



Effectiveness Of Selected Meditational Music On Anxiety Among College Students

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ABSTRACT

Anxiety is an emotion characterized by an unpleasant state of inner turmoil, it can also be understood as a hidden disability. The present study was conducted to assess the effectiveness of meditational music therapy on anxiety among college students at selected colleges of Indore. One group pre- test post- test research design was adopted. 30 BPT 2nd year students from Choithram paramedical College with moderate and high anxiety were selected using non probability purposive sampling technique. Pre test was conducted by using (STAI)State Trait Anxiety Inventory and personality assessment were assessed by Introvert and extrovert personality test. Twenty days after the last session, post test was conducted by using same tool (STAI). And follow up sessions of meditational music therapy was done for moderate and high anxiety students. The findings of the study revealed that the mean post test score of anxiety in State anxiety was 1.57 and the pre test score was 2.43, which was statistically significant at $t_{29} = 10.933$ at the level $P \leq 0.05$ while in Trait anxiety post test score was 1.50 and pre test score was 2.37 which was statistically significant at $t_{29} = 9.355$ at the level $P \leq 0.05$, the values revealed that there was a significant reduction in anxiety after the administration of meditational music therapy.

Key words: Meditational music therapy, Anxiety, Personality, BPT students

INTRODUCTION

Anxiety is a global problem affecting mainly children and adolescents. In America, anxiety is the most common illness and approximately 40 million adults have anxiety disorders. **(Robin H, 2009)⁴**

Anxiety disordered students are Less likely to have satisfying social relationships, Have higher ongoing usage of health facilities, Take longer to move out of home, Live a life (in their own words) of “missed opportunity”, Have higher stress responses (chemical & physical), **Heidi Lyneham (2009)**

The study took 8 healthy adults provide them listen to binaural beats daily over a 60-day period. The study resulted in a “decrease in anxiety and an increase in the quality of life”. **Helane Wahbeh.et.al (2007)**

The study by the Monroe institute, showed that binaural beats helped increase focus, sleep induction, pain management, and enhanced learning and creativity. **Robert Monroe (1986)**

Need of the study

Anxiety may occur even when there's no real threat, causing unnecessary stress and emotional pain and evoke the same "fight or flight" response that stress does, which means, like stress, anxiety will trigger a flood of stress hormones like cortisol designed to enhance your speed, reflexes, heart rate, and circulation. However, stress can occur with feelings of anger, sadness, or even happiness and excitement. **Dr. Mercola (2013)**

Afolayan J.A. et al. (2013)³⁹ conducted a study with the aim to determine the relationship between gender and academic performance of students in the faculty of Nursing, Niger Delta University, Wilberforce Island, Bayelsa State. A descriptive survey was used to obtain data from respondents who gave consent for the study. Data obtained was analyzed using Statistical Package for Science Solutions (SPSS) version 17. Results indicated that generally students expressed anxiety during examination which is seen as physiological, psychological and behavioral changes and abnormality. Also, at $P < 0.05$, chi square (χ^2) = 2.144, degree of freedom (df) = 3 and P value of 0.543, there was no statistical difference between gender and academic performance of students. The need for counseling the students to maintain optimal thought process and health during examination was therefore emphasized.

Review of literature

Annette. M et.al (1998) conducted a study and examined the utility of modifying the Social Anxiety Scale for Children-Revised (SASC-R) for use with adolescents, and examined associations between adolescents' social anxiety (SA) and their peer relations, friendships, and social functioning. Boys (n = 101) and girls (n = 149) in the 10th through 12th grades completed the Social Anxiety Scale for Adolescents (SAS-A) and measures of social support, perceived competence, and number and quality of their best friendships. Factor analysis of the SAS-A confirmed a three-factor structure: Fear of Negative Evaluation, Social Avoidance and Distress in General, and Social Avoidance Specific to New Situations or Unfamiliar Peers. Girls reported more SA than boys, and SA was more strongly linked to girls' social functioning than boys'. Specifically, adolescents with higher levels of SA reported poorer social functioning (less support from classmates, less social acceptance), and girls with higher levels of SA reported fewer friendships, and less intimacy, companionship, and support in their close friendships. These findings extend work on the SASC-R to adolescents, and suggest the importance of SA for understanding the social functioning and close friendships of adolescents, especially girls.

