2) EFFECT OF MUSIC THERAPY ON SELECTED BEHAVIORAL PARAMETER AMONG THE PREMATURE BABIES

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ABSTRACT

Background: NICU environment can be stressful to these little ones. Premature and low birth weight infants respond to their new surroundings with increased levels of agitation, which can cause fluctuations in both the heart rate and blood pressure, oxygen saturation and feeding. Exposure to music therapy has been proven to calm the infant and helps reverse the stress response. A number of studies reveal that babies who experience music therapy are more content, feed better and experience shorter length of stay in the hospital less crying, maintain physiological parameters. **Objectives of the Study:** To assess the selected behavioural parameters of the premature babies before music therapy 2) To assess the effectiveness of music therapy on selected Bhavioral parameters of the premature babies. **3)** To correlate the findings with selected demographical variables **Material and Method:** In order to achieve the desired objective of the study a Quantitative research approach was adopted for this study and pre test post test quasi experimental research design is used This study conducted in Bharati hospital sangli and Amanapure hospital Miraj Dist sangli with non probability purposive sampling method. The reliability of the tool correlation and split half technique was used and the r value is more than 0.7 hence the tool found to be reliable The pilot study was conducted from 25 jan to 28 March on 20 premature babies control 10 and experimental 10 samples were selected from Bharati hospital sangli and amanapure hospital miraj. Music therapy was given with head phones with recommoned decibel level that is 50 to 70 DB. music was given for 10 minutes and stopped then after 5 minutes the post test parameters were observed. Total for one baby 6 sessions were given on alternative days. so one baby was included in a study for 12 days. **Result:** In

sleep state the mean difference is 0.15 in control group and 3.11 is in experimental group. calculated t value is 24.83 which is more than t table value (1.734) and p is 0 which is < 0.001. Hence There is sufficient evidence at the alpha level of significance to support the claim that there is increment of sleep quality in experiment group then control group. The effect of music on behavioural response of the neonates before and after the intervention was calculated using ANOVA. The calculated p value is less than 0.05. the F value is 437.31 and p value is 0 Which is < .05 indicates difference between groups of control and experiments is statistically significant for sleep Hence it is inferred that music was effective in improving the behavioural responses of the preterm neonates. Except weight hence the null hypothesis is rejected.

KEYWORDS: Premature babies, Music Therapy, Sleep state.

INTRODUCTION

The neonatal intensive care unit (NICU) serves premature infants with low birth weight. Prematurity is defined as less than 37 weeks gestation and low birth-weight(LBW)indicates the infant weighs less than 2500 grams who indicates Intensive care.

As per the academic of pediatrics Over the past 2 decades, number of studies have documented the Effects of the NICU Environment on Stress Responses of Preterm Infants. Excessive stimulation, excessive noise, light and handling of preterm infants leads to increased stress responses, disturbances in sleep and increased risk of cochlear damage that may lead to hearing loss.[2]

Providing a suitable environment for development in the NICU is important because many infants admitted are born prematurely. Noise level in the NICU plays an important role in staff communication, family interactions and infant development. The American Academy of Pediatrics recommends that soundlevels be lower than 45 dBA in the NICU. According to the AAP, exposure to noise above 45 dBA may result in cochlear damage or disrupt the normal growth and development of premature infants (American Academy of Pediatrics, 1997[7] Results of studies of music therapy with premature infants, suggest that music therapy can reduce pain, stress and increases the sleep duration. According to the American Mu- sic Therapy Association (2007).

Exposure to music therapy has been proven to calm the infant and helps reverse the stress response. A number of studies reveal that babies who experience music therapy are more content, feed better and experience shorter length of stay in the hospital less crying, maintain behavioral parameters.

Researchers in the 1970s began evaluating the behavioral responses of preterm infants to stimulation. Katz[21] was the first to publish findings indicating that premature infants in the neonatal intensive care unit (NICU) benefit from auditory stimulation. During that same time, Segall[22] reported that postnatal auditory stimulation promoted a cardiac response.

This therapy is defined as "the prescribed use of music and musical interventions to restore, maintain and improve emo- tional, physiological and spiritual health and well-being"[23] and is described as "a behavioral science that uses specific music to produce desired changes in behavior, emotions and physiology"[23]

As a prematurity is a leading cause of neonatal mortality the researcher felt to undertake the research for the improvement of Premature health which helps in reducing Neonatal mortality rate. And as Music is a noninvasive, non pharmaceutical and relatively low-cost intervention that can be implemented at the infant's bedside.

