

THE EFFECT OF A GROUP ART THERAPY ON THE SELF-RESTRAINT OF STUDENTS WITH ATTENTION DEFICIT/HYPERACTIVITY DISORDER

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ABSTRACT

The present study aimed to investigate the effect of a group art therapy on the self-restraint of students with attention deficit/hyperactivity disorder (ADHD). The sample included 24 students with ADHD who were selected through random multi-stage sampling and randomly assigned to an experimental group ($n = 12$) or a control group ($n = 12$). The self-restraint of both groups were assessed pre- and post-test using by Weinberger & Schwartz' self-restraint scale (which included subscales for suppression of aggression, impulse control, consideration of others and responsibility). The experimental group participated in 9 sessions of group art therapy, while the control group did not. The data analyses by ANCOVA and MANCOVA showed that there were significantly increase in mean scores of self-restraint and subscales (suppression of aggression, impulse control, consideration of others and responsibility) in experimental group ($P < 0.01$). The study findings emphasize the effectiveness of the group art therapy in improving the self-restraint of students with ADHD, which may be used by teachers, parents, or professionals who work with such students.

Keywords: Group Art Therapy, Self-Restraint, Attention Deficit/Hyperactivity Disorder

INTRODUCTION

Attention-deficit/hyperactivity disorder (ADHD) is a heterogeneous neurodevelopmental disorder characterized diagnostically by symptoms of inattention, hyperactivity, and impulsivity (American Psychiatric Association, 2013). These children experience serious behavior problems at home, school, and other settings and present a challenge to parents and educators (Yoosefi Looyeh *et al.*, 2012). Core difficulties in children with ADHD include problems in sustaining attention, poor impulsive and hyperactivity control. For this reason, children with ADHD are more likely to display problems such as, emotional and behavioral disorders and to be impaired in social behaviors (Beh-Pajoochi *et al.*, 2012). ADHD related impairments such as poor time management, procrastination and distractibility can affect areas of life, including work, daily activities, social and family relationships. Moreover children with ADHD have problems with sustaining attention, finishing tasks, paying attention to details, and organizing activities (Pittsi *et al.*, 2015). Inhibition is comprised of the following three interrelated processes: 1) inhibition of a dominant response, 2) stopping of an ongoing response, and 3) interference control (distractibility). In that, this type of inhibition requires inhibition of a response, it is sometimes referred to as response inhibition (Barkley, 1997).

Children with ADHD especially the Hyperactive-Impulsive and Combined subtypes, have impairment in behavioral inhibition, which results in secondary impairments in four executive functions (EF) that are critical for effective self-regulation of behavior. The four EFs are: (1) working memory (the ability to mentally manipulate information), (2) reconstitution (the ability to effectively analyze and synthesize information from the environment to solve problems), (3) self-regulation of important internal states such as affect/emotion, motivation, and the arousal level needed to meet the demands of a task, and (4) the internalization of speech. These four cognitive processes are considered to be “mental abilities that permit self-control” (Barkley, 1997) and depend on effective behavioral inhibition to allow for their

