

**EFFICACY OF ART THERAPY IN THE REDUCTION OF  
IMPULSIVE BEHAVIORS OF CHILDREN WITH ADHD CO-  
MORBID INTELLECTUAL DISABILITY**

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**ABSTRACT**

*The present study intended to explore the efficacy of art therapy in the reduction of impulsive behaviors of children with Attention Deficit/ Hyperactivity Disorder (ADHD) co-morbid Intellectual Disability (ID) in Karachi, Pakistan. The study was based on experimental design for which the data was collected from different special schools located in Karachi –Pakistan. Sample was selected through purposive sampling of 14 children with ADHD (mild) co-morbid Mild ID with age ranging between 6 to 12 years (mean age= 7.391; SD = 1.315) during the year 2011 -2013 belonging to middle socioeconomic status. The sample was divided into two groups, treatment and control group. Treatment group received 25 art as therapy sessions while control group received regular class room activities. Children were placed in the treatment and control group by ABBA technique after 8 hours of observation. Followed by the administration of Demographic Information Sheet, Attention Deficit Hyperactivity Disorder Test (Gilliam, 1995) and Human Figure Drawing (Koppitz, 1968) were administered before and after the therapy sessions. Descriptive statistics and Wilcoxon test were calculated through SPSS version 17.0. Findings suggest that art as therapy is effective in the reduction of impulsive behaviors in children with ADHD co-morbid ID ( $p < .05$ ). The findings of this research have its clinical implications in multiple disciplines i.e. for psychologist and special educators. Recommendations for future research have also been suggested.*

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**Keywords:** Art therapy, Children with ADHD, Co-morbid Intellectual Disabilities, Impulsive Behavior

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## **INTRODUCTION**

One of the most prevalent childhood disorder in this day and age is Attention Deficit/Hyperactivity Disorder (ADHD) which affects the functioning of individual who suffers and his/her family as a whole in every social class, every culture and continent throughout the globe. This neurobehavioral disorder is characterized by an impulsivity, inattention and hyperactivity that affect school-aged children and adults. ADHD is heterogeneous, and the presentation of symptoms can vary considerably. At this time biological markers for diagnosis do not exist, hence the diagnosis is based purely on observation of hallmark behaviors commonly associated with this disorder. Diagnosis in children often requires not only direct observation in clinical settings, but also observations made by parents and teachers in natural settings such as home or school (DSM-V, American Psychiatric Association, 2013).

The symptom of inattention and or hyperactivity–impulsivity has a persistent pattern and interferes with functioning or development. This is an essential feature of ADHD, but the focus of this study is the behavioral manifestations of impulsivity.

The behavioral manifestation of symptoms of inattention in ADHD are; drifting off task, having failure or difficulty in sustaining focus and being disorganized and these all behaviors are not due to defiance or lack of understanding. It is linked with various underlying cognitive processes and might show cognitive problems on tests of attention and executive functioning (DSM V, American Psychiatric Association, 2013).

Impulsivity refers to hurried actions that happen in the moment without foresight and that have high probability of harm. Impulsivity may reflect a need for instant rewards or an inability to postponement of gratification. Impulsive behaviors may manifest as social intrusiveness, for example, interrupting others markedly and/or as making essential decisions without thoughtfulness of long-term consequences (DSM V, American Psychiatric Association, 2013).

There are many documented treatment approaches and numerous researches to investigate the efficacy of different treatments used to treat the children with ADHD. According to the findings of a study conducted on approximately 600 children with ADHD to investigate the Multimodal treatment approach, behavior modification, medication and the combination of two were

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found to be most effective (National Institute of Mental Health, MTA,1999). For more than three decades behavioral techniques and treatments have been used to treat children with disruptive behaviors (O'Leary& Becker, 1967).

Art therapy (AT) is a relatively new profession in comparison to the traditional methods of treatment. It looks to work as a treatment modality through the use of art as medium for healing. The AT has two camps of thought; "art psychotherapy" and "art as therapy". These two approaches to therapy are deep-rooted in different theoretical ideologies dealing with how the art is used and the outcomes it produces (Ulman, 1987). The famous Art therapists such as Naumburg and Kramer have based their therapy on Freudian theory for instance Naumburg (1966), named her approach as "dynamically oriented art therapy," in which she relates clients associations to images that are reflecting dynamic of unconscious. While Kramer (1971), called her approach as "art as therapy" relying on the ego-building potential of sublimation which is a creative process of ego mastering (Ulman, 1987). For the purpose of this study, the focus is on "art as therapy" as the approach to art therapy.

