

A Pilot Study of Therapeutic Effects of Indian Classical Raga on Depression, Anxiety and Stress among Adults

Sushila Pareek and Divya Shekhawat

Department of Psychology, University of Rajasthan Jaipur, Rajasthan

Indian classical music is emerging as a therapeutic agent in mental health and well-being. This pilot study aims to see the therapeutic effect of Indian classical raga on depression, anxiety and stress among adults. For the study, 20 participants were randomly selected then participants were divided into two groups; the intervention group and the control group. The intervention group received raga Ahir Bhairav with standard care and the control group received only standard care. Standard care includes pharmacology and psychiatrists counselling. To measure depression, anxiety and stress DASS-42 was used at baseline and after treatment. Results stated that there is a significant decrease in depression, anxiety and stress following raga therapy. Thus the raga is an inexpensive, non-invasive, safe adjunct to reduce stress, anxiety and depression.

Keywords: Raga Ahir Bhairav, Indian classical music, depression, anxiety, stress

Adults have lots of responsibility, this is the age when a person gets married and has to adjust in married life, get a job, and perform well to be financially independent. During this period, they observe some physical decline, loss of their parents, etc. so due to all these personal and professional reasons adults suffer from depression, anxiety, and stress.

World Health Organization (2015) defined depression as a mood disorder characterized by feelings of sadness, loss of interest and pleasure, feeling of guilt, lack of self-worth, disturbed sleep and appetite, and feelings of tiredness and concentration.

Depression is a long-lasting or recurrent mood disorder impacting a person's daily life. Severe depression leads a person to suicide (WHO, 2015). Depression is a major health concern nowadays World Health Organization (2013) assumed that depression will be the leading cause of disease burden worldwide by 2030. In India depression prevalence is not too far from western countries. Major depressive disorder is higher in adults, unemployed with poor education, and with low economic and social status (Grover, Dutt, & Avasthi, 2010).

Stress is the result of some external physical or mental factors that affect an individual's physical and psychological well-being (Atkinson, Miller, Kay, Blinkhorn, 1991). A study was conducted on the Swedish population to see the effect of stress on mental health and it was found that high stress is associated with depression, whereas moderate to low stress is associated with anxiety (Bergdahl & Bergdahl, 2002).

American Psychiatric Association (2013) defined anxiety as a

mental state in which an individual experiences the feeling of tension, worried thoughts, and some physiological changes like increased blood pressure and heart rate. Listening to Indian music can reduce anxiety levels (Nagarajan, Srinivas, & Rao, 2015).

Music Therapy

Music is considered a medicine in Ayurveda. In the Vedic text, the cosmos is called "Nadabrahma" which is a combination of two words Nada is a Sanskrit word that means sound and Brahma means, God, therefore, Nadabrahma means the sound is God. The music reflects the evaluation of life from the primal sound "Aum". Nalpat (2003) stated that music isn't energy but the energy itself. Indian civilizations were using music as medicine.

Effects of Music Therapy

Music therapy has the potential to cure and minimize the symptoms of physical as well as psychological diseases. Indian music balanced the Chakras and energy in the body to bring out the healing in the body. Music stimulates the secretion of the hormone by the pituitary gland, which affects the nervous system and the flow of blood (Peters, 2000). It could change negative personality traits like worry, bias, and anger (Chatterjee, 1999). Music can stimulate and soothe the mind (Copland, 1960).

Fight Depression, Anxiety and Stress: When a person suffers from depression, the serotonin level decreases, and music helps in increasing serotonin levels and reduced depression (Godman, 2011). Music is also effective in reducing anxiety it calms and soothes the mind (Kemper & Danhauer, 2005). Witte et al. (2020) suggest that listening to music is effective in reducing stress as it can reduce the heart rate and cortisol level, and release endorphins which improve the sense of well-being.

The Indian Tradition of Music Therapy

Music has recognized that Indian Classical raga is not only for entertainment but the sound and vibration created by raga could improve physical and psychological health. Raga Chiktsa is an ancient manuscript that dealt with the effects of the raga. Raga chiktsa means healing through the raga. Raga contains a sequence of notes that crates appropriate mood on emotion in a particular

Author Note

Sushila Pareek, Professor, Department of Psychology, University of Rajasthan, Jaipur, Rajasthan

Divya Shekhawat, PhD Scholar, Department of Psychology University of Rajasthan, Jaipur, Rajasthan

We have no known conflict of interest to disclose

Correspondence concerning this article should be addressed to

Divya Shekhawat, PhD Scholar, Department of Psychology University of Rajasthan, Jaipur, Rajasthan

E-mail: divyashekhawatkd@gmail.com

combination. By changing your mood raga can make you more peaceful, calm and relaxed. A raga has the potential to create the emotion of happiness, peace, compassion, courage and love (Karuna et al., 2013).

