

# Effectiveness of Art Therapy in Reducing State Anxiety Among Persons with Intellectual Disabilities

Thulasikanthan Mugesh<sup>1</sup>, Sucharita Dutt<sup>2</sup>, Subhasish Sarder<sup>3</sup>

<sup>1</sup>Faculty, National Institute For The Empowerment Of Persons With Intellectual Disabilities (Divyangjan) Niepid

<sup>2</sup>Rehabilitation Psychologist, National Institute For The Empowerment Of Persons With Intellectual Disabilities (Divyangjan), Regional Center, Kolkata

<sup>3</sup>M.Ed. Spl. Ed(ID), Student

## Abstract

The present study aimed to investigate the effectiveness of art therapy in reducing state anxiety among adult persons with mild intellectual disabilities. A total of 39 participants aged 18 to 35 who met the inclusionary criteria was included in the study. The participants were randomly divided into control (n=18) and experimental (n=21) groups. The experimental group received 10 sessions of art therapy over two weeks. The Self-Evaluation State-Trait Anxiety Inventory (STAI) was used to assess anxiety levels. Data analysis using SPSS version 20.0 revealed a significant difference between the control and experimental groups for the efficacy of art therapy in reducing state anxiety ( $t=2.97$ ,  $df=37$ ,  $p<0.01$ ). These findings suggest that art therapy can be an effective intervention for reducing anxiety among adult persons with intellectual disabilities. However, further research with larger sample sizes and longer intervention durations is recommended to enhance the applicability of these findings.

**Keywords:** Art Therapy, Intellectual Disabilities, State Anxiety

## Background

In today's world, anxiety has emerged as a prominent concern, influenced by a variety of factors such as the pandemic, economic instability, and personal, social, and political tensions. People from all walks of life and of all ages are experiencing increased levels of anxiety, which can significantly impact mental health and overall well-being. According to the APA (2022), anxiety is characterized as an emotion marked by feelings of tension, worrisome thoughts, and physical changes like increased blood pressure. Individuals with anxiety disorders often experience recurring intrusive thoughts or worries, leading them to avoid certain situations. They may also exhibit physical symptoms like sweating, trembling, dizziness, or a rapid heartbeat.

Hoffman (2023) noticed Students with intellectual disabilities often experience heightened levels of anxiety which exacerbate existing limitations and lead to significant emotional distress. Children and adolescents with intellectual disabilities often experience higher rates of anxiety compared to their typically developing peers (Whitaker & Read, 2006; Dekker & Koot, 2003; Emerson, 2003). This trend is evident in both general intellectual disability and specific syndromes (Royston, Howlin, Waite &

Oliver, 2017; Dykens, 2000). Reardon, Gray & Melvin (2015) reported prevalence rates of anxiety disorders for students with intellectual disabilities ranged from 3 to 22%. Elevated anxiety levels lead to reduced quality of life and distress, manifesting in diverse emotional and physical discomfort symptoms (Barton, Karner, Salih, Baldwin & Edwards, 2014; Hoffman, Dukes & Wittchen 2008). Individuals with intellectual disabilities, who already face cognitive and sometimes physical limitations, may find their actions further constrained. Anxiety is also associated with increased challenging behavior and other behavioral issues (Moskowitz et al., 2017; Pruijssers, van Meijel, Maaskant, Nijssen & van Achterberg, 2014), as well as lower levels of social acceptance and friendship quality (La Greca & Lopez, 1998), which contribute significantly to caregiver and teacher stress (Amstad & Müller, 2020; Brunsting, Sreckovic, & Lane, 2014; Jenkins, Rose, & Lovell, 1997).

To reduce psychological distress, art therapy is one of the approach that help individuals with intellectual disabilities to explore their emotions, improve self-esteem, and alleviate symptoms of anxiety and depression. Studies have indicated that arts-based interventions, including music therapy, mandala making, and art facilitation, improve the well-being of individuals with intellectual disabilities (ID) leading to reduced stress and improved language comprehension (Poquérusse et al., 2018; Schrade et al., 2011; Got & Cheng, 2008; Duffy & Fuller, 2000). Art therapy has been identified as particularly beneficial for individuals with ID who struggle with social interaction and verbal communication. It provides them with a nonverbal means of expression, allowing them to connect with others and express their emotions in a tangible way ((Reardon et al., 2015). Expression theories of art suggest that art can help individuals bring their emotions to the surface, leading to self-discovery and effective communication of feelings to others (Carroll, 2002).