A study conducted by Henley (1998) stated, "Aggressive or impulsive behaviors related to the hyperactivity or social anxiety can be channelized into socially productive forms of self-regulation through facilitated creativity. The results of the cited research are suggestive of AT as a means of behavioral change. Many other researchers that have examined the efficacy of Art integration have noted positive behavior changes in children (Pace & Schwartz, 2008).

According to Safran (2002) art therapy is an invaluable intervention method for children with ADHD as it can provide the therapist with the pre-therapy status of the child and help in keeping track of the development and positive changes occurring through the course of intervention. Kearns (2004) has asserted that children experiencing problems in sensory integration can greatly benefit from art therapy sessions as it can help them in becoming more focused as well as facilitate them in social integration.

From above mentioned literature and applicability of art therapy with children with emotional, developmental and behavioral problems it is clear that behavior therapy or art therapy or behavioral approach to art therapy are effective treatment methods in the reduction of inattention and impulsive behaviors. However, limited researches are available with reference to utilization

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of Art therapy or approaches of Art therapy as treatment intervention for children with symptoms of intention of impulsive behaviors. Extensive amount of research is required on all aspects of this disorder but specifically, in regards to behavioral symptoms and treatment of those symptoms.

Present study is an effort to analyze the effectiveness of art therapy for children with ADHD comorbid with Intellectual Disability. Based on the above mentioned literature thus it is hypothesized that treatment with art therapy would be effective in the reduction of impulsive behaviors of children with Attention Deficit/hyperactivity disorder co-morbid Intellectual disability as compare to children with Attention Deficit/hyperactivity disorder co-morbid Intellectual disability with no treatment.

### **METHOD**

#### ***Participants***

Sample of the present research comprised of 14 children with ADHD co-morbid ID from Sindh Special Education Center: Qauiden, Karachi, Pakistan. All the children who were qualified on the diagnostic criteria provided in Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revision (DSM-IV-TR; American Psychiatric Association, 2000) for ADHD (mild) on Axis I and Mild Intellectual Disability (old term mental retardation) on Axis II were included in the present study. They were diagnosed as ADHD by the trained and qualified clinical psychologist on the basis of clinical Interview, detailed Assessment and criteria given in DSM-IV-TR.

They were equally distributed in the experimental group (n=7; 3 girls and 4 boys) and control group (n=7; 2 girls and 5 boys) by ABBA technique. The age range of the entire sample was from 6 to 12 years with mean age of 7.391 ( $\pm SD = 1.315$ ).

#### ***Measures***

##### **Demographic Data Sheet**

A demographic data sheet was prepared; it consisted of name, age, sex, birth order, year of schooling, family structure, socio-economic status, parental qualification and profession.

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### **Observation Recording Sheet**

A recording sheet was prepared to record the baseline data and later was used to record the session notes i.e. any significant behaviors, verbalization and procedure within sessions.

### **Attention- Deficit / Hyperactivity Disorder Test (ADHD-T)**

The ADHD-T (Gilliam, 1995) is a standardized, individually administered test of Attention Deficit/ Hyper Activity Disorder (ADHD) based on the DSM-IV (APA, 1994) criteria of ADHD. The ADHD-T is comprised of three subtests: Hyperactivity, Impulsivity and Inattention, totaling 36 items. The items are related to the three core symptoms of the ADHD. Scores were computed for each subtest. Then the raw scores were converted to standard scores and percentile ranks. The sum of the subtests standard score were converted into the ADHD Quotient and their percentile. For the purpose of this study raw scores were used. The internal consistency and reliability of the subtests were determined to be in the .80 and .90 (Gilliam, 1995).

### **Human Figure Drawing (HFD)**

The HFD was developed by Koppitz (1968). Koppitz's developed scoring procedure for assessing various items in human figure drawing that could be expected to appear in HFDs of children ranging in age from 5 to 12 years. In this study the HFD test is used to measure the developmental indicator. Reliability studies (Koppitz, 1968; Snyder & Gaston, 1970; Vijfeijken, 1994) indicate that the inter-rater reliability commonly exceeds .90.

### ***Procedure***

Prior to the data collection, permission and informed consent were obtained from the authorities of the school/institution (director and the concerned teacher). A form containing information about the purpose of the research, the method/intervention to be used in therapy, the goals and hopes from the research, as well as the potential risk involved in the research was provided and explained to the authorities. All the children in the study were volunteer participants so the concern authorities were free to withdraw the children at any time from the study for any reason. The researcher ensured that all the information and data would be used only for the research purpose.

