

# Innovations

## **A Research to Evaluate the Effectiveness of Oral Motor Intervention in Preterm Newborns at a Specified Hospital in Puducherry**

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### **Abstract**

*Preterm newborns typically have oral feeding difficulties due to undeveloped oral motor skills and the lack of coordination of sucking, swallowing, and ventilation. Infants must be able to drink all feedings orally while maintaining physiological stability and weight gain in order to be discharged. As a result, trouble with oral feeding leads to prolonged hospital stays and increased expenditures. For example, with over half a million preterm newborns born each year, a three-day reduction in hospital stay would save more than \$2 billion yearly. There is a need for evidence-based therapies that promote the development of oral-motor skills, resulting in improved oral feeding and shorter hospital stays and expenditures. The goal of this study was to see if the newly developed Premature Infant Oral Motor Intervention (PIOMI), which began at 29 weeks postmenstrual age (PMA) before oral feedings were introduced, would result in a shorter transition from gavage to total oral feedings and a shorter hospital stay (LOS). The PIOMI is a 5-minute oral motor intervention that uses supported movement to stimulate muscle contractions and movement against resistance to increase strength.*

**Key words:** *Preterm Newborns, Oral motor intervention, improved oral feeding, sucking reflexes muscle strengthening,*

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### **I. Introduction**

A preterm newborn is a baby born before 37 weeks. Preterm birth, also known as preterm birth, is the delivery of a baby at less than 37 weeks gestation. These newborns are referred to as preemies or premmies. Preterm labour symptoms include uterine contractions occurring more than once every 10 minutes or vaginal fluid leakage. Premature newborns are more likely to suffer from cerebral palsy, developmental delays, hearing and vision difficulties. These hazards increase the sooner a kid is born.

Completed weeks of gestation (more than three weeks before due date). The oral motor intervention for premature newborns is a 5-minute intervention that provides aided movement to create muscular contraction and movement against resistance to improve strength. The technique aims to improve functional responsiveness to pressure and movement in the lips, cheeks, and jaws. And tongue. Finger stroking was used to stimulate the cheeks (both internal and external), lips, gums, tongue, and palate according to a predetermined regimen.

## **II. Objectives of the Study:**

1. To assess the effectiveness of oral motor intervention in preterm newborns.
2. To evaluate the efficacy of oral motor interventions in preterm newborns.
3. To associate the efficacy of oral motor intervention in preterm newborns based on chosen demographic characteristics.

## **Hypothesis**

H1: Preterm newborns will show substantial differences before and after oral motor intervention.

H2: There will be a significant relationship between the successes of oral motor intervention in pre-test and post-test among preterm newborns and chosen demographic characteristics.

## **III. Materials and Methods:**

This study used a quantitative research technique with a pre-experimental, one-group pre-test and post-test design, and it was done in a selected hospital in Puducherry. Convenience sampling was used to choose preterm newborns; the sample size was 60. The newborns oral motor function was examined using the modified preterm newborns oral feeding readiness assessment scale over a two-week period. Data was examined descriptively, and inferential statistics were utilised.

### **Inclusion criteria:**

- Data collection included all preterm newborns that were available.
- Preterm newborns are permitted to breastfeed.
- Male and female preterm newborns.
- Preterm newborns admitted to NICU and PICU.
- Preterm newborns with impaired sucking reflexes.

### **Exclusion criteria:**

- A healthy sucking reflex.
- A premature child with congenital cleft palate and lips.
- Babies born after 37 weeks of gestation.
- A preterm newborn who are contraindicated to breastfeeding.

**Data Collection Tool**

SECTION A: It consists of demographic data including mode of delivery, reason for preterm birth, ABGAR score gestational age, baby weight, sex, family income,

SECTION B: Modified Preterm newborns oral feeding readiness assessment scale were used to assess the oral motor function. It consists of knowledge items 24 question with 4,3 to 2 distracts, all question had only one correct response, each correct response awarded a single score recording to the pre-determined by and 0 score was awarded to negative response.

**IV. Results and Discussion:**

In these studies, the efficiency of oral motor intervention among preterm newborns was evaluated for signs of oral motor function in post-test among 60 samples. The results suggest that two preterm newborns (3.32%) have poor oral motor function. 19 preterm newborns (31.54%) had moderate oral motor function, and 39 preterm newborns (64.74%) had adequate oral motor function, as a result of the administration of oral motor intervention to achieve muscle contraction, muscle strengthening, and improved oral feeding.