Research Article

execution. The overt behavioral symptoms of ADHD (e.g., impulsivity, distractibility, restlessness) are a result of diminished control of behavior by internally represented information. Inhibition is theorized by Barkley (1997) to be the core deficit in children with ADHD. Researchers believed that many children with attention deficit/hyperactivity disorder have affected in response inhibition and working memory and signs of the disorder caused by a deficiency in these two components (Willcutt *et al.*, 2005). Response inhibition is the most important components of executive function and is called the ability to stop thoughts, actions and feelings (Barkley, 1997). Deficits in response inhibition in these children contributes to poor social skills, in this case, due to impairment in response inhibition, child cannot restraint in thought or behavior in inappropriate time and place, for this reason answers to questions sudden and untimely or interrupt the conversation of others, such behavior increases the punishment, blame and rejection in them (Mikamii *et al.*, 2007). The lack of inhibition is associated with attention and impulsivity Structures. The failure of inhibition in children leads to behaviors such as: answer before understand the homework, answer before have enough information, attention easily distracted by disturbing stimuli, and fail to correct specified inappropriate responses (Schachar *et al.*, 2000). The ability to suppress the thoughts, actions and emotions is the theory of deterrence as a major regulator of behavior. In other words, the overall concept of behavioral inhibition is synonymous with behavioral control (Barkley, 2006). Many studies have shown that response inhibition as measured by multiple neuropsychological assignments, is failure in people with this disorder (Durstun *et al.*, 2004), and the great theories have emphasized the role of inhibition insufficiency in these children (Barkley, 2006). So far, several studies have begun to assess response inhibition and have shown that training can improve it: Self-regulation training, relaxation training and social skills training (Meepien *et al.*, 2010), Self-monitoring training (Reid *et al.*, 2005), training triple skills stop, think and relax (Chapman *et al.*, 2006), training through go- no go model, Stop-sign model, and interference control and flanker activity (Thorell *et al.*, 2009), training through targeting, Stand up and sit game, and perform forward and reverse commands, movement among the barriers, balance games, eye to eye inhabitation Training (Saheban *et al.*, 2010). One of the treatments that are used for these children is art therapy.

Art therapy (AT) can be described as the therapeutic use of art making within a professional relationship by people who experience illness, trauma or challenges in living, or by people who seek personal development. The purpose of AT is to improve or maintain mental health and emotional well-being. Art therapy utilizes drawing, painting, sculpture, photography and other forms of visual art expression (Malchiodi, 2011). Art work links the inner experience that words cannot easily express with the outside world, in that shapes, lines and images substitute for words (Bensimon *et al.*, 2008). This therapeutic process allows clients to cope with real events in their lives in a better and more organized way when the therapy room serves as a safe container where an emotional change can occur through the use of artistic materials (Killick, 2000; Malchiodi, 2011). Karkou (2006) have indicated that arts therapies can be effective to the treatment for ADHD. Art Therapy is a useful therapeutic and educational intervention with AD/HD children. It provides a way of helping the child encounter and correct attention and hyperactivity issues and offers the opportunity to socialise and practice the social skills. It provides visual imagery and motor experiences, that enhance learning and allows practice of different skills. Art therapy has many benefits as a treatment modality, and in work with children with AD/HD there are several specific advantages: (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. The product of art therapy, the art itself, provides the child with an immediate and visual record of those feelings or ideas. Because the person with AD/HD often has difficulty remembering what has been learned, artwork becomes a way to reencounter feelings or thoughts, thus making learning easier (Councill, 2003). Art expression is preverbal; in other words, it does not rely solely on words. Individuals whose vocabulary may be inadequate to express intense feelings such as rage may be able to use nonverbal communications in therapy to explain these feelings. For individuals with AD/HD, art can be used to help others to understand their experiences that cannot be explained with words alone. Drawing is already used regularly for assessment (of imagination deficits, fine motor skills, visual-spatial deficits, developmental

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level, etc.), so it makes sense that art could be easily adapted for use as a practical therapy in this specialty (Malchiodi, 2011). In the last twenty years a broad theoretical and research base has confirmed the therapeutic power of art therapy in a range of different populations (Hughes & da Silva, 2011; Slayton *et al.*, 2010). Many studies show that art therapy is effective in improving symptoms of ADHD. Al Hariri and Faisal (2013) In a study entitled “effects of teaching art activities by using the playing method to develop skills in preschool children with attention deficit hyperactivity disorder” With the sample consisted of 14 boys and girls identified with ADHD, revealed beneficial and significant effects of the art program on the thinking and behavioural skills of the children who took part in the activities. Henley (2007) showed the positive impact of group art therapy in deaf children with attention deficit/hyperactivity, the results showed that art therapy can treat all early symptoms of attention deficit/hyperactivity disorder such as restlessness, impulsivity, and inattention. Also Henley (2007) in working with a 16-year-old child with attention deficit hyperactivity disorder and hypomania found when the child is painting, symptoms of manic and attention deficit decrease. Moreover Rastle (2008) in his study found that art therapy (painting, drawing and pottery) has positive effects on children at risk and reduce aggressive behavior, hyperactivity and inattention.

