

Research Paper

Art-Based Therapy on State Anxiety Among Students facing Board Exam – A Single Group Interventional Study

Ms. Sivaranjini S^{1*}, Ms. Balkis Fathima A², Mrs. Kavitha Dhanaraj³

ABSTRACT

Introduction & Review: Situational anxiety during an exam is explained as a “transitory state”, activated by anticipation or exposure to an exam, which involves emotional disturbance (Spielberger et al., 2002). Thus, reducing this situational state-anxiety is the objective of this study using art-based therapy as intervention among students facing Board exams. **Methodology:** Quasi experimental design, the Pre-test post-test research design was used and the non-probability sampling, the convenient sampling method was used. The sample size of the study was 84 students, 38 girls and 46 boys studying XI & XII class in a government school in Tiruvallur district, Tamil Nādu. The State-Trait Anxiety Inventory (STAI) was used to assess the State anxiety as a pre-test and post-test measure. The intervention was 30 minutes Art Based Therapy given as a group intervention. The data was statistically analyzed using the SPSS package and- Paired sample t-test, was used. **Results & Conclusion:** The state-anxiety levels ($t=4.328$ $p < 0.05$) of the students facing board exams was found to have significantly reduced following Art-based therapy. This study implies that art-based therapy can be practiced as a periodic activity in higher secondary schools to manage situational anxiety of the students facing board exam.

Keywords: *Art-based therapy, State Anxiety, Students, Board exam*

An adolescent faces the challenging board exam apart from managing their physical, psychological, and environmental changes. Board examination is considered as a milestone or a turning point in a student’s life, and the parents are equally stressed awaiting the results. Additionally, the adolescent student faces significant distractions, peer pressure, comparison, teacher, school, societal and self-expectation, sufficient to amplify their stress levels. Thus, the board exam may trigger situation specific anxiety for many students. State anxiety is an unpleasant emotional response while coping with a threatening situation. Experience of state anxiety can be a reaction to certain situational demands (Spielberger, 1983). Fernandez-Castillo and Caurcel, (2019) in their research have stressed that in the educational context, anxiety is usually present at “situations” where evaluation tests are associated. Concerning exams, anxiety is understood as a state and is characterized by a feeling of fear and tension, worry, and a perception of threat, together with negative

¹Counselling psychologist, M.Sc Applied Psychology, JBAS College for Women

²School Psychologist, M.Sc Applied Psychology, JBAS College for Women

³Assistant Professor and Head of, Department of Psychology, JBAS College for Women

*Corresponding Author

Received: December 22, 2025; Revision Received: January 15, 2026; Accepted: January 19, 2026

Art-Based Therapy on State Anxiety Among Students facing Board Exam – A Single Group Interventional Study

physiological manifestations (American Psychiatric Association., 2013). Situational anxiety during exam is explained as a “transitory state”, activated by anticipation or exposure to an exam, which involves emotional disturbance (Spielberger et al., 2002). It consists of feelings of apprehension, nervousness, and physiological sequelae such as an increased heart rate or respiration (Spielberger 1979). Thus, reducing this situational ‘here & now’ state-anxiety is a task to be worked by the school counsellors, teachers, parents and the student in union, which otherwise may lead to performance anxiety in exam or eventual burnout.

Counselling, psychotherapy, complementary therapies and pharmacotherapy can be used to reduce state-anxiety. A number of scientific studies have proven the effectiveness of art therapy in helping to cope with students’ stress, anxiety and depression (Hu et al, 2021). "Art is a unique way for people to communicate and gain understanding, as well as heal and express themselves" says Wadeson (1980). Liebmann explains that an art therapy session may look like an art class on the surface, but the goals and purposes are different. The focus in art therapy is on analyzing inner experiences, one's own feelings, perceptions, and imagination. Walsh, Chang, Schmidt, and Yoepp (2005) reported that students who participated in art-making activities experienced low stress and anxiety than those who did not engage in expressive art-making. It can improve self-esteem and self-awareness, nurture emotional resilience, develop social skills, and reduce distress (American Art Therapy Association, 2017). Art interventions reduce stress, lowers anxiety and negative emotions (Walsh 2004), and this creative process allows the person to express concerns and feelings and is effective in reducing anxiety both in children and adults (Nainis, N., et al., 2006).

It is evident from scientific studies that art-based intervention can reduce anxiety and this study aims to investigate whether art-based therapy can have a difference in the level of state anxiety among students facing Board exam.

METHOD

Statement of the problem:

To understand the difference in the levels of state anxiety among students facing Board exam using Art Based Therapy as Intervention.

