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A Study On The Impact Of Music Therapy In Reducing Depression Levels Among Elderly Residents In Geriatric Care Facilities In Madurai

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Abstract
Depression is a prevalent mental health issue among the elderly, often leading to reduced quality of life and impaired daily functioning. This study aimed to assess the effectiveness of music therapy in reducing depression among geriatrics in selected geriatric units in Madurai. A quasi-experimental design with pre-test and post-test assessments was employed, involving 60 participants (30 in the experimental group and 30 in the control group). The Beck Depression Inventory (BDI) was used to measure depression levels. Results revealed a significant reduction in depression scores among participants who received music therapy compared to the control group. These findings underscore the potential of music therapy as a cost-effective and non-invasive intervention to improve mental health in older adults.

Key Words: *Music therapy, Depression, Geriatrics/Elderly, Effectiveness, Geriatric units and Madurai.*

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I. Introduction

The global aging population has seen a dramatic rise, with individuals aged 65 years and older projected to double from 703 million in 2019 to 1.5 billion by 2050. India is no exception, with an elderly population exceeding 138 million in 2021. Aging often brings physiological, mental, and social challenges, including a heightened risk of depression. In older adults, depression may manifest atypically, complicating diagnosis and treatment.

Music therapy, a mind-body relaxation technique, has garnered attention for its ability to regulate emotions and alleviate depressive symptoms. Plato once stated, "Music is the moral law," emphasizing its profound impact on the human psyche. Studies have shown that music can enhance mood, reduce stress, and restore emotional balance. This study investigates the effectiveness of music therapy in reducing depression among geriatrics in selected units in Madurai.

Objective

The primary objective of this study was to evaluate the effectiveness of music therapy in reducing depression among geriatrics. The study sought to:

1. Assess the pre-test and post-test levels of depression in experimental and control groups.
2. Compare the changes in depression levels between the experimental and control groups.
3. Determine the statistical significance of music therapy's impact on depression.
4. Explore the association between demographic variables and depression levels.

II. Methods And Materials

Research Design: A quasi-experimental design with pre-test and post-test assessments was employed, involving an experimental group and a control group.

GROUP	PRE-TEST	INTERVENTION	POST TEST
E(non randomized)	01	x	02
C(non randomized)	01	-	02

E-Experimental group
C-Control group
X-Music therapy (intervention)
01-Pre-test level of depressive clients in experimental and control group
02-Post-test level of depressive clients in experimental and control group.

Setting and Participants: The study was conducted in two geriatric units in Madurai: Inba Illam (experimental group) and Christian Mission Hospital (control group). Sixty participants aged 60 years and above with mild depression were selected using convenience sampling.

Sample Size:
The total sample for this study will be 60 in number in which
30 belongs to control group
30 belongs experimental group

Sampling Technique:
Sample for this study were selected through convenience based on inclusion and exclusion criteria.

Inclusion Criteria:
1. Geriatrics willing to participate.
2. Clients with mild depression (based on BDI).
3. Individuals able to understand Tamil or English.

Exclusion Criteria:
1. Geriatrics who had previously undergone music therapy.
2. Clients with severe depression.

Intervention: Participants in the experimental group underwent music therapy sessions for 30 minutes daily over 14 days. Music included calming instrumental tracks and devotional songs selected to resonate with the participants' cultural context.

Method of data collection:

After obtaining permission from the concerned authority and informed consent from the samples. The researchers collected the data. If consists of the following phases.
Phase 1- pre- test was conducted to assess the level of depression using Beck's depression inventory.
Phase 2- Music therapy will be given for mild depressive clients.
Phase3- Post test was conducted to assess the level of depression using the same scale in the following week.

Tools for Data Collection:
1. **Beck Depression Inventory (BDI):** The BDI is a widely used, self-administered scale consisting of 21 items designed to measure the severity of depression. Each item is scored on a 4-point scale (0-3), with total scores ranging from 0 to 63. The scores are interpreted as follows:
   - 0-10: Normal
   - 11-16: Mild mood disturbance
   - 17-20: Borderline clinical depression
   - 21-30: Moderate depression
   - 31-40: Severe depression
2. **Demographic Data Sheet:** A structured form was used to collect information on participants' age, gender, marital status, education level, income, and hobbies.

The reliability of the BDI was established with a test-retest reliability score of r = 0.90, indicating high consistency. Validity was ensured through expert consultation.

Steps of data collection process:
Step-I
Self introduction about the research to the patients.
Explanation about the purpose of the study and goal consent obtained.

Good rapport was maintained with the patients.
Patients were made comfortable and privacy was provided.

Step-II
Selection of sample and allotment to experimental group and control group based on the inclusion criteria.

Step-III
Samples were oriented to music therapy.
Pre-test was done for both experimental and control groups.
Educational programme on music therapy was projected only to the patients in the experimental group.