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Experimental design was used in the present research. This design consisted of experimental and control group. Control group received the regular school/ classroom services while the experimental group received the Art as therapy sessions. After the completion of the treatment, both the groups were assessed again for any reduction in impulsive behaviors.

The study was started in February 2011. Two sessions per week were conducted with each child in both the treatment and control group. The duration of each session was 45 minutes. In total, twenty five sessions with each child (group) were conducted. The children who were part of control group were kept on the waiting list, and the researcher would continue to provide the therapy sessions after the data collection.

### ***Pre Intervention***

Prior to the treatment, each child was observed within the classroom setting for 8 hours (2 days for behavioral symptoms and patterns). Afterwards the Attention Deficit/ Hyper Activity Disorder Test (ADHD-T) was administered to obtain the scores of impulsive behaviors.

After comprehending the severity, intensity and frequency of impulsive behaviors, the researcher let the children draw freely in the first session. The intention was to understand the developmental artistic level of each child, so appropriate and obtainable goals can be set for each child. Developmental artistic level of each child was comprehended through the guidance of the work of Malchiodi (2003).

### ***Intervention Phase***

After establishing the baseline, the techniques of behavior therapy to art therapy were used, and Roth's (1987) behavioral techniques created for art therapy were also incorporated. Throughout the process the use of positive reinforcement was a fundamental component, in the form of verbal appreciation, clapping, tap, nonverbal gestures and cues which encourages the child to continue the process and assists in developing therapeutic alliance. The researcher used interventions that had an impact by providing modeling, shaping and prompting; introduced pre-art materials and materials that can create interest and involvement in the process.

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### *Post Intervention*

The Attention Deficit/ Hyper Activity Disorder Test (ADHD-T) and Human figure drawing (HFD) were re-administered to obtain the scores of inattention.

Data in the form of artwork creations created by the children was stored in folders created for each child. Each artwork was numbered, labeled and coded; session number and date on the back was saved. Case notes based on the researcher's observation and all that occurred during the sessions, questions, significant verbalization of the children within the session all was documented.

### *Statistical Analysis*

In order to examine the data statistically, SSPS, Vol. 17 was used. Wilcoxon test for difference, a non- parametric test of inferential statistics was applied, as it is the most appropriate statistic for this sample.

## RESULTS

**Table 1**  
*Mean and Standard Deviation of Age of Children according to groups*

<b>Groups</b>	<b><i>N</i></b>	<b><i>M</i></b>	<b><i>SD</i></b>
Overall Sample	14	7.391	1.315
Control ADHD (ID)	7	7.70	1.3317
Treatment ADHD (ID)	7	7.543	1.1178

**Table 2**

*Comparison of treatment and control group of children with ADHD comorbid ID on impulsive behaviors before and after treatment (N=14)*

Groups	N	Impulsivity Pre treatment		Impulsivity Post treatment		p
		Median	Range	Median	Range	
Control ADHD with ID	7	15	14-17	15	14-17	0.083
Treatment ADHD with ID	7	16	9-19	15	9-16	0.024*

( $p < .05$ )\* Wilcoxon signed ranked test

## DISCUSSION

Safran lists the benefits of therapy with reference to working with children with ADHD, as, (1) it is a child-appropriate activity, (2) it uses visual learning skills, (3) it lends structure to therapy, and (4) it gives children a way to express themselves” (Safran, 2007, pp. 23). These findings support the efficacy of the Art therapy in two populations, primarily with children with ADHD and secondarily its effectiveness with the developmentally delayed children. The present findings are consistent with the previous researches conducted with the children with intellectual disabilities.

Findings of this research are consistent with the limited previous findings in other countries that mention art therapy to be an effective intervention for those who are suffering with symptoms of ADHD. For ADHD as according to Association of Natural Psychology (2006), art therapy might be one of the most single effective therapies to help children and adults to concentrate, slow down and stabilize.

The findings of the present study indicated the efficacy of art therapy in the reduction of impulsive behaviors of children with ADHD as compared to the children with no treatment (Table 2). Moreover the pre-post findings of the treatment group specify that the treatment with art therapy has found to be



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effective in reducing the ADHD symptoms of the children with ADHD (Table 2). Previously, Smitheman-Brown and Church (1996) in their study with children with ADHD has investigated visual measurement of creative growth and behavioral changes due to art therapy. The findings of their study indicates the efficacy of art activity in increasing attentional abilities, better decision making, growth, completion of task, interest in personal aesthetics and decrease in impulsive behaviors.

