



EFFECT OF TACTILE AND AUDITORY STIMULATION ON TEMPERATURE REGULATION AMONG PRETERM INFANTS

Majella Livingston L. M¹, Pethuru Devadason², Nalini Jeyavantha Santha³, Alber Mathiarasu⁴.



INTRODUCTION

- ❖ Preterm is a major communal health problem in many developing countries including India.
- ❖ Effectual neonatal care can grasp up their growth and survival.
- ❖ Touching and hearing are the first two communications a newborn receives.
- ❖ Tactile and auditory stimulation enhance the bonding, improves sleep pattern, stimulate circulation, improves digestion, facilitates food absorption, results faster weight gain and the infants level of stress hormone reduces as a result it improves immune function.
- ❖ Even though tactile and auditory stimulations are traditionally practiced in India, it is not routinely practiced in the hospital setting.

OBJECTIVES

To assess and compare the regulation of temperature among preterm babies who had received the tactile and auditory stimulation and those who had not received the same

HYPOTHESES

- ❖ The mean post test physiological parameter (Temperature) score of the preterm neonates in experimental group who received tactile & auditory stimulation will be significantly higher than the mean pretest score of premature neonates.
- ❖ The mean post test physiological parameter (Temperature) score of the experimental group who received tactile & auditory stimulation will be significantly higher than posttest physiological score of the control group.

MATERIALS AND METHODS

- ❖ In this experimental research design, 120 preterm neonates included.
- ❖ Preterm neonates who were born between 28 to 36 weeks of gestation and with a birth weight of 1000g to 2000g and admitted into the neonatal care units of KanyaKumari Medical College Hospital, Nagercoil, Tamilnadu India were randomized in to two equal experimental and control groups.
- ❖ A pilot tested tool was developed to measure the demographic factors and temperature on the pre intervention, 3rd day and 5th day of the tactile and auditory stimulation.

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Table 1- General Characteristics of the Study Population

Demographic Factors	Category	Total (N=120)	Experimental Group (N=60)	Control Group (N=60)	Chi ² Value	df	p- Value
Gender	Male	58	30 (51.7%)	28 (48.3%)	0.133	1	0.715
	Female	62	30 (48.4%)	32 (51.6%)			
Religion	Hindu	51	25 (49.0%)	26 (51.0%)	0.826	2	0.661
	Christian	63	33 (52.4%)	30 (47.6%)			
	Muslim	6	2 (33.3%)	4 (66.7%)			
MOB	Normal Vaginal Delivery	45	19 (42.2%)	26 (57.8%)	3.845	2	0.146
	Instrumental Delivery	7	2 (28.6%)	5 (71.4%)			
OOB	LSCS	68	39 (57.4%)	29 (42.6%)	1.866	3	0.601
	First Order	51	28 (54.9%)	23 (46.3%)			
	Second Order	56	25 (44.6%)	31 (55.4%)			
	Third Order	3	1 (33.3%)	2 (66.7%)			
	Twins	10	6 (60.0%)	4 (40.0%)			
APGAR @ Birth	5	22	12 (54.5%)	10 (45.5%)	1.824	3	0.610
	6	45	19 (42.2%)	26 (57.8%)			
	7	41	22 (53.7%)	19 (46.3%)			
APGAR @ 5 Minutes	8	12	7 (58.3%)	5 (41.7%)	0.972	2	0.615
	7	22	32 (46.4%)	37 (53.6%)			
	8	48	23 (56.1%)	18 (43.9%)			
Gestational Age	9	50	5 (50.0%)	5 (50.0%)	0.585	2	0.746
	28 – 30 Weeks	22	10 (45.5%)	12 (54.5%)			
	31 – 33 Weeks	48	23 (47.9%)	25 (52.1%)			
Age Category	34 – 36 Weeks	50	27 (54.0%)	23 (46.0%)	0.836	2	0.658
	10 – 14 Days	54	26 (48.1%)	28 (51.9%)			
	15 – 19 Days	42	20 (47.6%)	22 (52.4%)			
Birth Weight Category	20 – 24 Days	24	14 (58.3%)	10 (41.7%)	0.891	2	0.641
	1000 – 1300 grams	22	09 (40.9%)	13 (59.1%)			
	1310 – 1650 grams	48	25 (52.1%)	23 (47.9%)			
	1660 – 2000 grams	50	26 (52.0%)	24 (50.0%)			

Table – 2 Comparison of Mean Temperature between Experimental and Control group

Weight	Experimental Group		Control Group		T-Value	p-Value
	Mean	SD	Mean	SD		
Pre Test	36.56	0.09	36.54	0.05	2.357	0.01
Post Test 3rd Day	36.83	0.08	36.54	0.05	110.01	0.0
Post Test 5th Day	37.43	0.07	36.86	0.08	1670.8	0.0

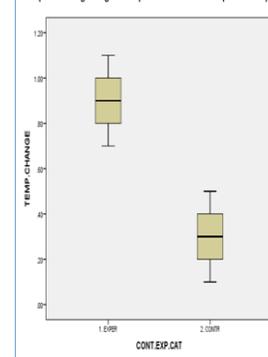
* Significant at 0.01 level.

Table – 3 Comparison of Change in Temperature between Experimental and Control group

Group	Category	Mean	SD	Paired Difference		t-Value	p-Value
				Mean	SD		
Experimental	Post.Temp.3D	36.83	0.08	0.27	0.11	18.355	0.0
	Pre.Temp	36.56	0.09				
	Post.Temp.5D	37.43	0.07	0.87	0.12	55.865	0.0
Control	Post.Temp.3D	36.56	0.09				
	Pre.Temp	36.69	0.06	0.15	0.06	15.699	0.0
	Post.Temp.5D	36.54	0.05				
	Pre.Temp	36.86	0.08	0.31	0.09	26.020	0.0
	Pre.Temp	36.54	0.05				

* Significant at 0.01 level.

Box plot showing Change in Temperature between Groups on 5th Day



- ❖ Of the total 120 preterm neonates 58 were males and 62 were females and other characteristics were as described in Table 1.
- ❖ [Table 2] The mean posttest temperature score in the experimental group was 37.43 whereas in the control group was 36.86. The corresponding 't' value was 160.8 which was higher than the table value of 2.920. Hence the temperature variation between the experimental & control groups on post-intervention 5th day was statistically significant at 0.01 level.
- ❖ [Table 3] In the Experimental group, the mean posttest temperature scores on the 3rd and 5th day were much higher than the pretest weight score. (t = 18.355, 55.865 and P < 0.01) as compared to Control group (t = 18.355, 55.865 and P < 0.01).
- ❖ Box Plot diagram shows the Change in Temperature between the groups on 5th Day which is significantly higher in the Experimental group.

CONCLUSION

- ❖ study findings have proved that the experimental group have significant higher in physiological parameters on temperature regulation.
- ❖ The observed statistical difference between the experimental and the control groups has confirmed that massage and music therapy are cost effective interventions in temperature regulation of preterm neonates.

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