

Evaluate Efficacy of Nesting on Posture among Selected Newborn Babies

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Abstract:

Background Information: New-borns are the most vulnerable group to adapt to new environment. The first few months after birth are a transition period in which the child adapts from a water to air environment. As a result, it is very important how the child is at this time and his level of happiness depends on their posture. Encouraging good posture and opportunities to bend can help prevent problems such as motor coordination, balance and posture difficulties. Proper posture helps your baby develop good posture.

Method: In this study, a quasi-experimental control group with pre-test and post-test was used, and non-probability convenience sampling method was adopted to select 60 premature infants as the experimental group and control group. A pilot study was conducted and the equipment and study design were found to be feasible. Data were collected using the IPAT tool. The experimental group received a nesting intervention. Data were collected and analysed using descriptive and inferential statistics. **Results:** As a result of the study, the significance of the difference in average scores before and after the posture test, statistically verified using paired 't' test was found to be very significant at the significance level of 0.05. The average nested score after the test in the experimental group was 13.17 and standard deviation was 1.552 and the control group had an average score of 8.30 and standard deviation of 1.92. The paired t test statistic is 14.57. Therefore, there is statistical significance in the rate of improvement indicating the effectiveness of nesting position among the selected new-born babies. The results showed that posture scores had no significant relationship with the selected demographic variables.

Conclusion: This study concluded that nesting is an effective method for maintaining normal posture in new-borns.

Keywords:- New born, Nesting & Posture.

I. INTRODUCTION

'A New Baby is like the beginning of all things Wonder, Hope, a dream of possibilities'

—Eda J Leshan

A newborn is a child less than 28 days old. Providing basic new-born care, including immediate and prolonged skin-to-skin contact and early exclusive breast-feeding, is essential to increase the chances of survival and establish the foundation for a healthy life. Preterm birth

is when a child is born before 37 weeks from the start of the last menstrual period (WHO). All premature babies require intensive care from the moment of birth to give them the best chance of survival without neurological sequelae. Due to premature central nervous system, the child is inactive, lethargic, cries weakly, reflexes are poorly developed.

The position of the newborn is also beneficial. Normal limb flexion indicates good muscle tone. Lack of flexion is associated with hypotonia, whereas excessive flexion usually indicates hypertonia. If only one arm is consistently straight and the newborn does not bend that limb, a brachial plexus injury should be considered. Normal new-borns maintain some degree of flexion in all limbs, whereas premature babies have less pronounced posture. Poor head control is another sign of abnormally reduced muscle tone. Proper positioning of a premature newborn can provide a sense of security, improve breathing ability and strengthen muscles. New-borns with "frog legs" have misaligned hips and fall to the side. These new-borns may have dislocated hips, may later have difficulty crawling, standing and walking. Premature babies' limbs tend to sag rather than curl up like older babies, so they need some help to lie down in a position that's comfortable, helps muscle development and can feel more secure.

Posture refers to the placement or alignment of various body parts in relation to each other. Correct posture can help improve blood circulation and digestion, improve sleep and prevent internal organ spasms. Correct posture can improve the quality of life. The correct position will help the newborn to develop proper posture and improve muscle control.

The NICU exposes the selected new born babies to a suboptimal physiological environment and invasive procedures and manipulations that can lead to chronic and long-term stress in premature infants. Acute stress can cause sudden movements and startles; the motor behaviour of a neonate is also affected. As a result, startles, rolling to the side, jerky movements of the limbs, rigid holding of the arms and legs, whether spontaneous or induced by handling, are commonly observed in selected new born babies, especially when the clinical condition is not yet stable, in turn jerky movements and adducted positions can add stress to stress.

The neonate should be placed on a soft, comfortable "Nestled" bed and pillow. Since hypotonia exists in these preterm infants, it is necessary to maintain proper anatomical alignment to avoid any type of contractures or potential complications related to the abnormal position.

Therefore, there is a felt need to maintain proper anatomical alignment through nursing interventions such as "nesting". Therefore, infants prefer to occupy this position in early extra uterine life.

