

**Research Article**

Effectiveness of music therapy on level of anxiety among patients diagnosed with cancer admitted in selected hospitals

Authors

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Abstract

This study found the effectiveness of music therapy on level of anxiety among patients diagnosed with cancer.

Methodology: *A quasi- experimental design was adopted for this study. Convenience sampling technique was used to select the samples from the selected hospital who met the inclusion criteria. The samples selected were conveniently assigned to the experimental group (30) and control group (30). The demographic data was collected using the demographic proforma and pre-test level of anxiety was assessed using the State Trait Anxiety Inventory scale for both experimental and control group. Music Therapy was provided for 3 days in two sessions, for experimental group samples along with the hospital interventions, while the control group samples underwent normal hospital intervention. Post-test level of anxiety was assessed using State Trait Anxiety Inventory scale for both the groups. Data was analysed using both descriptive and inferential statistics.*

Results: *The findings of the study revealed that there was a constant decrease in mean anxiety scores from 66.27±2.86 (pre-test) to 39.27±5.112 (post-test) in the experimental group, which was in contrast to the mean anxiety score of the control group, which did not show much decrease. The mean anxiety scores of the control group pre-test was 64.6±3.2 and that of post-test was 63.00±2.9. To determine the effectiveness of music therapy on level of anxiety of the experimental group paired 't' test was used. The calculated 't' value was 31.93 greater than the table value 2.75 indicating music therapy was effective in reducing the anxiety among cancer patients. Unpaired 't' test was used for comparing the post-test change in level of anxiety among samples in the experimental group. The calculated 't' test value 23.9 of change in the anxiety score from pre-test assessment to post-test assessment was greater than the table value 2.39 this indicated that music therapy was effective in reducing anxiety. There was no significant association between level of anxiety and demographic proforma.*

Conclusion: *music therapy was effective in reducing anxiety among cancer patients.*

Introduction

Life is a gift from God, how you use your life is God's gift. Cancer is a major health problem of present world, which has created challenging

environment in modern health care system. Despite of advanced treatment modalities, it has made people to suffer a lot.¹ Everyone deals with their cancer diagnosis differently. Many concerns

are raised aside from physical health, like how cancer will affect your mental health and quality of life. The emotional effects of cancer are not the same for everyone. For some people, this may mean stress, depression, anxiety, and fear. Others may feel a sense of relief and calmness with their diagnosis. All of these emotions are normal. Knowing how to cope with these emotional effects may make treatment less stressful and also increase your quality of life.²

Anxiety is a common phenomenon among hospitalized patients which is also called as angst or worry. It is a psychological and physiological state characterized by somatic, emotional, cognitive and behavioural component.³ Cancer and anxiety have been either sides of the coin the long term cancer survivors were more likely to have an anxiety disorder including medical phobia.⁴

There have been many treatments for different anxiety related problems of cancer patients like music, guided imagery, muscle relaxation, aroma therapy, chemotherapy and counselling, out of these combination music not only nourishes the soul, it reduces the anxiety that cancer patients feel- according to a major international review of the effectiveness of music therapy. The evidence suggested that music interventions may be useful as a complementary treatment to people with cancer.⁵

The use of music in relation to illness and health has been known since ancient history. According to Eliade and Henry, the Shamans a magician as well as a healer, and medicine man of indigenous people have used music drumming, singing and dancing to heal people. In 19th century, music was considered for healing purposes as addressed by Nightingale's concerns regarding the effects of noise and music in the care of patients.⁶ Listening to music can positively benefit neurophysiological and emotional responses as well as promote relaxation, which may be beneficial for cancer patients undergoing painful and anxiety inducing treatments.⁷

The investigators felt that music therapy has a positive effect on the level of anxiety on patients diagnosed with cancer undergoing chemotherapy along with the cost effective aspects of relaxation with the review of various studies and keeping in mind the welfare of patients and their wellbeing in a long run.⁸

Statement of the problem

“Effectiveness of music therapy on level of anxiety among patients diagnosed with cancer admitted in a selected hospital, Mangaluru”.

Objectives

Objectives of the study are:

1. To assess the level of anxiety among patients with cancer patients admitted in a selected hospital.
2. To evaluate the effectiveness of Music Therapy on level of anxiety among cancer patients admitted in a selected hospital.
3. To find the association between the pre-test level of anxiety and demographic variables of cancer patients admitted in a selected hospital

Hypothesis

All Hypotheses will be tested at 0.05 level of significance.