Table 1 shows the frequency and percentage distribution of demographic factors for oral motor intervention among preterm newborns.

S. No	Demographic variables	Frequency N	Percentage %
1.	Mode of delivery		
	a) Normaldelivery	37	61.42
	b) Caesareandelivery	25	38.18
2.	Reason for preterm infants		
	a) premature rupture of membrane	4	6.64
		25	41.5
	b) Fetal respiratory distress	5	8.3
	c)Abnormal amount of amniotic fluids	26	43.16
	d)others		
3.	Apgar score		
	a) Severe depression	3	4.98
	b)Mild depression	33	54.78
	c)No depression	24	39.84
4.	Gestational age		
	a)30 weeks or less	14	23.24
	b)Between 31 to 34 weeks	21	34.86
	c)35 weeks or more	25	41.5

5.	Baby weight		
	a)Below 1.5 kg	14	23.24
	b)1.6 kg-2 kg	25	41.5
	c)Above 2.1kg	21	34.86
6.	Sex		
	a)Male	35	58.1
	b)Female	25	41.5
7.	Family income		
	a)Rs.1000-5000 per month	16	26.56
	b)Rs.6000-10000 per month	33	54.78
	c)Above rs.11000 per month	11	18.26
8.	Specific medication		
	a)Yes	1	1.66
	b)No	59	97.94
9.	Mother exposure to educational media		
	a)Yes	0	0
	b)No	60	99.6
10.	No. of days stayed in hospital		
	a)<2 days	2	3.32
	b)2 to 4 days	8	13.28
	c)5 to 7 days	17	28.22
	d)>7 days	33	54.78

Table 2 compares the effectiveness of pre-test and post-test scores of oral motor intervention among preterm newborns.

S. No	Oral Motor Function	Pre-test		Post-test	
		F	%	F	%
1.	Inadequate oral motor function	12	19.92	2	3.32
2.	Moderate oral motor function	39	64.74	19	31.54
3.	Adequate oral motor function	9	14.94	39	64.74

