



"A STUDY TO ASSESS THE EFFECTIVENES OF TACTLE STIMULATION ON NEUROBEHAVIOR AMONG THE PRETERM NEONATES IN THE NEONATAL INTENSIVE CARE UNIT AT SVBCH IN SILVASSA, DNH"

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ABSTRACT

Background: The preterm neonates are born before their body and organ systems mature. Their body organs are not ready for extra uterine life for that there is need to refer to the neonatal intensive care unit.

The Tactile stimulation improves neurobehavior of premature neonates. Early stimulation give to neonates will change the growth of the brain cell, improve adaptive behavior, and finally cause the achievement of the optimal development of age. The Tactile stimulation is considered a safe practice and there are no significant harmful effects if performed appropriately in the NICU.

Aim: The study was to evaluate the effectiveness of tactile stimulation on neurobehavior among preterm neonates.

Methods: Quantitative approach with two group pretest and posttest research design was used. Non- Probability convenient sampling technique was used to select 60 preterm neonates who are admitted in NICU at Shri Vinoba Bhawe Civil Hospital, Silvassa. Modified neurobehavioral assessment scale tool used for datacollection.

Results: The finding shows that the score neurobehavior in comparison experimental pretest mean 12.97, posttest mean 18.27 and control group pretest mean 12.03 and posttest mean 19.90. SD of experimental group pretest 2.6901, posttest 1.6750. The effectiveness of tactile stimulation on neurobehavior control group posttest mean score 18.27, experimental 19.90. It was found that there is significant difference among preterm neonates those received tactile stimulation.

Conclusion: The present study result shows that the tactile stimulation had positive effects on neurobehavior among the preterm neonates.

KEYWORDS : Frequency (F), Percentage (P), Experimental (Experi)

INTRODUCTION

The birth of a neonate is a wonderful and very complex process.¹ The neonatal period starts from birth to twenty-eight days. The extra uterine life presents a challenge to the newborn baby because the newborn baby undergoes a conventional sequence of events to become habituated to the extra uterine life. Normal neonates remain with the risk of airway obstruction, hypothermia, and infection. When the baby is born much in advance than expected and when it is very little and weak, there is a challenge to regulate than the normal neonates.

According to WHO "live-born baby delivered before 37 weeks of gestational age completed are termed preterm neonates."² A preterm neonates are born before their body and organ systems mature. Such infants are extremely vulnerable and most of their body organs are not ready for extra uterine life; therefore, they might not function properly due to extreme immaturity. General activity of the baby is poor with sluggish or incomplete neonatal reflexes such as rooting, sucking and Moro reflexes. Limbs are extended due to hypotonic with poor recoil of the flexed forearm when it is extended. Head is larger than the body, skull bones are soft, suture are widely separated and fontanels are large.³

Preterm neonates are largely, but not entirely, related to the state of physiologic and anatomic immaturity of the various organs and systems at the time of the birth.⁴ Due to this, it will take a few more weeks to the preterm neonates in the NICU for further maturation of organs to lead a life with and without medical care. So the neonates needs special care in the NICU until the organs have developed enough to keep the baby alive without medical support this may take weeks to months.⁵ In the NICU preterm neonates are repeatedly subjected to painful, intrusive procedures, highly continuous stressful environment, high intensity noise and bright lights.⁶

The environment of the neonatal intensive care unit for premature neonate is characterized by body flexible due to

the connections with various medical devices, the difficulty of antigravity movement give immature physical development condition and contact with the hard floor and plastic wall of the incubator this is quite different from the uterine environment. The abnormal sensory stimuli experienced by the premature neonates are likely to induce physiological instability, delaying behavior and physiological responses and inhibiting normal growth, so interventions of tactile stimulation should be provided to preterm neonates.⁷

A condition of relaxation possibly will facilitate the preterm neonates, capacity to normalize their behavioral condition.⁸ A state of relaxation may facilitate the preterm neonate's ability to regulate their behavioral state organization despite the noxious environmental stimuli in the NICU. Neonates even the sick and tiny seem to benefit from nurturing stimulation derived from human contact. Since preterm neonates are born before critical aspects of brain development are completed, their experiences after birth have the potential for influencing the subsequent brain development. The brain responds to stimulation in two different ways the presence of stimulation facilitates the formation of a connection between neurons and the absence of stimulation results in cell death. The stimulation experienced by preterm neonates may contribute to physiological and neurobehavior improvement which helps in their anatomical maturity of all the systems.⁹

Tactile stimulation improves the neurodevelopment of premature neonates. Early stimulation given to neonates will change the growth of the brain cells, improve adaptive behavior and finally result in the achievement of the optimal development of their age.⁸ Growth hormone IGF-1 is an important medium in brain activity and plays a leading role in brain function. It can pass through the blood brain barrier and promote brain development.⁹

MATERIALS AND METHODS:-

Quantitative approach with two group pretest and posttest research design was used. Non- Probability convenient

sampling technique was used to select 60 preterm neonates who are admitted in NICU at Shri Vinoba Bhawe Civil Hospital, Silvassa. The tool consists of five sections-1.Frequency and percentage distribution based on demographic variable of preterm neonates.2, Frequency and percentage distribution based on neurobehavior score of preterm neonates. 3. Comparison of the pretest and post test score on selected neurobehavior score of preterm neonates. 4. Effectiveness of tactile stimulation on neurobehavior score among preterm neonates.5.Association between pretest neurobehavior score of preterm neonates with selected demographic variables. Modified neurobehavioral assessment scale tool used for data collection. Study was analyzed by using both experimental & inferential statistics. Formal permission was obtained from Ethical committee, Shri Vinoba Bhawe Civil Hospital, Silvassa. Oral consent were obtained from the preterm neonates mothers after explaining the study objectives & ensuring the confidentiality.