H₁: There will be significant difference in the level of anxiety before and after music therapy among cancer patients in experimental group.

H₂: There will be significant difference in the level of anxiety among cancer patients in experimental group and control group.

H₃: There will be significant association between pre-test level of anxiety and demographic variables of cancer patients in both the experimental group and control group.

Methodology

The research approach used for the study was evaluative approach. A quasi experimental study with pre-test post-test control group design. In the present study cancer patients who were in the age group of 25-65 yrs old admitted in selected

hospitals in Mangaluru. Sample was selected by non-probability convenient sampling technique. Sample size was 60 cancer patients. Out of which 30 patients were subjected to music therapy and 30 received only hospital intervention.

The data was collected using State trait anxiety scale was developed by Spielberger Charles D in 1983. The questionnaire consists of 20 items based on 4 point Likert scale. The response include not at all, somewhat, moderately so, very much so with a score of 1,2,3,4. The items include both positive and negative statements. The range of scores is 20-80, higher the score indicating greater anxiety. Some of the questions relate to the absence of anxiety, are reverse-scored. In this study music therapy refers to a music which is selected from a recorded classical violin which is played through headphone for a period of 20 minutes of a session for three consecutive days. The main ragas of the music therapy are Anandabhairavi, Neelambari.

Reliability of the tool was established by using test retest technique which measures the coefficient of internal consistency of the state trait anxiety inventory scale. The reliability obtained was (0.75) and It was good to excellent for the individual items ranging from 0.71-0.99. Hence the tool was found to be valid and reliable.

The Pilot study was conducted and results concluded that there was significant difference in the level of anxiety among cancer patients and

music therapy was effective in reducing anxiety. The research tools were found to be feasible and practicable. No further changes were done in the tool after the pilot study. Ethical clearance was obtained from ethical committee.

The cancer patients between the age group of 25-65 who fulfilled the inclusion criteria were identified and conveniently assigned to the experimental group and control group. 60 samples 30 experimental and 30 control group were selected and the data was collected from them. This was continued till data was obtained from a total of 60 samples. The demographic data was collected using the demographic proforma and the pre interventional level of pre-test anxiety was assessed using the state trait anxiety scale for both the experimental and control group. Three sessions of music therapy for 20min was provided for three consecutive days two sessions to the experimental group while the control group samples underwent the normal interventions of the hospital. The post interventional anxiety was assessed using the state trait anxiety scale for both the groups. The data collected was analysed using descriptive and inferential statistics to achieve the objectives of the study and to test the research hypotheses.

Results

The results revealed the following findings

Table 1: Frequency and percentage distribution of samples according to the sample characteristics in both experimental group and control group

SL.NO	variables	n=30+30			
		Experimental group		Control group	
		(n=30) frequency(f)	Percentage (%)	(n=30) frequency(f)	Percentage (%)
1.	Age				
	a. 25-34	6	20	8	26.66
	b. 35-44	6	20	5	16.66
	c. 45-54	13	43.33	12	40
	d. 55-65	5	16.7	5	16.66
2.	Gender				
	a. Male	18	60	20	66.66
	b. Female	12	40	10	33.33
3.	Educational status				
	a. No formal education	5	16.66	4	13.33
	b. Primary school	7	23.33	9	30.0

