterm infants Journal of Nursology 2023; 26:27-33. https://www.nursing-ataunipress.org

NET REFERENCE:

- https://www.indianpediatrics.net/aug2018/aug-675-678.htm
- https://ajner.com/AbstractView.aspx?PID=2021-11-2-2
- https://www.sciencedirect.com/science/article/abs/pii/S1355184118300504
- https://www.slideshare.net/DarshitaFatnani/oro-motor-stimulation-for-new-born
- https://www.slideshare.net/fouziasaleemi1/oral-motor-therapies
- https://www.isdh.ie/wp-content/ uploads/2020/03/Trish-Morrison-oral-motor.pptx

- https://www.semanticscholar.org/paper/Effect-of-Prefeeding-Oromotor-Stimulation-on-A-Sasmal-Shetty/ac89f2cb221b5403d357d6ae2fb5789c6b078277
- https://ajner.com
- https://doi.org/10.18231pms 2020.006
- https://www.nursing-ataunipress.org
- https://www.research gate.net