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## Original Research Article

# A quasi experimental study to evaluate the effectiveness of music therapy to alleviate the post-operative pain among school children's (6 – 12) Years

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## ABSTRACT

**Background of The Study:** Post-operative patients experience varying degrees of pain, generalized discomfort or anxiety, loss of control and sensitivity to unfamiliar noises may increase a patient's restlessness and perception of pain. If orders for opioid or non-opioid analgesics were written, the non-opioids, some of which had no analgesic properties, were given exclusively, in addition, the doses ordered were usually too small or too infrequent to be maximally effective.

**Materials and Methods:** Since the present study aims in investigating the effectiveness of music therapy to alleviate the post operative pain among school going childrens 6 – 12 years in Kamala Nehru Hospital & Research Center, Bhopal, Madhya Pradesh. The research design for this study was one group pre – test, post- test design pre experimental design The primary reason for selecting Kamala Nehru Hospital & Research Center Bhopal, Madhya Pradesh was familiarity, feasibility and expected cooperation from the hospital authorities in getting permission and conducting the study.

**Interpretation & Conclusion:** The percentage of pain perception score of school going children before the administration of music therapy. They are having on an average 48.4 % pain perception before the administration of music therapy. The overall percentage of pain perception score of school going children after the administration of music therapy. They are having on an average 70.6 % pain perception after the administration of music therapy. The analysis of present study by chi – square table, that the age of the school going children, the DF is 1, the c2 value is 5.86, the concern value is 3.84 which is greater than table value so that it is considered as highly significant at 0.05 or 5%. Emotional status of the school going children the DF is 1, the c2 value is 9.81, the concern value is 3.84 which is greater than concern value so it is considered as highly significant at 5% or 0.05. Over all H1 is accepted because there are significant association between the selected demographic variables by emotional status and age group of the childrens. The analysis of the present study the 'z' value is 31.0 which is Highly Significant, that is, greater than the tabulated value at 1%. This data signifies that the music therapy was very effective.<sup>1-5</sup>

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## 1. Introduction

The ultimate language of music is related to a world of beauty and harmony, of structure and order of which our children are deprived because of their illness. Music expresses child's deepest emotions. It can serve him in health and illness, in happiness and in sorrow. Music therapy

is one of the noblest functions of music.

## 1.1. Alvin, principles of music therapy

Post-operative patients experience varying degrees of pain, generalized discomfort or anxiety, loss of control and sensitivity to unfamiliar noises may increase a patient's restlessness and perception of pain. The stress of surgery has been shown to produce physiological changes in blood

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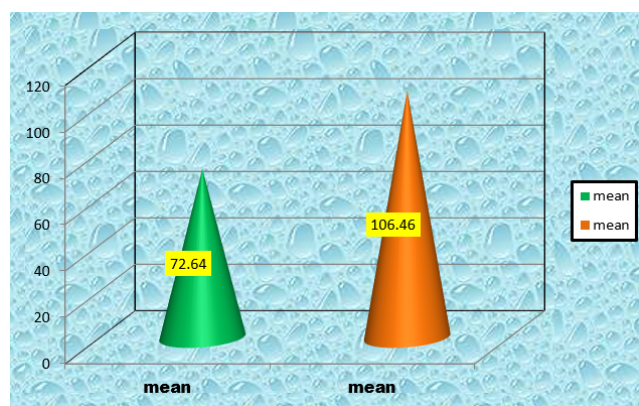


**Table 1:** Association between pain perception reduction score with selected demographic variables of post-operative school going children

Demographic characteristics	Pain perception reduction score						Post-operative School going children chi square test
	Severe			Moderate			
		N	N	%	N	%	
Age group (years )	6-8 yrs	22	14	28%	8	16%	c2=5.86 P=0.05* DF=1, significant
	9-12 yrs	28	9	18%	19	38%	
Gender	Male	23	12	24%	11	22%	c2= 0.18 P= 0.05 DF=1, not significant
	Female	27	11	22%	16	32%	
Education	1-3 class	24	11	22%	13	26%	c2 = 1.93 P=0.05 - DF=1, not significant
	4-6 class	25	11	22%	14	28%	
	nil	1	1	2%	0	0%	
Emotional status	happy	19	1	2%	18	36%	c2= 9.81, P= 0.05* DF=1, significant
	depressed irritable	12	5	10%	7	14%	
Type of surgery	Major surgery	19	7	14%	12	24%	c2= 0.825 P=0.05 DF=1, not significant
	Minor surgery	18	5	10%	13	26%	
Type of illness	Chronic	32	13	26%	19	38%	c2=0.148 P=0.05 DF=1, not significant
	Acute	15	6	12%	09	18%	
Previous hospitalization	Yes	35	12	24%	23	46%	c2=0.181 P=0.05 DF=1, not significant
	No	27	18	36%	09	18%	
	No	23	14	46%	09	18%	

**Table 2:** Post-Operative school going children’s overall pain perception reduction scores before and after the administration of music therapy.

