



EFFICACY OF BEHAVIOUR THERAPY AND ART THERAPY IN CHILDREN AND ADOLESCENTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER

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ABSTRACT This study evaluates the efficacy of Behavior Therapy (BT) and Art Therapy (AT) in children and adolescents with attention deficit hyperactivity disorder (ADHD), a neurodevelopmental disorder characterized by persistent inattention and hyperactivity/impulsivity. ADHD impairs daily functioning and development, with diagnoses increasing globally post-pandemic. The global prevalence is 5.29%, while Indian studies report 1.6% to 14%. Although pharmacological treatment is common, alternative therapies like BT and AT are gaining attention. Fifty participants aged 4 to 18 years were assigned to two groups. Group A received pharmacological management and BT; Group B received pharmacological management, BT, and AT. Both groups underwent 18–20 sessions over three months. A pre-post experimental design was conducted at Geetanjali Medical College and Hospital, Udaipur. Tools used were the ADHD Symptom Checklist-4 and Pediatric Quality of Life Inventory™ Version 4.0. Results showed significant improvements in Group B ($p < 0.001$). The findings support the combined use of Art Therapy with Behavior Therapy and Medication.

KEYWORDS : Attention Deficit Hyperactivity Disorder (ADHD), Pediatric Quality of Life, Behavioral Therapy (BT), Art Therapy (AT).

INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental condition that emerges in childhood and often persists into adolescence and adulthood. It is characterized by inattention, hyperactivity, and impulsivity that impair academic, social, emotional, and behavioural functioning (American Psychiatric Association, 2022). Children with ADHD struggle with attention, task completion, and emotional regulation, impacting learning, relationships, and self-esteem.

ADHD affects 5%–7% globally (Polanczyk et al., 2007). In India, diagnosis is improving, though access to treatment varies (Sagar et al., 2019). Early identification and multimodal interventions help prevent academic and emotional issues.

Pharmacological treatment includes stimulants like methylphenidate which improve attention by regulating brain chemicals (Sadock et al., 2015) but may cause side effects. Behaviour Therapy (BT) uses reinforcement, modelling, and behaviour modification to enhance desired behaviours (Corey, 2017; Rimm & Masters, 1974). When combined with medication, BT improves symptom management (Seligman, 2021).

Art Therapy (AT) involves creative expression to support emotional regulation, reduce impulsivity, and improve focus. It benefits children with behavioural disorders (Martínez Vérez et al., 2024; Moula et al., 2020).

Few studies have assessed the combined effect of BT and AT with medication on both ADHD symptoms and quality of life. Quality of life includes physical, emotional, social, and school functioning (Varni et al., 1999) and is often reduced in children with ADHD.

This study evaluates two groups: Group A (Behaviour Therapy + medication) and Group B (Behaviour Therapy + Art Therapy + medication), to compare improvements in ADHD symptoms and Pediatric quality of life. It is hypothesized that Group B will show greater improvement.

Need For The Study

In the 21st century, ADHD prevalence has steadily increased, with diagnostic rates further rising since the pandemic. While the global pooled prevalence is estimated at 5.29%, Indian studies report a wide range of 1.6% to 14%. Given these trends, developing more effective and personalized treatment strategies is imperative. Although pharmacological treatment and Behavior Therapy remain standard, recent years have seen increased interest in alternative or adjunctive approaches, including play therapy, relaxation techniques, and Art Therapy. Within this context, evaluating the combined efficacy of Behavior Therapy and Art Therapy becomes highly relevant. This

integrated approach may offer significant behavioral improvements and could serve as a complementary or alternative option to medication, particularly for individuals who do not respond adequately to traditional treatments.

AIM

To evaluate the efficacy of Behavior Therapy (BT) and Art Therapy (AT) in children and adolescents with attention deficit hyperactivity disorder (ADHD).

Objectives Of The Study

1. To study the efficacy of Behavior Therapy (BT) with pharmacological management in children and adolescents with ADHD.
2. To evaluate the combined efficacy of Behavior Therapy (BT) and Art Therapy (AT) along with pharmacological management in children and adolescents with ADHD.

Hypothesis

H1: There exists a significant **effect** between Behavior Therapy (BT) in children and adolescents with attention deficit hyperactivity disorder (ADHD).

H2: There exists a significant **difference** between Behavior Therapy (BT) and Art Therapy (AT) in children and adolescents with attention deficit hyperactivity disorder (ADHD)

METHODS

Study Design: This study is a pre and post experimental design.

Sample

Children and adolescents aged 4 to 18 years with ADHD were recruited to participate in this study at Geetanjali Medical College and Hospital (GMCH), Udaipur, Rajasthan. Children and adolescents with ADHD were diagnosed according to the Diagnostic and Statistical Manual of Mental Disorders (5th edition) (DSM-5) in the supervision of a qualified psychologist. Parameters of the study: independent variable (IV): Behavior Therapy (BT) and Art Therapy (AT). Dependent variable (DV): attention deficit hyperactivity disorder (ADHD).