Moreover the previous research findings by Dalebroux et al. (2008) stated that the individuals typically find it difficult to “slow down” and concentrate on even basic activities, but art can engage the mind and emotions more effectively than other forms of therapy. Moods and thoughts of individuals can be stabilized by various art activities, and they can attain a state called flow or groove in sports, art and daily life. Most of the people have had an experience of being fully immersed in art activity, while feeling happy and free from anxiety.

### ***Conclusion***

The process of art making and the art creations itself, let the therapist to explore the child's unique perceptive about the world and about the symptoms. It also helps to identify and explore the difficulties that the child is facing due to impulsive behaviors and inattention. When this insight is achieved by the therapist, there is a huge potential for meaningful therapeutic encounter. Further the ADHD is a neurobehavioral disorder and according to the limited literature available the creative process has an effect on the neurological processes, thus this area needs further exploration to find the potential therapeutic possibilities of Art Therapy as a treatment intervention with children. As this is the first study on the efficacy of Art therapy in the researcher's country, it will definitely open the area for future quantitative and qualitative research. In addition, due to the clinical adaptability of the therapy, there is high potential to incorporate the art therapy in special education, inclusive and normal day schools existing programs.

**REFERENCES**

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4<sup>th</sup> ed.). Washington, DC.: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4<sup>th</sup> ed., text rev.). Washington, DC.: Author.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5<sup>th</sup> ed.). Washington, DC.: Author.
- Association for Natural Psychology (2006). Art Therapy. Retrieved from [http://www.winmentalhealth.com/arts\\_therapy.php](http://www.winmentalhealth.com/arts_therapy.php)
- Dalebroux, A., Goldstein, T. R., & Winner, E. (2008). Short-term mood repair through art-making: Positive emotion is more effective than venting. *Motivation and Emotion*, 32(4), 288-295.
- Gilliam, J. E. (1995). *The Attention-Deficit/Hyperactivity Disorder Test: A method for Identifying ADHD*. Austin, TX: PRO-ED.
- Henley, D. (1998). Art therapy in a socialization program for children with attention deficit hyperactivity disorder. *American Journal of Art Therapy*, 37(1), 2-11.
- Kearns, D. (2004). Art therapy with a child experiencing sensory integration difficulty. *Art Therapy*, 21(2), 95-101.
- Koppitz, E. M. (1968) *Psychological evaluation of children's human figure drawings*. The Psychological Corporation, Harcourt Brace Jovanovich, Inc., New York.
- Malchiodi, C. A. (2003). Art therapy and the brain. In C. A. Malchiodi (Ed.), *Handbook of art therapy* (pp. 16-24). Guildford, New York.
- MTA Cooperative Group. (1999). A 14-month randomized clinical trial of treatment strategies for attention-deficit/hyperactivity disorder: Multimodal Treatment Study of Children with ADHD. *Archives of General Psychiatry*, 56 (12), 1073-1086.

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- Naumburg, M. (1966). *Dynamically oriented art therapy: Its principles and practices*. Grune & Stratton, New York.
- O'Leary, K. D., & Becker, W. C. (1967). Behavior modification of an adjustment class: A token reinforcement program. *Exceptional Children*, 33, 637-642.
- Pace, D., & Schwartz, D. (2008). Students create art. *Teaching Exceptional Children*, 40 (4), 50-54
- Roth, E. A. (1987). A behavioral approach to art therapy. In J. A. Rubin (Ed.). *Approaches to art therapy* (pp. 213-232). Bruner/ Mazel, New York.
- Safran, D.S. (2002). *Art Therapy and ADHD diagnostic and therapeutic approaches*. Jessica Kingsley, London.
- Smitheman-Brown,V., & Church, R. P. (1996). Mandala Drawing: Facilitating creative growth in children with ADD or ADHD. *Art Therapy: Journal of the American Art Therapy Association*, 13 (4), 252-262.
- Snyder, R.T., & Gaston, D.S. (1970). The figure of the first grade child: item analyses and comparison with Koppitz norms. *Journal of Clinical Psychology*, 26, 377-383.
- Ulman, E. (1987). Variations on a Freudian Theme: Three Art Therapy Theorists. In J.A. Rubin (Ed.), *Approaches to art therapy* (pp. 277-298). Bruner/Mazel, New York.
- van de Vijfeijken, K. (1994). *Normeringmenstekeningvoor 4-12 jarigekinderen* [HFD norms for 4-12 year old children]. Leiden University Press, Leiden.