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"THE EFFECT OF MUSIC THERAPY ON THE PHYSIOLOGICAL PARAMETERS, FEEDING AND SLEEPING PATTERN AMONG THE PREMATURE NEWBORNS"

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Abstract

Children constitute the most Important and vulnerable segment of our population. They are truly the foundation of our nation. Hence the focus of every citizen should be, to promote their health and safeguard their interests. So every unborn child should be allowed to achieve his or her optimal growth and development potential so that he can effectively contribute towards nation's productivity. The future of our nation depends on the way in which we nurture our children today. The research design used was a quasi experimental design. The data collection tool was validated by two pediatricians and three nursing experts. Reliability was established by inter–rater (0.64) and test-retest method (0.95). The samples for the study were chosen using purposive sampling technique, 25 were in experimental and 25 in control group. Data was collected by self structured interview method by using Preterm Infant Breastfeeding Behavior Scale by Nyqvist and a modified Brief Infant Sleep Questionnaire by Sadeh, to assess the physiological parameters, feeding and sleeping pattern and Music therapy was given for 15 minutes for three consecutive days for 4 weeks. The main study was conducted in NICU of Care 24 Medical Center and Hospital. The paired test t value for feeding pattern was 20 and for sleeping pattern was 12.28 at $P<0.05$ revealed that there was a significant improvement in maintaining the physiological parameters, improved feeding and sleeping pattern after the music therapy. It was inferred that there was a significant difference in maintaining the physiological parameters, improved feeding and sleeping pattern and they were good improvement in the experimental group than the control group. There was no significant association between the post test level of physiological parameters, feeding and sleeping pattern of the premature newborns and their selected demographic variables. The study concluded that the music therapy was effective in improving the physiological parameters, feeding pattern and sleeping pattern among the premature newborns, in the hospital setup. The implications, limitations, recommendations and conclusion were clearly spelt.

INTRODUCTION

The birth of an infant is one of the most owe inspiring and emotional event that can occur in one's life time. After nine months of anticipation and preparation the neonate arrives amid a flurry of excitement. The new human being affects the life of the parents and also the other members of the family. If the neonate is not the robust, healthy, lovable infant as expected, parents find it very difficult to cope with these changes and feel varying degree of turmoil and anxiety. Proper care of the newborn babies forms the foundation for the qualitative outcome without any mental and physical disabilities.

Preterm infants are those born before 37 weeks of gestation. This replaces the term prematurity. The physiological parameters are less obvious when compared to adults. The immaturity places infants at risk for not only neonatal complications but also for other higher-risk factors. . In the present era of science and technology, where quality is the supreme priority, Quality of life can only be accredited by decreased morbidity and mortality rate of newborn.

The premature baby's reflex activity is only partially developed. Sucking is absent or weak due to the infant's poor muscle tone. The cries of an early baby are often weak. Other neurologic signs are absent or diminished. Physiological immature, preterm babies are unable to maintain body temperature, have limited ability to excrete solutes in the urine and have increased susceptibility to infection. A pliable thorax, immature lung tissue and an immature regulatory center lead to periodic breathing, hypoventilation and frequent periods of apnea.

Premature infants born between 34 and 37 weeks of pregnancy usually appear healthy at birth but may have more difficulties adapting than full-term babies. These preterm babies usually require more sleep and they may even sleep through a feeding, which indicates they miss much-needed calories. Most infants require special feeding methods and supplemental calories.

Need for the study:

The hospital care of premature and low-birth infants requires expensive technology and experienced care. More than ever before the Neonatalogical care besides the medical and nursing work has to been balanced between protecting the child against over extension due to the concept of "Minimal handling" and on the other hand the necessary fostering of the young patients psychic and sensomotoric development during the long stationary treatment.

