

# Effectiveness of Music Therapy on Depression, Anxiety and Stress among Haemodialysis Patients

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## ABSTRACT

**Introduction:** Music therapy is a non invasive intervention, which is readily accepted by patients and has been used to relieve anxiety, stress and depression. Haemodialysis patients usually experience high level of stress, anxiety and depression. Relieving these psychological issues and helps patients to cope up with their psychological situation, calm music therapy has been found to be effective.

**Objectives:-** To find the effectiveness of music therapy among haemodialysis patients in reducing depression anxiety and stress as measured by DASS scale.

To find differences in Blood pressure, heart rate among subjects after music therapy

**Materials and Method:-** Research design adopted for the study was quasi experimental research design with pretest post test with randomization control group. Data were collected using demographic questionnaire & DASS (Depression Anxiety Stress Scale) tool.

**Results:-** For this study 40 subjects had been identified and majorities of 29 (72.5%) were males. Around 15 (45%) participant were in the age group of to 44 – 64 years. Among the 40 subjects, a group of 20 received music therapy. There was a difference in mean depression ( $p=0.016$ ), anxiety ( $p=0.035$ ) and stress ( $p=0.028$ ) between experimental and control group. In experimental group there was a difference in mean Systolic Blood Pressure and Diastolic Blood pressure ( $p < 0.05$ ) after the music therapy. In control group, there was a difference in SBP ( $p < 0.005$ ) and no significant difference was found in the Diastolic Blood Pressure. ( $p = 0.297$ ).

**Conclusion:** This study had been identified that, music therapy is effective in reducing the level depression, anxiety and stress among the haemodialysis cases. Thus, music therapy can be used to relieve depression, anxiety and stress among those who are undergoing Haemodialysis

**Keywords:** Effectiveness, Music therapy, Depression, Anxiety and Stress.

## INTRODUCTION

Dialysis is the treatment of choice for end stage renal disease. Calm music has been found effective in reducing patient's blood pressure and also benefits patient emotionally and physically. The rhythm, tonality and intensity of sound stimulate the emotional reaction and produce a state of wellbeing<sup>1</sup>. Haemodialysis patients usually experience high level of psychological stress, anxiety and depression and these patients should be provided with more psychological resources to cope up with their psychological situation. Music therapy is non

invasive intervention is readily accepted by patients and has been used to relieve anxiety, stress and depression with encouraging research study<sup>2</sup>. The music therapy may be contributing to the reduction of depression, anxiety and stress among haemodialysis patients

Relaxation technique such as listening to soothing music, mediation, physical exercise, deep breathing exercise, laughter therapy, guided imagery and massage etc. are some of effective ways of known non-invasive stress busters<sup>3</sup>. Healing power of music can be achieved from various kind of music like instrumental, western,

classical, carnatic etc.

The most common mental health problems of patients undergoing haemodialysis are depressive disorders. Authors report that 12% to 52% of haemodialysis patients experience anxiety during dialysis<sup>4</sup>. Depression occurs as a result of complications of chronic kidney disease and that anxiety accompanies them lower quality of life of patients.

Depression is a common and serious medical illness that negatively affects the way one feel, think and act. Depression causes feeling of sadness and / or a loss of interest in activities once enjoyed. Depressive symptoms are the one of the most common psychological disturbances associated with physical illness, but they are often undetected or left untreated. Depression may worsen disabilities, increase pain, reduce patient's compliance and affect prognosis<sup>5</sup>.

By comparing to healthy people, patients undergoing dialysis may experiences problems in participating in various fields of life. It has been noted that patient's compliance with the treatment process is very important which affects the prognosis of the disease and the quality of life of patient under chronic dialysis<sup>6</sup>.

### NEED FOR THE STUDY

Dialysis is a life changing event that can create an overwhelming amount of stress for a dialysis patient. Since, dialysis is a lifelong therapy, patients had reported that the time seems much longer to pass and difficult to spend, which may impact the quality of life of a patient by creating numerous health issues.

Thus, in regards of all these aspects, the necessary for carrying a study which can soothe and console the wellbeing of a hemodialysis patient is necessary. Hemodialysis has been playing a tremendous role in improving the life standards of a patient with chronic kidney failure yet it can be a source of stress and anxiety. Along with the hemodialysis there are many other alternative therapies which can alleviate and reduce the amount of stress and anxiety such as yoga, music therapy and play therapy. The degree of stress and anxiety can alter the activities of daily living which may further leads to frustration and many other health problems. Therefore, music therapy is one of the most suitable and convenient way to provide relaxation and

which also helps in deviating minds from stress in patients undergoing dialysis.