It has been found that positive emotions create positive and healthy physiological and emotional changes (Tugade et al., 2004). Raga works as a medicine (Baghchee, 2003). Different combination of notes has different effects on certain ailments (Sairam, 2004). Raga could be used as a complementary method for changing the emotional state and controlling the brain waves (Sairam, 2004).

Objectives of the Study

- To find out the level of depression, anxiety and stress among adults before and after exposure to raga in the experimental group.
- To find out pre-test-post-test levels of depression, anxiety and stress among adults in the control group.
- To identify the effectiveness of Indian Classical Raga on depression, anxiety and stress among adults.

Hypotheses of the Study

- There will be no significant difference in the level of depression, anxiety and stress between the pre-test post-test scores of the control group.
- There will be a significant difference in the level of depression, anxiety and stress between the pre-test post-test scores of the experimental group.
- There will be a significant difference in the level of depression, anxiety and stress between the post-test score of the control group and the experimental group

Method

Participants

A total of 20 participants were selected. The participants were divided into two groups- The intervention group ($n=10$) and the control group ($n= 10$). For sampling, a simple random method was used. Participants were selected from the OPD of Dr Amar Shinde, Hadapsar Gaadital, Pune. Participants were adults with a primary diagnosis of anxiety disorder and depression by a psychiatrist. Patients with substance abuse, psychosis, and other psychiatric illness were excluded from the study. The study involved a non-invasive procedure with no financial burden on the subjects.

Variables

Independent Variable: intervention of Raga Ahir Bhairavi

Dependent Variable: depression, anxiety and stress

Research Design

The pilot study is a randomized controlled trial with a pre-post intervention design.

Measure

The DASS is a 42 items self- administrated questionnaire developed by Lovibond and Lovibond in 1995. The scale was designed to measure the levels of three negative emotional states- Depression, Anxiety and Stress. Higher scores on each subtest indicate increasing severity of depression, anxiety and stress. Completing this test takes 10 to 20 minutes.

Procedure

The permission was taken from the director of the clinic and informed consent was received from the participants of the study, 20 subjects satisfying the inclusion and exclusion were randomly selected for the study.

Adequate information regarding the aim, benefits and risk factors of the study were given to the subjects before data collection. The intervention group listened to Indian classical music (Raga Ahir Bhairav) between 6 to 9 am, raga was given to the subjects for 15 days every day, they each session was for 15 minutes. The intervention tools included mobile phones or laptops with headphones. Raga Ahir Bhairav was recorded in instrumental form after obtaining 2 music experts' opinions. The control group received only the standard care without music therapy. The standard care includes pharmacotherapy with psychiatric counselling. The level of depression, anxiety and stress were measured using 42 items Depression Anxiety and Stress scale (DASS) at baseline on day 1 and after the intervention of 15 days.

Statistical Analysis

In the statistical analysis, mean, standard deviation and t-test were used to describe the data.

Results

Demographic Details

Table 1

Shows the Frequency, Percentage Distribution and p-value of Samples According to the Demographic Profile

Demographic variable	Category	Intervention group (n=10) No. (%)	Control group (n=10) No. (%)	p
Age in years	20-30	2(20%)	4(40%)	0.321a
	31-40	5(50%)	5(50%)	
	40-45	3(30%)	1(10%)	
Gender	Female	3(30%)	5 (50%)	1.000b
	Male	7(70%)	5 (50%)	
Residence	Urban	10 (100%)	9(90%)	1.000b
	Rural	0(0%)	1(10%)	
Education	Up to 10th	2 (20%)	3(30%)	1.000b
	Above 10th	8(80%)	7 (70%)	

Note. a-t-test b-Chi-square test

Table 1 is showing no significant difference in demographic characteristics-age, gender, residence, and education level among participants of two groups intervention group and control group.

Thus it can infer that the participants of the two groups were demographically matched and comparable.

Table 2

Showing pre and Post-test Scores on Depression, Anxiety and Stress of the Experimental Group

Experimental group pre-test & post-test	Mean	N	Std. deviation	t
Anxiety (pre-test)	16.60	10	1.57	4.48 **
(post-test)	12.9	10	2.07	
Stress (pre-test)	23.9	10	2.69	5.71 **
(post-test)	18.4	10	1.42	
Depression (pre-test)	24.3	10	2.66	6.85 **
(post-test)	17.5	10	1.64	

Note. Significant at the level .01

Table 2 is depicting the mean, standard deviation and *t*-value of the pre-test score and post-test score of the control group on anxiety, stress and depression. These values are statistically significant at the

level .01. Here the hypothesis has been proved.