Objectives:

- To understand the Level of state anxiety among the students facing XI and XII Board exam
- To compare the pre and post level of state anxiety among the students following Art Based Therapy as Intervention.
- To understand gender difference in the level of state anxiety in response to art-based therapy among students facing Board exam.

Research Design:

Quasi experimental research design was used. Pre-test post-test design – Single group intervention study was done.

Baseline Assessment tool and description:

1. The State-Trait Anxiety Inventory – STAI (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) is a commonly used measure of trait and state anxiety. It has 20 items assessing trait and 20 for state Anxiety. Internal consistency coefficient for the scale have ranged from 0.86 to 0.95; test-retest reliability coefficient has ranged from 0.65

Art-Based Therapy on State Anxiety Among Students facing Board Exam – A Single Group Interventional Study

to 0.75 over a 2-months interval (Spielberger et al.,1983). Considerable evidence attests to the construct and concurrent validity of the scale (Spielberger et al.,1983).

Sample and sampling:

The sample size of the study is 84 students, 38 girls and 46 boys studying XI & XII class in a government school of Tiruvallur district, Tamil Nādu who were preparing to appear for the board exam. The non-probability sampling method, the convenient sampling was used in the study.

Procedure:

The students were called for a brief meeting to give them instructions, assure confidentiality and obtain verbal consent. The art-based therapy was done in 4 groups in a large comfortably ventilated classroom sufficient to hold upto 25 students seated with an adequate distance between them to avoid copying. The environment assured the students to express themselves comfortably without being judged. The teachers/ school supervisors were not present in the classroom during the session. The most structured media, pencil was provided to the students to help them feel comfortable, as they are used to this medium which will be easy to handle and draw with, especially for the concrete tasks such as creating self-portrait. Also, anxious individuals will often feel more comfortable with a more structured media as this allows them to have a greater sense of safety and control during the art-making experience (Minh-Anh Nguyen, 2015).

The researchers asked the respective students to be seated comfortably and instructed to read each statement carefully and mark in the appropriate column which applies to them personally. Once the participants completed the pre-test state-anxiety form of the STAI tool, the art-based intervention was initiated. The intervention comprised of drawing on Directive themes and facilitate a sense of 'flow' and involvement in the controlled environment. The participants were given three sheets of A4 paper each and a pencil to draw the following themes.

1. Draw a picture of yourself
2. Draw a picture of your family
3. Draw a person picking apple from a tree

They were given upto 40 minutes to draw on the themes and avoid written expression. They were instructed to draw spontaneously and avoid overthinking to maximize self-expression. They were discouraged using erasers or scale and asked not to focus on the aesthetic beauty of the final output of the diagrams, but to concentrate only on the content of the drawing. At the end of the 40-minute period, the post-test State anxiety forms were given, and they were asked to complete it following instructions given by the researchers.

Statistical Analysis:

The data was statistically analyzed using the SPSS package, Paired sample 't'-test was used for the statistical analysis of the data.

**Art-Based Therapy on State Anxiety Among Students facing Board Exam – A Single Group
Interventional Study**

RESULT

Table I – ‘t’ scores of State Anxiety pre- and post- art-based intervention, p-value, and interpretation of the students facing Board exam post-art-based intervention.

Variable	N	Mean	Mean Difference	SD	Std. Error Mean	t-score	P	Interpretation
Pre-test State Anxiety	84	48.40	82.9426	9.104	0.993	4.328	0.001	Significant
Post-test State Anxiety	84	44.55	106.659	10.32	1.126			

Significance at 0.05(2-tailed) level. ** $p > 0.05$

The independent sample *t*-test was calculated to compare the pre and post-test scores of state anxiety among students. The mean score is significantly higher in the pre-test state anxiety ($M=48.40$, $SD=9.104$) than the post-test state anxiety mean score ($M=44.559$, $SD=10.32$), $t=4.328$, $df=83$, $p=0.001$. The p ($p > t=3.390$) value is significant at 0.05 level. It can be concluded that there is a significant reduction in the level of State anxiety after the 30 minutes art-based therapy session among the students.

Table II – ‘t’ scores of State Anxiety Pre – Post art-based intervention, p-value and interpretation of the girl and boys’ students.