RESULTS:-

Table-1:- Frequency and percentage distribution based on demographic variable of preterm neonates. N = 60

Sl.No	Category	Control		Experiment	
		F	P (%)	F	P
1	Age				
	2 nd Days	30	100.0	30	100.0
2	Gender				
	Female	13	43.3	19	63.3
	Male	17	56.7	11	36.7
3	Birth weight				
	1000-1250	1	3%	2	7%
	1251-1500	1	3%	10	33%
	1501-1750	18	60%	6	20%
	1751-2000	10	33%	12	40%
4	Gestational Age (weeks)				
	30-32weeks	7	23.3	3	10.0
	32-34weeks	10	33.3	11	36.7
	34-37weeks	13	43.3	16	53.3
5	APGAR 1 minute				
	Six	8	26.7	7	23.3
	Seven	19	63.3	23	76.7
	Eight	3	10.0	0	0
6	APGAR 5minutes				
	Seven	15	50.0	23	76.7
	Eight	15	50.0	7	23.3

Table-2:- Frequency and percentage distribution based on neurobehavior score of preterm neonates. N = 60

Head circumference					
Group	n	Minimum	Maximum	mean	SD
Control	30	24	30	28.37	1.542
Experi	30	25	31	28.50	1.834
Birth length					
Group	n	Minimum	Maximum	mean	SD
Control	30	44	48	45.87	1.167
Experi	30	44	47	45.57	1.223

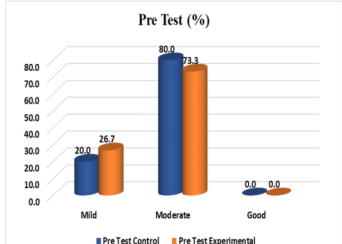


Fig: 1 Frequency and percentage distribution of pre-test neurobehavior score of preterm neonates

Finding of the study shows that is divided into category among that control group mild frequency and percentage is 6 and 20.0% where as in experimental group frequency and percentage is 8 and 26.7 %. And moderate in control group frequency and percentage is 24 and 80.0%, whereas in experimental group frequency and percentage is 22 and 73.3%. Hence, we can conclude that majority of subject moderate neurobehavior and there frequency and percentage in control group is 24 and 80.0 % and in experimental group 22 and 73.3 respectively.

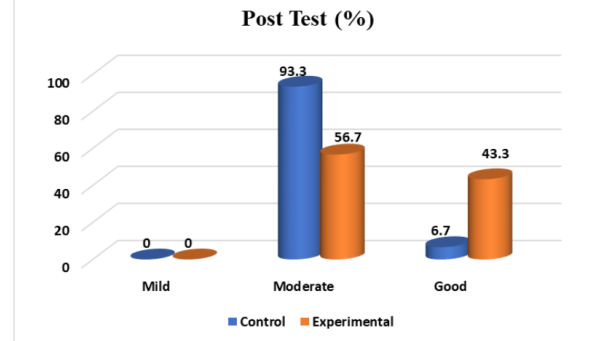


Fig: 2 Frequency and percentage distribution on post-test neurobehavior score of preterm neonates

The finding of the study shown that is divided in to category among that control group moderate frequency and percentage is 28 and 93.3% where as in experimental group frequency and percentage is 17 and 56.7 %. And good in control group frequency and percentage is 2 and 6.7%, where as in experimental group frequency and percentage is 13 and 43.3%. Hence we can conclude that majority of subject has good neurobehavior.

Table-3:- : Comparison of the pretest and post test score on selected neurobehavior score of preterm neonates.

Group	Test	Mean	SD	Pair t-test	Level of significance
Control	Pretest	12.97	2.6901	10.5251 (table value =2.05)	S
	Posttest	18.27	1.6750		
Experi	Pretest	12.03	2.9651	14.810 (table value=2.05)	S
	Posttest	19.90	2.0569		

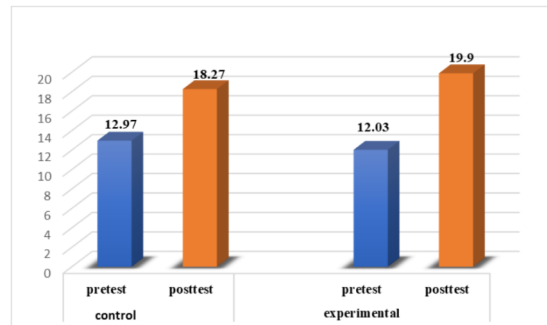


Fig :3 Comparison of the pretest and post test score on selected neurobehavior score of preterm neonates between experimental and control group

The above Fig indicated that the calculated control group pretest mean, SD was 12.97, 2.6901and posttest 18.27, 1.6750.whereas experimental mean, SD was pretest 12.03, 2.9651 and posttest 19.90, 2.0569. The t value of control group 10.5251 was more than the table value (2.05) .Hence stated hypothesis that there is significance deference between the

mean of pretest and post test score is accepted. The calculated value of experimental group 14.810 was more than the table value (2.05). Hence stated hypothesis that there is significance difference between the mean of pretest score and posttest score is accepted.

Table-4:- Association between pretest neurobehavior score of preterm neonates with selected demographic variables

Variable	Chi-square value	df	Inference
Sex	0.8801	1	NS
Gestational age	12.2174	2	S
APGAR 1 minutes	3.5404	2	NS
APGAR 5 minutes	3.9389	1	S

CONCLUSIONS

The main conclusion drawn from the present study, most of the preterm neonates in post-test neurobehavior score had mild and moderate neurobehavioral in control group and moderate and good in experimental group. These showed that the tactile stimulation was effective to improve the neurobehavior among the preterm neonates admitted in NICU.

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