

Effectiveness of Music Therapy on the Level of Stress among Patients Undergoing Haemodialysis at Rajarajeshwari Medical College & Hospital, Bangalore

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Abstract

The literature shows that music is an effective means of aiding in treatment of stress, anxiety, mental depression. Hence an attempt was made to study the effectiveness of music therapy on the level of stress among patients undergoing haemodialysis at Rajarajeshwari Medical College & Hospital, Bangalore. The study was conducted on 10 haemodialysis patients who were admitted in the Dialysis Unit and available at the time of the study and were selected by purposive sampling method. Patients were analysed by using Stress rating scale checklist before and after music therapy that was given for 1 hour. The results showed significant difference in the pre-therapy to post-therapy score favouring a decrease in the level of stress ($p=0.05$). The study revealed no association between post-test level of stress with gender and religion. However, there was an association between post-test level of stress and age, occupational status, educational status, income and marital status. The study clearly showed a need for providing music therapy to the patients undergoing haemodialysis for reducing their stress.

End-stage renal disease (ESRD) is a chronic, progressive disorder characterised by irreversible and gradual loss of renal function. These patients have to resort to lifelong Renal Replacement Therapies (RRT) such as haemodialysis, peritoneal dialysis and kidney transplantation. In India among one million population with chronic kidney disease (CKD), the estimated incidence of ESRD is approximately 1,00,000 each year, and among these, 90 percent will be initiated on RRT. In ESRD patients, psychosocial changes are on the rise which seems to be the immediate concern for the nurse. They experience many stressors such as fatigue, fluid restriction and food restriction. Those who are not able to cope with the stressors feel depressed and socially isolated. Haemodialysis (HD) is a medical procedure that uses a special machine to filter waste products from the blood and to restore the normal constituents to it. It is well understood that kidney failure and further therapy like haemodialysis can be challenging both physically and emotionally.

Disease can be devastating for anyone. A disease is a disorder of the structure or function that affects

part or all of an organism (Sharon & Idolia). Kidney disease is also known as nephropathy or renal disease. It usually results in kidney (renal) failure to more or less degree, with the amount depending on the type of disease. The main risk factors for developing kidney disease are diabetes, high blood pressure, cardiovascular disease, family history of kidney failure (Brunner & Suddarth). End-stage renal disease is kidney failure treated by dialysis or kidney transplant. Haemodialysis is a process for removing the waste and excess fluid from the blood, and it is used primarily as an artificial replacement for lost kidney functions in people with kidney failure. The most common physical and psychosocial problems of HD patients include stress, fatigue, treatment costs, travelling, limited drinking and limited time and places for entertainment. Various pharmacological and non-pharmacological techniques have been developed for the stress control of dialysis patients. Non-pharmacological stress control measures are more focused nowadays like music therapy, relaxation therapy. "Music cleans his soul while dialysis cleans his blood". Many experts suggest that it is the rhythm of the music or the beat that has calming effect on us although we may not be very conscious about it. According to American music therapy association (AMTA) music therapy is an effective and valid treatment for persons who have psychosocial, affective, cognitive and communicative needs. It is a form of sensory stimulation which increases the relaxation.

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Need of the study: A patient's stress can be reduced, and his/her comfort can be increased by a carefully selected music. In this way, the patient's attention can be diverted from pain. There are psychological as well as physiological effects of musical treatment on HD patients. Alternative therapy methods such as progressive relaxation, deep breathing exercise, therapeutic touch and music treatment have been used as independent nursing initiatives to help fulfil the physical, emotional, and psychological requirements of the patients. However, there is a very limited amount of research in which music is used as a nursing initiative, and which investigates the effects of music on the physical and psychosocial symptoms of HD patients. This study was conducted to identify the effects of music on the physical and psychosocial symptoms of kidney patients receiving HD, including music in nursing care and provide data for future research related to this area.

Objectives

The objectives of the study were to: (i) assess the pre-test level of stress among the patients undergoing haemodialysis, (ii) assess the post-test level of stress among the patients undergoing haemodialysis, (iii) determine the effectiveness of music therapy on the level of stress among the patients undergoing haemodialysis and (iv) associate the post-test level of stress with their selected demographic variables.

Review of Literature

Cantekin I, Tan M, Ren Fail (2013) conducted a pre-test- post-test control group experimental study on 100 patients to analyse the influence of music therapy on perceived stressors and anxiety levels of haemodialysis patients in haemodialysis (HD) Units of Ataturk University Research Hospital & Regional Education. It was found that music therapy has influence in reducing anxiety levels and perceived stressors of haemodialysis patients.