Children with low self-restraint are defecting in social functions including wait times stay, respond to non-verbal cues, understand the feelings of others and participating in social situations need to be inhibited and participation. Also show aggressive behavior in relation to others and thus it is very difficult to establish and maintain friendly relations (Closson, 2010). However, the role of art in the inhibition of these children has not been studied. In addition, the primary treatment, medication with or without behavior therapy, has proven to be extremely helpful. However, medication is not always a treatment option because of either medical reasons or resistance to the idea of medication by parent or child. It also does not address the social skills deficits such as impulsivity and hyperactivity, found in so many children with AD/HD (Jensen *et al.*, 2001), so the aim of present study was to investigate the effect of a group art therapy on the self-restraint of students with attention deficit/hyperactivity disorder (ADHD). Results of this research can be helping mental health providers understand the effect of art therapy in helping children with AD/HD.

MATERIALS AND METHODS

Population, Sample, and Sampling Method: The study’s procedure was experimental with pretest-posttest design employing a control group. The population included all the second to sixth-grade elementary school students in Kermanshah city studying under the Education Organization in 2014-2015. The sample size was 24 students were selected through random multi-stage sampling. The sampling was as following: first, one area was selected randomly from the three educational areas in Kermanshah City. Then 5 elementary schools was selected randomly from all schools of area three, then Connors’ Teacher Rating Scale (CRS) distributed and after evaluating the results of (CRS), students who have ADHD Symptoms, rated by DSM-5 criteria. After that Self-Restraint Scale was distributed and 24 student who have low self-restraint and conditions of entry to the study from these five schools were selected and assigned randomly to the experimental and control groups (each of which, 12 individuals). The conditions of entry to the study include diagnosis of ADHD according to (CRS) and DSM-5 criteria, willingness of parents, attend of students in class at least for 4 months, and the exit criteria include contemporaneous interventions. A self-restraint scale was administered to both groups prior to the art therapy intervention. Following the art therapy intervention (administered to the experimental group only), both groups completed the self-restraint scale again.

The ethical review board of the regional Education Organization approved the study.

Self-Restraint Scale: Self-restraint scale was designed and developed by Weinberger and Schwartz (1990). This 30-item scale has one total scale and 4 sub-scales such as impulse control (8 item), consideration of others (7 item), suppression of aggression (7 item) and responsibility (8 item). Reliability and validity of self-restraint scale for children and adults proved by Weinberger (1997). Moreover, it has been shown that the scale successfully predicts problem behaviors during the teenage years (Farrell &

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Sullivan, 2000). In the present research, the reliability of the form was also assessed, using a Cronbach’s alpha coefficient of .87. It is worth noting that in this study, teachers completed mentioned scale about students with ADHD.

Art Therapy Intervention: Group Art Projects for Kids with ASD that developed and regularly use with elementary school-age children by Martin (2009). Art therapy program was held for nine 45-60 minute sessions (two sessions per week) with the experimental group. “Group Art Projects for Kids with ASD” for children was used in this study. Art projects can be tailored to work on working with a partner, attention to faces, and attention to detail, and close interaction, turn-taking, loss of control over the shared drawing, patience flexibility, fine motor skills, and memory recall.