S. No.	Type of intervention	Total pain perception reduction score	Mean	SD	Percentage
1.	Before the administration of music therapy	3632	72.64	1.945	48.4%
2.	After the administration of music therapy	5323	106.46	7.516	70.6%



**Fig. 1:**

**7. Setting of The Study**

The primary reason for selecting Kamala Nehru Hospital & Research Center Bhopal, Madhya Pradesh was familiarity,

feasibility and expected cooperation from the hospital authorities in getting permission and conducting the study.

Setting is the physical location and condition in which data collection takes place. The study will be conducted in the post-operative pediatric surgical ward of Kamala Nehru Hospital & Research Center Bhopal, Madhya Pradesh, which is a 920 bedded high technology hospital with all the modern technology. It is a government hospital & one of the most famous hospitals of Madhya Pradesh state, approximately 20- 30 pediatric surgery is done in a week.<sup>16-22</sup>

**8. Target Population**

Polit & Hungler state that the target population is the entire aggregate of the cases about which the researcher would like to make generalization. The target population in this study includes 50 post-operative school going childrens between (6-12 years).

**Table 3:** Association between pain perception reduction score with selected demographic variables of post-operative school going children

Demographic characteristics		Pain perception reduction score					Post-operative School going children chi square test
		Severe		Moderate			
		N	N	%	N	%	
Age group (years)	6-8 yrs	22	14	28%	8	16%	c2=5.86 P=0.05* DF=1, significant
	9-12 yrs	28	9	18%	19	38%	
Gender	Male	23	12	24%	11	22%	c2=0.18 P=0.05 DF=1, not significant
	Female	27	11	22%	16	32%	
Education	1-3 class	24	11	22%	13	26%	c2=1.93 P=0.05 DF=1, not significant
	4-6 class	25	11	22%	14	28%	
	Nil	1	1	2%	0	0%	
Emotional status	happy	19	1	2%	18	36%	c2=9.81, P=0.05* DF=1, significant
	depressed	12	5	10%	7	14%	
	irritable	19	7	14%	12	24%	
Type of surgery	Major surgery	18	5	10%	13	26%	c2=0.825 P=0.05 DF=1, not significant
	Minor surgery	32	13	26%	19	38%	
Type of illness	Chronic	15	6	12%	09	18%	c2=0.148 P=0.05 DF=1, not significant
	Acute	35	12	24%	23	46%	
Previous hospitalization	Yes	27	18	36%	09	18%	c2=0.181 P=0.05 DF=1, not significant
	No	23	14	46%	09	18%	

**Table 4:** Effectiveness of music therapy

Pretest			Posttest			Z-Value	Significance
N	Mean	SD	N	Mean	SD		
50	72.64	1.95	50	106.46	7.52	31.00	Highly Significant at 1%

## 9. Accessible Population

In the present study, the accessible population includes the post-operative school going children who are admitted in the post-operative ward in the Kamala Nehru Hospital & Research Center Bhopal, Madhya Pradesh.

## 10. Sample

The sample of the population of the present study are 50 post-operative school going children who are admitted in the post-operative ward of Kamala Nehru Hospital & Research Center Bhopal, Madhya Pradesh.

### 10.1. Sampling technique

Purposive sampling technique is used in which subjects were selected according to specific criteria established by the investigator.

## 11. Data Collection Method

A formal written permission was obtained from the Dean of Gandhi Medical College Bhopal Madhya Pradesh, prior to the data collection. The study was carried out in the

same way as that of the pilot study. A total of 50 school going children were selected for the study who fulfilled the criteria findings in Kamala Nehru Hospital Bhopal.

Table 2 Shows that the age of the school going children, the DF is 1, the c2 values is 5.86, the concern value is 3.84 which is greater than table value so that it is considered as the highly significant at 0.05 or 5%. Emotional status of the school going children the DF is 1, the c2 values is 9.81, the concern value is 3.84 which is greater than concern value so it is considered as highly significant at 5% or 0.05. Here H<sub>1</sub> is accepted because there is significant association between pain perceptions with selected demographic variables.

Table 2 Shows the mean percentage of pain perception score of school going children before and after the administration of music therapy. Before the administration they are having average 48.4% and after the administration they are having 70.6%. It directly says that music therapy is effective.

Table 4 Shows that the age of the school going children, the DF is 1, the c2 values is 5.86, the concern value is 3.84 which is greater than table value so that it is considered as the highly significant at 0.05 or 5%.

Emotional status of the school going children the DF is 1, the  $c_2$  values is 9.81, the concern value is 3.84 which is greater than concern value so it is considered as highly significant at 5% or 0.05. Here  $H_1$  is accepted because there is significant association between pain perceptions with selected demographic variables. Over all  $H_1$  is accepted because there are significant association between the selected demographic variables by emotional status and age group of the children's.

Table 4 Shows that before administrating music, mean is 72.64 and after administering music, mean is 106.46. The present study, the 'z' value is 31.0 which is Highly Significant, that is, greater than the tabulated value at 1%. This data signifies that the music therapy was very effective.

## 12. Conclusion

Music is a relatively a less intrusive and less expensive tool to improve academic performance with its own merits and limitations There are few studies which evaluated the effect of music therapy on academic performance. The current study suggests that a subgroup of students can get benefitted when the music is used as an intervention to improve academic performance.

## 13. Source of Funding

None.

## 14. Conflict of Interest

None.

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