The scores of depression, anxiety and stress were reduced after 15 days in the control group but statistically not significant.

Table 3

Showing Pre-post-test Scores of Depression, Anxiety and Stress of the Control Group

control group pre-test & post-test	Mean	N	Std. deviation	t
Anxiety (pre-test)	18.4	10	2.71	1.23
(post-test)	16.78	10	2.86	
Stress (pre-test)	28.2	10	3.42	0.45
(post-test)	27.5	10	3.50	
Depression (pre-test)	25.1	10	2.42	1.57
(post-test)	23.4	10	2.42	

Note. Not significant at 0.05 level

Table 4

Shows the Pre-test Scores of Depression, Anxiety and Stress of the Experimental Group and Control Group

Experimental group & control group pre-test	Mean	N	Std. deviation	t
Anxiety (exp. Group)	16.7	10	2.86	1.36
(control group)	18.4	10	2.71	
Stress (exp. Group)	27.5	10	3.5	0.45
(control group)	28.2	10	3.42	
Depression (exp. Group)	24.3	10	2.66	0.79
(Control group)	25.5	10	2.42	

Note. Not significant at 0.05 level

Table 5

Shows the Post-test Scores of Depression, Anxiety and Stress of the Experimental Group and Control Group

Experimental group & control group post-test	Mean	N	Std. deviation	t
Anxiety (exp. Group)	12.9	10	2.07	2.08**
(control group)	15.5	10	3.34	
Stress (exp. Group)	18.4	10	1.42	7.60**
(control group)	27.5	10	3.5	
Depression (exp. Group)	24.5	10	1.64	6.38**
(control group)	23.4	10	2.41	

Note. Significant at the level .01

The baseline score for depression, anxiety and stress of the experimental group was lower than the baseline scores of the control group. And the values are not statistically significant. Thus, it proved that there is no statistically significant difference between the pre-test scores of the experimental group and the control group.

The result is showing that there is a statistically significant difference at the level of 0.05 for depression, anxiety and stress between the post-test scores of the experimental group (which received the raga) and the control group (without music). Thus, the result supports the hypothesis that there will be a significant difference between the scores of the intervention group which received Indian classical raga for 15 days with standard care and the group which received only standard care.

Discussion

The present study aimed to see the therapeutic effect of Indian classical raga on depression, anxiety, and stress. About the healing effect of raga therapy is explained in the Indian context by Samaveda. Raga has a positive impact on overall mental health (Hegde, 2014). Music improves the cognition, emotional and physiologic functions, and social well-being of an individual (Zatorre, 2005). Music helps in coping skills and self-image (Sairam, 2015). Music has a positive impact on health and disease conditions (Mac Donald, 2013). It prevents the delay in neurodevelopment (Pariali, 2014) and cognitive decline (Guétin et al., 2012).

The result of the study indicates that there is a significant decrease in depression, anxiety, and stress levels in the participants who listened to raga (Raga Ahir Bhairav) for 15 days. The result of this study is consistent with Deshmukh et al. (2009) who reported that Indian classical raga decreases the depression scores in the participants. Gupta and Gupta (2005) also found a significant decrease in depressive, state and trait anxiety in the participants who followed Indian classical raga. Similarly, Tripathi, Singh, and Khan (2022) further noted that raga is effective in reducing stress levels.

Conclusion

The result of the study showed significant improvements in the level of depression, anxiety and stress. Therefore it is recommended to use music therapy as a complementary method in the management of depression, anxiety and stress. This technique is non-invasive, inexpensive, simple and safe.

Limitations of the Study

Further studies are required to examine the effect of music therapy over a longer period, on larger sample size and different forms of ragas in Indian classical music.

References

American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders* (Fifth ed.). Arlington, VA: American Psychiatric Publishing, p. 189. ISBN 978-0-89042-555-8.

Atkinson, J. M., Millar, K., Kay, E. J., & Blinkhorn, A. S. (1991). Stress in dental practice. *Dental Update*, 18(2), 60-64.s

Bagchi, K. (2003). *Music, mind and mental health* (ed). New Delhi: Ashish Publications.

Bergdahl, J., & Bergdahl, M. (2002). Perceived stress in adults: Prevalence and association of depression, anxiety and medication in a Swedish population. *Stress and Health*, 18, 235-241. DOI: 10.1002/smi.946. [CrossRef] [Google Scholar]

Chatterjee, S. (1999). Music: An eternal quest. *Nincid-Journal of ITC-SRA*, 13, 25-29.