Group	N	Mean	Mean Difference	Std. Deviation	Std. Error Mean	t	P	Significant
Girls pre	38	44.44	66.36	8.146	1.321	0.349	0.72	NS
Girls post	38	43.44	119.07	10.91	1.77			
Boys pre	46	51.67	74.26	8.61	1.27	7.004	000	Significant
Boys post	46	45.06	98.24	9.91	1.46			

NS – Not Significant, Significance at 0.01(2-tailed) level

The dependent sample *t*-test was calculated to compare pre and post-test state anxiety in girls and boys. In girls, it is seen that there is only a marginal difference between the mean pre ($M=44.44$, $SD=8.15$), and post-test state anxiety score ($M=43.44$, $SD=10.91$) ($t=0.349$, $df=37$, $p=0.729$), which is not statistically significant. On the other hand, among boys, it is seen that the score of mean pre-test state anxiety is higher ($M=51.67$, $SD=8.15$) than the mean post-test State Anxiety ($M=45.06$, $SD=9.91$), $t=0.349$, $df=45$, $p=0.000$, the p ($p < t=7.004$) value is significant at 0.01 level. This shows that there is a significant decrease in the level of state anxiety among boys when compared to girl students.

DISCUSSION

The study reveals that the mean score of the level of state anxiety of the students before the art-based intervention was 48.40 and the mean score of the state anxiety after the intervention is 44.85 which is significantly lower, indicating the empirical difference

Art-Based Therapy on State Anxiety Among Students facing Board Exam – A Single Group Interventional Study

between the pre and post-test scores. This clearly shows that the art-based intervention has significantly reduced the level of state anxiety. This result is in congruence with the observation of Bo Zhang et al (2024) observing that art therapy has a pronounced effect on state anxiety, suggesting that art therapy may be particularly beneficial in helping children and adolescents manage anxiety. Also, Zoe Moula (2020) suggesting that art therapy is effective in improving children's quality of life and anxiety among school children.

Most of the children were able to draw the figures without much difficulty, and within the stipulated time. Few of them preferred to write statements about the theme given in addition to the drawing in spite instructions. All the students appear to enjoy the art making process and maintained silence while focusing on bringing out the best of their expression. They appeared relaxed and many smiled at their picture, once completed. The following observation was made from the diagrams of the students.

In 'Draw a picture of yourself' theme, the students drew stick figure, smiley face emoticon was common. Few boys drew figures with 6-packs abdomen, heart shapes and broken heart shape with statements "I don't know my path" "Free fire" "friends are life". Many girls added items they are fond of, like chocolate, other food items, friends.

In 'Draw a picture of yourself with your family', many drew a model of their house with the family members doing some activity, or just standing in a line, Scenarios like beach, house placed on banks of a river, parks; and additional elements like boat on beach, fishes on river, sun, rain and clouds, Kolam in front of house, fan, T.V, lights, trees, vehicles, mountains were added. Many wrote statements like "I love my mother, father".

In 'Draw yourself picking an apple from a tree', art, many added elements like cloud, birds, nest, mountain, house, bike, other trees, roots, flowers, sun, river to accentuate their art. Some of the children drew the fruit falling off the tree and they trying to catch it, and many drew stones, knife, ladder, bench, stick to pick the fruit from the tree. Most of them drew themselves picking the fruit, while some had friends helping them pick the fruit. Some had abundance of fruits on the tree while some had just one or two fruits in the tree.

The strength of the study was the cost-effectiveness in carrying on an intervention process, possibility of the intervention in a group setting and encouraging expression of each individual with 'flow' and effectiveness in helping students deal with feelings of anxiety in certain situations midst of facing the Board exams.

CONCLUSION

The results of the study support the previous empirical studies that art-based intervention will significantly reduce the participants' situational anxiety levels. The fact that the group's mean post-state anxiety score dropped to 44.85 points from the pre-state anxiety score of 48.40, which proves that indulgence in the art-based intervention for just 30 minutes can make a significant reduction in situational anxiety in the students.

The findings show that art-based intervention will benefit and play a major role in academic performance once the situational stress is adequately managed. These benefits carry vital scope and endorse for art-based therapy in schools as a periodic essential activity, be it the first standard or twelfth standard of both government and private schools.

Art-Based Therapy on State Anxiety Among Students facing Board Exam – A Single Group Interventional Study

Limitations

- Other mediating and moderating variables were not controlled.
- The sample population was limited to the Tiruvallur district.
- The students were from government schools only.
- No funding for additional art materials.

Suggestions for future research

- The study can be expanded to include students of college.
- The study can be carried out using larger sample.
- Mediating & Moderating variables can be controlled to refine the results of the study.