Art therapy is a integrative mental health and human services profession that uses art-making. Art Therapy aims to enhance cognitive and sensory-motor functions, nurture self-esteem and self-awareness, develop emotional resilience, stimulate insight, improve social skills, mitigate and resolve conflicts and distress, and contribute to societal and ecological change. Through non-verbal communication and symbolic expression; art therapy facilitates personal growth, resilience, and societal change (American Art Therapy Association, 2018).

Hu, Zhang, Hu & Xu (2021) denote art therapy has been of great potentials in clinical applications for various mental disorders and warrants further exploration and research. Art therapy is frequently used in cancer, depression, anxiety, autism, dementia, and cognitive impairment cases where verbal expression is challenging for patients (Chiang, Reid-Varley & Fan 2019; Deshmukh, Holmes & Cardno 2018; Attard & Larkin, 2016). It serves as a valuable tool for maintaining engagement when direct verbal communication is challenging and offers a safe, indirect method for individuals to connect with others (Papangelo, Pinzino Pelagatti, Fabbri-Destro & Narzisi, 2020).

Art therapy is conducted either individually or in groups, and sometimes a mixed approach is used. Individual therapy was the most common intervention (41/68), followed by group therapy (13/68). Fourteen papers described group-based interventions in combination with individual interventions (Power, Harrison, Hackett & Carr, 2023). Group sizes ranged from 4 to 14 members, with a mode of eight people. Despite being a feature of routine clinical practice, publication on group work was lacking (Hackett, Ashby, Parker, Goody, & Power, 2017).

The practitioner need to be flexibility in engaging a diverse client group and addressing complex needs. Practitioners need to have active engagement and adaptive skills to meet clients' changing needs, aligning with findings by Ashby (2018) on staff stress in learning disability services and Power, Dolby,

and Thorne (2021) on art therapist experiences during the Covid-19 pandemic. Bosgraaf, Spreen, Pattiselanno & Hooren (2020) review on art therapy with children and adolescents, including learning disabilities, highlighted therapist behavior and the use of various techniques as key mechanisms for improving psychosocial outcomes.

There has been a wide range of outcome measures used mostly focusing on observational and deficit-oriented outcomes. Because of the communication challenges these individuals faced, observer-rated behavioral change was the primary area of measurement. A trend emerged across these studies suggesting that meaningful therapeutic occupation supported improvements in behavior (Hackett et al., 2020; Burns & O'Shea, 2017; Males, 1986). Viewing challenging behavior as a continuum from verbal aggression to physical violence highlights art therapy's potential to offer alternative expression forms or provide additional coping tools for self-regulation. This suggests a crucial area for practitioners to collaborate with positive behavior support to enhance the lives of people with learning disabilities (Breeze, 2021; PBS Coalition UK, 2015).

The current study aims to address the gap in existing literature by investigating the effectiveness of art therapy in reducing state anxiety among adults with mild intellectual disabilities. Art therapy had been found to be a valuable intervention for individuals who struggle to express their feelings verbally, particularly those with intellectual disabilities (ID). While previous studies have evidence supporting of art therapy on social interaction and anxiety in other populations, there is a lack of research focusing specifically on adults with mild intellectual disabilities. This study seeks to contribute to the use of art therapy in alleviating anxiety among persons with intellectual disability.

### **Objective:**

Study the effectiveness of art therapy to reduce State Anxiety of children with mild Intellectual Disability during adulthood.

### **Hypothesis:**

There will be no significance effect of Art therapy in reducing State Anxiety.

### **Method**

**Design** -An experimental design was used to study effectiveness of art therapy in reducing State anxiety among adult with Mild Intellectual Disabilities. The experimental design for the study is the (pre-post control group design). Purposive sampling method used.

