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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:

Introduction: Premature infants and those with low birth weights have the highest mortality rate during the first year of life. These infants weigh 2500g or less at birth, indicating immaturity and lack of normal reflexes. **Methodology:** The pre-experimental one group pre-test and post-test design was undertaken to perform this study. The study population consisted of preterm neonates with gestation age of 28 to 36 weeks admitted to the NICU of SMVMCH. Purposive sampling technique was deployed whereby 30 neonates satisfying the research inclusion criteria was used with a study period of 6 weeks. **Result and Findings:** The study found that the majority of preterm neonates (53.3%) had a moderate sucking reflex, 26.7% had a good sucking reflex, and 6% had a poor sucking reflex. After intervention, 21% of preterm neonates showed a good sucking reflex, while 9% had a moderate sucking reflex. **Conclusion:** This study also highlighted that after Intervention there was significantly increased sucking reflex of preterm neonates in comparison to pre intervention level. The statistical analysis confirmed a highly significant difference, indicating that the oral stimulation intervention had a positive impact.

Keywords: sucking reflex, preterm neonates, feeding.

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INTRODUCTION:

Premature infants and those with low birth weights have the highest mortality rate during the first year of life. These infants weigh 2500g or less at birth, indicating immaturity and lack of normal reflexes. The chances of survival are much lower for premature infants, with about half of their deaths occurring on the first day of life.

The low pressures in cardiac and central nervous system and absence of the oral musculature makes preterm infants prone to oral feeding difficulties. Absence of successful suck – swallow reflex and textural aversions to food may lead to its rejection, both of which are common oral feeding problems. Early oral feeding has been shown to improve sucking frequency, feeding performance, and overall health. Preterm neonates may face problems during oral feeding, such as weak rooting reflexes, inverted lower lips, biting patterns, increased perioral muscle tone, and hypertonic tongue.

AIM OF THE STUDY:

The aim of the study to assess the effectiveness of Oro-motor stimulation in improving sucking reflex among preterm neonates admitted in NICU at SMVMCH, Puducherry.

METHODOLOGY:

The pre-experimental one group pre-test and post-test design was undertaken to perform this study. The study population consisted of preterm neonates with gestation age of 28 to 36 weeks admitted to the NICU of SMVMCH. Purposive sampling technique was deployed whereby 30 neonates satisfying the research inclusion criteria was used with a study period of 6 weeks. Inclusion criteria included preterm neonates admitted for at least 7 days and receiving care at NICU levels I and II, while neonates in NICU level III care, with conditions like respiratory distress syndrome were excluded.

Data collection was done in three phases. Part I was to first obtain consent from the mothers of preterm neonates and collect the demographic data as the baby's order of birth, birth asphyxia and the type of feeding. Part II concerned with breastfeeding assessment consisted of an investigation into such factors as latch on, time before latch, suckling, audible swallow and maternal assessment of feeding. In Part III, the Premature Infant Oral Motor Intervention (PIOMI) was introduced, which consisted of eight stimulating oral feeding components including cheek C-stretch, lip roll, gum massage, lip curl and stretch, , mid-blade tongue stimulation, lateral tongue border stimulation, eliciting suck, and supporting non-nutritive suck.

RESULT AND ANALYSIS:

Demographic variables:

The findings reveal that female (60%), with 40% being male. Regarding the gestational age, most neonates (53.3%) were between 35 to 36 weeks, followed by 36.7% between 32 to 34 weeks, and 10% between 28 to 31 weeks. Regarding birth weight, the majority (66.7%) weighed more than 1750g, while 26.7% had a birth weight between 1500g to 1750g, and 6.6% weighed less than 1500g. Most neonates (60%) were the firstborn, 30% were second-born, and 10% were third-born or beyond. All neonates (100%) had no birth asphyxia, and the majority (66.7%) were fed directly, with 33.3% receiving paladai feeding. No neonates were fed via NG tube.

Level of sucking reflex:

Table 1 showed that before intervention, the majority (53.3%) had a moderate sucking reflex, followed by 26.7% with a good sucking reflex and 6% with a poor sucking reflex. After intervention, 21% of neonates showed a good sucking reflex, while 9% had a moderate sucking reflex.