Preterm babies are also having some sort of anxiety and stress even though we are not taking care of. Several studies have shown how music therapy enhances the efficacy of nursing interventions that is the majority of NICU staff preferred live recorded music and music appears to be an acceptable intervention in Neonatal intensive care unit. The holistic movements has become a challenge to health care professionals and music is one of the few interventions that can be considered truly holistic. Research and clinical findings support the uses of music in a varietyof physical and psychological conditions.

Therefore from the above findings the researcher felt that it is a need to conduct the present study to assess the effectiveness of music therapy in preterm neonates.

Statement of problem:

A study to assess the effectiveness of music therapy in physiological parameters, feeding and sleeping pattern among the premature newborns in NICU, at selected hospitals

Objectives of the study:

- To assess the pre and post test level of physiological parameters, feeding and sleeping pattern among the experimental and control group.
- To compare the pre and post test level of physiological parameters, feeding and sleeping pattern among the experimental and control group.
- To assess the effectiveness of music therapy on the pre and post test level of physiological parameters, feeding and sleeping pattern among the experimental group.
- To find the association between the post test level of physiological parameters, feeding and sleeping pattern and their selected demographic variables among the experimental group.

Hypothesis:

H_1: There is a significant difference in the post test level of physiological parameter, feeding and sleeping pattern between the experimental and control group.

H_2: There is a significant association in the post test level of physiological parameters, feeding and sleeping pattern of the premature newborns of the experimental group and their selected demographic variables.

ASSUMPTIONS:

- Music therapy is effective to improve the physiological parameters for thepremature newborns.
- Music therapy improves the feeding and sleeping pattern for the prematurenewborn.
- Music therapy is more feasible to practice.

DELIMITATIONS:

- The population of the preterm neonate who were with a gestational age from 30 to36 weeks.
- Who was admitted in the hospital at the time of data collection.
- Who was on breast feeding.
- The study was limited to four weeks.

RESEARCH METHODOLOGY

RESEARCH APPROACH:

The research approach used for this study was quasi experimental approach.

RESEARCH DESIGN:

The research design selected for the present study was Quasi Experimental Non-Randomized control group which is relatively straight forward research design in which there is an experimental group and a control group in which samplesare selected by purposive sampling technique. All the subjects were given the pretest, and the experimental group received the treatment and the control group received no treatment, and post test were conducted for both the group.

GROUP	PRE TEST	INTERVENTION	POST TEST
Experimental group	O_1	X	O_2
Control group	O_1	–	O_2

The symbols used:

O_1: Pre test to assess the level of physiological parameters, feeding and sleepingpattern among preterm newborns in experimental and control groups.

X : Music therapy

O_2: Post test to assess the effect of Music therapy among preterm in experimental and control group.

VARIABLES

INDEPENDENT VARIABLE

In the present study Music therapy is an independent variable.

DEPENDENT VARIABLE

In the present study the physiological parameters, feeding and sleeping pattern among the preterm newborns were the dependent variable.

SETTING OF THE STUDY

The study was conducted in the NICU of CARE-24 Hospital.

POPULATION

Target population In this study the target population were the preterm newborns admitted in the NICU.

Accessible population In this research the accessible populations were the preterm newborns admitted in the NICU of the CARE-24 Hospital.

SAMPLE AND SAMPLE SIZE

The sample size for this study consists of 50 samples.

SAMPLING TECHNIQUE

In present study purposive sampling technique was used.

SAMPLE SELECTION CRITERIA

INCLUSION CRITERIA

- Preterm newborns of gestational weeks between 30-36.
- Preterm who were on breastfeeding.
- Mothers who were willing to participate in the study.

EXCLUSION CRITERIA

- Preterm who were critically ill.
- Mothers who were not willing to participate in the study.

DATA ANALYSIS AND INTERPRETATION

THE DATA ANALYSED WERE PRESENTED AS FOLLOWS

Section 1: Data on selected Demographic variables of the Premature Newborns in the experimental and control group.

Section 2: Data on comparison of Physiological parameter, Feeding and Sleeping pattern among Premature Newborn among experimental and control group.

