

## “A Quasi experimental study to assess the effect of nesting on posture & movements among preterm neonates admitted in selected hospitals of Pune city”



### Nursing

**KEYWORDS:** Assess, Nesting, Posture, Movements, Preterm, Neonates.

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### ABSTRACT

**Background:** Newborns are the most vulnerable group to get adjusted to the new environment. Following birth, the first few months act as a transitory period during which the baby adjusts from the aquatic to the aerial environment. The way in which baby is positioned throughout this time is very important and baby's posture dictates the level of his well being. A pediatric physiotherapist started to design and make 'nest' which would enable newborn to make movements similar to those made in their mother's womb. Positioning provides safe comfortable and appropriate posture for preterm infant in coping outside their mother's body. So the researcher felt the need to contribute newer practices to improve their posture and movements as well as prevent further hidden consequences.

#### Objectives:

- To assess the posture and movements of the preterm neonates in experimental and control group.
- To determine the effect of nesting on posture and movement of the preterm neonates in experimental group.
- To compare pre and post observation of the posture & movement of the preterm neonates in experimental and control group.
- To co-relate posture & movement of the preterm neonates with selected demographic variables.

**Method:** This study was based on evaluative approach and quasi Experimental research design done with experimental and control group design is used. The sample consisted of sixty preterm neonates admitted in NICU. Non probability purposive sampling technique was used and Modified Wilcoxon's sign rank test tool was used.

**Result:** Paired t-test was applied to assess effect of nesting among preterm neonate admitted. The t-value was found to be 9.9 and corresponding p-value was 0.000. Posture of the neonates in experimental group improved after nesting as compared to the neonates in control group.

**Conclusion:** To conclude, nesting is very effective measure to prevent the postural defects in later period of lifetime and improve the required movements.

#### Introduction:

Birth is a traumatic experience for both, the mother and the baby. Apart from the discomfort and trauma associated with the process of delivery, the baby is suddenly thrust into a world of bright lights, loud sounds and cold environment. The baby cannot tolerate environmental insults and stresses, which may adversely affect their neuromotor development.

The intensive care of the new born babies has become mechanical or "robotic" and "stereotyped". Instead of being flexible and individualized. It's pity that technological advances have dehumanized the care of new born babies. It has been recently realized, that there is a need to have a synthesis of "art and science" of neonatal care in order to provide holistic care to newborn babies. Hi-tech care should be provided, but comfort of the baby should not be ignored. Babies should be reared in neonatal intensive care unit (NICU), which should simulate the ecology of the womb, to ensure maximum comfort to the baby. All efforts should be made to provide babies with as comfortable positioning as possible, although it's impossible to achieve in-utero comfort levels and cushioning.

As per research published in Times of India 2012 neonatal mortality rate is number of deaths during the first 28 completed days of life per 1,000 live births in a given year or period. So as per this statistic it shows that the neonatal mortality rates are increasing it is moreover related to the postural defects such as dolicocephaly, narrowing of head, kyphosis, scoliosis lordosis etc.

#### Material and Method:

This study was based on evaluative approach and quasi Experimental research design done with experimental and control group design is used. The sample consisted of sixty preterm neonates admitted in NICU. Non probability purposive sampling technique was used and Modified Wilcoxon's sign rank test tool was used. Various Pediatric hospitals were selected for the study. The rationale for selection of these areas was their geographical proximity, economy in terms of time; easy transport facilities, administrative approval, cooperation, and above all, the selected hospitals fulfilled the criteria of the sampling technique. Homogeneity of sample could be maintained.

#### Pilot study:

On the first day of study pre test was done to assess the posture and movement of the preterm neonates. After the pretest nesting was given to the experimental group for 2 hours each day they were assessed using the tool till 6<sup>th</sup> day. Then the score of the first day and the last day was compared to assess the findings. The control group was also assessed at the same time. The findings of the Pilot Study were analyzed the reliability score was 0.80. The results showed that the statistical test chosen to test the results was appropriate.

#### Data collection:

The investigator approached the staff nurses and did the assessment of posture and movements and prepared a sampling frame of those who met the inclusion criteria. The samples were divided into control group and experimental group. Then researcher approached participant parents at hospital and explained the purpose of the study and how it is beneficial for them. Investigator enquired their willingness to participate in the study and obtain written consent. After pre test score of both the groups the nesting was applied to the experimental group only. Application of Nesting was done for 6 days and then on 6th day the post test score was measured of both the group as on the first day. Then the scores were compared. The collected data was coded, tabulated and analyzed by using descriptive and statistics (mean percentage, standard deviation) and inferential statistics. To associate the demographic characteristics, one way ANOVA test was used.

#### Result:

In experimental group, majority 80% of the neonates were between 0-2 days of life. In control group, majority 73% of the neonates had 0-2 days of life.

In experimental group, 57% of them were females and 43% of them were males. In control group, 53% of them were males and 47% of them were females.

In experimental group, half (50%) of the neonates had weight 1500-2000 gm. In control group, 47% of them had weight 1500-2000 gm.

In experimental group, 60% of them were delivered by normal delivery. In control group, 63% of them were delivered by normal

delivery. In experimental group, 50 % of them had it 30-32 weeks. In control group, 57% of them had gestational age 30-32 weeks.

Weight of the preterm neonate and gestational age are the demographic variables which were found to have statistically significant association with posture of neonates.

Mode of delivery is the only demographic variable which was found to have statistically significant association with movements of neonates.

**Table 1: Comparison of POSTURE of neonates in experimental and control group using two sample t-test**

N=60

Sr.n	Group	Mean	SD	T	df	p-value
1	Experimental	6.6	3.5	9.9	58	0.000
2	Control	0.03	0.9			

Two sample t-test was applied to compare the effect on posture of neonates in experimental and control group. The t-value was found to be 9.9 and corresponding p-value was 0.000. Since p-value is small (less than 0.05), the null hypothesis is rejected and research hypothesis is accepted. Researcher concluded at 5% level of significance and 58 degrees of freedom that the posture of the neonates in experimental group was improved after nesting as compared to the neonates in control group. Thus, nesting is proved to be significantly effective in improving the posture of neonates.

**Table 2: Comparison of MOVEMENTS of neonates in experimental and control group using two sample t-test**

N=60

Group	Mean	SD	T	Df	p-value
Experimental	2.4	0.8	13.6	58	0.000
Control	0.1	0.5			

Two sample t-test was applied to compare the effect on movements of neonates in experimental and control group. The t-value was found to be 13.6 and corresponding p-value was 0.000. Since p-value is small (less than 0.05), the null hypothesis is rejected and research hypothesis is accepted. Researcher concluded at 5% level of significance and 58 degrees of freedom that the movements of the neonates in experimental group improved after nesting as compared to the neonates in control group. Thus, nesting is proved to be significantly effective in improving the movements of neonates.

## Discussion

It is evident that there is existence of effect of nesting on posture and movements among preterm neonates. It can be concluded that, there is significant effect of nesting on posture and movements among preterm neonates admitted in hospitals.

Paired t-test was applied to assess effect of nesting among preterm neonate. The t-value was found to be 9.9 and corresponding p-value was 0.000. Since p-value is less than 0.05, null hypothesis was rejected and research hypothesis was accepted. Researcher concluded at 5% level of significance and 58 degrees of freedom that posture of the neonates in experimental group improved after nesting as compared to the neonates in control group. Thus, nesting is proved to be significantly effective in improving the posture and movements of preterm neonates.

## Conclusion

To conclude, above study supports that nesting is very effective measure to prevent the postural defects in later period of lifetime and improve the required movements.

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