Table 2 showed that the comparison of mean scores on the level of sucking reflex before and after intervention showed that the mean score before intervention was 4.67 (SD = 2.339), and after intervention, it increased to 7.17 (SD = 1.367). The calculated ‘t’ value was 9.898, with a p-value of $p<0.01$, indicating a highly significant difference.

Table 1: Assessment on level of sucking reflex among preterm neonates.

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%

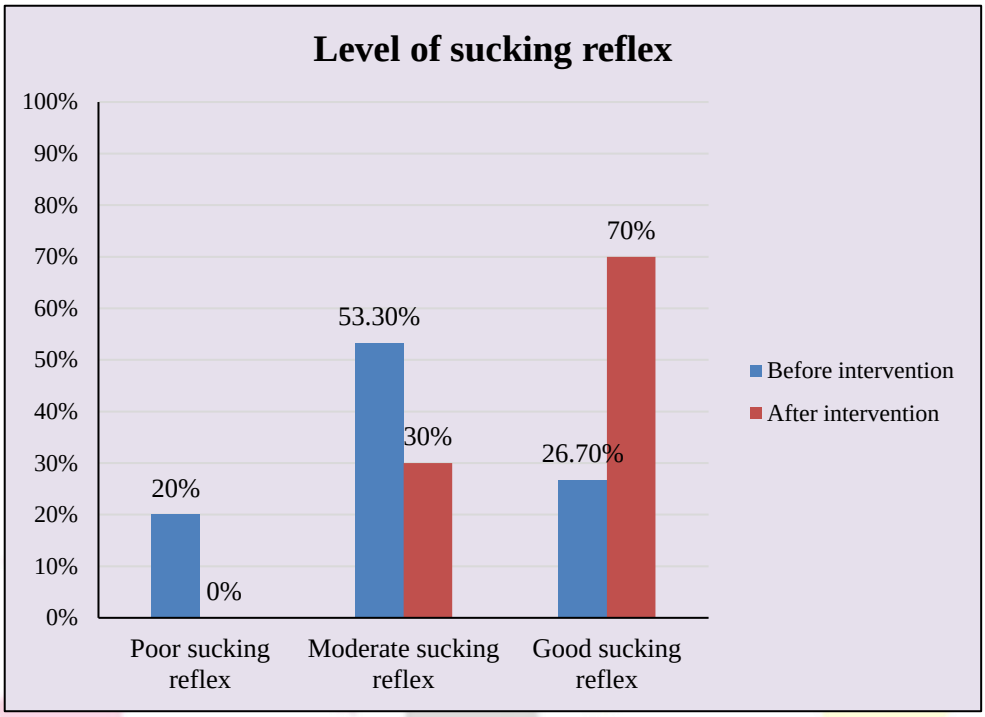

Figure 1: Represents distribution of sucking reflex among preterm neonate

Table 2: Effectiveness of Oro-motor stimulation on level of sucking reflex among preterm neonates.

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**

DISCUSSION:

The present study found that before intervention, the majority of preterm neonates (53.3%) had a moderate sucking reflex, 26.7% had a good sucking reflex, and 6% had a poor sucking reflex. After intervention, 21% of preterm neonates showed a good sucking reflex, while 9% had a moderate sucking reflex. These findings are consistent with a study by D. Babitha Christobel (2021) which showed great increase of sucking reflex after use of oral motor stimulation, same as the findings of the present study. As for studies, after the intervention, the mean score of sucking reflex increased, and statistical analysis showed highly significant

difference (t = 9.898, p <0.01). It shows that oral stimulation facilitates improvement of the sucking reflex in preterm neonates.

CONCLUSION

The study concluded that after intervention, there was a significant increase in the sucking reflex of preterm neonates compared to the pre-intervention level. The statistical analysis confirmed a highly significant difference, indicating that the oral stimulation intervention had a positive impact. Preterm neonates who received oral stimulation showed notable improvement in their sucking reflex compared to those who did not. Therefore, the study confirmed that oromotor stimulation effectively improves the sucking reflex of preterm neonates, achieving the research objective

RECOMMENDATION

- Conduct follow-up studies to assess the long-term impact of oro-motor stimulation on the developmental milestones of preterm neonates.
- Training NICU staff in these techniques could improve feeding outcomes and reduce complications related to feeding difficulties in preterm infants.

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