Section 3: Data on the Effectiveness of Music therapy on the Physiological parameters, Feeding and Sleeping pattern among the Premature Newborns.

Section 4: Data on the association of Post test level of Physiological parameters, Feeding and Sleeping pattern and their selected demographic variables among experimental group.

SECTION 1: DATA ON SELECTED DEMOGRAPHIC VARIABLES OF THE PREMATURE NEWBORNS IN THE EXPERIMENTAL AND CONTROL GROUP

TABLE 1: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SELECTED DEMOGRAPHIC VARIABLES OF THE EXPERIMENTAL AND CONTROL GROUP

S. no	Demographic variables	Experimental group		Control group	
		Freq	%	Freq	%
1.	Gestational weeks				
	a. Below 30 weeks	0	0	0	0
	b. 31 - 33 weeks	4	16%	3	12%
	c. 34 - 36 weeks	21	84%	22	88%
2.	Age of Premature Newborn				
	a. 1 - 7 days	9	36%	8	32%
	b. 8 – 14 days	5	20%	4	16%
	c. 15 – 21 days	8	32%	9	36%
	d. 22 – 28 days	3	12%	4	16%
3.	Birth weight				
	a. 2 – 1.751 kg	20	80%	20	80%
	b. 1.750 – 1.501 kg	5	20%	5	20%
	c. 1.500 – 1.251 kg	0	0	0	0
	d. > 1.250 kg	0	0	0	0
4.	Birth order				
	a. One	20	80%	17	68%
	b. Two	5	20%	8	32%
	c. Three	0	0	0	0
5.	Cry of the child at birth				
	a. Did not cry	0	0	0	0
	b. Weak cry	7	28%	7	28%
	c. Cried well	18	72%	18	72%
6.	APGAR score				
	a. 0 – 3	0	0	0	0
	b. 4 – 6	7	28%	8	32%
	c. 7 - 10	18	72%	17	68%
7.	Gender				

	a. Male b. Female	14 11	56% 44%	15 10	60% 40%
8.	Religion a. Hindu b. Muslim c. Christian	14	56% 20% 24%	13 6 6	52% 24% 24%
9.	Residential area a. Urban b. Rural	16 9	64% 36%	15 10	60% 40%
10.	Educational status of Mother a. Primary b. Secondary c. Higher secondary d. Graduate e. Illetrate	0 0 10 15 0	0 0 40% 60% 0	0 0 11 4 0	0 0 44% 56% 0
11.	Occupational status of Mother a. Private employee b. Government employee c. Own business d. At home	9 5 5 6	36% 20% 20% 24%	10 3 5 7	40% 12% 20% 28%

SECTION 2: DATA ON COMPARISON OF PHYSIOLOGICAL PARAMETER, FEEDING AND SLEEPING PATTERN AMONG PREMATURE NEWBORN AMONG EXPERIMENTAL AND CONTROL GROUP.

TABLE 2: MEAN, SD OF THE POST TEST LEVEL OFPHYSIOLOGICAL PARAMETERS OF THE EXPERIMENTAL AND CONTROL GROUP.

N= 25

GROUP	EXPERIMENTAL GROUP			CONTROL GROUP		
	POST TEST			POST TEST		
	HR	RR	SPO2	HR	RR	SPO2
MEAN	141	29	95	148	34	92
SD	4.9	2.6	1.07	6.4	2.8	1.05

Frequency And Percentage Distribution Of Pre Test And Post Test Level Of Feeding Pattern In Experimental And Control Group.