Nesting as part of developmental care improves the quality of the position of neonate by maintaining the curved position of the limbs of premature babies and limiting sudden movements and immobility of the arms and legs. Improper body positioning causes postural distortions such as hip abduction and external rotation, ankle abduction, shoulder retraction and abduction, and neck hyperextension. Developmental positions include midline orientation, hand-to-mouth activity, and foetal flexor pattern. All of these principles are achieved through "nesting".

II. PROBLEM STATEMENT

"The Efficacy of Nesting on Posture among selected New-born babies in a selected hospital at Namakkal district, Tamil Nadu".

A. Objectives Of The Study:

- Assess the Posture among selected Newborn babies in experimental and control group.
- Evaluate the effectiveness of Nesting on Posture among selected Newborn babies in experimental
- Determine the association between the post-test score of Nesting on Posture among selected Newborn Babies with their selected demographic variables.

B. Hypothesis:

- **H₁**: To evaluate the effectiveness of Nesting on Posture among selected New born babies in experimental group
- **H₂**: To determine the association between the post-test score of Nesting on Posture among selected New born babies with their selected demographic variables.

C. Operational Definition:

➤ Nesting:

In this study, nesting is the procedure in which the two blankets were rolled in the form of shell – shaped secure boundary and the baby is placed over the rolled blanket up to half an hour two times per day and continue for three days.

➤ Posture:

In present study, Posture refers to shoulder alignment in terms of shoulder adduction and abduction, flexion of elbows, hips, knee when the selected New born babies lie in the Nest.

➤ Newborn Babies:

In present Studies New Born Babies are newly born Babies Born before 37 week of gestation who have the score of less than 12 as assessed by Infant position assessment tool.

III. LITERATURE REVIEW

A. Literature related to Posture on selected Newborn babies:

Beatriz Rosana Gonçalves de Oliveira, et.al, (2019) conducted a case-control study to assess the validation of a neonatal intensive care unit positioning protocol. The Delphi technique was used. The results show the positioning of the newborn in the NICU and the standardization of nursing care related to the positioning. We evaluated ten indicators, for which agreement was 100.0% for seven and 80% for three, above 60% by the recommended validation technique. The study concludes that the importance of neonatal in NICU positioning for neuromuscular development contributes to the adoption of evidence-based nursing practice.

B. Literature related to effect of Nesting on Posture among selected Newborn Babies:

Ms. Ramya Poulouse (2018) conducted a study to assess the efficacy of 'nesting' among low-birth-weight infants in the NICU at a selected government hospital in Delhi. An interventional study was conducted in which low birth weight infants (birth weight 1.00-2.5 kg) were divided into three groups based on their birth weight (1.0-1.5 kg, 1.5-2, 0 kg, 2.0-2.5 kg). 60 low birth weight neonates were selected as sample and divided into two group; 30 samples in group-I and another 30 samples in group-II. Pre-test Post-test control group design was used in which nesting was provided in the experimental group for 9 hours per day for 5 days. Posture, comfort and vital parameters were assessed before and during nesting administration. In the experimental group, significant improvement in body posture was observed when nesting was used ($t=12.64$). Discomfort of the neonate was significantly reduced in the intervention group while compare to the nonintervention group ($t=10.65$). Low birth weight infants exhibit relatively stable vital parameters throughout the nesting period.

IV. RESULTS

Frequency and percentage distribution of demographic variable:

