EFFECTIVENESS OF MUSIC THERAPY ON PREOPERATIVE ANXIETY OF BREAST CANCER PATIENTS UNDERGOING SURGERY AT SELECTED HOSPITALS, AGRA, UTTAR PRADESH.

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Abstract:

Background: Anxiety is commonly seen in the preoperative setting. Preoperative anxiousness is widely documented to have a deleterious influence. Anxiety is heightened in the case of gynecological surgery because the intervention can have disastrous consequences for a woman's body image, sexuality, and psycho-affective well-being. Music listening is becoming more popular as an alternative therapy for reducing preoperative anxiety. Personal tastes, familiarity, and popularity may be important factors in achieving the best relaxing reaction to music. The purpose of this study was to see if listening to self-selected music reduces preoperative anxiety in women going for gynecologic surgery versus predefined music from an application. **Methods:** The research design used Pre experimental one group pretest post-test design, with a purposive sampling method. The subjects of this study consisted of 60 patients with Breast cancer undergoing surgery. The measurement of anxiety intensity uses the anxiety scale which is analyzed using the Paired t' test statistical test. The results showed that the entire study sample experienced a decrease in anxiety intensity scores in undergoing Breast cancer surgery treatment after being given music therapy.

Result: In this study, post test 55% of breast cancer patients have minimal anxiety and 5% have mild anxiety. Educational status were the factors that significantly affect music therapy to reduce anxiety level p value less than 0.05.

Conclusion: Despite the fact that more than half of Breast cancer surgery patients 55 percentage of patient minimal anxiety. Music therapy is effective for the patient reducing anxiety.

Key words: Effectiveness, Music therapy, Anxiety, Breast cancer, surgery.

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Introduction:

Patients undergoing surgery experience increased anxiety. This condition's effects can be apparent throughout the patient's hospitalization, with implications for his post-surgery rehabilitation. While natural, this anxiety should be viewed negatively due to the risk of increased postoperative complications, as well as prolonged postoperative hospitalization and morbidity.[1]

During the preoperative period, patients are exposed to a range of stressful events, which can contribute to higher stress levels both intraoperatively and postoperatively. The results can be severe, with both physical and mental ramifications. Furthermore, their ability to resume daily activities and quality of life after surgery may be compromised.[2] Increased preoperative stress has been associated to increased postoperative pain, resulting in a greater demand for analgesics. In general, higher levels of preoperative anxiety impede the patient's postoperative recovery.[3]

Many studies have found that anxiety affects 10% of cancer patients. Similarly, in 2018, these statistics dropped to 7%.It should be emphasized that the majority of people suffering from severe depression exhibit anxiety symptoms.[4] While it appears that 9% of breast cancer patients suffer from serious depression. Several studies have been conducted to investigate the postoperative anxiety levels of breast cancer patients as well as the anxiety levels of their caretakers.[5]

Breast cancer is the most frequent cancer in women, and it has psychological, occupational, and social ramifications. The purpose of this prospective, cross-sectional study was to assess preoperative stress levels in breast cancer surgery patients. Diagnosis and treatment, as well as the effects on women's daily lives, are frequently severe. The ultimate goal of nurses is to intervene to lessen preoperative anxiety and facilitate postoperative recovery of patients.[6]

Methods

Study area and period

The study was conducted in Agra hospital Uttarapradesh and one month

Study design

The research design was used in this study Pre-experimental one group pre-test post-test design.

Population

Source population:

The source population was all breast cancer patients undergoing surgery.

Study population:

All sampled breast cancer patients undergoing surgery during study period.

Inclusion criteria and Exclusion criteria:

Inclusion criteria

➢ Admitted at preoperative breast cancer hospital
➢ Present during the period of data collection
➢ The patient who can read and write Hindi

Sample size determination

➢ The sample size in this study was determined by using a single proportion formula as follows.

$n = Z(\alpha 2)⁄2p(1−p)/d2$

Where: -

n =　The required minimum sample size

z = is the standard normal deviate set at 1.96 (for 95% confidence level = is the desired degree of accuracy (taken as 0.05)

P = Proportion of breast cancer patient (assumed to be 5%)

Estimated non-response rate = 10%

$n = (1.96)20.05(1−0.05)0.052 \ n=60$

The minimum sample size for this study will be 60. Sample comprised of 60 breast cancer patients who are admitted in a selected hospital.

