

Effectiveness of Music Therapy on Post-Traumatic Stress Disorder among the Orthopaedic Patients, Selected Hospital Chennai

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ABSTRACT

To appraise the efficacy of music therapy on pain reduction among the patients underwent orthopedic surgery at Sree Balaji Hospital, Chrompet. Hence find out the association between the posttest level of pain among control group and their selected demographic variables. Extreme stressors such as intense fear, helplessness or horror that leads entities to relieve the trauma. The belongings of traumatic events on individuals are upsetting memories of the events, acting or feeling like the events is happening again, nightmares, and feeling of intense distress when reminded of the trauma. Whereas, physical reactions of trauma include rapid breathing, nausea, muscle tension, sweating pounding heart, trouble falling or startled by loud noises. A purposive sampling technique was used to select the samples. In order to collect the data, the tool was prepared which comprised of demographic variables, Visual analogue scale to assess the level of pain of the samples. Music therapy is found helpful in the reduction of post-traumatic stress disorder among orthopaedic patients in orthopaedic wards.

Key words: Trauma, Stress, Rapid breathing, Nausea, Muscle tension, Sweating pounding heart, Trouble falling

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INTRODUCTION

Stress is a universal experience but is difficult to define experienced by people feel in their lives. Stress is a physical force that produces strain on a physical body, the intensity of stress is expressed in units of force divided by units of area [1-3]. Psychologically stress may cause mental or emotional strain or suspense, mood swings, irritability, resentment, feeling of powerlessness, low self-worth, and lack of interest in activities. Cognitive effects of stress are anxiety, depression, panic attack, feeling of guilt, feeling over whelmed, unable to feel happy, feeling of hopelessness. A neuromodulator is a substance other than a neurotransmitter, released by a neuron at a synapse and conveying information to adjacent or distant neurons, either enhancing (or) damping their activities. Serotonin and acetylcholine are considered as active neuromodulators in the sensory transmission particularly pain which lead toward fast healing [1,4].

Endorphins are the natural pain killers, the best-known endorphins are alpha and beta endorphin. The alpha endorphin seems to be most implicated in pain relief. Beta endorphin is free into the blood (from the pituitary gland) by the spinal cord and brain from hypothalamic neurons.

Post-traumatic stress disorder is a set of reactions to extreme stressors such as intense fear, helplessness or horror that leads individuals to reveal the trauma. It may be due to natural disaster, car or plane crashes, road traffic accidents, falls, terrorist attacks, and sudden deaths of a loved one, rape, kidnapping assault, sexual or physical abuse, and child hood neglect. Individuals have upsetting memories of the events, acting or feeling like the events is happening again, nightmares and feeling of intense distress when reminded of the trauma [5,6].

There are number of treatment modalities are available to treat the post-traumatic stress disorder. Those are cognitive behavioural therapy, pharmacotherapy for treating anxiety, depression and insomnia, psychodynamic psychotherapy, eye movement desensitization, reprocessing, and music therapy. The physical reactions of trauma include pounding heart, rapid breathing, nausea, muscle tension, sweating, trouble falling or startled by loud noises [7-9]. Music is a worldwide language and is not necessary for one to comprehend that music gain positive possessions. The therapy can be passive or active alive, individual or group performances. Music therapy is one of the therapeutic techniques used for treating post-traumatic stress disorder. It improves the emotional, physical, psychological, spiritual health, wellbeing and also used to bring a more positive state of mind by reducing the depression and anxiety [1].

The music therapy acts on the brain. A strong beat can stimulate brain waves, with the faster beats bringing sharper concentration, more alert thinking, a slower tempo promoting a calm meditative state and changes in the brain wave activity due to music which brings the brain to shift speeds more easily. Indian classical music can be classified into 2 forms. Those are Kalpita sangita or compositions, manodharma sangita or the music extemporized [4,10,11].

According to ancient Indian text, swara sastra the 72 melakarta ragas (parent ragas) control the 72 important nerves in the body. It is believed that if one sings with due devotions, adhering to the raga "sruthi shuddi", and "lakshana" the raga could affect the body in a favorable manner [12]. Bone pain is a debilitating form of pain from the bone tissue. The incentive of the nociceptors that innervate bone tissue, leads to the sensation of bone pain "Raag miaki malhaar" is used in post-traumatic stress disorder to diminish the stress levels, which comfort the mind and produce deep sleep according to the experiences of great musicians [7].

MATERIALS AND METHOD

The sample size consists of 80 patients with fracture admitted in orthopaedic ward at Narayana medical college hospital.

Exclusion criteria

Patients who are having other organization disorders like gastrointestinal tract disorders, cardiac disorders, Orthopaedic patients who scores severe level of stress. Independent variable: Music therapy. Dependent variable: Level of post-traumatic stress disorder.

Inclusion criteria

Admitted in the orthopaedic ward with more than one area of fracture. Having mild or moderate stress, Both Male and female.

Section I: Distribution of socio demographic variables among the orthopaedic patients.

