

A Study on the effect of Instrumental Music on Emotional Competency

Dr Abhishek Kr Bharadwaj* & Puja Rani Bharadwaj**

*Senior Research Fellow, Patanjali Research Foundation, Haridwar

**T M B University, Bhagalpur

Email: devineinp@gmail.com

Abstract

Previous studies have reported the effects of instrumental music on different psycho-physiological parameters. The present study aimed to assess the effect of instrumental music on emotional competency in healthy adults. There were 12 participants ages ranged between 18 and 22 years and the group mean ages were 19.58 ± 1.31 years. All the participants were studying in a university located in the north India. The participants were assessed using a reliable and valid Emotional Competency Scale. After assessments, the participants listened instrumental music {fusion of Indian and western music i.e. Tabla, Violin, Santoor, Flute and Drum}, 15 minutes daily for twenty days. Assessments were made before and after 20 days of the intervention. Data were analyzed using t-test. This was a one group pretest – posttest designed study. After 20 days, the group showed a significant increase in the level of emotional competency ($p < 0.01$). So, it can be concluded that regular listening of instrumental music can significantly improve the level of emotional competency in the normal adults.

Key words: Instrumental music, Emotion, Emotional competency

Introduction:

The world of emotions and feelings is quite complex. Emotions fill the heart with pleasure and make the life heaven. One satisfied with his emotional life can't ask for psychological help. An emotionally competent person knows how to control and express feelings at the right time and music therapy can help to manage our emotions. Now, scientific studies have also shown that music really can change our mood and even help us in concentration and psychological well-being.

Music has an amazing power to influence man's emotions and behavior. It has been found to affect and stimulate our different parts of the body as well as the brain. Studies have found that music can reduce stress, aid relaxation, and helps to store and recall information among other functions. Stress is reduced through music by decreasing the amount of the hormone cortisone released in the body.¹

Music therapy is a new intervention that uses “music and musical activities for the purposes of altering behavior and enhancing the everyday existence of people with various types of emotional disturbances”. People have been using forms of music therapy since the earliest recorded history.² Modern research tends to confirm music's psychotherapeutic benefits.³ Music therapy helps to relieve grief and improve emotional tones and feelings.² Elizabeth Valentine found that dementia patients had better memory recall after being exposed to music rather than background noise or silence.⁴

Listening to music can reduce chronic pain from a range of painful conditions, including osteoarthritis, disc problems and rheumatoid arthritis, by up to 21 percent.⁵ Music also reduces muscle tension and improves body movement and coordination.^{6, 7} According to a report, a

person's ability to recognize visual images, including letters and numbers, was faster when either rock or classical music was playing in the background.⁸

In a study, 94 participants (aged between 19 and 28 years) with sleep complaints listened for 45 minutes either to relaxing classical music (Group 1) or an audiobook (Group 2) at bedtime for 3 weeks. The control group (Group 3) received no intervention. Sleep quality was measured using the Pittsburg Sleep Quality Index before the study and weekly during the intervention. Depressive symptoms in experimental group participants were measured using the Beck Depression Inventory. Results showed that music statistically improved sleep quality ($P < 0.0001$). Depressive symptoms decreased significantly in the music group ($P < 0.0001$), but not in the group listening to audiobook.⁹

In one study, 167 patients (adults with aged between 20 and 65 years waiting for surgery without premedications) were randomly assigned to the headphone, broadcast and control groups. Both the headphone and broadcast groups were provided with the same instrumental music, while the control group did not listen to any music. The tools for measuring anxiety were visual analogue scale (VAS) ranging from "not anxious at all" to "extremely anxious" and heart rate variability (HRV). The VAS score exhibited a significant decrease for both the headphone and broadcast groups. Both headphone and broadcast music were found effective for reducing the preoperative patient's anxiety in the waiting room.¹⁰ In the another study, music therapy was found very useful in reducing anxiety and depression level in the patients having early to moderate stage of Alzheimer's disease and also in reducing the burden on main caregiver.¹¹

These above mentioned studies have shown the positive impact of listening music. The present study aimed to assess the effect of instrumental music on emotional competency in healthy adults. Emotional competency refers to the mastering of abilities to do a task, sufficiency of means for living, easy circumstances or, in ethical sense, a right to take cognizance which specifies the process of observation, comprehension, explanation, exploration and manipulation of the experiences more objectively with the fullest use of an individual's normal capabilities.¹² Emotional competence as an efficiency to deal effectively with several dissociable but related processes is a blending of five competencies i.e. adequate depth of feeling, adequate expression and control of emotions, ability to function with emotions, ability to cope with problem emotions and encouragement of positive emotions.¹³

Research Methodology:-

Participants:

There were 12 participants ages ranged between 18 and 22 years and the group mean ages were 19.58 ± 1.31 years. All the participants were studying in a university located in the north India. The participants were selected by the incidental sampling, a non-probability type of sampling.