Another study on concerns of patients on dialysis in four hospitals in Athens included 100 patients undergoing haemodialysis. It was found that psychological disorders appeared to affect the population of patients to a large extent, with a sample rate feeling lack of rest (43.8%), lack of joy (41.1%), feeling tired (41.8%), irritability (37.5%), decreased ability to travel (29.5%), anxiety and sleep disorders (68.1%). The sexual life (59.8%) and appearance (57.7%) did not concern all participants.

Kwuy Bun Kim, Mi Hunn Lee, Sohyune R Sok (2006) assessed the effect of music therapy on anxiety and depression among 36 patients (18 each in experimental control group) undergoing haemodialysis in three hospitals in Seoul. It was found that patients undergoing haemodialysis who received music therapy had less anxiety and depression

than patients undergoing haemodialysis who did not receive music therapy.

Macdonald, Flowers P, Filiopoulos V et al (2008) conducted a study to investigate the effects of music on anxiety and pain perception in 60 patients undergoing haemodialysis treatment. Anxiety and pain were measured in pre-test and post-test. Findings revealed that the control group scored significantly higher in state anxiety than the experimental group and experienced significantly higher pain intensity in post-test phase.

Youngmee et al (2005) conducted a systematic review and meta-analysis on anxiolytic effects of music interventions in patients receiving haemodialysis; seven studies were analysed in this study. This study found that music interventions effectively reduce anxiety in patients on maintenance HD.

Methodology

This experimental and quantitative study was conducted on 10 patients undergoing haemodialysis with their consent and approval from institutional ethical committee at Rajarajeshwari Medical College and Hospital, Bangalore. One group pre-test post-test research design was adopted for the study. The independent variable included music therapy and dependent variable included the level of stress. Patients were selected by purposive sampling technique, and those who were available at the time of data collection and willing to participate were included in the study. The critically ill and those on peritoneal dialysis were excluded. The study tool consisted of two sections: Section A consisted of demographic variables of patients on haemodialysis such as age, gender, religion, marital status, income, education and occupation. Section B consisted of Stress Rating scale. Then post-test stress assessment was done by using Stress Rating scale after giving music therapy for one hour during the procedure. Preferred music therapy was given to dialysis patients by means of headphone.

Results

Majority of haemodialysis patients (40%) were in the age group of 41 to 50 years (80% males, 20% females). Ninety percent were Hindus, 40 percent had primary level of education, 30 percent had higher secondary level of education, 20 percent had graduation and above and, only 10 percent had secondary level of education. Forty percent of haemodialysis patients were unemployed, 20 percent were engaged in private sector; 20 percent had government jobs and only 10 percent were self-employed; 40 percent had income below Rs.5000/- per month, 30 percent had monthly income of Rs. 10,001-15000/-, 20 percent had between Rs 5001-10,000/- and 10 percent had monthly income above

Table 1: Scoring interpretation on stress level

Score	Level of stress
0-19	Mild
20-39	Moderate
40-59	Severe

Rs. 15,001/-; 80 percent were married and 20 percent were unmarried. It was also found that 20 percent of the respondents had mild level of stress and 80 percent had moderate stress in the pre-test while in the post-test, majority of the respondents (70%) had mild stress and only 30 percent had moderate level of stress. The mean stress level in the pre-test and post-test were 25.9 and 15.9 respectively; standard deviation (SD) was 6.16, 't' = 5.647 (table value = 2.26). Hence, research hypothesis (H1) was accepted at $p=0.05$ level. Thus, music therapy was highly effective in reducing stress among patients undergoing haemodialysis. Chi-square test was done to find the association between post-test level of stress of patients with their selected demographic variables; significant association was found between stress level and age, educational status, occupation, income per month, marital status while no significant association was found between stress level and gender, religion.

Discussion

In the pre-test, 20 percent of the subjects had mild level of stress, 80 percent had moderate level of stress and none of them had severe level of stress (Table 1). These findings are supported by a study conducted by National Institute of Mental Health which reveals that nearly 10 percent patients suffer with the stress due to the End Stage Renal Disease. In the post-test, 70 percent of the subjects had mild level of stress, 30 percent had moderate level of stress and none had severe level of stress. These findings are supported by a pre-test-post-test control group experiment conducted by Cantekin I, Tan M, Ren Fail (2013) to analyse the influence of music therapy on perceived stressors of haemodialysis patients in Ataturk University Yakutiye Research Hospital & Regional Education. In the study, 100 patients showed that music therapy was influential in reducing stress levels and perceived stressors of haemodialysis patients. In the present study it was also found that the mean pre-test level of stress was 25.9 and the mean post-test level of stress was 15.9. The paired 't' test value ($t=5.647$) showed a significant decrease in the level of stress of haemodialysis patients considering the overall aspects of haemodialysis patients after providing the music therapy. Youngmee et al (2015) conducted a systematic review and meta-analysis on anxiolytic effects of music interventions in patients receiving hae-