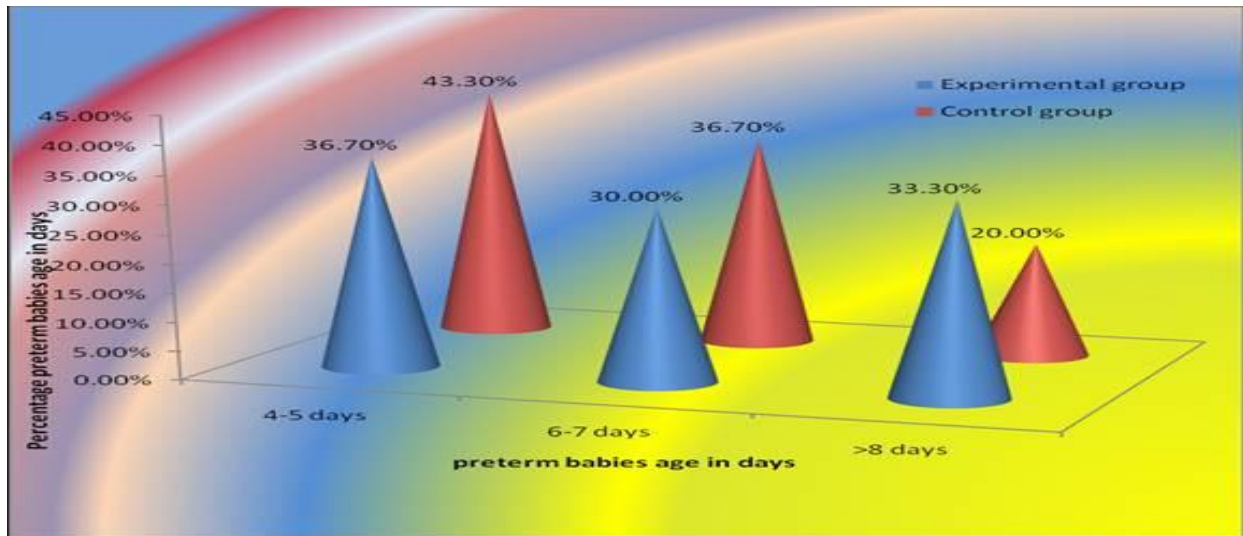


Fig. 1: Shows that Maximum 36.70 % of selected newborn babies were in the age group of 4-5 days in Group I, where as in Group II 43.30 % in the same age group

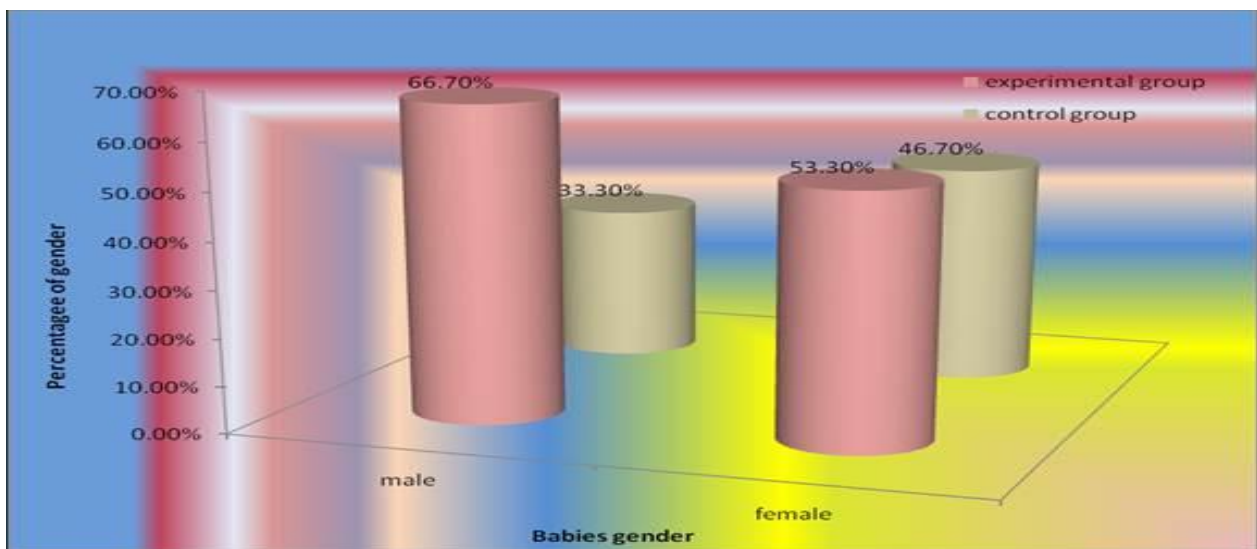


Fig. 2: shows that Most 66.70 % of selected newborn babies were male in Group I, where as in Group II 46.70 % were belongs to female category

