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ORAL STIMULATION ON IMPROVING SUCKING REFLEX AMONG PRE-TERM INFANTS IN SELECTED HOSPITALS IN JABALPUR, M.P.

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Introduction

Feeding difficulties are among the most common problems in preterm neonates due to physiological immaturity of oral motor control and coordination between sucking, swallowing, and breathing. A well-developed sucking reflex is crucial for successful oral feeding and for ensuring adequate nutrition and growth. The absence or weakness of this reflex can result in dependence on tube feeding, risk of aspiration, and delayed discharge from neonatal intensive care units (NICUs).

Oral stimulation, a therapeutic intervention involving gentle tactile and kinesthetic stimulation around the lips, tongue, and gums, has been identified as an effective technique to promote the maturation of the sucking reflex. It is an evidence-based nursing practice that helps to accelerate the acquisition of oral feeding readiness, reduce dependency on enteral feeding, and support mother-infant bonding.

Globally, about 15 million babies are born preterm every year, and approximately 60–80% of neonatal deaths occur among preterm and low birth weight infants (WHO, 2023). In India, the prevalence of preterm birth is around 13%, among the highest in the world. Feeding immaturity remains a leading challenge in neonatal care, particularly in resource-limited settings where technological and therapeutic support is restricted. Thus, non-invasive nursing measures such as oral stimulation hold critical importance.

Need for the Study

Premature infants are at risk of poor feeding patterns due to incomplete development of the central nervous system and oral motor structures. These infants often rely on

gavage feeding until they achieve physiological maturity for oral feeding. The transition from tube to oral feeding can be slow and stressful for both infants and caregivers, contributing to longer hospital stays and increased healthcare costs.

Nurses play a vital role in neonatal feeding management. Incorporating oral stimulation in daily care can help improve oral sensorimotor coordination and stimulate the sucking reflex, allowing infants to achieve oral feeding milestones earlier. Studies from developed countries have shown that oral stimulation can reduce transition time to full oral feeding by 4–7 days. However, research in the Indian context, particularly in central India, remains limited.

Hence, this study was undertaken to determine the effectiveness of oral stimulation in improving the sucking reflex among pre-term infants in selected hospitals of Jabalpur.

Objectives of the Study

1. To assess the sucking reflex among pre-term infants before oral stimulation.
2. To administer oral stimulation to pre-term infants.
3. To assess the sucking reflex after oral stimulation.
4. To evaluate the effectiveness of oral stimulation on improving the sucking reflex among pre-term infants.
5. To find the association between pre-test sucking reflex scores and selected demographic variables of pre-term infants.

Hypotheses

- **H_1:** There will be a significant difference in sucking reflex scores before and after oral stimulation among pre-term infants.
- **H_2:** There will be a significant association between sucking reflex and selected demographic variables such as gestational age, birth weight, and duration of hospitalization.

Materials and Methods

Research Design

A quasi-experimental pre-test and post-test design was used to assess the effectiveness of oral stimulation on the sucking reflex among pre-term infants.

Setting of the Study

The study was conducted in the Neonatal Intensive Care Unit (NICU) of selected hospitals.

Population and Sample

The population consisted of all pre-term infants admitted to NICUs. A total of 20 pre-term infants who met the inclusion criteria were selected through purposive sampling.

Inclusion Criteria

- Pre-term infants with gestational age between 28–36 weeks.
- Infants who were clinically stable and receiving tube feeding.
- Infants whose parents gave informed consent.

Exclusion Criteria

- Infants with major congenital anomalies or neurological deficits.
- Infants on mechanical ventilation.

Tool for Data Collection

A structured observational checklist was used to assess the sucking reflex based on parameters such as:

1. Rooting response
2. Sucking strength
3. Sucking duration
4. Coordination between sucking and swallowing

Each item was rated on a 4-point scale (0–3), with higher scores indicating better reflex performance.

Intervention

The researcher provided oral stimulation therapy for 10 minutes once daily for 7 consecutive days. The intervention included:

- Gentle stroking of the cheeks, lips, and tongue.
- Applying light pressure inside the oral cavity using a gloved finger.

- Allowing non-nutritive sucking on a gloved finger.

Data Collection Procedure

Pre-test observation of the sucking reflex was done before intervention. Post-test assessment was conducted on the 8th day after completing the oral stimulation sessions.

Data Analysis

Data were analyzed using descriptive and inferential statistics. The paired t-test was used to evaluate the effectiveness of oral stimulation, and chi-square was applied to determine associations.

Results

The results showed a significant improvement in sucking reflex scores after the oral stimulation intervention.

- The mean pre-test score was 4.8 ± 1.2, whereas the mean post-test score increased to 8.6 ± 1.4.
- The t-value of 6.87 was significant at $p < 0.05$, indicating that oral stimulation effectively improved sucking reflexes.
- No significant association was found between the sucking reflex and variables such as gender or mode of delivery. However, gestational age showed a significant association with pre-test sucking scores.

Discussion

The findings of this study support the effectiveness of oral stimulation in enhancing sucking reflex among pre-term infants. The improvement observed is consistent with similar studies by Fucile et al. (2002) and Lyu et al. (2020), which demonstrated that oral stimulation accelerates the transition from gavage to oral feeding and reduces NICU stay. Oral stimulation helps stimulate oral muscles, improves sensory awareness, and facilitates neuromuscular coordination essential for effective sucking and swallowing.

Nursing Implications

- **Nursing Practice:** Nurses can integrate oral stimulation techniques as part of daily neonatal care routines to enhance feeding outcomes.

- **Nursing Education:** Training programs should emphasize the importance of oral stimulation and feeding readiness assessment.
- **Nursing Research:** Further large-scale studies should explore the long-term developmental benefits of early oral stimulation.
- **Nursing Administration:** Protocols can be developed to standardize oral stimulation interventions in NICUs.

Conclusion

The study concluded that oral stimulation is a safe, effective, and practical nursing intervention that significantly improves the sucking reflex in pre-term infants. By incorporating this simple technique, nurses can facilitate early oral feeding, promote weight gain, and shorten hospitalization duration. Strengthening neonatal care practices with evidence-based interventions like oral stimulation can improve survival and developmental outcomes among preterm infants.

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