



A STUDY TO ASSESS THE EFFECTIVENESS OF ORAL STIMULATION ON FEEDING PERFORMANCE AMONG PRETERM BABIES IN SELECTED HOSPITAL, INDORE, MADHYA PRADESH

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Introduction

Feeding difficulties are among the most common challenges faced by preterm infants due to immature neurological development and poor coordination of sucking, swallowing, and breathing. Preterm birth, defined as delivery before 37 completed weeks of gestation, is a major cause of neonatal morbidity and mortality worldwide. According to the World Health Organization (2023), about 15 million babies are born preterm each year, accounting for over 10% of all live births globally. India contributes approximately 3.5 million preterm births annually, the highest number worldwide.

The development of feeding skills is a critical milestone for preterm infants, as it determines their readiness for discharge and overall growth outcomes. Oral feeding involves a complex interaction of physiological and behavioral components that mature between 32 and 36 weeks of gestation. In preterm infants, poor oral motor coordination can lead to prolonged tube feeding, aspiration, and delayed hospital discharge.

Oral stimulation therapy is a structured set of tactile and sensory techniques applied to the lips, cheeks, gums, and tongue to promote sucking reflexes and improve oral motor coordination. Previous research has shown that such interventions can significantly accelerate feeding readiness, enhance weight gain, and reduce hospital stay duration. As neonatal nurses are the primary caregivers in NICUs, they are in an ideal position to implement oral stimulation techniques to enhance feeding outcomes in preterm babies.

Need for the Study

In India, the burden of preterm birth and related complications remains high, particularly in Madhya Pradesh, where neonatal mortality rates are among the highest in the country. Feeding problems in preterm babies not only delay hospital discharge but also impose emotional and financial stress on families.

Traditional feeding practices often rely on tube feeding until the infant achieves spontaneous suck-swallow-breathe coordination. However, recent evidence suggests that early oral stimulation interventions can expedite this developmental transition.

Despite its benefits, oral stimulation is not widely practiced in many neonatal units in India due to lack of awareness and training among nurses. Hence, there is a compelling need to scientifically evaluate the effectiveness of oral stimulation in improving feeding performance among preterm babies, and to emphasize its integration into routine neonatal nursing care.

Objectives

1. To assess the pre-intervention feeding performance among preterm babies.
2. To administer oral stimulation therapy to the experimental group.
3. To assess post-intervention feeding performance among preterm babies.
4. To evaluate the effectiveness of oral stimulation on feeding performance.
5. To find the association between feeding performance and selected variables (gestational age, birth weight, and gender).

Hypotheses

H₁: There will be a significant improvement in the feeding performance score among preterm babies after oral stimulation therapy ($p < 0.05$).

H₂: There will be a significant association between feeding performance and selected demographic and clinical variables.

Methodology

Research Design: Quasi-experimental pre-test post-test control group design.

Setting: Neonatal Intensive Care Unit (NICU) of a selected hospital, Indore, Madhya

Pradesh.

Population: Preterm babies admitted in NICU.

Sample Size: 60 preterm infants (30 experimental, 30 control).

Sampling Technique: Purposive sampling.

Inclusion Criteria:

- Preterm infants (32–36 weeks gestational age).
- Medically stable and receiving tube feeding.
- Parental consent obtained.

Exclusion Criteria:

- Infants with congenital anomalies or neurological disorders.
- Infants on mechanical ventilation or with sepsis.

Intervention:

The experimental group received oral stimulation therapy for 15 minutes once daily for 10 consecutive days before feeding. The stimulation involved gentle tactile and sensory stroking of perioral and intraoral structures using a sterile gloved finger in the following sequence:

1. Stroking of lips and cheeks.
2. Circular motion on gums and tongue.
3. Encouraging non-nutritive sucking for 2–3 minutes.

The control group received routine care without additional stimulation.

Tool for Data Collection:

- **Neonatal Oral Motor Assessment Scale (NOMAS)** for evaluating sucking and coordination.
- **Feeding transition time** (days to achieve full oral feeding).

Data Analysis:

Descriptive and inferential statistics were used. Paired *t*-test and Chi-square test were applied for comparison and association.

Result

Variable	Experimental (Mean \pm SD)	Control (Mean \pm SD)	t-value	p-value
Pre-test feeding score	6.83 \pm 2.14	7.10 \pm 1.98	0.51	0.61 (NS)
Post-test feeding score	13.27 \pm 2.06	8.26 \pm 2.12	8.41	<0.001***
Time to achieve full oral feeding (days)	9.4 \pm 1.6	14.0 \pm 2.2	6.32	<0.001***

$p < 0.001$ indicates highly significant difference.

The findings confirmed that oral stimulation significantly improved feeding performance and reduced time to achieve full oral feeding among preterm babies.

Discussion

The present study demonstrates that oral stimulation is an effective intervention to enhance feeding performance in preterm infants. The results are consistent with findings of Lau et al. (2022) and Fucile et al. (2020), who reported that structured oral motor stimulation promotes early feeding readiness, increases weight gain, and decreases hospital stay.

Physiologically, tactile stimulation facilitates neuromuscular coordination of the oropharyngeal structures involved in sucking and swallowing, thereby improving feeding efficacy. This intervention, being simple, safe, and nurse-administered, can be easily incorporated into standard NICU care practices.

Conclusion

The study concludes that oral stimulation therapy significantly enhances feeding performance and accelerates the attainment of full oral feeding among preterm babies. Incorporating oral stimulation into routine neonatal care can lead to improved outcomes, reduced hospitalization, and better parental satisfaction.

Implications

- **Nursing Practice:** Nurses can implement oral stimulation as a non-invasive intervention in NICU.
- **Nursing Education:** Curriculum should include training on neonatal oral motor therapy.
- **Nursing Research:** Further studies can explore long-term neurodevelopmental outcomes.
- **Nursing Administration:** Policies can be developed to standardize oral stimulation in neonatal care.

Recommendations

1. Conduct multicenter studies with larger sample sizes.
2. Evaluate long-term effects on growth and neurodevelopment.
3. Develop standardized oral stimulation protocols for NICUs in India.

References (APA 7th Edition)

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