	c. High school	5	16.66	5	16.66
	d. Higher secondary/PUC	7	23.33	7	23.33
	e. Graduation(UG PG)	2	6.66	2	6.66
	f. Others	4	13.33	3	10
4.	Occupation				
	a. Unemployed	5	16.66	4	13.33
	b. Government employee	6	20	7	23.33
	c. Private employee	9	30	8	26.66
	d. Self-employment	7	23.33	8	26.66
	e. coolie	3	10	3	10
5.	Marital status				
	a. married	18	60	18	60
	b. unmarried	9	30	9	30
	c. divorced	3	10	3	10
6.	Socio-economic status				
	a. lower class	7	23.33	7	23.33
	b. middle class	14	46.66	14	46.66
	c. upper class	9	30	9	30
7.	Occupation of caretaker/spouse				
	a. health care professional/worker	7	23.33	8	26.66
	b. unskilled worker	14	46.66	13	43.33
	c. skilled worker	6	20	6	20
	d. other professional	2	6.66	2	6.66
	e. unemployed	1	3.33	1	3.33
8.	Leisure time activity				
	a. music	6	20	6	20
	b. reading	9	30	9	30
	c. watching T V	9	30	9	30
	d. others	6	20	6	20
9.	Clinical profile				
	a. ca breast	4	13.33	4	13.33
	b. ca respiratory tract	7	23.33	6	20
	c. ca GI tract	7	23.33	6	20
	d. ca genitourinary tract	5	16.66	6	20
	e. ca bone	4	13.33	4	13.3
	f. leukaemia	3	10	4	13.3
10.	hospitalization period				
	a. less than a week	10	33.3	6	20
	b. less than a month	15	50	17	56.66
	c. more than 30days	5	16.66	7	23.33
11.	Progress of disease				
	a. primary stage	12	40.0	10	33.33
	b. secondary stage	13	43.3	15	50
	c. tertiary stage	5	16.66	5	16.66

Distribution of pre-test level of anxiety in both experimental and control group

Table 2: frequency and percentage distribution of the pre interventional level of anxiety in both experimental and control group.

S.no	Pre-test level of anxiety	Experimental group		Control group	
		f	%	f	%
1.	Mild anxiety	0	0	0	0
2.	Moderate Anxiety	3	10.0	3	10.0
3.	Severe anxiety	27	90.0	27	90.0

Data depicted in table 2 shows that most of the samples, 90 % (27) had severe anxiety, 10 % (3) had moderate anxiety, 0 % (0) had mild anxiety both in experimental and control group.

Effectiveness of music therapy on level of anxiety among patients who are diagnosed with cancer in terms of reduction in their post-test level of anxiety in experimental group

Table 3: Frequency and percentage distribution of the pre and post interventional level of anxiety in both experimental and control group

Level of anxiety	N=30+30							
	Experimental group				Control group			
	Pre test		Post test		Pre test		Post test	
	f	%	f	%	f	%	f	%
Mild Anxiety	0	0	20	66.7	0	0	0	0
Moderate Anxiety	3	10.0	10	33.3	3	10.0	6	20.0
Severe Anxiety	27	90.0	0	0	27	90.0	24	80.0

Data showed that in experimental group, 90 % (27) samples had severe anxiety, 10 % (3) had moderate anxiety and 0 % (0) had mild anxiety in pre-interventional level. Whereas in post-test none of them had severe anxiety, 66.7 % (24) had mild anxiety, also 33.3 % (6) had moderate anxiety. In

the control group, 90 % (27) had severe anxiety, 10 % (3) had moderate anxiety and none of them had mild anxiety in pre-interventional level. But in post-test too none of them had mild anxiety, 80 % (20) had severe anxiety, 20 % (10) had moderate level of anxiety.

Table 4: Mean, SD and Paired ‘t’ test of pre-test and post-test level of anxiety among patients diagnosed with cancer in the experimental group and Control group

N=30			
Experimental group	Mean ±SD	Mean difference	t value
Pre-test	66.27±2.86	27.00	31.93
Post-test	39.27±5.112		

To determine the effectiveness of music therapy on level of anxiety of the experimental group paired ‘t’ test was used. The calculated ‘t’ value

was 31.93 greater than the table value 2.75 indicating music therapy was effective in reducing the anxiety among cancer patients.

Comparison of anxiety levels among cancer patients in experimental and control group.

Table 5 Mean , SD, Mean deference and ‘t’ test of pre-test and post-test level of anxiety

N=60			
	Mean ±SD	Mean Difference	t value
Pre-post experimental	27 ± 4.63		
Pre- post control group	1.60 ± 3.49	25.4	23.9*

Unpaired ‘t’ test was used for comparing the post-test change in level of anxiety among samples in the experimental group. The calculated ‘t’ test value 23.9 of change in the anxiety score from pre-test assessment to post-test assessment was

greater than the table value 2.39 this indicated that music therapy was effective in reducing anxiety. Association between the pre-test level of anxiety and selected demographic variables.

Table 6: Association between pre-test level of anxiety of experimental group with selected demographic variables.