**Sample** -Sample consisted of 39 Adult Persons with Mild Intellectual Disabilities within the age group of 18 to 35. Individuals were randomly divided into experimental and control groups. The sample could not be of equal size as few participants drop out from the study. Finally, the sample for experimental group was 21 and control group was 19 samples. Individual with associated conditions were not accepted.

**Tools**-The State-Trait Anxiety Inventory (STAI) is a psychological assessment tool comprising 40 self-report items rated on a 4-point Likert scale. Developed by psychologists Spielberger, Gorsuch and Lushene (1993) measures two types of anxiety: state anxiety and trait anxiety. Higher scores indicate higher levels of anxiety. The inventory's most recent revision is Form Y and it is available in more than 40 languages. In a study conducted by Pawel Kurtek in 2016, the STAI was administered to 120 students with intellectual disabilities at the Education and Rearing Center in Kielce, Poland.

**Procedure** -Informed consent was obtained from parents and individuals after briefing the purpose of the study. Rapport was established with the members of the group initially. Data collection started from 11th July 2023 to 21th August 2023. After the initial collection of data researcher started art therapy session on experimental group. The experimental group received total 10 sessions’ twice a week up to 60 minutes sessions of art therapy. Experimental group were further divided into three group with seven members in each group. Homogeneity of the groups was maintained. Protocol of art therapy was strictly adhering. Participants who were uncomfortable during the session were free to leave the study at any point of time. After data the session feedback was taken from individual and parents. At the end of the study participants were thanks for their involvement in the study.

**Results**

**TABLE 1 : Shows the Mean, SD and t test of State Score for pre session**

		N	Mean	SD	t-test	Degree of freedom	Level of significance
<b>STATE PRE</b>	Control	18	1.72	0.67	0.45	37	0.65
	Experiment	21	1.62	0.74			

Table 1 shows that there is no significant difference between the control and experimental group before providing the session for art therapy ( $t(37) = 0.45, p > 0.05$ ). This indicates that both the group have same level of anxiety. The null hypothesis is accepted. A pre-test effect size of -0.15 indicates that there was a minimal or negligible differences in state anxiety levels before the participants received art therapy. This indicate participants were experiencing the same amount of state anxiety.

**TABLE 2: Shows the mean, SD and t test of State Score for post session**

		N	Mean	SD	t-test	Degree of freedom	Level of significance
<b>STATE POST</b>	Control	18	2.0	0.91	2.92	37	0.01
	Experiment	21	1.3	0.48			

Table 2 shows that there is a significant difference between the control and experimental group after providing the session for art therapy ( $t(37) = 2.92, p < 0.01$ ). This indicate that experimental group have an impact of art therapy in controlling the anxiety level of the child. Thus the null hypothesis is rejected. An effect size of -0.57 suggests that art therapy has a moderate negative impact on state anxiety. This means that, on average, participants who undergo art therapy experience a moderate decrease in state anxiety compared to those who do not undergo this therapy.

**Discussion**

The study's objective was to evaluate the effectiveness of art therapy in reducing state anxiety among adults with mild intellectual disabilities (PWIDs). Art therapy (AT) is a non-verbal therapy that uses visual arts in the current study scribbling was used to treat anxiety. Art therapy was used alone as part of a multidisciplinary treatment program. The non-verbal approach as mentioned by previous researchers (Smeijsters, 2008; Gold, Voracek, Wigram, 2004; Posthuma, 2001) is suitable for those who struggle with labeling their feelings or rely too heavily on rationalizing. It can also benefit those with high

anxiety levels by providing a way to express emotions without having to talk about them directly, which can be intimidating. Art helps in developing a sense of control and helping to manage overwhelming anxiety.

The results indicated a significant difference in state anxiety among PWIDs after receiving art therapy. Feedback from parents of individuals with mild disabilities suggested positive changes in their behavior, including increased attention to work and decreased anger. Additionally, students reported improved emotional control and reduced anger. The art therapy sessions also appeared to have a positive impact on erasing negative events from the past that had previously affected students' behavior. Overall, both parents and students reported beneficial effects of art therapy on reducing anxiety and improving behavior (Abbing, Baars, Ponstein & Swaab 2019).