Design:

This was a one group pretest – posttest designed study.

Assessments:

Assessments were made before and after 20 days of the intervention. Emotional competency was measured using the Scale of Emotional Competencies (EC-Scale).¹⁴ The reliability (0.74 by test-retest method and 0.76 by split-half method) and the validity of the scale have been established. The scale was a five-point scale and had total 30 items to measure five emotional competencies (adequate depth of perception, adequate expression and

control of emotions, ability to function with emotions, ability to cope with problem emotions and encouragement of positive emotions). The scale was administered in a group. The participants were given clear instructions to attempt all the questions, and to complete filling the questionnaire in the given time, and to ask the instructor if they were not able to understand any question. The instructions were very simple. The participants were called to come and sit at a definite time everyday then they listened a series of instruction followed by 15 minutes of music. Instructions were also very simple and aimed at making the subjects feel relaxed. Following instructions were there –

“Now you are going to listen a soothing music. This music is a fusion of Indian and western style. Just sit easily on the chair, feel relaxed and enjoy the effects.”

Intervention:

Intervention was given for twenty days and on each day, the participants listened

instrumental music {fusion of Indian and western music i.e. Tabla, Violin, Santoor, Flute and Drum}, 15 minutes daily between 5:30 and 6:00 PM. At the time of intervention, it was total dark in the room. The CD of the instrumental music was played using a DVD player.

Scoring and data analysis:

There were five alternatives to each item in this scale. Scoring of these five alternatives followed a system of 1, 2, 3, 4, and 5 from upper to lower end. Data were analyzed by t-test using Microsoft Excel.

Result:

For testing the hypothesis, a null hypothesis was formulated that ‘There is no significant relationship between instrumental music and emotional competency.’ After 20 days, the group showed a significant increase in the level of emotional competency ($p < 0.01$), and the null hypothesis was rejected. Results are shown in Table 1.

Table 1: Showing result before and after the intervention

	Pre test	Post test
Mean (M_x)	110.83	122.34
Standard Deviation (SD)	7.23	10.72
Total number of subjects (n)	12	12
Correlation (r)	0.81	
Group mean difference ($M_2 - M_1$)	11.5	
Standard error of mean (σ_M)	2.18	3.23
Standard error of difference (SE_D)	1.95	
Degree of freedom (df)	11	
‘t’ value	5.89	
Level of significance	at 0.01	

Discussion:

According to the result, pre and post mean are 110.83 and 122.34 respectively. The difference between these two means are

11.5 and the ‘t’ value is 5.89 which is significant at 0.01 level of significance. Obtained result shows a significant increase in the level of emotional

competency of the subjects after listening instrumental music.

Instrumental music really relaxes the body and mind. Anyone can experience the effects after listening instrumental music. Relaxing music reduces sympathetic nervous system activity, decreases anxiety, blood pressure, heart and respiratory rate and may have positive effects on sleep via muscle relaxation and distraction from thoughts. Listening to slow, quite classical music is proven to reduce stress.¹⁵ Researchers have shown that just 45 minutes of relaxing music before bedtime can make for a restful night.¹⁶

Music, especially upbeat tunes, can take our mind off what stresses us, and help to feel more optimistic and positive. This helps release stress and can help us to keep from getting as stressed over life's little frustrations in the future. Researchers discovered that music can decrease the amount of the cortisol, a stress-related hormone produced by the body in response to stress.¹⁷

These days, music therapy is increasingly used in hospitals to reduce the need for medication during childbirth, to decrease postoperative pain and complement the use of anesthesia surgery.¹⁸

Music can boost the immune function. Scientists explain that a particular type of music can create a positive and profound emotional experience, which leads to secretion of immune-boosting hormones.¹⁹ This helps to contribute a reduction in the factors responsible for illness. Listening to music or singing can also decrease the levels of stress-related hormone cortisol. Higher levels of cortisol can lead to a decreased immune response.^{20, 21}

References:

1. Music and Stress Reduction. (1998). *Futurist*, 32, 1-3.
2. Shapiro, A. (1969). A pilot program in music therapy with residents of a home for the aged. *Gerontologist*, 9, 128-133.

Easy listening music or relaxing classics improves the duration and intensity of concentration in all age groups and ability levels. It is not clear what type of music is better, or what kind of musical structure is necessary to help, but many studies have shown significant effects.²²

Several studies conducted in clinical settings have suggested that sedative music may have positive effects on sleep via muscle relaxation and distraction from thoughts. Music can decrease sympathetic nervous system activity, as well as anxiety, heart rate, respiratory rate and blood pressure.^{23, 24} After listening music; one can feel relaxation in the body parts as well as in the brain. After getting relaxed we feel freshness and positive energy within us. With this positive energy and thoughts one can have adequate expression and control of emotions, one can be able to cope with problem emotions and gradually they can be like an emotionally competent person.