REFERENCES

- American Art Therapy Association (2017). Facts, figures and helpful resources from AATA. Available online at: <https://multibriefs.com/briefs/aata/review122117.pdf> (accessed July 11, 2020).
- American Psychiatric Association, D., & American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders: DSM-5 (Vol. 5, No. 5). Washington, DC: American psychiatric association.
- Beiter, R., Nash, R., McCrady, M., Rhoades, D., Linscomb, M., Clarahan, M., & Sammut, S. (2015). The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *Journal of affective disorders*, 173, 90-96.
- Blomdahl, C., Gunnarsson, B. A., Guregård, S., Rusner, M., Wijk, H., & Björklund, A. (2016). Art therapy for patients with depression: expert opinions on its main aspects for clinical practice. *Journal of mental health*, 25(6), 527-535.
- Bo Zhang, Jiahua Wang, Azizah binti Abdullah (2024). The effects of art therapy interventions on anxiety in children and adolescents: A meta-analysis
- Caouette, J. D., & Guyer, A. E. (2014). Gaining insight into adolescent vulnerability for social anxiety from developmental cognitive neuroscience. *Developmental cognitive neuroscience*, 8, 65-76.
- Cattell, R. B., & Scheier, I. H. (1961). The meaning and measurement of neuroticism and anxiety.
- Dye, M. (2018). Evaluating the benefits of art therapy interventions with grieving children. Fernández-Castillo, A., & Caurcel, M. J. (2019). Self-esteem, hours of sleep and state-anxiety before academic tests. *Revista Argentina de Clinica Psicologica*, 28(4), 348. <https://www.healthychildren.org/English/health-issues/conditions/emotional-/Pages/Anxiety-Disorders.aspx>
- Lauer, A. L. (2015). Treatment of anxiety and depression in adolescents and young adults with cancer. *Journal of Pediatric Oncology Nursing*, 32(5), 278-283.
- Liebmann, Marian. (1986). Art therapy for groups. Cambridge, MA: Brookline Books. Meacham F, Bergstrom C T. Adaptive behavior can produce maladaptive anxiety due to individual differences in experience. *Evolut Med Public Health* 2016; 2016(1): 270 -85.
- Liebmann, Marian. (1986). Art therapy for groups. Cambridge, MA: Brookline Books. Meacham F, Bergstrom C T. Adaptive behavior can produce maladaptive anxiety due to individual differences in experience. *Evolut Med Public Health* 2016; 2016(1): 270 -85.
- Nainis, N., Paice, J. A., Ratner, J., Wirth, J. H., Lai, J., & Shott, S. (2006). Relieving symptoms in cancer: innovative use of art therapy. *Journal of pain and symptom management*, 31(2), 162-169.

Art-Based Therapy on State Anxiety Among Students facing Board Exam – A Single Group Interventional Study

- Ogundele MO. Behavioural and emotional disorders in childhood: A brief overview for paediatricians. *World J Clin Pediatr* 2018; 7(1): 9 -26
- Prioli, K. M., et.al (2017). Costs and effectiveness of mindfulness-based art therapy versus standard breast cancer support group for women with cancer. *American Health & Drug Benefits*, 10(6), 288.
- Rubin, J. A. (1984). *Child art therapy: Understanding and helping children grow through art*. Van Nostrand Reinhold Company.
- Salzano, A. T., Lindemann, E., & Tronsky, L. N. (2013). The effectiveness of a collaborative art-making task on reducing stress in hospice caregivers. *The Arts in Psychotherapy*, 40(1), 45–52.
- Sohail, N. (2013). Stress and academic performance among medical students. *J Coll Physicians Surg Pak*, 23(1), 67–71.
- Spielberger, C. D. (1966). Theory and research on anxiety. *Anxiety and behavior*, 1(3), 413-428.
- Spielberger, C. D. (1983). State-trait anxiety inventory for adults.
- Wadson, H. (1980). Art therapy research. *Art Education*, 33(4), 31-34.
- Waller, D. (2006). Art therapy for children: How it leads to change. *Clinical Child Psychology and Psychiatry*, 11(2), 271-282.
- Walsh, S. M., Chang, C. Y., Schmidt, L. A., & Yoepp, J. H. (2005). Lowering stress while teaching research: A creative arts intervention in the classroom. *Journal of Nursing Education*, 44(7), 330-333.
- Walsh, S. M., Martin, S. C., & Schmidt, L. A. (2004). Testing the efficacy of a creative-arts intervention with family caregivers of patients with cancer. *Journal of Nursing Scholarship*, 36(3), 214-219.
- Wood, M. J. (2015). 4.11 the contribution of art therapy to palliative medicine. (25) Zoe Moola (2020). A systematic review of the effectiveness of art therapy delivered in school-based settings to children aged 5–12 years

Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Sivaranjini, S., Balkis F.A., & Kavitha D. (2026). Art-Based Therapy on State Anxiety Among Students facing Board Exam – A Single Group Interventional Study. *International Journal of Indian Psychology*, 14(1), 101-107. DIP:18.01.007.20261401, DOI:10.25215/1401.007