Individuals with intellectual disabilities benefit from freely scribbling with colors as an effective technique to express their emotions and thoughts without constraints. This method emphasizes the process over the final outcome, enabling them to release anxiety and gain emotional control. Using colors, lines, and shapes, they visually represent their inner experiences, promoting self-discovery and insight. Embracing the spontaneous and intuitive nature of free-form art helps participants alleviate anxiety. Therefore, as art therapy has proven effective for the general population, the same intervention process may be applicable for persons with intellectual disabilities. Thus, Art therapy emerges as a viable and accessible alternative psychological treatment for individuals with learning disabilities (Gerrard, 2022). It can effectively complement bio-psychosocial interventions (Hu, Zhang & Xu 2021; Colwill, 2021; Colwill & Golparvar, 2021), offering support to the individual and their network of care.

### Conclusion

The study highlight the effectiveness of art therapy in helping individuals with intellectual disabilities manage their emotions, control their behaviors, and improve their overall quality of life. Incorporating art therapy into interventions for individuals with intellectual disabilities is beneficial and meaningful way to support their mental health and well-being.

### Limitation of the study and future directions

The study may have limited generalizability due to the small sample size of participants.

Conducting randomized controlled trials with larger sample sizes and control groups would provide stronger evidence for the effectiveness of art therapy in reducing anxiety.

Future research could benefit from longitudinal studies to assess the long-term effects of art therapy on anxiety in adults with intellectual disabilities.

### References

1. Abbing, A., Baars, E. W., Ponstein, A. S., & Swaab, H. (2019). The Effectiveness of Art Therapy for Anxiety in Adult Women: A Randomized Controlled Trial. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.01203>
2. American Art Therapy Association (2018). Definition of Art. Available online at: <https://arttherapy.org/about-art-therapy/> [Google Scholar]
3. Amstad, M., and Müller, C. M. (2020). Students' problem behaviors as sources of teacher stress in special needs schools for individuals with intellectual disabilities. *Front. Educ.* 4:159. doi: 10.3389/educ.2019.00159