Table 1: Art Therapy Intervention

Project	Goals	Directions	Time
1 Group mural (shadow tracing)	Body awareness, reading body language.	Turn off the lights and invite one child to hold a flashlight while another peer stands in front of the paper, casting a shadow. Invite another child to trace this shadow.	45-60
2 Group mural (body tracing)	Body awareness, posing, reading body language, figure drawing, and intimacy	Invite the children to take turns lying down on the paper in the pose of their choice and trace each other’s bodies. (This is a great way to work on patience and drawing control.)	45-60
3 Group mural (imaginative)	Attention to peers, turn-taking, patience, compromise	Have them take turns adding to the mural in a way that works with the theme and encourage the children to let each drawing build from the previous one.	45-60
4 Portrait drawing	Selecting and working with a partner, and close interaction	Instruct the children to draw their partner’s face, paying close attention to details that distinguish their partner from the other peers. The children should hold still for each other as needed.	45-60
5 Interactive portraits	Turn-taking, loss of control over the shared drawing, attention to detail, and interaction.	Have the children draw each peer in succession, taking turns for each body part (i.e., one child draws the eyes, then passes the marker to the next child who draws a nose, etc.).	45-60
6 Peer figure drawing	Patience, perspective-taking, attention to detail.	Seat the children at tables arranged in a circle and invite the children to take turns selecting peers (one at a time) to sit alone as the model in the middle of the table.	45-60
7 Community quilt	Understanding group/community concept, and fine motor skills	Provide each child with a fabric square and allow them to decorate it as they wish with the paint	45-60
8 Friendship boxes	Memory recall and gift-giving skills.	Allow each child to paint a box and decorate it with personal Touches, Then pass around the boxes one at a time and invite each child to make a drawing especially for each person’s box	45-60
9 Art show	To celebrate and showcase accomplishments outside of the group setting.	An art show is a wonderful way to summarize and share the children’s progress with their families and to help the children understand the social potential of art-making	45-60

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RESULTS AND DISCUSSION

Table 1 shows the mean self-restraint and its subscales ratings for the experimental and control groups.

Table 2: Effect of Art Therapy Intervention on Self-Restraint in Children With ADHD

Self-Restraint	Groups	Descriptive statistics	
		Pre-test	Post-test
		M (SD)	M (SD)
Overall Self-Restraint	Experimental	46.50 (5.02)	70.83 (7.03)
	Control	53.92 (7.50)	49.92 (5.82)
Suppression of Aggression	Experimental	9.25 (2.26)	15.67 (2.02)
	Control	10.25 (2.01)	9.17 (1.53)
Impulse Control	Experimental	10.08 (1.04)	18.25 (1.55)
	Control	11.93 (2.43)	10.91 (1.68)
Consideration of Others	Experimental	11.50 (1.93)	17.00 (2.49)
	Control	15.58 (3.55)	15.08 (3.42)
Responsibility	Experimental	14.33 (1.83)	17.67 (2.67)
	Control	14.92 (2.81)	13.67 (2.84)

Note. ADHD = attention deficit/hyperactivity disorder.

As seen in Table 2 an average of experimental and control groups in total score of self-restraint and its subscales in the Pre-test almost equal, but in the Post-test in the experimental group increased. To determine whether the changes in Overall self-restraint were statistically significant, an ANCOVA was conducted for which the pre-test scores were considered covariates.

Table 3: Analysis of Covariance Results for Overall Self-Restraint in Experimental Group and Control Group

Changes	Sum of Squares	Degrees of Freedom	M of Sum of Squares	F	Significance Level	Etta Coefficient
Pre-test	597.937	1	597.937	39.41	0.000	0.65
Group	3190.717	1	3190.717	210.28	0.000	0.91
Error	318.646	21	15.174			
Total	91025.000	24				

The ANCOVA results (Table 3) showed that the art therapy intervention significantly improved the Overall self-restraint in the experimental group relative to the control group.

To determine whether the changes in subscales of self-restraint were statistically significant, an MANCOVA was conducted for which the pre-test scores were considered covariates that the results can be seen in Table 4.

Table 4: The Results of Multivariate Analysis of Covariance for the Subscales of Self-Restraint

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Squared	Eta
Groups	Pillai's Trace	.91	39.89	4.00	15.00	.000	.91
	Wilks' Lambda	.08	39.89	4.00	15.00	.000	.91
	Hotelling's Trace	10.63	39.89	4.00	15.00	.000	.91
	Roy's Largest Root	10.63	39.89	4.00	15.00	.000	.91

Based on table 4, the multivariate analysis of covariance showed that experimental and control groups in at least one of the four self-restraint subscales were significantly different (p<0.001). In order to

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understand the differences of experimental and control group in each subscales of self-restraint ANCOVA was used and results have been presented in Table 5.