ArielleS.Dolegui (2013), Listening to music for relaxation is common among students to counter the effects of stress or anxiety while completing difficult academic tasks. Thirty-two undergraduate students (twenty-five females, seven males), ranging in age from 20 to 41 years from the University of Maryland, Baltimore County (UMBC) at Shady Grove participated in this study. Participants were selected from a psychology class and received extra credit for their participation as agreed on by the class's instructor. All students participated on a voluntary basis. This study used five different arithmetic tests to measure cognitive performance. The tests consisted of 20 different operations: 5 multiplication, 5 division, 5 addition, and 5 subtraction problems. A repeated-measure design was used in this study. All thirty-two participants were exposed to all five conditions. The researcher explained to participants that music would be played while they solved the questions on the tests. The volume at each music condition was adjusted as the experiment progressed.

OBJECTIVES:

- To assess the level of anxiety among college students by using State- Trait anxiety Inventory.
- To find out the association between level of anxiety with selected socio demographic variables.
- To explore the type of personality among college students
- To correlate between type of personality and level of anxiety.
- To evaluate the effectiveness of selected meditational music on anxiety.

HYPOTHESES:

- **H1:** There is significant association between level of Anxiety and selected socio demographic variables at the level of $p \leq 0.05$.
- **H2:** There is significant difference in the level of Anxiety among college students after selected meditational music at the level of $p \leq 0.05$.
- **H3:** There is a significant correlation between type of personality and level of anxiety among college students at the level of $p \leq 0.05$.

OPERATIONAL DEFINITIONS:

- **Meditational Music:** In the present study Meditational music can be defined as the Meditation Music With Isochronic Tones & Binaural Beats (Brainwave Entrainment) to induce the effect of meditation on anxiety which will be given to students in a group of 15 sessions, twice a day by using headphones for 15-20 minutes.
- **ISOCHRONIC TONES:** Isochronic tones are a very effective audio-based method of stimulating the brain. You may have heard of another method called **binaural beats**. Both of these methods are examples of a complex neurological process known as **brainwave entrainment**, which enables the use of audio or visual stimuli to affect the brain and help people with a variety of problems. At its simplest level, an isochronic tone is just a tone that is being turned on and off rapidly. They create sharp, distinctive pulses of sound.
- **BINAURAL BEATS:** Binaural beats were originally discovered in 1839 by physicist Heinrich Wilhelm Dove. He discovered when signals of two different frequencies are presented separately, one to each ear, your brain detects the phase variation between the frequencies and tries to reconcile that difference.
- **Effectiveness:** In this study effectiveness is the reduction in Anxiety as a result of meditational music as measured by State Trait Anxiety Inventory.
- **Anxiety:** Anxiety is a feeling of fear, uneasiness, and worry, usually generalized and unfocused as an overreaction to a situation which is measured by State Trait Anxiety Inventory.
- **College students:** In this study college students are BPT IInd year students receiving education to become graduates in Physiotherapy in selected paramedical colleges of Indore.

Research methodology

Research approach: The study adopted quantitative research approach

Research Design: The study adopted One group pre-test- post test research design.

Population: The population consisted of BPT nursing 2nd year students of selected college of Indore.

Sampling technique: Non probability Purposive sampling technique was used

Sample size: 30 samples

Setting: Choithram Institute of health sciences.

Dependent variable: Level of anxiety and personality were the dependent variable.

Independent variable: Applied relaxation and Meditation music was the independent variable in this study.

Target population

In the present study, the target population was the BPT students of selected colleges.

Accessible population

The accessible populations was 2nd year BPT students meeting the inclusion criteria of selected colleges.

Inclusion Criteria:

- College Students who have moderate and high level of anxiety
- Anxious Students who are willing to participate in selected Meditational Music
- Students above 18 years of age.