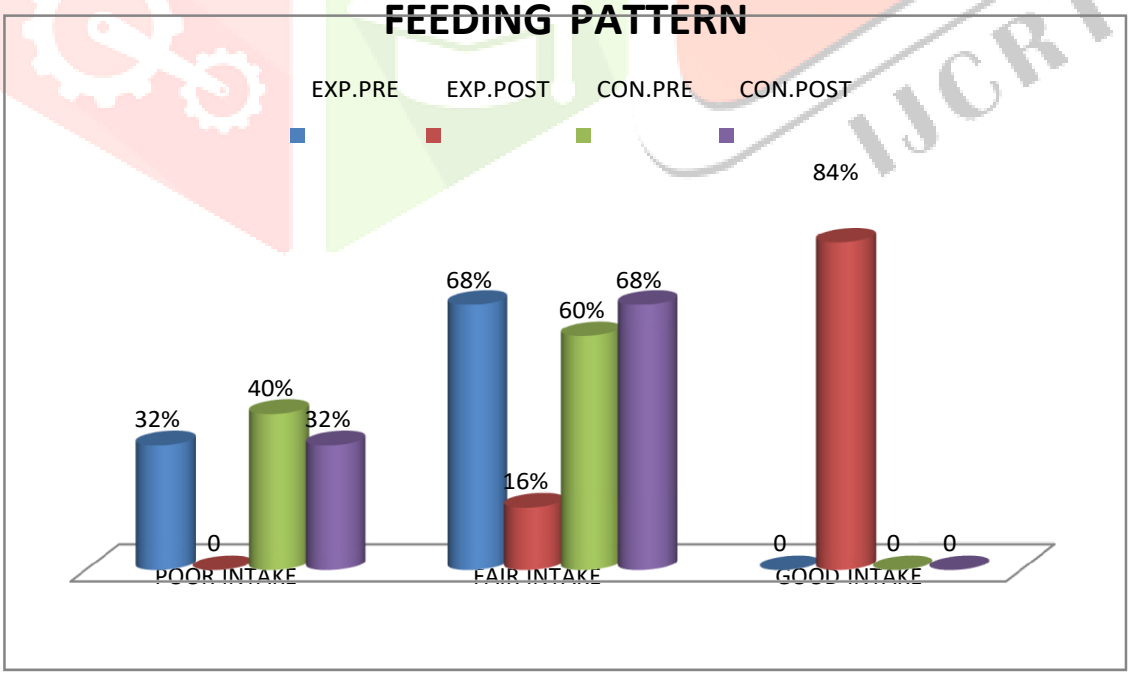


TABLE 3: MEAN, SD, MEAN DIFFERENCE, UNPAIRED t VALUE OF POST TEST LEVEL OF FEEDING PATTERN AMONG THE EXPERIMENTAL AND CONTROL GROUP.

N=50

GROUP	MEAN	SD	MEAN DIFFERENCE	UNPAIRED t VALUE
EXPERIMENTAL POST TEST	15	1.6	7	t = 15.09Df=49 S
CONTROL POST TEST	8	1.6		

Frequency And Percentage Distribution Of Pre Test And Post Test Level Of Sleeping Pattern In Experimental And Control Group.