Above mentioned studies have found the positive results of listening music and also support the finding of the present study. So, it can be concluded that regular listening of instrumental music can improve the level of emotional competency in the normal adults.

The limitations of this study are - (i) there was no control group in this study and (ii) the sample size was very small, so the obtained results can't be generalized. Despite these limitations, the present study demonstrated improved emotional competency after listening the instrumental music.

3. Maratos, A. S., Gold, C., Wang, X., Crawford, M. J. (2008). Music therapy for depression. *Cochrane Database Syst Rev.* 23, CD004517.
4. Larkin, M. (2001). Music tunes up memory in dementia patients. *Lancet*, 357, 1-3.
5. Siedliecki, S. L., Good, M. (2006). Effect of music on power, pain, depression and disability. *J Adv Nurs.* 54, 553-562.
6. Bernatzky, G., Bernatzky, P., Hesse, H. P., Staffen, W., Ladurner, G. (2004). Stimulating music increases motor coordination in patients afflicted with Morbus Parkinson. *Neurosci Lett.* 6; 361, 4-8.
7. Rosenkranz, K., Williamon, A., Rothwell, J. C. (2007). Motorcortical excitability and synaptic plasticity is enhanced in professional musicians. *J Neurosci.* 9; 27, 5200-5206.
8. Pavlygina, R. A., Frolov, M. V., Davydov, V. I., Milovanova, G. B., Sulimov, A. V. (1999). Recognition of visual images in a rich sensory environment: musical accompaniment. *Neurosci Behav Physiol.* 29, 197-204.
9. Harmat, L., Takacs, J., Bodizs, R. (2008). Music improves sleep quality in students. *J Adv Nurs.* 62, 327-335.
10. Lee, K. C., Chao, Y. H., Yiin, J. J., Chiang, P. Y., Chao, Y. F. (2011). Effectiveness of different music-playing devices for reducing preoperative anxiety: a clinical control study. *Int J Nurs Stud.* 48, 1180-1187.
11. Guetin, S. et al.. (2009). Impact of music therapy on anxiety and depression for patients with Alzheimer's disease and on the burden felt by the main caregiver (feasibility study). *Encephale.* 35, 57-65.
12. Allport, G. W. (1961). *Patterns and growth in personality.* New York: Holt Rinehart and Winston.
13. Coleman, J. C. (1970). *Abnormal psychology and modern life:* Bombay: D. B. Taraporevala Sons & Co. Pvt. Ltd.
14. Sharma, H. C., Bhardwaj, R. (1995). *Manual for the Scale of Emotional Competencies.* Agra, India: Mapan.
15. Labbe', E., Schmidt, N., Babin, J., Pharr, M. (2007). Coping with stress: the effectiveness of different types of music. *Appl Psychophysiol Biofeedback.* 32, 163-168.
16. Lai, H. L., Good, M. (2005). Music improves sleep quality in older adults. *J Adv Nurs.* 49, 234-244.
17. Khalifa, S., Bella, S. D., Roy, M., Peretz, I., Lupien, S. J. (2003). Effects of relaxing music on salivary cortisol level after psychological stress. *Ann N Y Acad Sci.* 999, 374-376.
18. Nilsson, U., Unosson, M., Rawal, N. (2005). Stress reduction and analgesia in patients exposed to calming music postoperatively: a randomized controlled trial. *Eur J Anaesthesiol.* 22, 96-102.
19. Kuhn, D. (2002). The effects of active and passive participation in musical activity on the immune system as measured by salivary immunoglobulin A (SIgA). *J Music Ther.* 39, 30-39.
20. le Roux, F. H., Bouic, P. J., Bester, M. M. (2007). The effect of Bach's magnificat on emotions, immune, and endocrine parameters during physiotherapy treatment of patients with infectious lung conditions. *J Music Ther.* 44, 156-168.
21. Kreutz, G., Bongard, S., Rohrmann, S., Hodapp, V., Grebe, D. (2004). Effects of choir singing or listening on secretory immunoglobulin A, cortisol, and emotional state. *J Behav Med.* 27, 623-635.
22. Patston, L. L., Hogg, S. L., Tippett, L. J. (2007). Attention in musicians is more bilateral than in non-musicians. *Laterality.* 12, 262-272.
23. Standley, J. M. (1986). Music research in medical/dental treatment: meta-analysis and clinical application. *J Music Ther.* 23, 56-122.
24. Salamon, E., Bernstein, S. R., Kim, S. A., Kim, M., Stefano, G. B. (2003). The effects of auditory perception and musical preference on anxiety in naïve human subjects. *Med Sci Monit.* 9, 396-399.