STATEMENT OF THE STUDY
"A study to assess the effectiveness of music therapy on behavioral parameter of the premature babies in selected neonatal intensive care units of sangli city**".**

OBJECTIVES OF THE STUDY
- To assess the selected behavioral parameters of the premature babies before music therapy
- To assess the effectiveness of music therapy on selected behavioral parameters of the premature babies.
- To correlate the findings with selected demographical variables.

HYPOTHESIS
- **Ho**- Music therapy will not have any significant difference on the selected behavioural parameter of premature babies.
- **H$_1$** - Music therapy will have significant difference on the selected behavioural parameter of premature babies.

MATERIAL AND METHODS

RESEARCH APPROACH- In order to achieve the desired objective of the study a Quantitative research approach was adopted for this study **RESEARCH DESIG-** Keeping in view the objectives of the study the researcher selected the pre test post test quasi experimental research design for the study. **VARIABLES - INDEPENDENT VARIABLE** independent variable is music intervention. **DEPENDENT VARIABLE** In this study, the dependent variable is selected behavioural parameters **SETTING** This study is conducted in Bharati hospital Sangli and Amanapure hospital Miraj. Is 750 bedded multy specialty hospital which has the facility of 10 beded NICU with high dependency and low dependency units with high technology machineries and treatment. **SAMPLE AND SAMPLING TECHNIQUE** premature babies selected for data collection were those who fulfilled the criteria laid down for the selection of the sample and were available during the period of the data collection. They were selected by non probability purposive sampling method. **RELIBILITY** The reliability of the tool correlation and split half technique was used and the r value is more than 0.7 hence the tool found to be reliable **PILOT STUDY** The pilot study was conducted from 25 jan to 28 March on 20 premature babies control 10 and experimental 10 samples were selected from Bharati hospital sangli and Amanapure hospital Miraj**. METHOD-** The data was collected through observation table. the subjects were selected based on inclusion criteria with non probability purposive sampling technique (10 samples) in each group. then it is informed to the Audiometrologist for hearing assessment prior to the study and if the hearing test is valid then only the subjects were added in the study. Before the study Behavioral parameter is observed and Music therapy was given with head phones with recommened decibel level that is 50 to 70 DB for 10 minutes and stopped then after 5 minutes the post test parameters were observed. Total for one baby 6 sessions were given on alternative days. so one baby was included in a study for 12 days.

ANALYSIS OF THE DATA AND RESULT

THE ANALYZED DATA IS PRESENTED UNDER THE FOLLOWING HEADINGS

- **SECTION I**

A) frequency and percentage distribution of Demographical variables.

a) Frequency distribution based Gender.

b) Frequency distribution based on Gestational week

c) Frequency distribution based on type of delivery

d) Frequency distribution based on birth weight

- **SECTION II**

A) Comparison of pre/post mean score of behavioral parameters in control and experimental group.

B) Comparison of post mean score between control and experimental group.

- **SECTION III**

A) ANOVA showing effect of music between control and experimental Group.

- *SECTION I*

A) frequency and percentage distribution of Demographical variables

Table no 1 -frequency and percentage distribution of Demographical variables

SR.NO	DEMOGRAPHIC VARIABLES		EXPERIMENTAL GROUP		CONTROL GROUP	
			frequency	percentage	frequency	percentage
1	GENDER	Male	4	40%	5	50%
		Female	6	60%	5	50%
2	WEIGHT	1 kg to 1.5 kg	5	50%	4	40%
		1.5kg to 2 kg	5	50%	6	60%
3	GESTATIONAL AGE	28wks to 32 wks	4	40%	5	50%
		32 to 36 wks	6	60%	5	50%
4	TYPE OF DELIVERY	Normal	6	60%	4	40%
		Lscs	4	40%	6	60%

Table no 1 show the frequency and percentage distribution of Demographical variables in the gender the maximum number that is 60% were females and in weight in both the group 60% were from 1.5 to 2 kg in control group and in gestational week maximum were from the 32 to 36 wks that is 60% where in type of delivery maximum were from normal delivery that is 60% from conrol group and 60% were from Lscs in experimental group.
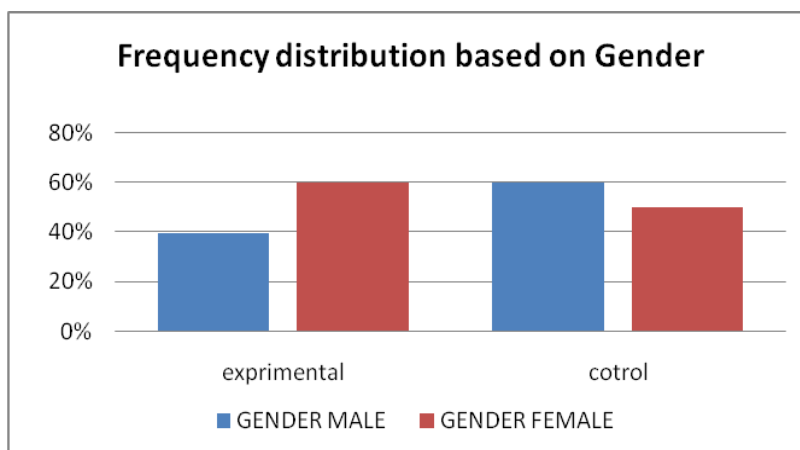