Section II: Distribution of the level of post-traumatic stress disorder among orthopaedic patients. Section-III: Effectiveness of music therapy on the level of post-traumatic stress disorder among the orthopedic Patients. Section - IV: Association between the effectiveness of music therapy on the level of post-traumatic stress disorder with the selected socio demographic variables.

RESULTS

Portrays that, majority of the orthopaedic patients 10(16.7%) were in the age group of less than 20yrs, 28 (46.7%) were in the age group of 21-40yrs, 16 (26.6%) in the age group of 41-60yrs, 6 (10%) were in the age group of more than 60yrs (Figure 1).

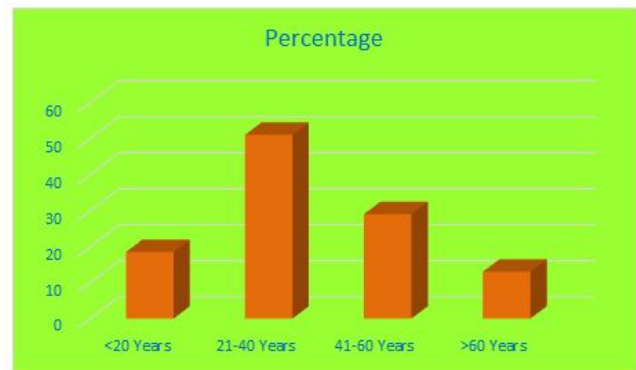


Figure 1: Percentage distribution of age.

This shows that, majority of the orthopaedic patients 40 (72.7%) were found to be males as compared to females 20 (28.3%) in the study group (Figure 2).

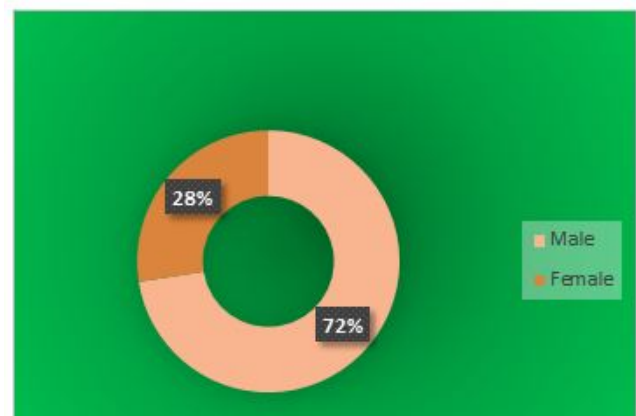


Figure 2: Percentage distribution of gender.

This reveals that, 38 (66.3 %) were Hindus, 10 (13.7%) were Muslims, 11 (15.7%) were Christians, 1 (4.3%) belong to other religion (Figure 3). In relation to the cause of trauma, 33 (55%) had accidents, 27(45%) had falls (Figure 4). In relation to source of counselling 40 (35%) were counselled by the doctors, 32.5 (28.3%) were counselled by the nurses, 25.5 (26.7%) were counselled by the students, 3 (1.6%) were counselled by the others (Figure 5).

Distribution of orthopaedic patients based on the various dimensions of the level of the post-traumatic stress disorder. In association of effectiveness of music therapy on the level of post-traumatic stress disorder among the orthopaedic patients in occupation calculated value is 3.24 and Figure value is 2.78. The calculated value is more than the Figure value; hence it is significant (Figure 6). In association of effectiveness of music therapy on the level of post-traumatic stress disorder among the orthopaedic patients in income per month calculated value is 9.02 and Figure value is 2.78. The calculated value is more than the Figure value, hence it is significance. In association of effectiveness of music therapy on the level of post-traumatic stress disorder among the orthopaedic patients in type of the family calculated value is 4.15 and Figure value is 3.84. The

calculated value is more than the Figure value, hence it is significance.

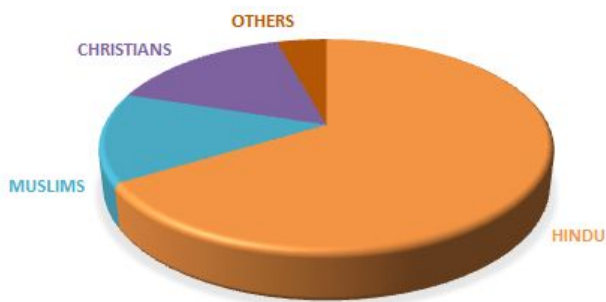


Figure 3: Percentage distribution of religion.

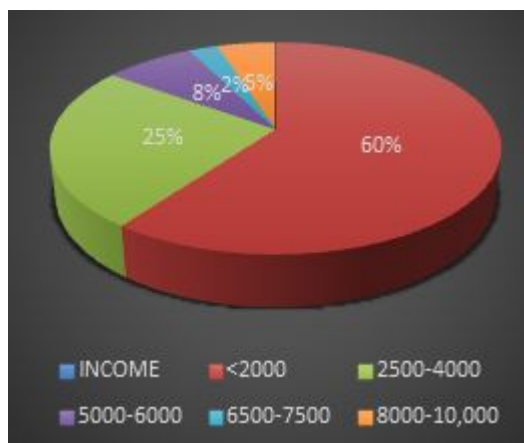


Figure 4: Percentage distribution of causes of trauma.

