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Instrumental music to reduce stress among parents of the neonates admitted in NICU

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Abstract

The use of listening to music as an economic, non-invasive, and highly accepted intervention tool has received special interest in the reduction of stress and stress-related health issues. The parents of preterm infants face major mental health challenges in the Neonatal Intensive Care Unit (NICU). Family-centered music therapy actively integrates and empowers parents in their neonates' care.

The purpose of the study was to assess effectiveness of instrumental music among parents of the neonates admitted in NICU.

Methods: One group pre-test, post-test research design, which belongs to pre-experimental design, was selected to effectiveness of instrumental music on level of stress among parents of the neonates admitted in NICU. An evaluative research approach was considered appropriate for the present study. Study was undertaken on 60 parents of neonates were selected by purposive sampling technique. In the present study, the data collected by using the demographic data and perceived stress scale. The data collection was carried out from 24th October to 15th November. Formal permission will be obtained from the head of the hospital before proceeding for data collection. After obtaining informed consent from the sample and assuring about confidentiality of the information. The investigator will administer the structured interview schedule which contains demographic variables and questionnaire to assess the level of stress of parents of neonates admitted in NICU. The data will be collected for about 4-5 subject per day. Duration of data collection was 40 days. Parents are allowed to listen instrumental music in a separate room at least 2 times a day for 5 days duration will be for 30 min. Parents are assessed stress before and after listening to instrumental music.

Results: Majority of samples 55% were within the age group of 25-31 and 41.7% within the age group of 18-24 and 3.33% within the age group of 32-38. With respect to gender 61.7% were female and 38.3% were male. Maximum samples 70% were belongs to Hindu religion, 13.3% were belongs to Muslim religion and 7% from other religion. As per education is concerned 50% of samples were having high school educational qualification, 23.3% were from secondary education and 28.7 were from graduate. Among 60 samples 56.7% were working and 43.3% were not working. Most of the samples 45% were having Rs 10001-15000 family income per month, 35% were having Rs 5001-10000 family income per month and 20% were having Rs >15000 family income per month. Among 60 samples 56.7% were from rural residence and 43.3% were from urban residence. Pre Interventional Scores: the level of stress among parents of neonates measured on Perceived stress Scale. It depicts that 65% were having severe stress, 18.33% were having moderate stress and 10% were having very severe stress and 6.66% were having mild level of stress in pre-test. Post Interventional Scores: It depicts that 58% of the samples were having moderate stress, 31.67% were having mild stress and 10% of the samples were having severe stress and 0% were having very severe stress in posttest. Pre-intervention mean score and SD in parents of neonates were 22.68 and 4.90 respectively. Post-intervention mean score and SD in parents of neonates were 12.86 and 4.48 respectively.

Conclusion: The reduction in the stress score was found statistically significant at the level of $p < 0.001$ the study finding revealed that instrumental music was effective in reducing level of stress among parent of neonates.

Keywords: Effectiveness, neonatal intensive care unit, instrumental music, stress, parents, neonate

Introduction

Parents need to learn to cope with adapting to the NICU environment, understanding medical terminology and medical needs of their child, infant's uncertain survival and outcome, focusing on how to care for the infant post-discharge and long term outcomes, the loss of parental role, and the emotional distress [1].

Parents often feel stress over the environment in the NICU. They need to adjust to the unfamiliar surroundings [2]. Additionally, music therapy has been shown to increase appropriate parent actions and responses to their infants, which may lead to decreased stress levels in parents [3]. Parents find it very stressful when their neonate is admitted to the neonatal

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unit for any reason. Different sources of stress have been identified, and certain occasions (such as discharge from hospital or bereavement) are particularly difficult. These experiences impact on families in positive and negative ways, and people adopt a range of coping strategies. Staff should adopt a holistic approach to care that acknowledges the uniqueness of each family and supports them appropriately [4]. Watkins (1997) concluded music can stimulate the production of endorphins, the body’s natural opiates, as well as reduce levels of cortisol and nor adrenaline, hormones related to stress⁵. The investigator during his clinical experiences found that the parents face more stress when neonates admitted in NICU. Hence, the investigator interested to determine the effectiveness of instrumental music on the level of stress among parents of neonates admitted in NICU.