### OBJECTIVES

To find the effectiveness of music therapy among haemodialysis patients in reducing depression anxiety and stress as measured by DASS scale.

To find differences in blood pressure, heart rate among subjects after music therapy.

### MATERIALS AND METHOD

#### RESEARCH APPROACH

Quantitative approach was adopted to determine the effectiveness of music therapy on depression, anxiety and stress among the hemodialysis patients in selected hospital at Mangalore.

#### RESEARCH DESIGN

A Quasi experimental design with pre test- post test (randomization, control group and intervention) was adopted for the present study.

The research design proceedings adopted was:

$$\begin{array}{rcccl} R & & E & O_1 & x & O_2 \\ & & & C & O_1 & x & O_2 \end{array}$$

E = experimental group

C = control group

O<sub>1</sub> = pretest

O<sub>2</sub> = post test

X = music therapy

#### Setting

Present study was conducted at KSHEMA hemodialysis unit, where the patients are undergoing hemodialysis for end stage renal disease. The patients who were interested in music were selected as experimental group and others were in control group.

Justice K. S. Hegde Hospital is a well-known charitable hospital situated at Deralakatte, Mangalore. The haemodialysis unit of the hospital is well equipped with all facilities which are guided under the nephrology unit. It is a 9 bedded unit which provides dialysis on reasonable rate.

**Population**

The patients aged between 15-75 years admitted in hemodialysis unit of Justice K. S. Hegde Hospital.

**Sample**

In this study, sample comprised of 40 haemodialysis patients in the age group of 15-75 years in which 20 haemodialysis patients for the music therapy and considered in the experimental group and the other 20 were in the control group.

**Sampling technique**

The investigators adopted purposive sampling technique to select the sample.

**RESULTS**

**Organization and presentation of data**

The data were analyzed and presented under the following headings:

Section 1: Description of Sample Characteristics.

Section 2: Evaluate the effectiveness of music therapy

Section 3: Correlation between music therapy and selected parameters.

**Table 1: Distribution of the Demographic Characteristics**

Demographic characteristics	Frequency	Percentage
<b>Age-</b> 22-44 44-64 64-74	15 18 7	37.5 45 17.5
<b>Gender-</b> Male Female	29 11	72.5 27.5
<b>Blood Group-</b> A+ A- B+ B- AB+ AB- O+ O-	12 2 7 0 5 1 12 1	30.0 5.0 17.5 0 12.5 2.5 30.0 2.5
<b>Marital status-</b> Married Unmarried	31 9	77.5 22.5

For this study 40 subjects, who underwent haemodialysis were identified. Of these 20 received music therapy. Majorities (72.5%) were male and (27.5%) were female and age group was categorized respectively 22-44(37.5%), 44-64(45%) and 64-

74(17.5%). The sample were also categorized based on blood group and the study reveal that majority (30.0%) were O+ve and A+ve, followed by (17.5%) B+ve, (12.5%)AB+ve,(5.0%) A-ve (2.5%) O-ve and AB-ve. Majority of them (77.5%) were married.

**Table 2:- Effectiveness of music therapy on depression, anxiety and stress level among subjects**

	Pre test		Post test		“t” value	“p” value
	Mean	S.D	Mean	S.D		
Depression	10.30	4.28	6.67	3.57	3.866	<0.001**
Anxiety	10.60	3.62	6.67	3.61	4.511	<0.001**
Stress	9.70	4.51	6.75	3.14	3.350	<0.001**

Paired “t” test was used to compare the difference in music therapy .The obtained p values are <0.001 for depression, anxiety and stress (table 1). It indicates, there was a difference in mean depression, anxiety and stress before and after the music therapy. Hence the therapy is effective in reducing the level of depression, anxiety and stress at 5% level of significance.

**Table 3: Comparison of depression, anxiety and stress between experimental and control group among the HD patients.**

	Experimental		Control		t value	P value
	Mean	S.D	Mean	S.D		
Depression	11.9	4.43	8.7	3.55	2.517	0.016
Anxiety	11.8	3.20	9.4	3.70	2.191	0.035
Stress	11.25	3.78	8.15	4.73	2.287	0.028

Independent sample t test was used to find differences in depression, anxiety and stress among experiment and control group. The obtained ‘p’ value are > 0.05 for depression (p= 0.016), anxiety (p=0.035 and stress (p=0.028). It indicated that there was difference in mean depression, anxiety and stress level among the experimental and control group.