4. Ashby, E. (2018). *Surviving creatively: An investigation into the impact of work with people who have learning disabilities on art therapists employed in the NHS* (Doctoral dissertation, Goldsmiths, University of London).
5. Attard A., Larkin M. (2016). Art therapy for people with psychosis: a narrative review of the literature. *Lancet Psychiatry* 3 1067–1078. 10.1016/s2215-0366(16)30146-8 [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
6. Barton, S., Karner, C., Salih, F., Baldwin, D. S., and Edwards, S. J. (2014). Clinical effectiveness of interventions for treatment-resistant anxiety in older people: A systematic review. *Health Technol. Assess.* 18, 1–62. doi: 10.3310/hta18500
7. Bosgraaf, L., Spreen, M., Pattiselanno, K., & Hooren, S. V. (2020). Art therapy for psychosocial problems in children and adolescents: a systematic narrative review on art therapeutic means and forms of expression, therapist behavior, and supposed mechanisms of change. *Frontiers in psychology*, 11, 584685.
8. Breeze, J. (2021). Including people with intellectual disabilities in the development of their own positive behaviour support plans. *Tizard Learning Disability Review*, 26(4), 199-205.
9. Brunsting, N. C., Sreckovic, M. A., and Lane, K. L. (2014). Special education teacher burnout: A synthesis of research from 1979 to 2013. *Educ. Treat. Child.* 37, 681–711. doi: 10.1353/etc.2014.0032
10. Burns, S., & O’Shea, R. (2017). ‘I like your new coat’: The emergence of secure base and sense of self and other through an art psychotherapy relationship. *International Journal of Art Therapy*, 22(2), 46-56.
11. Carroll, N. (2002). *Philosophy of Art: A Contemporary Introduction*. New York, NY: Routledge.
12. Chiang M., Reid-Varley W. B., Fan X. (2019). Creative art therapy for mental illness. *Psychiatry Res.* 275 129–136. 10.1016/j.psychres.2019.03.025 [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
13. Colwill, A. (2021). *Standards for Adult Community Learning Disability Services*. Quality Network for Learning Disability Services (QNLD). Royal College of Psychiatrists. Second Edition.
14. Colwill, A., & Golparvar, L. (2021). *Standards for Inpatient Learning Disability Services*. Quality Network for Learning Disability Services (QNLD). Royal College of Psychiatrists. Fourth Edition.
15. Dekker, M. C., and Koot, H. M. (2003). DSM-IV disorders in children with borderline to moderate intellectual disability. I: Prevalence and impact. *J. Am. Acad. Child Adolesc. Psychiatry* 42, 915–922. doi: 10.1097/01.CHI.0000046892.27264.1A
16. Deshmukh S. R., Holmes J., Cardno A. (2018). Art therapy for people with dementia. *Cochrane Database Syst. Rev.* 9:D11073. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
17. Dykens, E. M. (2000). Annotation: Psychopathology in children with intellectual disability. *J. Child Psychol. Psychiatry Allied Discip.* 41, 407–417. doi: 10.1017/S0021963000005667
18. Emerson, E. (2003). Prevalence of psychiatric disorders in children and adolescents with and without intellectual disability. *J. Intell. Disabil. Res.* 47, 51–58. doi: 10.1046/j.1365-2788.2003.00464.x
19. Gerrard, D. 2022. STOMP & STAMP: Everybody's business. Presentation to National Professional Learning Disability Senate 5th September (2022)
20. Gold C., Voracek M., Wigram T. (2004). Effects of music therapy for children and adolescents with psychopathology: a meta-analysis. *J. Child Psychol. Psychiatry* 45 1054–1063. [[PubMed](#)] [[Google Scholar](#)]

21. Got, I. L. S., and Cheng, S. T. (2008). The effects of art facilitation on the social functioning of people with developmental disability. *Art Ther.* 25, 32–37. doi: 10.1080/07421656.2008.10129347
22. Got, I. L. S., and Cheng, S. T. (2008). The effects of art facilitation on the social functioning of people with developmental disability. *Art Ther.* 25, 32–37. doi: 10.1080/07421656.2008.10129347
23. Hackett, S. S., Ashby, L., Parker, K., Goody, S., & Power, N. (2017). UK art therapy practice-based guidelines for children and adults with learning disabilities. *International Journal of Art Therapy*, 22(2), 84-94.
24. Hackett, S. S., Zubala, A., Aafjes-van Doorn, K., Chadwick, T., Harrison, T. L., Bourne, J., ... & Kaner, E. (2020). A randomised controlled feasibility study of interpersonal art psychotherapy for the treatment of aggression in people with intellectual disabilities in secure care. *Pilot and Feasibility Studies*, 6, 1-14.
25. Hoffman, D. L., Dukes, E. M., and Wittchen, H. U. (2008). Human and economic burden of generalized anxiety disorder. *Depress. Anxiety* 25, 72–90. doi: 10.1002/da.20257
26. Hofmann, V. (2023). Anxiety in students with intellectual disabilities: The influence of staff-perceived social acceptance and rejection in the classroom. *Frontiers in Education*, 8, 1157248. <https://doi.org/10.3389/educ.2023.1157248>
27. Hu, J., Zhang, J., & Xu, J. (2021). Art therapy: a complementary treatment for mental disorders. *Frontiers in psychology*, 12, 686005.
28. Hu, J., Zhang, J., Hu, L., Yu, H., & Xu, J. (2021). Art Therapy: A Complementary Treatment for Mental Disorders. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.686005>
29. Jenkins, R., Rose, J., and Lovell, C. (1997). Psychological well-being of staff working with people who have challenging behaviour. *J. Intell. Disabil. Res.* 41, 502–511. doi: 10.1111/j.1365-2788.1997.tb00743.x
30. Kurtek, P. (2016). Role of Anxiety as a Trait and State in Youth With Mild Intellectual Disability: Coping With Difficult Situations. *Journal of Policy and Practice in Intellectual Disabilities*, 13(3), 236-245. <https://doi.org/10.1111/jppi.12150>
31. La Greca, A. M., and Lopez, N. (1998). Social Anxiety among Adolescents: Linkages with peer relations and friendships. *J. Abnorm. Child Psychol.* 26, 83–94. doi: 10.1023/A:1022684520514
32. Males, J. M. (1986). *Art therapy as an approach to change in mental handicap*. University of Surrey (United Kingdom).
33. Moskowitz, L. J., Walsh, C. E., Mulder, E., McLaughlin, D. M., Hajcak, G., Carr, E. G., et al. (2017). Intervention for anxiety and problem behavior in children with autism spectrum disorder and intellectual disability. *J. Autism Dev. Disord.* 47, 3930–3948. doi: 10.1007/s10803-017-3070-z
34. Papangelo P., Pinzino M., Pelagatti S., Fabbri-Destro M., Narzisi A. (2020). Human figure drawings in children with autism spectrum disorders: a possible window on the inner or the outer world. *Brain Sci.* 10:398. [10.3390/brainsci10060398](https://doi.org/10.3390/brainsci10060398) [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
35. PBS Coalition UK. (2015). *Positive Behaviour Support, A Competence Framework*. Positive Behavioural Support ([pbsacademy.org.uk](http://pbsacademy.org.uk)).
36. Poquérusse, J., Azhari, A., Setoh, P., Cainelli, S., Ripoli, C., Venuti, P., et al. (2018). Salivary  $\alpha$ -amylase as a marker of stress reduction in individuals with intellectual disability and autism in response to occupational and music therapy. *J. Intellect. Disabil. Res.* 62, 156–163. doi: 10.1111/jir.12453