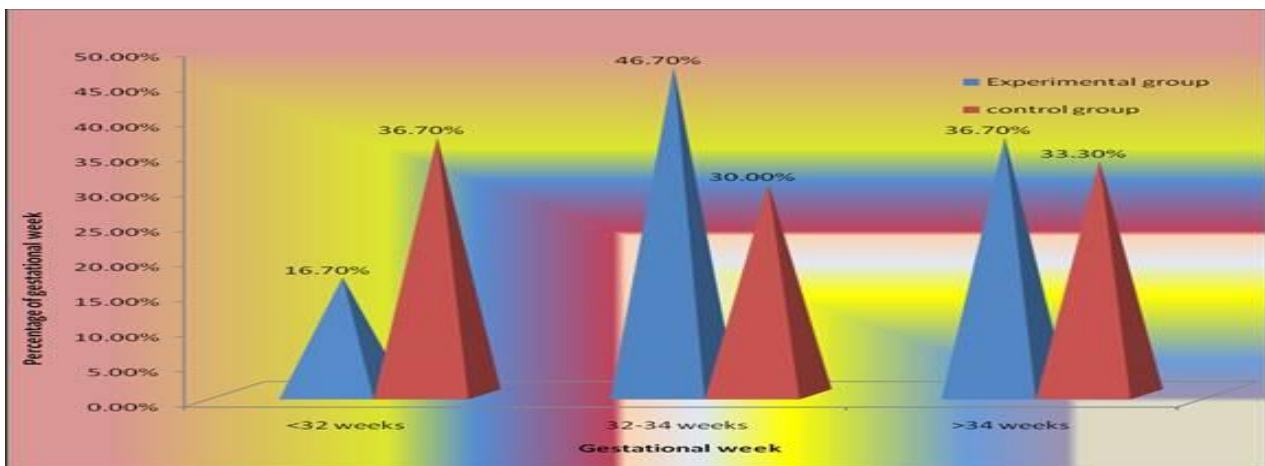


Fig. 3: Shows that Most 46.70 % of selected newborn babies gestational week were 32-34 weeks in Group I, where as in Group II 36.70 % were belongs to less than 32 weeks of gestation.

Table 1: Efficacy of nesting on positionfor selected New born babies in both groups

S. No	Outcome	Group-I (n=30)				Group-II (n=30)			
		Pre test		Post test		Pre test		Post Test	
		Numbe rs	Percen tage	Numbe rs	Percenta ge	Numbe rs	Percen tage	Numbe rs	Percentag e
1.	Perfect posture	0	0%	9	30%	0	0%	0	0%
2.	Acceptable posture	10	33.3%	21	70%	5	16.7%	8	26.7%
3.	Repositioning	20	66.7%	0	0%	25	83.3%	22	73.3%

Table 1& Figure 4 represents that in experimental pre-test group 20(66.7%) were need repositioning and in post-test group 21(70%) newborn babies are acceptable

posture. In control group experimental pre-test group 25(83.3%) were need repositioning and in post-test group 22(73.3%) newborn babies are in need of repositioning.

