

EFFECTIVENESS OF INSTRUMENTAL MUSIC ON LEVEL OF STRESS AMONG PARENTS OF THE NEONATES ADMITTED IN NEONATAL INTENSIVE CARE UNIT, TERTIARY CARE HOSPITAL, KARAD**DHANRAJ PRAKASH KHARAT*, PRABHUSWAMI HIREMATH, SAMIR K CHOUDHARI**

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*Received: 17 April 2017, Revised and Accepted: 23 May 2017***ABSTRACT**

Objectives: The aim of this study was (1) to assess the level of stress among the parents of neonate admitted in neonatal intensive care unit (NICU), (2) to determine the effectiveness of instrumental music on the level of stress among parents of the neonates admitted in NICU, and (3) to find out association between level of stress and sociodemographic variables.

Methods: The research approach adopted for this study was an evaluative approach, and research design was a one-group pre- and post-test research design. The study was conducted in NICU, Krishna Hospital, Karad, Maharashtra, India. The sample consists of 60 parents of neonates admitted in NICU. A convenient sampling technique was used to select the sample. Parents were allowed to listen instrumental music two times a day for 5 days, and each session lasted for 30 minutes. The data were collected by structured questionnaire. The data were analyzed using descriptive and inferential statistics.

Results: The mean pretest stress score was 22.68, the mean post-test stress score was 12.86, and the mean difference of pretest and post-test stress score was 9.82. The reduction in the stress score was found statistically significant at the level of $p < 0.001$.

Conclusion: The findings reveal that the instrumental music is effective in reducing level of stress among parents of neonates admitted in NICU.

Keywords: Instrumental music, Stress, Parents of the neonates, Neonatal intensive care unit.

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INTRODUCTION

Stress in human life is seen with tension, anxiety, worry, and pressure. It is accepted that stress is an inevitable part of human life and it can cause either beneficial or detrimental effect on emotional intellectual, spiritual, and social well-being. Chronic stress causes biological disturbances [1].

Stress is a state of psychological and physiological imbalance that occurs due to the disparity between situational demand and person's capability to react to the situation [2]. Stress experienced by an individual may not always be of the same magnitude; sometimes, the encounter event may be perceived as highly stressful, and at another time, it is just mildly stressful [3].

The birth of a premature infant and the admission into the neonatal intensive care unit (NICU) are events that cause stress to most families. After labor and delivery, parents are separated from the infant and are filled with feelings of uncertainty and anxiety and loss of control [4].

Parents find it very stressful when their neonate is admitted to the neonatal 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 [5].

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. Parents often feel stress over the

environment in the NICU. They need to adjust to the unfamiliar surroundings. This may include the sights and sounds of monitors and equipment, bright lights, other fragile babies, and the large number of medical staff and chemical orders [6].

Music therapy uses music to promote positive changes in the well-being of an individual. These positive changes may be manifested in changes in physical development, social and interpersonal development, emotional or spiritual well-being, or cognitive abilities. Music therapy can help to relieve pain and reduce stress and anxiety for the patients, resulting in physiological changes include improved respiration, lower blood pressure, improved cardiac output, reduced heart rate, and relaxed muscle tension [7].

The purpose of this research study is to determine the effectiveness of instrumental music therapy interventions on the stress levels of parents of neonates in the NICU. The NICU environment creates more stress among parents of neonates which affects their physiological and psychological health. 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.

METHODS

The pre-experimental research design was used to conduct the study among parents of neonates admitted in NICU, Krishna Hospital, Karad, Maharashtra, India. 60 parents of neonates selected through convenient sampling. The samples included in this study were who fulfilled the inclusion criteria with willing to participate and speak Marathi or English language. Samples with hearing impairment, not available at the time of data collection and not interested in listening instrumental music, were excluded from the study.

Research ethics committee of Krishna Institute of Medical Science Deemed University; Karad, Maharashtra, India, had given permission before the data collection. After obtaining permission from the setting, informed consent was obtained from the parents. After collecting the demographic data, the pretest level of stress among parents of neonates assessed using perceived stress scale. After the pretest, parents were allowed to listen instrumental music in a separate room at least two times a day for 5 days and each session lasted for 30 minutes. At the end of 5th day, the post-test level of stress was assessed by the perceived stress scale.

Description of the 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).

RESULTS

Section 1: Description of sample characteristics

Majority of samples, 55%, were within the age group of 25-31 and 41.7% within the age group of 18-24. With respect to gender, 61.7% were female. Maximum samples of 70% were belong to Hindu religion. As per education is concerned, 50% of samples were having high school educational qualification. 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. Among 60 samples, 56.7% were from rural residence and 43.3% were from urban residence (Table 1).

Level of stress among parents of neonates

Among 60 samples, 65% were having severe stress, 18.33% were having moderate stress, 10% were having very severe stress, and 6.66% were having mild level of stress in the pretest. In post-test, 58% of the samples were having moderate stress, 31.67% were having mild stress, 10% of the samples were having severe stress, and 0% was having very severe stress shown in Fig. 1.