modialysis; seven studies analysed for this study found that music interventions effectively reduce anxiety in patients on maintenance HD. Yet another study assessed the effect of Indian music in the management of mental depression, and supported the findings of the present study. It included 40 clinically diagnosed mentally depressed patients in the age group 15-45 years who were not undergoing any medical treatment. The results showed significant difference in the pre-therapy to post-therapy score favouring a decrease in the level of depression ($p<0.0001$). An experimental study (Podder, 2007) with pre-test post-test control group design was conducted on the effect of music therapy on anxiety level and pain perception and labour outcome in primipara mothers during the first stage of labour in a selected hospital of Kolkata during 2005-06. The study concluded that music therapy can make a difference to mothers in allaying the anxiety, reduction of pain and discomfort of labour and can help them to feel relaxed during labour having a positive impact of labour, thus supporting the findings of the present study. The present study also revealed that there was no association between post-test level of stress with gender and religion. However, there was significant association between post-test level of stress with age, occupation, educational status, income and marital status. The findings of the present study are also supported by Maheswari & Sam (2014) to assess the effectiveness of Benson's relaxation technique vs music therapy on bio-psychological parameters of haemodialysis patients. The findings of the study revealed that there is no significant association between post-test scores of bio-psychological parameters with their demographic variables like age, gender, previous history of dialysis whereas significant association was found between anxiety and duration of dialysis.

Recommendations

Similar study with additional demographic variables can be replicated on a large sample to generalise the findings. A comparative study can be done to assess the effect of other non-pharmacological therapies like deep breathing exercises, Benson's relaxation technique on the level of stress among patients undergoing haemodialysis.

Conclusions

Music therapy is effective in reducing the stress among the patients undergoing haemodialysis. Every participant in study showed a significant improvement in their level of stress showing that music therapy definitely has a positive effect on the mind. Music therapy is an upcoming field in healthcare which deserves attention and adequate research as it proves to show great potential. It is a

means of promoting the healthy mental status and preventing stress in a safe and easy manner. Music is an interesting topic of research as it follows a systematic and scientific pattern and its correlation with the functioning of the brain could provide us with new possibilities of music therapy.

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कोविड महामारी: जंग जारी है

समूची विश्व में कहर ढाती कोविड-91 की महामारी विश्व स्वास्थ्य संगठन (डब्ल्यूएचओ), 212 देशों की सरकारों, डाक्टरों, स्वास्थ्यकर्मियों और आमजनों की गंभीर चिंता बनी हुई है। कारण, अभिनव दवाओं की खोज, जल्द वैक्सीन खोजने, तथा अन्य चहुमुखी प्रयासों के बावजूद सभी इलाकों में संक्रमण, पॉजिटिव मामलों और मौतों की संख्या में लगातार बढ़त जारी है।

जहां तक हमारे देश का प्रश्न है, सही वक्त पर लॉकडाउन लागू करने के साहसिक कदम उठाए जाने से, विशाल जनसंख्या के बावजूद, इस भयावह बीमारी के प्रसार में अन्य देशों जैसी वृद्धि नहीं हुई जैसा प्रतीत हो रहा था। पहला लॉकडाउन 25 मार्च से आरंभ हुआ था, संप्रति लॉकडाउन का चौथा दौर चल रहा है।

लैब परीक्षण सुविधाएं: फरवरी माह तक देश में बीमारी के वायरस के परीक्षण के लिए मात्र एक लैब थी, जिनकी संख्या बढ़ कर अब 599 है, इनकी डेढ़ लाख टेस्ट प्रतिदिन है। केवल कोविड मामलों के स्वास्थ्य केंद्र 2065 हैं जिनमें 1.77 लाख बेड हैं। इसके अलावा 7063 विकसित किए गए कोविड केयर केंद्रों में 6.50 लाख बेड हैं।

निजी अस्पतालों को निर्देश: दिल्ली के मामलों के उपचार, और देखरेख के लिए शहर के 117 प्राइवेट अस्पतालों को निर्देश हैं कि वे 20 प्रतिशत बेड कोविड मरीजों के लिए सुरक्षित रखें।

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