Tools used:

ADHD-SC4: An 18-item checklist used to assess ADHD symptoms in children, based on DSM-IV criteria. It includes two subscales-Inattention and Hyperactivity/Impulsivity-each rated on a 4-point Likert scale from 0 (never) to 3 (very often).

Pediatric Quality of Life Inventory (Edsel™ 4.0): Developed by Varni et al. (2001) is a 23-item standardized tool measuring health-related quality of life in children and adolescents. It covers four core

domains: physical, emotional, social, and school functioning. Responses are rated on a 5-point Likert scale (0 = never, 4 = almost always), with scores transformed so that higher values reflect better quality of life.

Procedure

After obtaining ethical approval from Geetanjali Medical College and Hospital, Udaipur, Rajasthan, the study recruited 50 participants through consecutive sampling, with informed assent obtained from parents or legal guardians. Participants were divided into two groups: Group A (comparative group) received Behavior Therapy along with pharmacological management, and Group B (experimental group) received pharmacological management combined with Behavior Therapy and Art Therapy. Each participant received 18–20 therapy sessions over a three-month period, conducted weekly, with each session lasting approximately 60 minutes under the supervision of a qualified psychologist. A comprehensive clinical psycho-evaluation was carried out using structured interviews by qualified psychologist. Inclusion criteria included children and adolescents aged 4 to 18 years with a diagnosis of ADHD, speaking either Hindi or English, of both genders, and from urban or rural backgrounds. Exclusion criteria included individuals with other comorbid psychiatric or medical conditions, including physical disabilities.

Analysis Of Data

The comparison and association between pre-test and post-test scores were conducted using paired T-test, unpaired t-test, and chi-square test.

RESULT

A pre-post comparison was conducted over three months to evaluate two groups. Group A received Behavior Therapy (BT) with pharmacological management, while Group B received a combined intervention of pharmacological management, Behavior Therapy (BT), and Art Therapy (AT).

In Group A, no statistically significant changes were observed. ADHD symptoms showed a mild reduction from a mean score of 35.67 to 32.8 ($t = 1.03$, $p = 0.308$), and psychosocial functioning scores on the Pediatric Quality of Life Inventory (PedsQL™ 4.0) increased from 37.0 to 41.72 ($t = 1.77$, $p = 0.083$). Overall quality of life scores rose from 43.2 to 47.2 ($t = 1.68$, $p = 0.100$), suggesting non-significant improvement.

In contrast, Group B demonstrated statistically significant improvements across all domains. ADHD symptoms decreased from 37.12 to 27.16 ($t = 4.31$, $p < 0.001$), psychosocial functioning improved from 36.2 to 51.8 ($t = 5.02$, $p < 0.001$), and overall quality of life scores increased from 44.8 to 58.8 ($t = 4.57$, $p < 0.001$). Percentage-wise, Group B showed a 27% reduction in ADHD symptoms, a 43% increase in psychosocial functioning, and a 31% improvement in quality of life.

Baseline comparisons revealed no significant differences between groups across all variables. Post-test analysis showed Group B had significantly greater improvements than Group A in ADHD symptoms ($p = 0.025$), psychosocial functioning ($p = 0.002$), and overall quality of life ($p < 0.001$).

Chi-square analysis of sociodemographic factors showed that groups were comparable in sex, education, and region. Age was the only variable with a significant difference ($p = 0.05$), potentially influencing responsiveness.

Overall, findings suggest that integrating Art Therapy with Behavior Therapy and pharmacological management significantly enhances outcomes in children and adolescents with ADHD.

DISCUSSION

The study evaluated the effectiveness of Behavior Therapy (BT) with pharmacological management (Group A) versus BT and Art Therapy (BT+AT) with pharmacological management (Group B) in children and adolescents with ADHD. Interventions were assessed using pre-and post-test scores on ADHD symptoms and quality of life.

Group A showed no significant improvements: ADHD symptoms ($t = 1.02986$, $p = 0.308$), psychosocial functioning ($t = 1.76839$, $p = 0.08335$), and total PedsQL ($t = 1.67547$, $p = 0.100346$).

Group B showed significant improvements: ADHD symptoms ($t =$

4.31281, $p = 0.00008$), psychosocial functioning ($t = 5.01738$, $p = 0.00001$), and total quality of life ($t = 4.56955$, $p = 0.000034$).

Between-group comparisons showed better outcomes in Group B: ADHD symptoms ($t = 2.3098$, $p = 0.025245$), psychosocial functioning ($t = 3.27552$, $p = 0.001962$), and quality of life ($t = 4.11907$, $p = 0.000149$). Baseline scores showed no significant differences; sociodemographic variables were comparable, except for age ($p = 0.05$).