Sampling procedure

Non probability purposive sampling technique

Variables

Independent variables

The independent variable in this study is music therapy.

Dependent variables

The dependent variable in this study is anxiety among breast cancer patient undergoing operation.

Operational definition

➢ **Effectiveness:** It refers to the extent to which the music therapy will reduce the anxiety level of patients.
➢ **Music therapy:** - It refers to the an allied health profession, "is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program.
➢ **Anxiety:** - It refers to the emotion characterized by feelings of tension, worried thoughts, and physical changes like increased blood pressure.

> **Patient: -** It refers to *the* person who is receiving medical treatment, especially in a hospital.
> **Breast cancer: -** It refers to a disease in which cells in the breast grow out of control. There are different kinds of breast cancer.
> **Hospital: -** It refers to the person who is receiving medical treatment from a doctor or hospital.

Data collection instrument and procedure

Structured and semi-structured English version questionnaire was prepared from the literature review by principal -investigators. Translation to hindi version and again translated to English version were used by the principal investigators before starting the data collection time. It includes about socio-demographic factors and Anxiety scale to assess the anxiety among patients.

Data collection instrument and methods:-

The data collector was the group members. Face to face interview held privately after verbal consent is obtained from each participant.

Data processing and analysis

The coded data were entered to computer by using Statistical Package for Social Science (SPSS)

version 25 statistical software for analysis. Cleaning were performed by using frequency distribution .Any error were corrected after revision of the original data using the code numbers of the questionnaires. Frequencies were computed for description of the study population in relation to socio-demographic and other relevant variables. The association between independent and dependent variable determined by odd ratio with 95% CI and P- value less than considered as statistically significance. The direction and strength of statistical association was measured by odds ratio with 95% CI. Paired 't' test will be used to assess the effectiveness of music therapy. Chi-square test will be used to find association of the post-test anxiety score with selected demographic variables. In this study P-value < 0.05 was considered to declare a result as statistically significant association. The result presented by charts, figures, and tables.

Results:

Descriptive and inferential statistics were used for analyzing the data on the basis of objectives of the study. The data has been tabulated and organized as follows.

Section A-Description of Demographic Variables of the patients

Table: I Frequency and percentage distribution of study samples according to the selected Demographic variables

N=60

Demographic Variables		frequency	Percentage
Age in years	<20	4	6.7
	21-30	12	20.0
	31-40	17	28.3
	>41	27	45.0
Religion	Hindu	35	58.3
	Muslim	15	25.0
	Christian	10	16.7
Educational status	No formal education	19	31.7
	Primary Education	24	40.0
	Secondary education	10	16.7
	Higher secondary	5	8.3
	Graduation and above	2	3.3
Marital status	Single	11	18.3
	Married	29	48.3
	Widowed	12	20.0
	Divorced	8	13.3
Occupation	House wife	9	15.0
	Servant	11	18.3
	Private employee	19	31.7
	Government employee	6	10.0
	Farmer	15	25.0
Monthly family	Rs.5000-10000	10	16.7

income	Rs.10000-20000	43	71.7
	Rs.20000-30000	2	3.3
	Rs. 31000 and above	5	8.3
Type of family	Nuclear	27	45.0
	Joint	30	50.0
	Extended	3	5.0
Heard about music therapy	**Yes**	20	33.34
	No	40	66.66
		60	**100**

◇ Table 1 shows the frequency and percentage distribution of the demographic variables of breast cancer Patients. According to their age majority 27(45.0 %) were in >41 years of age, 17(28.3%) were 31-40 years of age,12(20%) were 21-30 years and 4 (6.7%) were less than 20 years of age.

◇ Regarding religion of breast cancer Patients maximum 35(58.3%) belongs to Hindu, 15(25%) belongs to Muslim and 10(16.7%) belongs to Christian.

◇ With regard to educational status of breast cancer Patients 24(40%) were primaryeducation,19(31.7%) belongs no formal education,10(16.7%) were secondary education and 5(8.3%) were higher secondary and graduation and 2(3.3%) were graduation and above.

◇ Regarding marital status of breast cancer Patients maximum 19(31.7%) were married, 12(20%) belongs to widowed, 11(18.3%) were single and 8(13.3%) were divorced. According to occupational status of breast cancer Patients majority 19(31.7%) were private employee, 15(25%) were farmer,11(18.3%) servant and 6(10.0%) were government employee.