Material and method

Research Approach: Evaluative approach

Results

Table 1: Distribution of samples according to their socio-demographic variables:

N=60				
S. No.	Variables		Frequency	Percentage
1.	Age	18-24	25	41.7%
		25-31	33	55.0%
		32-38	2	3.33%
		39-45	0	0%
2.	Gender	Male	23	38.3%
		Female	37	61.7%
3.	Religion	Hindu	42	70.0%
		Muslim	8	13.3%
		christen	4	7.0%
		other	6	10.7%
4.	Education	Illiterate	1	1.7%
		Primary	0	0.0%
		secondary	14	23.3%
		High school	30	50.0
		Graduate	13	21.7%
5.	Occupation	post graduate	2	3.3%
		working	34	56.7%
6.	Income of the family per month	Not working	26	43.3%
		<5000	0	0%
		5001-10000	21	35%
		10001-15000	27	45%
7.	Residence	>15000	12	20%
		Urban	26	43.3%
		Rural	34	56.7%

Majority of samples 55% were within the age group of 25-31 and 41.7% within the age group of 18-24 and 3.33% within the age group of 32-38. With respect to gender 61.7% were female and 38.3% were male. Maximum samples 70% were belongs to Hindu religion, 13.3% were belongs to Muslim

Research design: Pre experimental.

Setting: tertiary care Hospitals of Karad City.

Study subjects: Parents of neonates admitted in NICU, Krishna Hospital, Karad, Maharashtra, India

Sample Size: 60

Sampling Technique: Convenient Sampling Technique

Data collection tool: The structured questionnaire consisted of two sections covering the following areas:

- **Section A:** Personal data consist of seven items which include age, gender, religion, education, occupation, income of the family, and residence and source of information of parents of neonates admitted in NICU.
- **Section B:** Perceived stress scale consisting of ten items regarding assess the level of stress among parents of neonates.

(Score: 0-10=Mild, 11-20=Moderate, 21-30=Severe, and 31-40=Very severe).

religion and 7% from other religion. As per education is concerned 50% of samples were having high school educational qualification, 23.3% were from secondary education and 28.7 were from graduate.

Table 2: Frequency and Percentage distribution of pre-interventional scores among parents of neonates.

N=60			
Grades	Score	Pre-test	
		Frequency	Percentage
Mild	0-10	4	6.66
Moderate	11-20	11	18.33
Severe	21-30	39	65
Very Severe	31-40	6	10

Data presented in table:2 shows the level of stress among parents of neonates measured on Perceived stress Scale. It depicts that 65% were having severe stress, 18.33% were

having moderate stress and 10% were having very severe stress and 6.66% were having mild level of stress in pre-test.

Table 3: Frequency and Percentage distribution of Post interventional scores among parents of neonates

Grades	Score	Post-test	
		Frequency	Percentage
Mild	0-10	19	31.67
Moderate	11-20	35	58.33
Severe	21-30	6	10
Very Severe	31-40	0	0

N=60

Data presented in table-3 shows the level of stress among parents of neonates measured on Perceived stress Scale. It depicts that 58% of the samples were having moderate stress, 31.67% were having mild stress and 10% of the samples were having severe stress and 0% were having very severe stress in post- test.

Pre-intervention mean score and SD in parents of neonates were 22.68 and 4.90 respectively.

Table 5: Post-interventional Mean scores and SD among parents of neonates

Grades	Score	posttest	
		Mean	SD
Mild	0-10	12.86	4.48
Moderate	11-20		
Severe	21-30		
Very Severe	31-40		

N=60

Post-intervention mean score and SD in parents of neonates were 12.86 and 4.48 respectively.

Table 4: Pre-interventional mean and SD among parents of neonates

Grades	Score	Pre-test	
		Mean	SD
Mild	0-10	22.68	4.90
Moderate	11-20		
Severe	21-30		
Very Severe	31-40		

N=60

Table 6: Mean, Difference of Mean, Standard Deviation and paired' value of Pre- Test and Post-Test stress scores of Parents of neonates.

Group	Mean		Mean Difference	Standard Deviation		Paired 't' value
	Pre-Test	Post- Test		Pre- Test	Post-Test	
	Parents of Neonates	22.68		12.86	9.82	

N=60

Table: 6 indicates that the mean post-test stress score 12.86 is significantly lower than the mean pre-test stress score 22.68. The calculated t value is 19. was found significant at $P < 0.001$ level. Hence the research hypothesis (H1) is accepted. This showed that there is significant co-relation between the level of stress experienced by the parents of neonates admitted in NICU after instrumental music. The study finding revealed that instrumental music was effective in reducing level of stress among parent of neonates.

Discussion: Results of present study indicate that the mean pre-test stress score was 22.68, the mean post-test stress score was 12.86 the mean difference of pre-test and post test stress score was 9.82. The reduction in the stress score was found significant at the level of $p < 0.001$. Thus, instrumental music was found effective in the reducing the stress among parents of neonates admitted in NICU. Myriam V *et al.* study indicate that music listening impacted the psychobiological stress system. Listening to music prior to a standardized stressor predominantly affected the autonomic nervous system (in terms of a faster recovery), and to a lesser degree the endocrine and psychological stress response. These findings may help better understanding the beneficial effects of music on the human body [6].

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