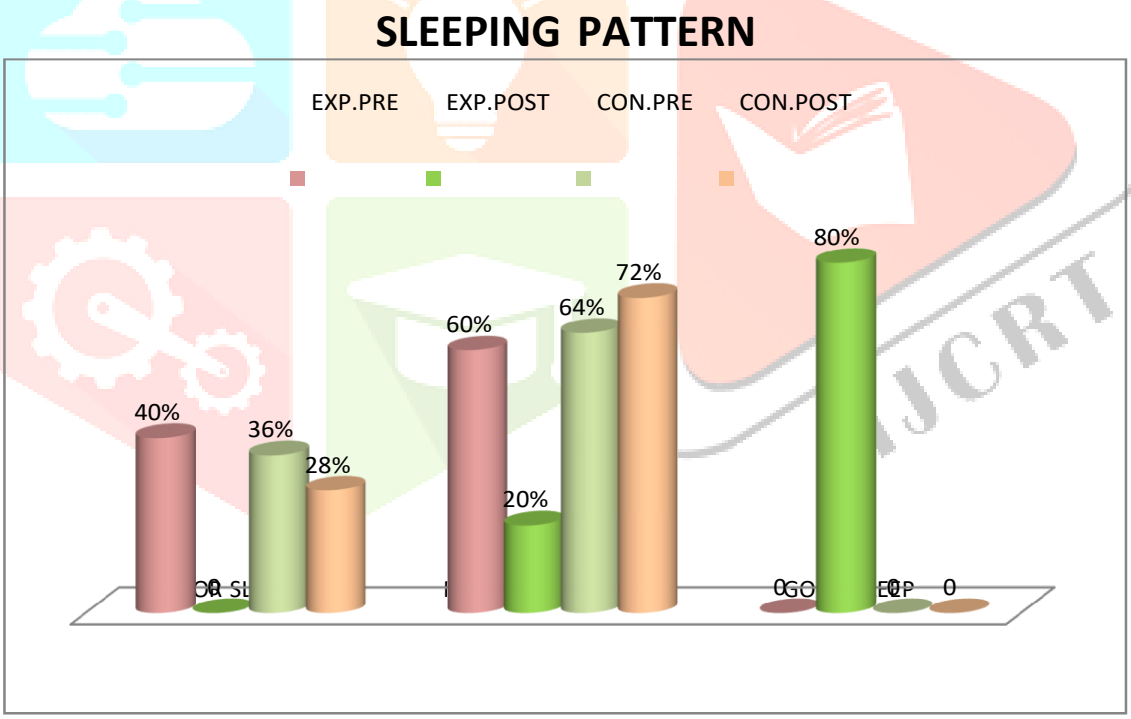
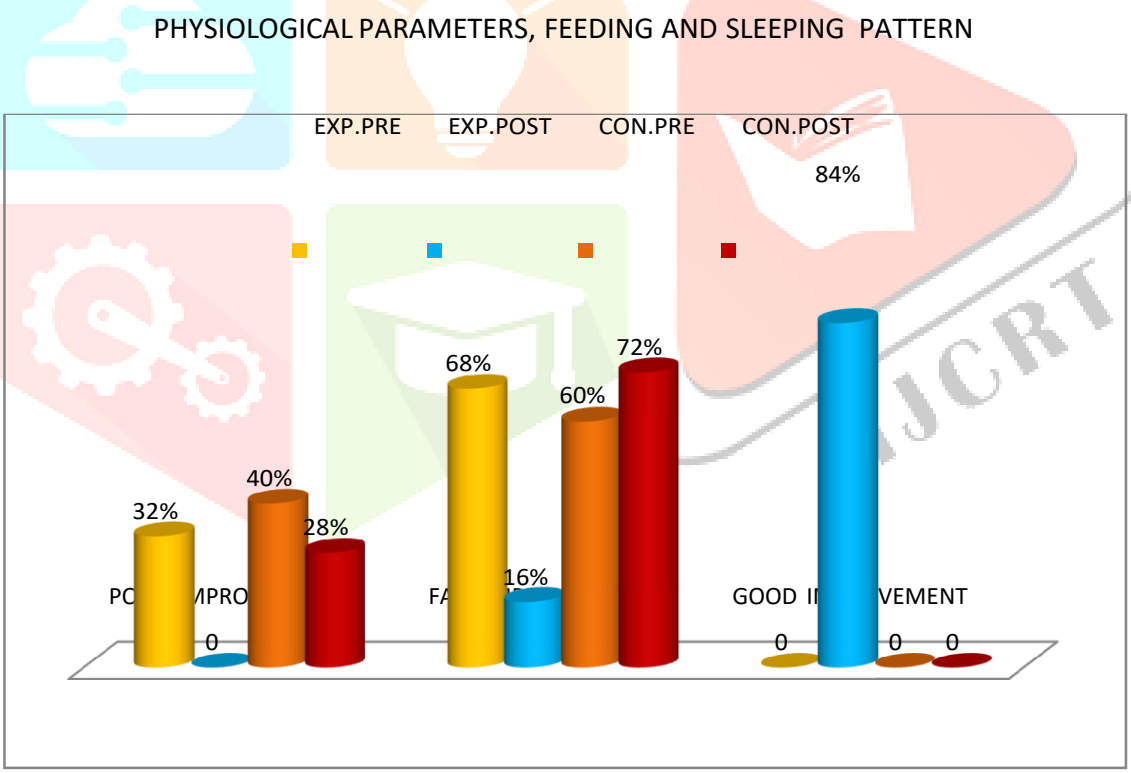