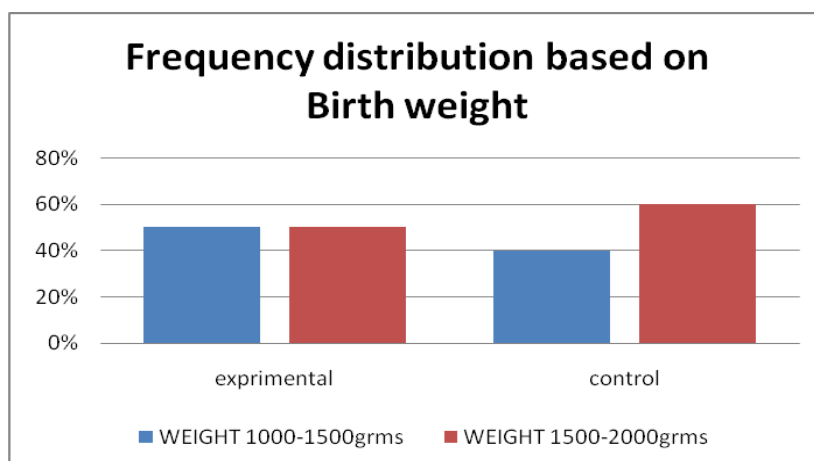**Figure NO -1 - Frequency distribution based on Gender**

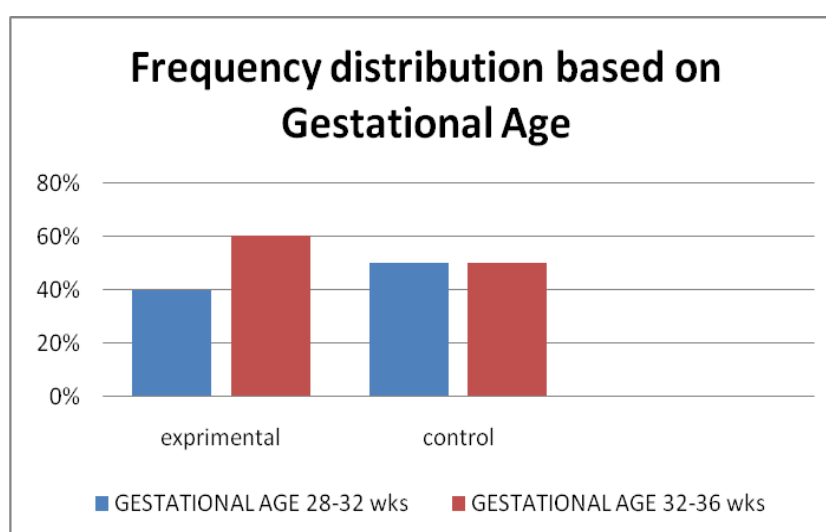**Figure NO -2 - Frequency distribution based on Birth weight**

Figure NO -3 - Frequency distribution based on Gestational Age
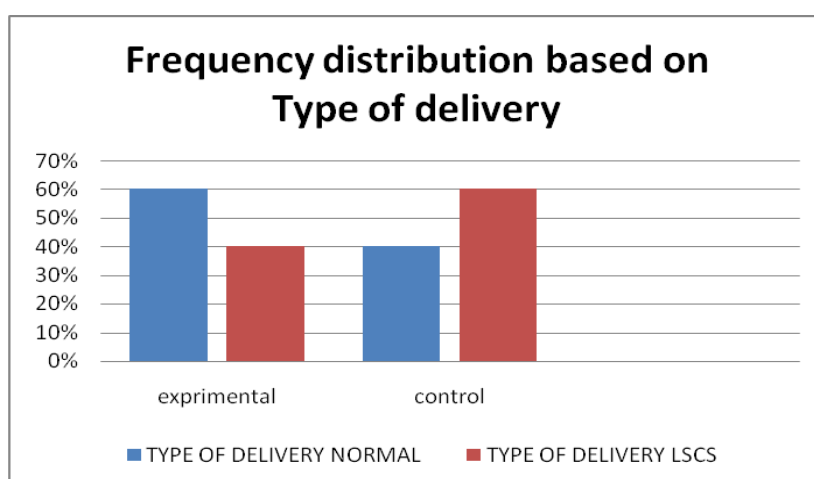