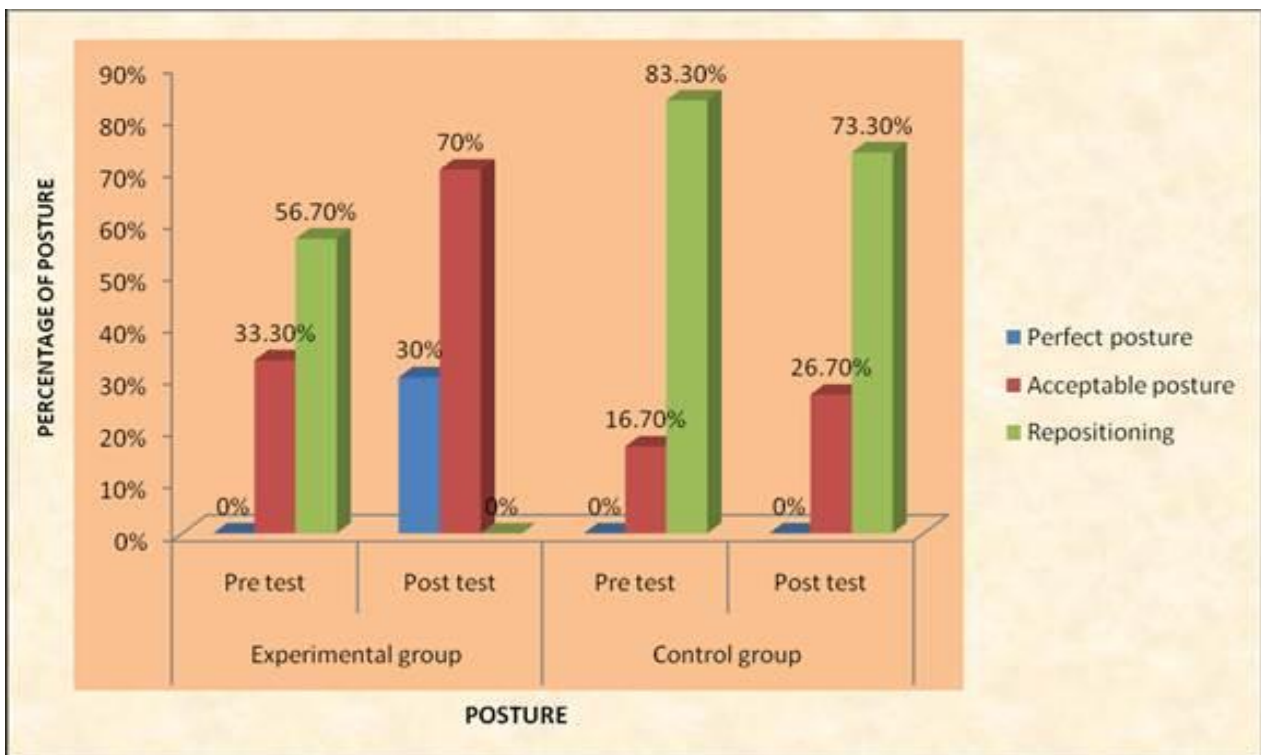


Fig. 4: Posture outcome of New born babies

Table 2: Comparison of mean, standard deviation and paired t – value score of Nesting on position for selected New Born babies in both groups

Position	Mean	SD	Maxi mum score	Mean percentage	Mean difference	Paired ‘t’ Value	P value
Group-I	13.17	1.522	15	29.9	4.87	14.57	P 0.05
Group-II	8.30	1.92	8	30.8			

Table 2: represents the mean score of nesting on posture among selected New born babies in post-test. Post-test mean score of nesting was found to be 13.17 andSD1.522 in Group-I. Post-test mean score of nesting was found to be 3.20 and SD1.92 in Group-II. The statistical

paired, t’testvalueis14.57. Therefore, there exist sastatistical significance in the enhancement score indicating the efficacy of nesting on position among selected New Born babies.

Table 3: Chi-square test on effectiveness of nesting on posture among selected New born babies with their selected demographic variables

S.no	Demographic variables	Perfect Posture		Acceptable Posture		Repositioning		Chi square χ^2	Result
		F	%	F	%	F	%		
1	Age in days 4 - 5 Days	6	54.5	5	45.5	0	0	3.203	df=2 t=5.991 NS
	6 – 7 Days	6	66.7	3	33.3	0	0		
	>8 Days	9	90	1	10	0	0		
2	Gender Male	13	65	7	35	0	0	0.714	df=1 t=3.841 NS
	Female	8	80	2	20	0	0		
3	Birth Weight 1500 – 2000 gms	3	60	2	40	0	0	3.630	df=2 t=5.991 NS
	2000 – 2500gms	8	57.1	6	42.9	0	0		
	>2500gms	10	90.9	1	9.1	0	0		
4	Gestational Week <32 weeks	3	60	2	40	0	0	3.630	df=2 t=5.991 NS
	32 – 34 Weeks	8	57.1	6	42.9	0	0		
	>34 Weeks	10	90.9	1	9.1	0	0		
5	Mode of Delivery Normal Delivery	6	57.1	3	42.9	0	0	3.107	df=3 t=7.82 NS
	Forceps Delivery	2	73.3	0	26.7	0	0		
	Vacuum Delivery	0	50	0	50	0	0		
	Lower Segment Caesarean Section	12	100	7	0	0	0		
6	APGAR Score Good (7- 10)	16	80	4	20	0	0	2.857	df=1 t=3.841 NS
	Fair (4 – 6)	5	50	5	50	0	0		
	Poor(Below 4)	0	0	0	0	0	0		
7	Method of Feeding Paladai Feeding	3	100	0	0	0	0	1.429	df=1 t=3.841 NS
	Spoon or Dropper	0	0	0	0	0	0		
	Direct Breast Feeding	18	66.7	9	33.3	0	0		
8.	Choice of Milk Expressed Breast Milk	0	0	0	0	0	0	1.429	df=1 t=3.841 NS
	Donor Human Milk	3	100	0	0	0	0		
	Formula Feed	18	66.7	9	33.3	0	0		
9.	Duration of Hospital 1 – 10 Days	16	64	9	36	0	0	2.57	df=1 t=3.841 NS
	11 – 20 Days	5	100	0	0	0	0		
	>20 Days	0	0	0	0	0	0		