Exclusion Criteria:

- Students who are already exposed with other relaxation therapy
- Students who already have any kind of Mental disorder

Tool: The tool consisted of three sections

- A. Socio-demographic variable.
- B. State Trait Anxiety Inventory
 - i. STAI Type A- State anxiety scale
 - ii. STAI Type B- Trait anxiety scale.
- C. Introvert and Extrovert personality test

SECTION A: SOCIO DEMOGRAPHIC VARIABLES

• This section consisted of a questionnaire to collect baseline data which consisted of 11 items for obtaining information about age, sex, religion, monthly income of the family, type of family, parents occupation, number of siblings, ordinal position among siblings, marital status, education and place of residence. Moreover, it is consisted of total 5 items to collect personal information about Hobbies, situation creates anxiety, methods use to relieve anxiety and history of psychological therapy and counseling in past one year.

SECTION B: STATE-TRAIT ANXIETY INVENTORY

State-Trait anxiety inventory (STAI) is a standardized scale which is developed by **Charles D. Spielberger in 1967**.

The state-trait anxiety inventory (STAI) is comprised of separate self-report scales for measuring two distinct anxiety concepts: state anxiety (A-State) and trait anxiety (A-Trait). Although originally developed as a research instrument for investigating anxiety phenomena in normal (non – psychiatrically disturbed) adults, the STAI has also been found to be useful in the measurement of anxiety in junior and senior high school students, and in neuropsychiatric, medical, and surgical patients.

The range of possible scores of the STAI varies from a minimum score of 20 to maximum score of 80 on both the A-State and A-Trait subscales.

i. STAI TYPE A-STATE ANXIETY SCALE

The A-State scale also consists of 20 statements, but the instructions require subjects to indicate how they feel at a particular moment in time.

The A-State scale is a sensitive indicator of the level of transitory anxiety experienced by clients and patients in counseling, psychotherapy, behavior therapy, or on a psychiatric ward. It may also be used to measure changes in A-State intensity which occur in these situations. The essential qualities evaluated by the A-State scale involve feelings of tension, nervousness, worry, and apprehension. The four categories for the A-State scale are: (1) Not At All; (2) Somewhat; (3) Moderately So; And (4) Very Much So.

ii. STAI TYPE B-TRAIT ANXIETY SCALE

It is a self-report scale that consists of 20 statements that ask people to describe how they generally feel. It provides a means for screening high school and college students for anxiety-proneness and for evaluating the extent to which students who seek counseling and guidance services are troubled by neurotic anxiety problems. There are no right or wrong answers. It has seven reversed items and thirteen that are scored directly. Subjects respond to each item by rating themselves on a four point scale. The categories for the Trait scale are: (1) Almost Never, (2) Sometimes, (3) Often; and (4) Almost Always.

SECTION C: Introvert and Extrovert Personality Test

- Introvert and Extrovert Personality Test is created by Mateo Sol and Aletheia Luna
- This test contains 20 questions to assess Introvert, Ambivert and Extrovert type of personality.
- The test is categorized into Strongly disagree, Disagree, Uncertain, Agree and Strongly Agree

PROCEDURE FOR DATA COLLECTION

Ethical consideration was fulfilled by taking written permission from the administrative authority of the college Indore Institute of medical sciences and by taking informed consent from the participants. Assessment of the pre-test level of anxiety was done on the first day. After this the investigator guided the students to practice Benson relaxation and meditational music for 20 days, total 30-45 minutes, twice a day. Post - test was taken after last intervention on the 20th day. The investigator terminated the data collection procedure by thanking the respondents for their co-operation and participation.

ETHICAL AND LEGAL CONSIDERATIONS:

The written permission was obtained to conduct the study from the administrative authorities of the institutions. The procedure and the purpose of the study explained in detail to each participant included in the study and informed consent were obtained. Participants were informed about their right to withdraw from the study at any stage without any academic consequences. Confidentiality and anonymity of the participants were strictly maintained. The information collected was used only for academic and research purposes.