TABLE 4: MEAN, SD, MEAN DIFFERENCE AND UNPAIRED t VALUE OF THE POST TEST LEVEL OF SLEEPING PATTERN AMONG THE EXPERIMENTAL AND CONTROL GROUP.

N=50

GROUP	MEAN	SD	MEAN DIFFERENCE	UNPAIRED t VALUE
EXPERIMENTAL POST TEST	16	1.9	7	t = 12.72 Df = 49S
CONTROL POST TEST	9	2.1		

Overall Frequency And Percentage Distribution Of Pre Test And Post Test Level Of Physiological Parameters, Feeding And SleepingPattern In The Experimental And Control Group



SECTION 3 : DATA ON THE EFFECTIVENESS OF MUSIC THERAPY ON THE PHYSIOLOGICAL PARAMETERS, FEEDING AND SLEEPING PATTERN AMONG THE PREMATURE NEWBORNS.

TABLE 5: MEAN, SD OF THE PHYSIOLOGICAL PARAMETERS OF THE EXPERIMENTAL GROUP.

N= 25

EXPERIMENTAL GROUP	PRE TEST			POST TEST		
	HR	RR	SPO2	HR	RR	SPO2
MEAN	152	34	92	141	29	95
SD	6.3	3.4	1.07	4.9	2.6	1.07

TABLE 6: MEAN, SD, MEAN DIFFERENCE AND t VALUE OF PRE TEST AND POST TEST LEVEL OF FEEDING PATTERN OF THE EXPERIMENTAL GROUP.

N= 25

EXPERIMENTAL GROUP	MEAN	SD	RANGE	MEAN DIFFERENCE	PAIRED t VALUE
PRE TEST	7	1.3	4	8	20
POST TEST	15	1.6	5		

TABLE 7: MEAN, SD, MEAN DIFFERENCE AND t VALUE OF PRE AND POST TEST LEVEL OF SLEEPING PATTERN OF THE EXPERIMENTAL GROUP.

N= 25

EXPERIMENTAL GROUP	MEAN	SD	RANGE	MD	PAIRED t VALUE
PRE TEST	9	2.2	6	7	12.28
POST TEST	16	1.9	7		

SECTION 4: DATA ON THE ASSOCIATION OF POST TEST LEVEL OF PHYSIOLOGICAL PARAMETERS, FEEDING AND SLEEPING PATTERN OF THE EXPERIMENTAL GROUP AND THEIR SELECTED DEMOGRAPHIC VARIABLES.

TABLE 8: ASSOCIATION BETWEEN THE POST TEST LEVEL OF FEEDING PATTERN OF THE EXPERIMENTAL GROUP AND THEIR SELECTED DEMOGRAPHIC VARIABLES.

S. NO	DEMOGRAPHIC VARIABLES	EXPERIMENTAL GROUP		CHI SQUARE x^2	SIGNIFICANCE
		FREQ	%		
1.	Gestational weeks				
	a. Below 30 weeks	0	0		Df = 4NS
	b. 31 – 33 weeks	4	16%	0.43	
	c. 34 – 36 weeks	21	84%		
2.	Age of premature newborn				
	a. 1 – 7 days	9	36%		Df= 6NS
	b. 8 – 14 days	5	20%	5.15	
	c. 15 – 21 days	8	32%		
	d. 22 – 28 days	3	12%		
3.	Birth weight				
	a. 2 – 1.751 kg	20	80%		Df= 6NS
	b. 1.750 – 1.501 kg	5	20%	1.67	
	c. 1.500 – 1.251 kg	0	0		
	d. > 1.250 kg	0	0		
4.	Birth order				
	a. One	20	80%		
	b. Two	5	20%	0.07	Df= 4NS
	c. Three	0	0		
5.	Cry of the child at birth				
	a. Did not cry	0	0		
	b. Weak cry	7	28%	0.18	Df= 4NS
	c. Cried well	18	72%		
6.	APGAR score				
	a. 0 – 3	0	0		
	b. 4 – 6	7	28%	0.18	Df= 4NS
	c. 7 – 10	18	72%		