Hypothesis I was not supported. Hypothesis II was supported, with Group B showing greater improvements.

These findings align with Martínez Vérez et al. (2024), Cornish et al. (2023), Moula (2020), Murtaza et al. (2015), and Song (2021), supporting art-based interventions. Art Therapy facilitates emotional processing, reduces impulsiveness, and enhances cognitive flexibility. Its non-verbal nature benefits children with limited verbal skills. Combined with BT, it offers holistic treatment.

These results suggest that art-based techniques improve engagement, emotional regulation, and quality of life, supporting a multimodal treatment integrating behavioral, creative, and pharmacological strategies.

CONCLUSIONS

This study found that combining Behavior Therapy, Art Therapy, and medication significantly reduced ADHD symptoms and improved quality of life in children and adolescents, outperforming Behavior Therapy with medication alone. The results support the integration of creative, non-verbal therapies like Art Therapy into multimodal ADHD treatment for more effective outcomes. However, studying has several limitations. The small sample size ($N = 50$) and use of consecutive sampling may limit generalizability and introduce bias. Reliance on parent- or teacher-reported measures, such as the ADHD Symptoms Checklist and PedsQL™ 4.0, may have led to self-report bias. The short intervention period also limits insight into long-term effectiveness, as no follow-up assessments were conducted.

REFERENCES:

- [1] American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.; DSM-5-TR). American Psychiatric Publishing.
- [2] Bandura, A. (1977). *Social learning theory*. Prentice-Hall.
- [3] Corey, G. (2017). *Theory and practice of counselling and psychotherapy* (10th ed.). Cengage Learning.
- [4] Gadow, K. D., & Sprafkin, J. N. (1997). *ADHD Symptom Checklist-4 (ADHD-SC4)*. Checkmate Plus. Kazdin, A. E. (2001). *Behavior modification in applied settings* (6th ed.). Wadsworth/Thomson Learning.
- [5] Martínez Vérez, N., Gil Ruiz, M., & Domínguez Lloria, S. (2024). Interventions through art therapy and music therapy in autism spectrum disorder, ADHD, language disorders, and learning disabilities in pediatric-aged children: A systematic review. *Children*, *11*(4), 406. <https://doi.org/10.3390/children11040406>
- [6] Moula, Z., Palmer, L., Wrench, A., & Coyne, E. (2020). A systematic review of arts-based interventions delivered to children and young people in nature or outdoor spaces. *Frontiers in Psychology*, *11*, 586134. <https://doi.org/10.3389/fpsyg.2020.586134>
- [7] Moula, Z., Powell, F., & Karkou, V. (2022). Qualitative and arts-based evidence from children participating in a pilot randomized controlled study of school-based arts therapies. *International Journal of Environmental Research and Public Health*, *19*(13), 7610. <https://doi.org/10.3390/ijerph19137610>
- [8] Polanczyk, G., de Lima, M. S., Horta, B. L., Biederman, J., & Rohde, L. A. (2007). The worldwide prevalence of ADHD: A systematic review and meta-regression analysis. *American Journal of Psychiatry*, *164*(6), 942–948. <https://doi.org/10.1176/ajp.2007.164.6.942>
- [9] Rimm, D. C., & Masters, J. C. (1974). *Behavior therapy: Techniques and empirical findings* (1st ed.). Academic Press.
- [10] Sadock, B. J., Sadock, V. A., & Ruiz, P. (2015). *Kaplan and Sadock's synopsis of psychiatry: Behavioral sciences/clinical psychiatry* (11th ed.). Wolters Kluwer.
- [11] Sagar, R., Pattanayak, R. D., Chandrasekaran, R., Chaudhury, S., Deswal, B. S., Singh, O. P., ... & Gururaj, G. (2019). ADHD: An Indian perspective. *Indian Journal of Psychiatry*, *61*(Supplement 2), S109–S118. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_526_18
- [12] Seligman, L. W. (2021). *Theories of counseling and psychotherapy: Systems, strategies, and skills* (5th ed.). Pearson Education/Ullmann, L. P., & Krasner, L. (1969). *A psychological approach to abnormal behavior*. Prentice-Hall.
- [13] Varni, J. W., Seid, M., & Rode, C. A. (1999). The PedsQL™: Measurement model for the Pediatric Quality of Life Inventory. *Medical Care*, *37*(2), 126–139.
- [14] Wolpe, J. (1969). *The practice of behavior therapy*. Pergamon Press.
- [15] World Health Organization. (1992). *The ICD-10 classification of mental and behavioral disorders: Clinical descriptions and diagnostic guidelines*. World Health Organization.