DATA ANALYSIS

The collected data were coded, organized, and analyzed using descriptive and inferential statistics. Baseline data containing sample characteristics analyzed using frequency and percentage. Chi-square used to find out the association between level of anxiety and selected demographic variable. Paired t-test applied to determine the significance of the difference between mean pre - test score and mean post test score of level of anxiety. Karl Pearson correlation coefficient applied to determine the correlation between type of personality and level of anxiety.

RESULTS

SECTION I: SOCIO – DEMOGRAPHIC CHARACTERSTICS

Table No 1(a): Frequency Percentage distribution o f Socio-demographic variables.

(n = 30)

S. No.	Socio- demographic Variables	Frequency (f)	Percentage (%)
1.	Age in years a) 18 - 20 years b) 21 – 23 years	25 5	83% 17%
2.	Gender a) Male b) Female	7 23	23.3% 76.7%
3.	Religion a) Hindu b) Muslim c) Others	27 1 2	90% 3.3% 6.7%

Data presented in this table no. 1 (a) showed that majority samples 25 (83%) were in age group of 18-20 years and only 5 (17%) were in age group of 21-23 years and In terms of gender, majority 23 (76.7%) were female and only 7 (23.3%) male. In terms of religion majority 27 (90%) were Hindu, 2 (6.7%) were of other religion and only 1 (3.3%) were Muslim.

SECTION II: ASSESS THE LEVEL OF ANXIETY OF STUDENTS BEFORE INTERVENTION

Table No. 2 (a): Frequency and percentage distribution of level of Anxiety (State Anxiety- Y -1 and Y -2) among college students before intervention.

(n = 30)

S.NO.	Level of anxiety	Frequency (f)	Percentage (%)
1.	Before Intervention (Pre Y-1 State anxiety) 1. Mild anxiety (0 - 41) 2. Moderate anxiety (41 – 50) 3. High anxiety (51 – 80)	0 17 13	0 56.7% 43.3%
	(Pre Y – 2 Trait anxiety) 1. Mild (0 -41) 2. Moderate anxiety (41 – 50) 3. High anxiety (51 – 80)	0 17 13	0 56.7% 43.3%

Data represented in Table no. 2 revealed that before Intervention more than half sample 17 (56.7%) were having moderate anxiety (41- 50) and 13 (43.3%) sample were having high anxiety (51- 80) in Pre Y-1 state anxiety whereas in Pre Y-2 Trait anxiety, majority 17 (56.7%) having moderate anxiety (41- 50) and 13 (43.3%) sample were having high anxiety (51- 80).

Table No. 2 (b): Frequency and percentage distribution of level of Anxiety (State Anxiety- Y -1 and Y -2) among college students after intervention.

(n = 30)

S. No.	Level of anxiety	Frequency (f)	Percentage (%)
2.	After Intervention		
	(Post Y-1 State anxiety)		
	a) Mild anxiety (0 - 41)	16	53.3%
	b) Moderate anxiety (41 – 50)	11	36.7%
	c) High anxiety (51 – 80)	3	10%
	(Post Y – 2 Trait anxiety)		
	a) Mild (0 -41)	18	60%
	b) Moderate anxiety (41 – 50)	9	30%
	c) High anxiety (51 – 80)	3	10%

Data presented in Table No. 2 revealed that After Intervention in the Post Y-1 state anxiety, majority 16 (53.3%) sample were having mild anxiety (0 – 41), 11 (36.7%) sample were having moderate anxiety (41- 50) and only 3 (10%) sample were having high anxiety (51- 80) whereas in the Post Y-2 Trait anxiety, majority 18 (60%) have mild anxiety (0- 41), 9 (30%) have moderate anxiety (41- 50) and only 3 (10%) have high anxiety (51 – 80)

SECTION- III: ASSOCIATION BETWEEN LEVEL OF ANXIETY AND SELECTED SOCIO DEMOGRAPHIC VARIABLES.

Table No. 3 (a): Chi square value showing association of anxiety level scores with selected socio – demographic variables.