7.	Gender a. Male b. Female	 14 11	 56% 44%	0.69	Df= 2NS
8.	Religion a. Hindu b. Muslim c. Christian	 14 5 6	 56% 20% 24%	1.50	Df= 4NS
9.	Residential area a. Urban b. Rural	 16 9	 64% 36%	2.67	Df= 2NS
10.	Educational status of mother a. Primary b. Secondary c. Higher secondary d. Graduate e. Illterate	 0 0 10 15 0	 0 0 40% 60% 0	0.19	Df= 8NS
11.	Occupational status of mother a. private employee b. government employee c. own business d. At home	 9 5 5 6	 36% 20% 20% 24%	2.51	Df= 6NS

TABLE 9 : ASSOCIATION BETWEEN THE POST TEST LEVEL OF SLEEPING PATTERN OF THE EXPERIMENTAL GROUP AND THEIR SELECTED DEMOGRAPHIC VARIABLES.

S. NO	DEMOGRAPHICVARIABLES	EXPERIMENTAL GROUP		CHI SQUARE X^2	SIGNIFICANCE
		FREQ	%		
1.	Gestational weeks a. Below 30 weeks b. 31 – 33 weeks c. 34 – 36 weeks	 0 4 21	 0 16% 84%	0.073	Df = 4NS
2.	Age of premature newborn a. 1 – 7 days b. 8 – 14 days c. 15 – 21 days d. 22 – 28 days	 9 5 8 3	 36% 20% 32% 12%	7.536	Df= 6NS
3.	Birth weight a. 2 – 1.751 kg b. 1.750 – 1.501 kg c. 1.500 – 1.251 kg d. > 1.250 kg	 20 5 0 0	 80% 20% 0 0	1.562	Df= 6NS
4.	Birth order a. One b. Two c. Three	 20 5 0	 80% 20% 0	0	Df= 4NS
5.	Cry of the child at birth a. Did not cry b. Weak cry c. Cried well	 0 7 18	 0 28% 72%	0.446	Df= 4NS
6.	APGAR score a. 0 – 3 b. 4 – 6 c. 7 – 10	 0 7 18	 0 28% 72%	0.446	Df= 4NS

7.	Gender a. Male b. Female	 14 11	 56% 44%	1.459	Df= 2NS
8.	Religion a. Hindu b. Muslim c. Christian	 14 5 6	 56% 20% 24%	2.142	Df= 4NS
9.	Residential area a. Urban b. Rural	 16 9	 64% 36%	3.515	Df= 2NS
10.	Educational status of mother a. Primary b. Secondary c. Higher secondary d. Graduate e. Illterate	 0 0 10 15 0	 0 0 40% 60% 0	0	Df= 8NS
11.	Occupational status of mother a. private employee b. government employee c. own business d. At home	 9 5 5 6	 36% 20% 20% 24%	2.609	DF= 6NS

CONCLUSION

The findings of the study showed that the post test level of physiological parameters, feeding and sleeping pattern of the premature newborns were improved. There was a significant ($p<0.05$) improvement on the physiological parameters, feeding and sleeping pattern among the premature newborns after the music therapy. None of the selected demographic variables revealed that the music therapy had significant association ($P> 0.05$). Thus the study revealed that music therapy was effective to improve the physiological parameters, feeding and sleeping pattern among the Premature Newborns.

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