SL NO.	Demographic variables	N =60			
		Experimental group		Control group	
		χ^2	Level of Significance	χ^2	Level of Significance
1.	Age in years	0.00	NS	1.222	NS
2.	Gender	0.00	NS	0.00	NS
3.	Education	0.00	NS	0.556	NS
4.	Occupation	0.86	NS	0.00	NS
5.	Marital status	1.050	NS	0.00	NS
6.	Socio economic status	0.00	NS	2.340	NS
7.	Occupation of caretaker	0.208	NS	0.536	NS
8.	Leisure time activity	0.208	NS	0.133	NS
9.	Clinical profile	0.410	NS	0.556	NS
10.	Hospitalization	0.234	NS	0.208	NS
11.	Progress of disease	0.31	NS	0.150	NS

Table value: $\chi^2=3.84, p<0.05$

Discussion

The present study revealed that most of the samples in the experimental group, 90 % (27) had severe anxiety, 10 % (3) had moderate anxiety, 0 % (0) had mild anxiety. While in the control group a large group of samples 90 % (27) had severe anxiety, 10 % (3) had moderate anxiety, 0 % (0) had mild anxiety.

A study on relationship among cancer patients sense of purpose of life and death anxiety. The research was done by a cross sectional correlation design to examine the death anxiety among Taiwanese cancer patients. 219 cancer patients were analyzed by a sense of purpose in life scale and a death anxiety scale. Results have shown that 33.8% of participants reported a sense of purpose in life, where as 38.4% were unsure about sense of purpose in life and 27.8% demonstrated no sense of purpose in life, $p < 0.001$ ⁹

The present study revealed that In the experimental group 90 % (27) fell in severe anxiety group pre-test, which decreased to 0% on post-test levels, 10% (3) had moderate anxiety level which decreased to 33.3 (10) on post interventional assessment. 0 % (0) had mild anxiety which increased to 66.7 % (20) on post interventional assessment. In control group 90 % (27) of the samples fell in severe anxiety pre-test which decreased to 80 % (24) on post-test level, 10 % (3) had moderate anxiety in pre-test level which has increased to 20 % (6) on post-test levels. 0 % (0) had mild anxiety both in pre-test and post-test assessment.

A study was conducted to identify the role of interactive music in oncology patients undergoing painful procedures (lumbar injection, bone marrow aspiration, osteomedullary biopsy and arterial catheter). Buntington hospital, Hong Kong. Data was collected from 50 oncological patients. The study results showed that a fall in YPAS values in M compared to C in the four phases of process: phase 1 ($P < 0.05$); phase 2,3 and d ($P < 0.01$). for the icc with a score of < 1 , “collaborated”, those with a score of > 1 were “noncollaborators”; in the music group the trend

was for an increase in number of collaboration ($p < 0.07$) the study concluded that the interactive music therapy was effective in management of cancer patients.¹⁰

Unpaired t test was computed to compare the effectiveness of music therapy among experimental and control group. So there is a significant difference between the level anxiety in the experimental group and control group. This indicates that music therapy was effective.

The findings of the present study were consistent with the findings of a descriptive study conducted in taiwan demonstrated a positive effect of music on anxiety and pain a quasi experimental design including 30 patients who underwent music stimulation and 30 who had no intervention. All patients were scheduled for chemotherapy in a hospital Tahiwan. Measures included the STAI. Visual analogue scale (vas) and physiological measures (cortisol level blood pressure). Patients listen to 30 min of preferred music in the evening and afternoon for 2days the patients in the treatment group were encouraged to listen to music at any other time that they wanted results indicated that participants in the treatment group had significantly lower pain and anxiety as demonstrated in the visual analogue scale blood pressure was significantly lower in the treatment group.¹¹

Conclusion

Music can be used in diversion and recreation. It is important to draw a distinction between the use of music as diversion in cancer anxiety and as therapy, and music in diversion and recreation. Nurses can integrate the current research findings and use music therapy as an effective intervention in the care settings. Nursing students should be aware to evaluate the physical and psychological causes of cancer anxiety and about various nursing interventions. The student nurses while planning care to the patients should focus on anxiety reduction by diversion therapy. Music as a complementary therapy should be incepted in the curriculum so as to utilize these in interventions.

Administrator can make use of the facilities or educate with the existing hospital setting together with the nurse to utilize the central system every morning and evening with the selected music items to provide soothing effect and to divert the patients mind from anxiety.

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