Selected demographic variables	Level of anxiety			Total	df	X ² value	Table value
	Mild (0 - 40)	Moderate (41 – 50)	High (51 – 80)				
1. Age							
a) 18 – 20 yrs	14	9	2	25	1	3.285	0.094
b) 21 – 23 yrs	2	2	1	5			
2. Gender							
a) Male	4	3	0	7	2	1.033	0.597
b) Female	12	8	3	23			
3. Family type							
a) Nuclear	9	7	3	19	2	2.083	0.353
b) Joint	7	4	0	11			

$P \leq 0.05$

NS – Non significant

S - Significant

Data presented in Table No. 3 depicts that the association between age and level of anxiety is non-significant, the association of gender and level of anxiety is non-significant and the association of family type and level of anxiety is non-significant.

Table No. 3 (b): Chi square value showing association of anxiety level scores with selected socio – demographic variables.

Selected demographic variables	Level of anxiety			Total	df	X ² value	Table value
	Mild (0 - 40)	Moderate (41 – 50)	High (51 – 80)				
1. 4. Ordinal position in family							
a) Eldest	8	6	1	15	4	4.647	0.325
b) Youngest	3	4	2	9			
c) Between	5	1	0	6			
2. 5. Socio economic condition							
a) Rs. <5000	1	0	0	1	6	4.866	0.561
b) Rs. 5001 – 10,000	3	1	0	4			
c) Rs. 10, 001 – 15,000	4	1	0	5			
d) Rs. > 15,001	8	9	3	2			

Data presented in the Table No. 3 (b) depicts that the association of ordinal position in the family with level of anxiety is non – significant and the socio economic condition with level of anxiety is non- significant.

4.4 SECTION- IV: TO EVALUATE THE EFFECTIVENESS OF SELECTED MEDITATIONAL MUSIC ON ANXIETY.

This section deals with determining the effectiveness of meditational music on anxiety among college students using paired t test.

Table No. 4 (a): Shows mean, mean difference, standard deviation, standard error, df, and t value of pretest and post test score.

Group	Mean	Mean difference	Std deviation	Std error	df	t value	Table Value
Pre y-1 cat							
Post y- 1 cat	.867	0	.434	.079	29	10.933	
Pre y- 2 cat							1.699
Post y – 2 cat	.867		.507	.093	29	9.355	

Table depicts the mean column in the paired sample t test displays the average difference between before and after therapy (.867) in State Anxiety and (.867) in Trait Anxiety group. Since the significance value for change in all measurements are less than 0.05(P=0.000), we can conclude that the average difference of .867 per student in both group is not due to chance variation, and can be attributed to after 20 days meditational music training programme i.e. statistically significant difference between before and after therapy in the level of Anxiety among college students.

4.5 SECTION- V: TO CORRELATE BETWEEN TYPE OF PERSONALITY AND LEVEL OF ANXIETY.

Table No. 5 (a): Correlation between type of personality and level of anxiety (state Anxiety).

Variabl—es	No. of student s	Minimu m score	Maximum	Mea n	Std. deviatio n	Cor - relation	Inferences
Persona- lity	30	40	84	62.70	9.717		
Pre – test score Y-1	30	41	72	51.40	8.724	-.170	Negative Co - relation
Post - test score Y- 1	30	27	54	39.43	7.894	-.272	

In the above plot we find that the adjusted R^2 of our model is 0.029 and .074 that means that the linear regression explains 2 and 7 % of the variance in the data i.e. very less relationship among both variables. If the null hypothesis that there is no linear relationship between the two variables then the R^2 would be $R^2=0$.

Table No. 5 (b): Correlation between type of personality and level of anxiety (trait Anxiety).

Variables	No. of students	Minimum score	Maximum	Mean	Std. deviation	Correlation	Inferences
Personality	30	40	84	62.70	9.717		
Pre – test score Y-2	30	40	64	49.20	7.549	-.296	Negative Co - relation
Post - test score Y- 2	30	26	57	39.53	8.191	-.397	

The correlation coefficients are -.296 and -.397. This indicates a negative linear relationship between personality and level of anxiety (trait Anxiety) pre-y2 and post-y2 i.e. where the value of one variable increases as the other decreases. The null hypothesis is often rejected if $p < .05$. We conclude that the correlation is not less than 0.05 in the population (we now expect it to be somewhere nearer 29 and 39%).