P<0.05

The above Table 1.4 shows the association between the post-test effectiveness of nesting on posture among selected New born babies with their selected demographic variables. The analysis revealed that there was no statistical

significance found with demographic variables of preterm babieslike age in days, gender, birth weight, gestational week, mode of delivery, Apgar score, method of feeding, choice of milk, duration of hospital.

V. RESULT AND DISPUTE

A. To assess the Posture among selected New born babies in experimental and control group.

In pre-test the score of nesting on posture in experimental group shows that majority of the subjects 20(66.7%) were needed to be repositioning, 10(33.3%) were in acceptable posture and none of the preterm babies belongs to perfect posture. In control group the pre-test score of nesting on posture shows that majority of subjects 25(26.7%) were needed to be repositioning, 5(16.7%) preterm babies were in acceptable posture and none of the preterm babies belongs to perfect posture. This study was supported with the study finding of *Reka et al 2021* studies on level of Posture among New-born babies which highlights that 70 percent of New-born babies shows Unsatisfactory posture.

B. To evaluate the effectiveness of Nesting on Posture among selected New born babies in experimental group.

While in post-test the score of nesting on level of posture in experimental group shows that majority of the subjects 9(30%) were perfect posture, 21(70%) were in acceptable posture. Well, none of preterm babies no need of repositioning. In control group majority of subjects 22(73.3%) preterm babies need repositioning, 8(26.7%) were in acceptable posture.

The mean, standard deviation and paired and unpaired t score of nesting on posture among selected New born babies in post-test. Post-test mean score of nesting on posture was found to be 13.17 andSD1.522 in Group-I. Post-test mean score of nesting was found to be 8.30 andSD1.922 in Group-II.

The statistical paired, 't' test value is 14.57. Therefore, there exists a statistical significance in the enhancement score indicating the effectiveness of nesting on posture among preterm babies.

The present study was supported by *Hanokh.Jeevan.et al (2017)* conducted a quasi-experimental study to assess the effectiveness of nesting on position for neonates. The result of the study shows that, nesting was effective in preventing the postural defect and require movement. A computed t-value was found to be 9.9 and p value is 0.000. The study concludes the nesting was more effective in improving the neonates position.

Hence hypothesis H1 was accepted.

C. To determine the association between the post-test score of Nesting on Posture among selected New born babies with their selected demographic variables.

The table 4.5.1 shows in Posture that there was no statistical significance found with demographic variables of preterm babies like age in days, gender, birth weight, gestational week, mode of delivery, Apgar score, method of feeding, choice of milk, duration of hospital.

This study was supported by *Mikki Khan et al., (2014)* conducted a descriptive Study to Assess the knowledge regarding nesting on Maintenance of position among preterm in the Selected Government Hospital of Delhi. 60 preterm neonates were selected through convenient sampling technique. The finding shows that demographic variables did not show any statistically significant association with knowledge score of the mothers.

Hence hypothesis H2 was Rejected

VI. CONCLUSION

Nesting is one of the measures you can do to keep your neonate comfortable. Therefore, from the statistics and results, it can be concluded that nesting is a good intervention to improve the New Born babies 'posture.

- Nesting is one of the measures to keep the babies comfortable. Therefore, from the data analysis and the results, it can be concluded that nesting is an effective intervention to improve posture, movements and physiological parameters of premature babies
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VII. RECOMMENDATIONS

- Same intervention may follow for a large sample to draw more conclusive generalization.
- True experimental study can be undertaken with one group pretest and posttest for effective comparison.
- Study can be undertaken to find out the role of nurses practice of Nesting in NICU.

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