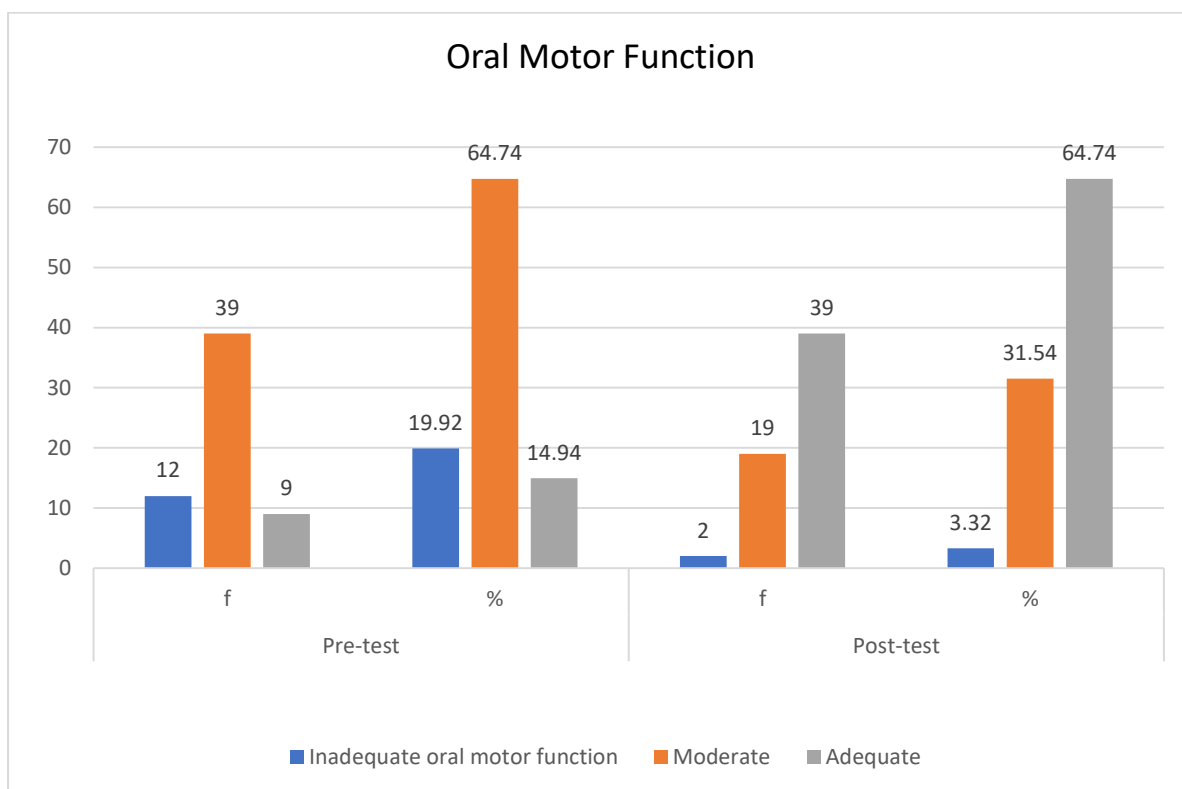
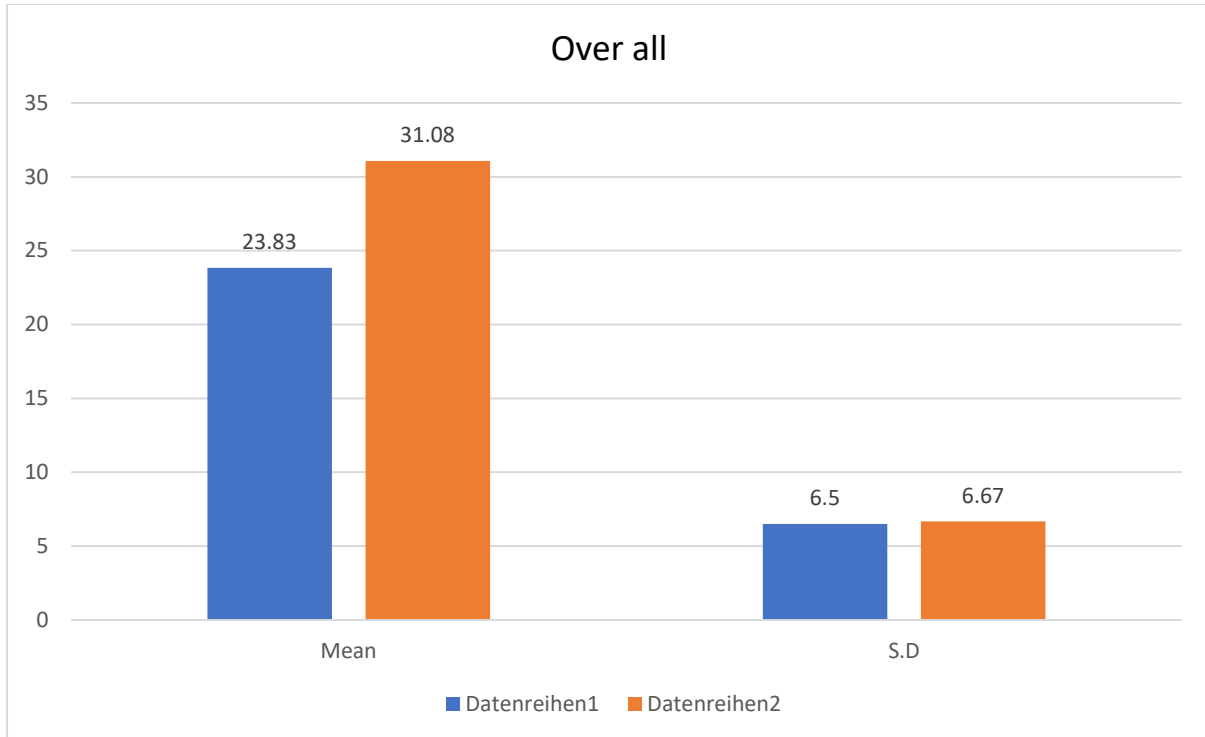


Table 3: mean and standard deviation of the paired test to evaluate the efficiency of oral motor intervention among preterm newborns

Over all	Mean	S. D	T -test	P- value
Pre-test	23.83	6.50	11.27	0.0563
Post-test	31.08	6.67		



**V. Conclusion:**

The current study aims to investigate the effectiveness of oral motor intervention among preterm newborns at selected hospital puducherry. The study showed that oral motor intervention provides appropriate treatment to preterm newborns. The distribution of oral motor intervention among preterm newborns in pre-test revealed that 12 (19.92%) had poor oral function. 39 (64.74%) of them had moderate oral motor function, while 9 (14.94%) had acceptable oral motor function. In the post-test, 2 (3.32%) of them had inadequate oral function, 19 (31.54%) had moderate oral motor function, and 39 (64.74%) had appropriate oral motor function.

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