DISCUSSION

The present study demonstrated that BPT students experienced moderate to high levels of anxiety before the intervention, with a significant reduction in both state and trait anxiety following meditational music therapy, indicating its effectiveness as a non-pharmacological strategy for anxiety management. The findings are consistent with previous studies reporting the beneficial effects of relaxation and music-based interventions on anxiety reduction. There was no significant association was observed between anxiety levels and selected demographic variables, suggesting that anxiety may be influenced by factors beyond basic socio-demographic characteristics. Although a negative relationship was found between personality traits and anxiety levels, the correlation was not statistically significant. Overall, the study highlights the potential role of meditational music in reducing anxiety among undergraduate healthcare students and supports its incorporation into student wellness programs to promote psychological well-being and academic performance.

IMPLICATIONS OF THE STUDY

The findings of this study have implications for nursing practices, nursing education, nursing administration and nursing research.

Nursing practice

Nursing practice of nurse reflects an image of nursing profession. This study might be an example of autonomy where investigator conducted all the therapeutic sessions independently with the students. For the well-being of the BPT students being as a mental health nurse an anxiety management method can be taken into consideration, which can help the students to perform well in their daily lives. Regular practice of this therapy will improve the concentration, emotional stability, motivation, deep meditation and help

the students to manage anxiety conditions like examination phobia, social phobia, stage fear, etc.

Nursing education

Nursing students should be educated regarding the use of various non-pharmacological measures of improving psychological well-being and physical health. Major findings and conclusions of this study will be a scientific basis for it. The nurses who are also interested in relaxation therapies can be encouraged for doing certification courses from recognized holistic health centers. Certification is the best way to ensure proper performance of the technique.

Nursing research

Nursing research plays an important role in helping the students to learn relaxation techniques and to aid stress and anxiety reduction. The present study found that meditational music therapy is effective in anxiety. The purpose of this research is to teach the patient/students a coping skill which will enable him/her to relax rapidly, in order to counteract, and eventually abort the anxiety reactions altogether.

Nursing administration

Nurse administrator should plan to conduct the relaxation workshops in the hospital as well as in the college. Nurse administrator can appoint a relaxation therapy nurse who is competent enough in relaxation skills so she/he can guide the clients and student nurses about relaxation techniques. Nurse administrator should take initiative to plan and prepare nursing standards and protocols related to relaxation therapy for the clients, she can develop a new model of nursing care delivery system.

5.5 LIMITATIONS OF THE STUDY

The present study had following limitations:

1. The results could have been more scientific if the sample size had been large.
2. The findings of the study cannot be generalized to the general population as the sample size was small.

5.6 RECOMMENDATION FOR FURTHER RESEARCH

On the basis of the findings of the study it is recommended that:

1. A similar study can be replicated on a larger scale.
2. A study can be conducted on comparison of effectiveness of selected meditational music therapy with other forms of therapy available for anxiety.
3. A study to examine the effectiveness of meditational music therapy on other psychiatric disorders.
4. A study to identify the contributing factors that cause high level of anxiety among college students.
5. Special guidance and counseling/ guidance centers for students should be initiated in the colleges.

CONCLUSION

The present study attempted to find the effectiveness of selected meditational music on the level of anxiety. The sample consisted of 30 BPT students of selected paramedical colleges of Indore. The tool used for pre and post intervention assessment of level of anxiety was State Trait Anxiety Inventory and for correlation of personality and level of anxiety the tool used was Extrovert and Introvert personality test.

The selected meditational music therapy consisted of 20 sessions. Sessions were conducted on daily basis. Each session lasted for 30-45 minutes. Students were reminded to repeat same relaxation and Meditational Music at evening by phone calls. Discussion was also the part of every session regarding the experience of the students.

The results were analyzed in terms of the difference seen in level of anxiety after applying selected meditational music therapy.

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