Copland, A. (1960). *Copland on Music*. New York, Garden City: Doubleday and Company Inc. Garden City.

Deshmukh, A. D., Sarvaiya, A. A., Seethalakshmi, R., & Nayak, A. S. (2009). Effect of Indian classical music on quality of sleep in depressed patients: A randomized controlled trial. *Nordic Journal of Music Therapy*, 18(1), 70-78.

Goodman, K.D. (2011). Music therapy education and training: From theory to practice. Illinois, Springfield: Johnson Rep Atkinson, J.M., Millar, K., Kay, E.J., Blinkhorn, A.S. (1991). Stress in dental practice. *Dental Update*, 18, 60-64. [PubMed] [Google Scholar rint Corporation.

Grover, S., Dutt, A., & Avasthi, A. (2010). An overview of Indian research in depression. *Indian Journal of Psychiatry*, 52(Suppl 1), S178-S188. <https://doi.org/10.4103/0019-5545.69231>

Guétin, S., Giniès, P., Siou, D. K. A., Picot, M. C., Pommié, C., Guldner, E., & Touchon, J. (2012). The effects of music intervention in the management of chronic pain: A single-blind, randomized, controlled trial. *The Clinical Journal of Pain*, 28(4), 329-337.

Gupta, U., & Gupta, B. S. (2005). Psychophysiological responsivity to Indian instrumental music. *Psychology of Music*, 33(4), 363-372.

Hegde, S. (2014). Music-based cognitive remediation therapy for patients with traumatic brain injury. *Frontiers in Neurology*, 5, 34.

Karuna, N., Srinivasan, T. M., & Nagendra, H. R. (2013). Review of Rāgās and its Rasās in Indian music and its possible applications in therapy. *International Journal of Yoga-Philosophy, Psychology and Parapsychology*, 1(1), 21.

Kazdin, A.E. (2000). *Encyclopedia of psychology*. Washington, DC: American Psychological Association.

Kemper, K. J., & Danhauer, S. C. (2005). Music as therapy. *Southern Medical Journal*, 98(3), 282-289.

Lovibond, S.H., & Lovibond, P.F. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd Edition). Psychology Foundation, Sydney.

MacDonald, R. A. (2013). Music, health, and well-being: A review. *International Journal of Qualitative Studies on Health and Well-being*, 8(1), 20635.

Nagarajan, K., Srinivasan, T. M., & Rao, N. H. R. (2015). The immediate effect of Indian music on cardiac autonomic control and anxiety: A comparative study. *Heart India*, 3(4), 93.

Nalapat, S. (2003). *Music therapy in management, education and administration*. New Delhi: Readworthy Publications Pvt. Ltd.

Pasiali, V., LaGasse, A. B., & Penn, S. L. (2014). The effect of musical attention control training (MACT) on attention skills of adolescents with neurodevelopmental delays: a pilot study. *Journal of Music Therapy*, 51(4), 333-354. <https://doi.org/10.1093/jmt/thu030>

Peters, J.S. (2000). *Music therapy: An introduction*. Springfield, IL: Thomas Publishers Ltd.

Sairam, T.V. (2004 a). *Medicinal music*. Chennai: Nada Centre for Music Therapy.

Sairam, T.V. (2004 b). *Raga therapy*. Chennai: Nada Centre for Music Therapy.

Sairam, T.V. (2015). Can music replace medicine? *Bhavan Journal*, 61, 64-70.

Tripathi, J. L., Singh, S., & Khan, W. (2022). Raga therapy: An effective treatment for stress management. *Defence Life Science Journal*, 1(7), 11-16. DOI: 10.14429/dlsj.7.17056

Tugade, M. M., Fredrickson, B. L., & Feldman Barrett, L. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of Personality*, 72(6), 1161-1190.

Witte, M. D., Pinho, A. D. S., Stams, G. S., Moonen, X., Arjan E. R., Bos, A. E. R., & Hooren, S. V. (2022). Music therapy for stress reduction: a systematic review and meta-analysis. *Health Psychology Review*, 16(1), 134-159. DOI: 10.1080/17437199.2020.184658.

World Health Organization (WHO). *Health topic: Depression*. World Health Organization; 2015 [cited 15 Aug 2014]; Available from: <http://www.who.int/topics/depression/en>

Zatorre, R. (2005). Music, the food of neuroscience? *Nature*, 434, 312

Received September 6, 2022

Revision received September 15, 2022

Accepted September 16, 2022