◇ Regarding family monthly income of breast cancer Patients maximum 43(71.7%) were monthly income 5000 to 8000,10(16.7%) were monthly incomers Rs.2000 to 5000, 5(8.3%) were monthly income above 12,000 and 2(3.3%) were family income were Rs.8000-12000.

◇ Regarding type of family of breast cancer Patients maximum 30(50%) were Joint, 27(45%) were Nuclear family and 3(5%) were extended family. Heared about music therapy yes means 20(33.34%) and some patients don't know about music therapy 40(66.66%).

Table II: Comparison of pretest and posttest levels of anxiety of breast cancer patients undergoing operation.

Levels of anxiety	Pretest levels		Posttest levels	
	Number	**Percentage**	**Number**	**Percentage**
Minimal Anxiety	0	0.00	28	46.7
Mild Anxiety	0	0.00	32	53.3
Moderate Anxiety	16	26.7	0	0.00
Severe Anxiety	44	73.3	0	0.00
Total	**60**	**100.00**	**60**	**100.00**

$P<0.05$

The table 2 shows that Comparison of pretest and posttest level of anxiety of breast cancer patients undergoing operation pretest level Minimal anxiety 0.00 percent, mild anxiety 0.00 percent, moderate anxiety 16(26.7%) and severe anxiety 44(73.3%) and post test level of anxiety after providing music therapy at posttest level Minimal anxiety 28(46.7%), mild anxiety 32(53.3%), moderate anxiety 0.00 Percent and severe anxiety 0.00%.So $P<0.05$ level at significant.

Table III: Effectiveness of music therapy on anxiety among breast cancer patients undergoing operation.

Times	Mean	SD	Mean Diff.	SD Diff.	t-value	df	p-value
Pretest	3.733	0.4459					
Posttest	1.533	0.5031	11.64	3.45	22.582	59	0.001,S

The table 3 shows that the pretest mean score of   anxiety among breast cancer patients undergoing

operation mean and SD13.733+. 3.45 and the post test mean score of anxiety was 1.03 with S.D 0.49 in experimental group. The calculated paired 't' value of t = 22.582 was found to be statistically significant at P<0.0001 level this clearly indicated that after music therapy post test level of anxiety was considerably reduced breast cancer patient undergoing operation in the experimental group.

This clearly indicated that after music therapy post test level of anxiety was considerably reduced breast cancer patient undergoing operation in the experimental group and this clearly indicates that effectiveness of music therapy was found to be effective in reducing anxiety among breast cancer patient in the experimental group.

Table IV: Association between pretest levels of anxiety and demographic characteristics

Demographic profile	Pretest levels of anxiety							Chi-square	df	P-value
	Mild Anxiety	%	Moderate Anxiety	%	Severe Anxiety	%	Total			
Age groups in Years										
<20	0	0.0	1	1.67	3	5	4	7.223	3	0.065
21-30	0	0.0	6	10	6	10	12			
31-40	0	0.0	1	1.67	16	26.67	17			
>41	0	0.0	8	13.33	19	13.66	27			
Educations										
No formal education	0	0.0	4	6.66	15	25	19	6.224	4	0.747
Primary Education	0	0.0	7	11.67	17	28.33	24			
Secondary education	0	0.0	2	3.33	8	13.33	10			
Higher secondary	0	0.0	1	1.67	4	6.67	5			
Graduation and above	0	0.0	2	3.33	3	5	10			
Religions										
Hindu	0	0.0	9	15	26	43.33	35	0.584	2	0.178
Muslim	0	0.0	5	8.33	10	16.66	15			
Christian and others	0	0.0	2	3.33	8	13.33	10			
Marital status										
single	0	0.0	3	5	8	13.33	11	1.123	3	0.772
Married	0	0.0	9	15	20	33.33	29			
Widow	0	0.0	1	1.67	7	11.66	8			
Divorced	0	0.0	3	5	9	15	12			
Occupation										
House wife	0	0.0	4	6.66	5	8.33	9	2.168	4	0.705
Servant	0	0.0	2	3.33	9	15	11			
Private employee	0	0.0	5	8.33	14	23.33	19			
Government employee	0	0.0	1	1.67	5	8.33	6			
Family Monthly income										
Rs.2000-5000	0	0.0	5	8.33	5	8.33	10	5.355	3	0.418
Rs.5000-8000	0	0.0	11	18.34	32	53.33	43			
Rs.8000-12000	0	0.0	0	0.0	2	3.33	2			
Rs. 12000 and above	0	0.0	0	0.0	5	8.33	5			
Type of family										
Nuclear	0	0.0	5	8.33	22	36.66	27	3.542	2	0.170
Joint	0	0.0	9	15	21	35	30			
Extended	0	0.0	2	3.33	1	1.67	3			
Heard about music therapy										
Yes	0	0.0	0	0	4	6.66	4	1.558	1	0.278
No	0	0.0	16	26.66	40	66.67	56			