Effectiveness of instrumental music on level of stress among parents of neonates

The mean post-test stress score 12.86 is significantly lower than the mean pretest stress score 22.68. The calculated t=19.85 was found significant at the level of p<0.001 shown in Table 2.

Association between pretest level of stress and selected demographic variables

None of the sociodemographic variables was found to have a significant association with level of stress except income of the family per month. Income of the family per month has found a significant association between level of stress at the level of p<0.05 shown in Table 3.

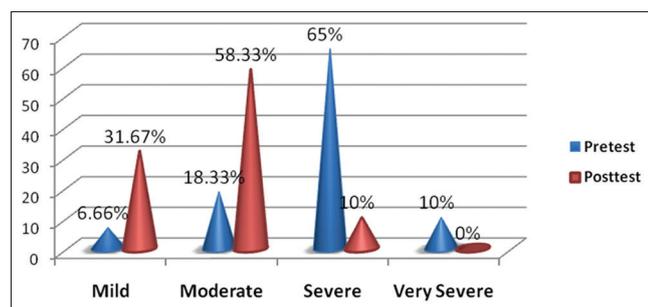


Fig. 1: Level of stress before and after intervention among parents of neonates (n=60)

DISCUSSION

The purpose of the study was to determine the effectiveness of instrumental music therapy on level of stress among parents of neonates admitted in the NICU. Results of the present study indicate that the mean pretest stress score was 22.68, the mean post-test stress score was 12.86, and the mean difference of pre- and post-test stress

Table 1: Frequency and percentage distribution of demographic variable (n=60)

S. No.	Variables	Frequency (%)
1	Age	
	18-24	25 (41.7)
	25-31	33 (55.0)
	32-38	2 (3.33)
2	Gender	
	39-45	0 (0)
	Male	23 (38.3)
	Female	37 (61.7)
3	Religion	
	Hindu	42 (70.0)
	Muslim	8 (13.3)
	Christian	4 (7.0)
	Others	6 (10.7)
4	Educational Qualification	
	No formal education	1 (1.7)
	Primary	0 (0)
	Secondary	14 (23.3)
	High school	30 (50.0)
	Graduate	13 (21.7)
5	Occupation	
	Postgraduate	2 (3.3)
	Working	34 (56.7)
6	Income of the family per month	
	Not working	26 (43.3)
	RS <5000	0 (0)
7	Residence	
	RS 5001-10000	21 (35)
	RS 10001-15000	27 (45)
	RS >15000	12 (20)
7	Residence	
	Urban	26 (43.3)
	Rural	34 (56.7)

Table 2: Determine the effectiveness of instrumental music on the level of stress among parents of neonates admitted in NICU

Group	Mean±SD		Paired t-test
	Pretest	Post-test	
Parents of neonates	22.68±4.90	12.86±4.48	t=19.85 p<0.001 Significant

SD: Standard deviation, NICU: Neonatal intensive care unit

Table 3: Association between pretest level of stress and selected demographic variables (n=60)

S. No.	Characteristics	Chi-square value	df	p value	Result
1	Age	0.628	6	>0.05	Not significant
2	Gender	0.388	3	>0.05	Not significant
3	Religion	0.559	9	>0.05	Not significant
4	Educational qualification	0.414	12	>0.05	Not significant
5	Occupation	0.615	3	>0.05	Not significant
6	Income of the family per month	0.035	6	<0.05	Significant
7	Residence	0.368	3	>0.05	Not significant

score was 9.82. The reduction in the stress score was found statistically 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. This result consistent with the findings of Linnemann *et al.* 2015 conducted a study with the title of music listening as a means of stress reduction in daily life. Results revealed that music listening was effective in reducing subjective stress levels ($p < 0.010$). The most profound effects were found when "relaxation" was stated as the reason for music listening, with subsequent decreases in subjective stress levels ($p < 0.001$) and lower cortisol concentrations ($p < 0.001$) [8].

A study conducted by Moradipannah *et al.* 2007 with the title of effect of music on anxiety, stress, and depression levels in patients undergoing coronary angiography. Differences in pre- and post-intervention scores demonstrated that there were significant decreases in mean scores of state anxiety ($p = 0.006$), stress ($p = 0.001$), and depression ($p = 0.02$) in the intervention group [9].

The findings of Thoma *et al.* study indicate that music listening impacted the psychobiological stress system. Listening to music before 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 [10].

In the present study, intervention was limited to 30 minutes and study was conducted only among parents of neonates admitted in NICU. Based on the findings of the study, the following recommendations are made: A similar study may be replicated in another setting, and similar study can be replicated on a sample with different demographic variables.

CONCLUSION

The NICU environment creates more stress among parents of neonates which affects their physiological and psychological health. Findings of

the present study reveal that instrumental music is effective in reducing stress among parents of neonates admitted in NICU. It is suggested that more interventional nursing study should come up for reducing the stress among parents of neonates admitted in NICU.

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