**Table 4: Comparison of blood pressure within the experimental and control group.**

GROUPS	BP		MEAN	S D	‘t’ VALUE	‘P’ VALUE
EXPERIMENTAL	Systolic	Pre Post	151 142.50	11.192 7.86	4.344	<0.001
	Diastolic	Pre Post	98.5 93.00	10.89 6.56		
CONTROL	Systolic	Pre Post	151.00 142.5	15.86 12.08	3.489	0.002
	Diastolic	Pre Post	94.50 91.00	13.16 8.52		

Paired‘t’ test was used to compare the difference in blood pressures before and after the interventions for each control and experimental group. In experimental group, the p values for both systolic and diastolic are less than 0.05 hence there was difference in blood pressures among the patients who received the music therapy. In

control group, the p values of SBP are less than 0.05 hence there was difference in systolic whereas the p value of DBP is more than0.05 and hence there is no difference among subjects.

**Table 5: Association between depression, Anxiety and stress level with selected demographic Characteristics.**

DEPRESSION					ANXIETY					STRESS		
DEMOGRAPHIC CHARACTERISTICS	<9.5 (MEDIAN)	>9.5 (MEDIAN)	STATISTICAL TEST	P value	<9.5 (MEDIAN)	>9.5 (MEDIAN)	STATISTICAL TEST	P value	<9.5 (MEDIAN)	>9.5 (MEDIAN)	STATISTICAL TEST	P value
Age 24-44 44-64 64-74	8 11 1	8 8 4	2.403	0.301	9 11 2	7 8 3	0.527	0.768	10 10 3	6 9 2	0.361	0.835
Gender Male Female	7 13	4 16	1.129	0.288	5 17	6 12	0.557	0.456	8 15	3 14	1.48	0.222
Blood group A+ A- AB+ AB- B+ O+ O-	5 1 4 0 4 5 1	7 1 1 3 7 0	5.513	0.480	8 2 4 0 3 4 1	4 0 1 1 4 8 0	9.934	0.127	5 2 4 0 4 7 1	7 0 1 1 3 5 0	7.38	0.287
Marital status Married Unmarried	15 5	16 4	0.1440	0.705	18 4	13 5	0.521	0.417	17 6	14 3	0.407	0.524

To find the association between depression, anxiety and stress level with selected demographic variables, chi-square test or likelihood ratio test used. The obtained p value are >0.05 and hence there mean no association between depression, anxiety and stress level with selected variables at 5% level of significance.

**DISCUSSION**

The present study findings reveal that majorities (72.5%) were males and age group was categorized respectively 22-44(37.5%), 44-64(45%) and 64-74(17.5%). The sample were also categorized based on blood group and the study reveal that majority (30.0%) were O+ve and A+ve. Majority of them (77.5%) were married.

To find out the effectiveness of music therapy on depression, anxiety and stress level among subjects Paired “t” test was used. The obtained p values are <0.001 for depression, anxiety and stress indicates that there was a difference in mean depression, anxiety and stress before and after the music therapy. Hence the

therapy is effective in reducing the level of depression, anxiety and stress at 5% level of significance.

To find out the effectiveness of music therapy among the experimental and control group of HD patients Independent sample t test was used. The obtained ‘p’ value are > 0.05 for depression (p= 0.016), anxiety (p=0.035 and stress (p=0.028). It indicated that there was difference in mean depression, anxiety and stress level among the experimental and control group.

To calculate Correlation between music therapy and selected parameters. Paired t test was used. The obtained p values are less than 0.05and hence there was a difference in mean SBP and DBP at 5% level of significance. To find the association between depression, anxiety and stress level with selected demographic variables Chi-square test or likelihood ratio test mean used. The obtained p value are >0.05 and hence there mean no association between depression, anxiety and stress level at 5% level of significance.

## CONCLUSION

Nurses play a profound impact on the health and functional independence of clients by promoting a healthy environment free of depression, anxiety and stress. Effective nursing interventions for reducing depression, anxiety and stress among the patient include guided imagery, progressive muscle relaxation, music therapy etc. The most common mental health problems of patients undergoing haemodialysis are depressive disorders. In the present study the investigator made an attempt to relieve stress, anxiety and depression among haemodialysis patient by providing music therapy and results shows that there was a significant difference in depression, anxiety and stress level among the experimental and control group.

**Conflict of Interest:**-The researcher declares that there is no personal and financial problem in writing the study.

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**Ethical Clearance:** Ethical clearance for the study was obtained from the Institutional Ethics committee and obtained written consent from haemodialysis patient to maintain privacy, confidentiality and anonymity.

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