*p<0.001*indicates significant   S-Significant   NS-non significant

The table 4 showed that demographic variables Age, religion, marital status, occupation, type of family, heared about music therapy had shown no statistically significant association with the pretest levels of anxiety among breast cancer patient undergoing operation. P<0.001.

Discussion
The purpose of this study was to effectiveness of music therapy to reduce anxiety among breast cancer patients undergoing operation. In this study

Effectiveness Of Music Therapy On Preoperative Anxiety Of Breast Cancer Patients Undergoing Surgery At Selected Hospitals, Agra, Uttar Pradesh.

Section A-Research Paper

it was found that more than half of the patients having moderate and severe anxiety.

➢ A study was examine effects of music therapy and progressive muscle relaxation training on depression, anxiety and length of hospital stay in Chinese female breast cancer patients after radical mastectomy. A total of 170 patients were randomly allocated to the intervention group ($n = 85$) receiving music therapy and progressive muscle relaxation training plus routine nursing care and the control group ($n = 85$) receiving routine nursing care. Music therapy and progressive muscle relaxation training were performed twice a day within 48 h after radical mastectomy, once in the early morning (6a.m.–8a.m.) and once in the evening (9p.m.–11p.m.), for 30 min per session until discharged from the hospital. Result showed that A general linear model with univariate analysis showed that the intervention group patients had significant improvement in depression and anxiety in the effects of group ($F = 20.31, P < 0.001; F = 5.41, P = 0.017$), time ($F = 56.64, P < 0.001; F = 155.17, P < 0.001$) and group*time interaction ($F = 6.91, P = 0.009; F = 5.56, P = 0.019$). The intervention group patients had shorter length of hospital stay (12.56 ± 1.03) than that of the control group (17.01 ± 2.46) with statistical significance ($F = 13.36, P < 0.001$). Study concluded that Music therapy and progressive muscle relaxation training can reduce depression, anxiety and length of hospital stay in female breast cancer patients after radical mastectomy.[7]

➢ Conducted study to assess the clinical trial of the effects of music therapy on anxiety of female breast cancer patients following radical mastectomy. A randomized controlled design was utilized. The patients were randomly allocated to the experimental group ($n = 60$) received music therapy in addition to routine nursing care, and the control group ($n = 60$) only received routine nursing care. A standardized questionnaire and the State Anxiety Inventory were applied. The primary endpoint was the state anxiety score measured at pretest (on the day before radical mastectomy) and at three post-tests (on the day before patients were discharged from hospital, the second and third time of admission to hospital for chemotherapy respectively).Result showed that The pretest score revealed that the majority of the patients had a moderate level (77·5%) and 15% had severe level of state anxiety. The repeated-measure ANCOVA model analysis indicated that the mean state anxiety score was significantly lower in the experimental group than those in the control group at each of the three post-test measurements. The mean difference between the experimental and control group together with 95% confidence intervals were −4·57 (−6·33, −2·82), −8·91 (−10·75, −7·08) and −9·69 (−11·52, −7·85) at the 1st post-test, 2nd post-test and 3rd post-test respectively. study concluded that Music therapy is found to have positive effects on decreasing state anxiety score.[8]

Conclusion:
Study concluded that music therapy are considerably useful in lowering the level of anxiety experienced by breast cancer patients undergoing operation.

Competing interest:
The authors report no conflicts of interest for this work.

Authors' contributions

All authors were involved in the interpretation of the data and contributed to manuscript preparation. All authors have read and approved the final version of the manuscript.

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