Figure NO -4 - Frequency distribution based on Type of delivery

SECTION –II

A) Comparison of pre/post mean score of behavioral parameters in control and experimental group.

b) Comparison of post mean score between control and experimental group

Table no. 2 – Comparison of pre/post mean score of sleep state in control and experimental group

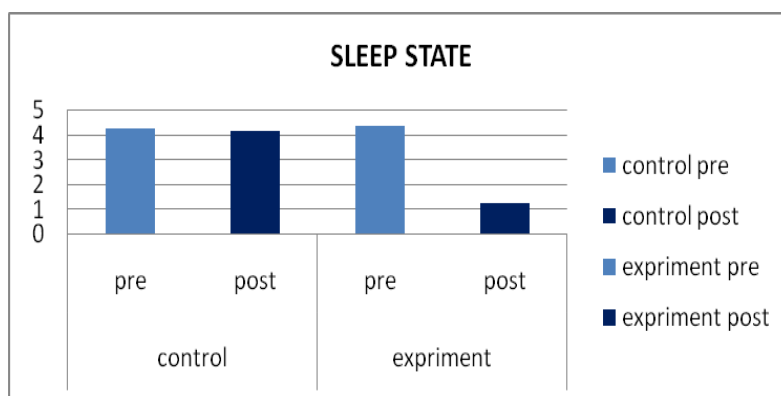| Group		Mean	SD	t value	P value
control	pre	4.3	0.59	1.55	0.078
	post	4.15	0.73		
Experiment	pre	4.36	0.58	5.1	0
	post	1.25	0.43		

Figure NO 5 – Comparison of pre/post mean score of sleep state in control and experimental group

Table no 2 and figure no 5 shows t value in control group is 1.55 which is more than the t table value and the p value is 0.078 which is more than 0.001 indicates significant difference between pre and post test in the control group . In experimental group t calculated t value is 5.1 which is more than the t table value and the p value is 0 which is < 0.001 indicates highly significant difference between pre and post test for sleep in experimental group.

Table no. 3 – Comparison of post score between control and experimental group

Sr.No	Parameters	Group	Mean difference	t-value between control and experiment (Difference = μ (expriment) - μ (control)	p-value	Result
1	sleep	control	0.15	24.83	0	Highly significant.

Table no 3 In sleep state the mean difference is 0.15 in control group and 3.11 is in experimental group. calculated t value is 24.83 which is more than t table value (1.734) and p

is 0 which is 0.001. Hence There is sufficient evidence at the alpha level of significance to support the claim that there is increment of sleep quality in experiment group then control group.

SECTION III

A) ANOVA showing the effect of music between control and experimental group.

Table no 4 – ANOVA showing effect of music between control and experimental group

	F-value between control and exp	**p-value**	**Result**
sleep	437.31	0	We see that p-value for groups is 0 < .05 indicates difference between groups of control and experiments are **statistically significant** for sleep

The effect of music on the behavioural response of the neonates before and after the intervention was calculated using ANOVA. The calculated p values are less than 0.05 and the **f value is 437.31 and the p value is 0 which is < .05 Hence it is inferred that music was** effective in improving the behavioural responses of the preterm neonates. Hence the null hypothesis is rejected.

CONCLUSION

Premature infants may face a number of health challenges, including, low birth weight, breathing problems because of underdeveloped lungs, underdeveloped organs or organ systems, greater risk for life-threatening infections, greater risk for a serious lung condition, known as respiratory distress syndrome, greater risk for cerebral palsy (CP) and greater risk for learning and developmental disabilities. Healing with sound has become increasingly popular and well documented as an effective holistic treatment. Music is credited to have numerous qualities and capabilities and it has been shown even to enhance the growth of plants. Studies have shown that soft and soothing music to individual babies enhances their stabilit. Babies like and enjoy gentle and classical or gentle instrumental music. Music causes autonomic stability, reduces stress and quietens the baby, increase the sleeping period and baby goes in deep sleep hence it maintains the stability in them.

The present pilot study, in short, gave the investigator a new experience, a chance to widen the knowledge and conduct final study which will help to understand the effect of intervention on preterm neonates in maintaining behavioural responses to achieve and restore the life.

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