37. Posthuma D. (2001). “Ik tel ook mee als ik plezier heb; beeldende therapie met een groep vrouwen met traumatische seksuele ervaringen,” in Beeld, eds Schweitzer C., De Bie D. (Houten: Bohn Stafleu van Loghum; ). [[Google Scholar](#)]
38. Power, N., Dolby, R., & Thorne, D. (2021). ‘Reflecting or frozen?’The impact of Covid-19 on art therapists working with people with a learning disability. *International Journal of Art Therapy*, 26(3), 84-95.
39. Power, N., Harrison, T. L., Hackett, S., & Carr, C. (2023). Art therapy as a treatment for adults with learning disabilities who are experiencing mental distress: A configurative systematic review with narrative synthesis. *The Arts in Psychotherapy*, 86, 102088. <https://doi.org/10.1016/j.aip.2023.102088>
40. Pruijssers, A. C., van Meijel, B., Maaskant, M., Nijssen, W., and van Achterberg, T. (2014). The relationship between challenging behaviour and anxiety in adults with intellectual disabilities: A literature review. *J. Intell. Disabil. Res.* 58, 162–171. doi: 10.1111/jir.12012
41. Reardon, T. C., Gray, K. M., and Melvin, G. A. (2015). Anxiety disorders in children and adolescents with intellectual disability: Prevalence and assessment. *Res. Dev. Disabil.* 36, 175–190. doi: 10.1016/j.ridd.2014.10.007
42. Royston, R., Howlin, P., Waite, J., and Oliver, C. (2017). Anxiety disorders in Williams syndrome contrasted. *J. Autism Dev. Disord.* 47, 3765–3777. doi: 10.1007/s10803-017-2909-z
43. Schrade, C., Tronsky, L., and Kaiser, D. H. (2011). Physiological effects of mandala making in adults with intellectual disability. *Arts Psychother.* 38, 109–113. doi: 10.1016/j.aip.2011.01.002
44. Smeijsters H. (2008). *Handboek Creatieve Therapie*. [Handbook Art Therapy]. Bussum: Coutinho. [[Google Scholar](#)]
45. Spielberger C. D., Gorsuch R. L., Lushene R., Vagg P. R., Jacobs G. A. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press. [[Google Scholar](#)]