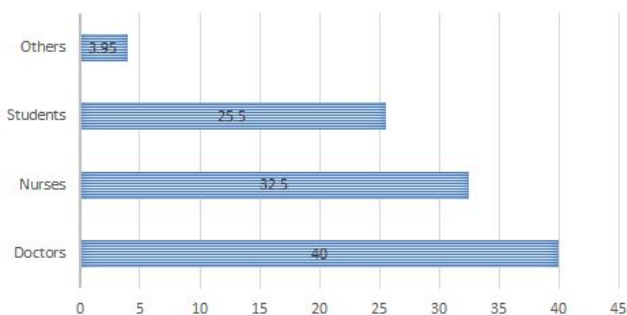


Figure 5: Percentage distribution of orthopaedic patients by the source of counselling services taken.

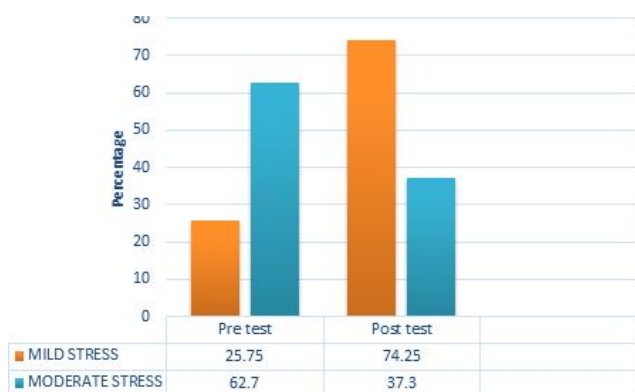


Figure 6: Percentage distribution of effectiveness of music therapy on the level of post-traumatic stress disorder among orthopaedic patients.

DISCUSSION

The samples were selected based on the sampling criteria and screened for the level of post-traumatic stress disorder by using post-traumatic stress disorder rating scale. A total 60 orthopaedic patients were included for the study. Informed consent was obtained. Confidentiality of shared information was assured. The purpose of the study was explained. The music therapy was conducted for 20 minutes for 21 days in 2 times in a day. Post test was conducted on 23rd day. The data was analyzed by using the descriptive and inferential statistics (i.e. frequency and percentage, mean, median, standard deviation, Z test, chi- square). The findings are discussed based on the demographic characteristics, objectives and hypotheses stated [13-16]. To assess the level of post-traumatic stress disorder among orthopaedic patients. To determine the effectiveness of music therapy on the level of post-traumatic stress disorder among the orthopedic patients.

To associate the effectiveness of music therapy on the level of post-traumatic stress disorder among the orthopedic patients with their selected socio demographic variables. Level of post-traumatic stress disorder among orthopedic patients. That among 60 samples, in pretest 19 (31.6%) orthopedic patients had mild stress, 41(68.4%) orthopaedic patients had moderate stress. Effectiveness of music therapy on the level of post-traumatic stress disorder among the orthopedic patients. That in pretest 19 (31.6%) orthopaedic patients had mild stress, 41 (68.4%) orthopedic patients had moderate stress. In post-test 38 (63.4%) orthopaedic patients had mild stress, 22 (36.6%) orthopaedic patients had moderate stress.

In emotional dimension, pre-test mean level of post-traumatic stress disorder is 14.41 with S.D of 5.42, in post-test mean level of post-traumatic stress disorder is 10.26 with S.D of 2.58. In physiological dimension, pre-test mean level of post-traumatic stress disorder is 1.61with S.D of 0.77, post-test mean level of post-traumatic stress disorder stress is 4.45 with S.D of 0.66. So music therapy is effective to reduce the level of post-traumatic stress disorder among orthopedic patients. In psychological dimension, pretest mean level of post-traumatic stress disorder is 25.05 with S.D of 3.90 and in post-test psychological mean level of post-traumatic stress disorder is 15.06 with S.D of 5.15.

Association between the effectiveness of music therapy on the level of post-traumatic stress disorder in selected socio demographic variables. Conducted a phenomenological study on music therapy in treating the post-traumatic stress disorder in 18 trauma patients at Drexel university centre city campus in Philadelphia. The results showed that 70% of members had marked reduction of post-traumatic stress disorder symptoms after using the music therapy. The conclusion of this

study was the music therapy can reduce the post-traumatic stress disorder in trauma patients. This review of literature was supporting the study [17-21].

There is a statistically significant association between the effectiveness of music therapy on the level of post-traumatic stress disorder with socio demographic variables like education, occupation, income per month, type of family, counselling services. There is no statistically significant association between the effectiveness of music therapy on the level of post-traumatic stress disorder with socio demographic variables such as age, gender, religion, marital status, duration of illness, causes of trauma, types of fractures, methods of coping strategies at $p < 0.05$ level of significance. Hence null hypothesis (H₀) is rejected, alternative hypothesis (H₂) is accepted.

CONCLUSION

Therefore the music therapy was found to be a very effective form of in reducing the level of post-traumatic stress disorder among orthopaedic patients. Non-pharmacological intervention to relieve pain among orthopaedic surgical patients and also it is a non-invasive therapy without any side effects.

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ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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