Step-IV
Post-test was conducted for both the experimental and control groups using the same tool on the eighth day.
After the data collection procedure, educational progamme on music therapy was given to the control group for ethical consideration.
A healthy gratitude was conveyed for the patients for their co-operation and participation.

Data Analysis: Descriptive statistics (mean, standard deviation) and inferential statistics (paired and independent t-tests) were utilized to analyze the data. A significance level of $p < 0.05$ was adopted.

Ethical consideration:
The basic responsibility of the investigator in carrying out the nursing research is to give protection to all the study participants from harm of any forms. Approval from the ethical committee members of C.S.I Jeyaraj Annapackiam College of Nursing, Pasumalai. Madurai and concerned authorities were obtained. Each individual was informed about the purpose of the study and confidentiality was promised and ensured. The clients have the freedom to leave the study at their without assigning any reason. Based on the ethical consideration, intervention was also given to the control group at the data collection process. Thus ethics were ensured in the study.

III. Results And Discussion

The below table 1 compares the pre-test and post-test levels of depression among geriatric people in control and experimental groups. In the control group, depression levels worsened post-test, with an increase in severe cases (20% to 43.4%). In contrast, the experimental group, which underwent music therapy, showed significant improvement, with a reduction in moderate and severe depression (pre-test: 36.7% and 23.3%; post-test: 16.7% and 6.7%) and an increase in normal and mild levels (pre-test: 10% and 30%; post-test: 40% and 36.7%). This indicates that music therapy effectively reduced depression levels among geriatric individuals.

Table 1 Comparison of pre test and post test mean score level of depression among geriatric people in control and experimental group.

	Control group				Experimental group			
	Pre test		Post test		Pre test		Post test	
Level of depression	f	%	f	%	f	%	f	%
Normal	4	13.3	5	16.7	3	10	12	40
Mild	10	33.3	3	10	9	30	11	36.7
Moderate	10	33.3	9	30	11	36.7	5	16.7
Severe	6	20	13	43.3	7	23.3	2	6.7
Total	30	100	30	100	30	100	30	100

TABLE 2 Mean score difference in level of depression among geriatric people between the control and experimental group
(N=60)

Level of depression	Max score	Control post -test score			Experimental post- test score			Difference in mean
		Mean	SD	Mean %	Mean	SD	Mean %	
overall	63	27.4	11.6	5.1	15.6	5.6	2.2	2.9

The analysis of table 2 reveals a significant difference in depression scores between the control and experimental groups during the post-test phase. The experimental group, which received music therapy intervention, showed a lower mean score (15.6±) compared to the control group's higher mean score (27.4±), with a mean score difference of 2.9%. This reduction in depression scores among the experimental group participants

demonstrates the effectiveness of music therapy as an intervention for depression, leading to the acceptance of hypothesis H2.

TABLE 3 Unpaired 't' test on level of depression score among geriatric people between control and experimental group .

(N=60)

Level of depression	Control post -test score		Experimental pre- test score		Mean difference	't'-value	p-value
	Mean	SD	Mean	SD			
overall	27.4	11.6	15.6	5.6	7.6	1.88	P<0.001

The above table 3 shows the post test mean, SD, mean% mean difference and and 't' value on the level of depression between experimental group and control group.

The mean post test score (27.4±11.6) was higher in control group than the mean post test score(15.6±5.6)in experimental group among geriatric people. The mean difference in level of depression was 7.6.

The obtained 't' value was 1.88. which showed a statistical significance at $p<0.001$ level. It was inferred that the music therapy was significantly effective in reducing the level of depression in the experimental group and not in the control group.

There was no statistical association between the demographic variable and pre and post test depression scores.

IV. Discussion

The findings align with the results of Javo (2016) and Ibraheen (2019), where music therapy effectively reduced depressive symptoms among the elderly. The significant reduction in depression scores within the experimental group highlights the power of music in eliciting positive emotional and physiological responses.

Music's ability to stimulate the release of endorphins and reduce cortisol levels may explain its effectiveness. Additionally, its capacity to evoke memories and associations could provide elderly individuals with a sense of comfort and familiarity, thereby alleviating depressive symptoms. These findings are consistent with those of Hsieh et al. (2021), who identified music therapy as a reliable, non-pharmacological approach to managing geriatric depression.

The control group's lack of improvement further validates the specific impact of music therapy as a tailored intervention. Previous studies by Lin et al. (2005) also emphasized that structured music sessions yield significant psychological benefits when compared to unstructured or passive interventions.

Cultural elements, such as using devotional or locally resonant music, may have enhanced the intervention's efficacy. This aspect mirrors the findings of Hui et al. (2012), who reported greater therapeutic outcomes when music interventions were culturally relevant.

V. Conclusion

Music therapy is an effective, non-invasive intervention for reducing depression in elderly populations. The study highlights its potential as a cost-effective alternative to pharmacological treatments, especially in resource-limited settings. Future research could explore the long-term effects of music therapy and its application in diverse cultural contexts.

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