Table 5: Analysis of Covariance Results for Subscales Self-Restraint in Experimental Group and Control Group

Source	Dependent Variable	Sum of Squares	Degrees of Freedom	M of sum of Squares	F	Significance Level	Etta Coefficient
Groups	Suppression of Aggression	138.27	1	138.27	89.44	.000	.83
	Impulse Control	147.05	1	147.05	120.00	.000	.87
	Consideration of Others	44.662	1	44.66	31.32	.000	.63
	Responsibility	27.21	1	27.21	10.64	.004	.37

The results in Table 5 show that when the pre-test data were considered covariates, the art therapy intervention led to significant differences in suppression of aggression, impulse control, consideration of others and responsibility between the two groups ($p < .01$). This finding implies that the suppression of aggression, impulse control, consideration of others and responsibility of the experimental group significantly increased relative to the control group.

Discussion

The present study aimed to investigate the effect of a group art therapy on the self-restraint of students with attention deficit/hyperactivity disorder (ADHD). To explain these findings, have to state that by such programs children can explore their problems and express their wishes and needs in a creative way without being concerned about expressing them (Namdari, 2012). Art therapy allows children to learn and understand the ideas of others and helps them communicate effectively (Hope, 2008). Art therapy helps children to create a way to vent emotions to get greater insight and increases self-control, the ability to divide, the ability to stay in position, and the ability to follow the rules in these children (Murphy *et al.*, 2004).

Also results indicated that the art therapy increases the students’ suppression of aggression. To explain these findings, have to state that art therapy help children with ADHD through increasing empathy, attention and respect for one another instead of dispute and aggression (Lipman, 2003). Art therapy offers children the opportunity to express and control their inner feelings (Anim, 2012). Coulter *et al.*, (2008) suggests art therapy as an effective modality in the treatment of anger in adolescents, which provides them an opportunity to apply their creative minds to find better ways of communication, problem solving, and decision-making.

Art therapy as a non-verbal medium helps children with ADHD express their anger in a more appropriate and safe way (Liebmann, 2008).

Moreover results indicated that the art therapy increases the students’ impulse control. In the explanation of this finding it can be stated that, art therapy provided a safe way for children to externalize their feelings which caused them to be less intrusive with each other (Murphy *et al.*, 2004). In line with these findings, Groves & Huber (2003) concluded that art therapy improves the self-control. Also Smitheman-Brown and Church (1996) showed that Mandala painting increase attention, and reduce impulsive behavior in children with ADHD.

The findings also showed that art therapy increase the students’ consideration of others. To explain these findings, have to state that art therapy provide supportive context that helps a person’s emotional and social growth (Murphy *et al.*, 2004). Social and emotional growth, in turn, leads to a better understanding of others and respect for their ideas.

Also the results of this study showed that the art therapy increases the students’ responsibility. In the explanation of this finding it can be concluded that in art therapy sessions, clients address the unresolved

Research Article

anger, which is the cause of their present problem, and become more reasonable and responsible for their acts and behavior. Groups of art therapy provide an opportunity for children with ADHD to learn from each other, and sharing their drawings and thoughts becomes a vehicle for change and at the same time enhances self-worth and responsibility (Malchiodi, 2003).

It seems that art therapy due to its non-verbal nature is one of the techniques for counseling and behavioral problems, particularly for children who have problem in self-restraint. On the other hand, painting allows the child to express his feelings are not accepted without having to encounter negative reactions of adults. In this sense, painting that has been refined act, helps to discharge tensions that exist for various reasons in children. In this way, children can express themselves and be creative in ways to reduce their negative feelings and promote children's self-esteem by providing meaningful and rewarding social experiences.

The limitations of this study include the lack of follow-up phase due to lack of time, it is suggested that in future research follow-up also be done.

Conclusion

According to mentioned discussion it can be said that attention deficit/-hyperactivity disorder is associated with self-restraint in everyday life, and art therapy is an appropriate and effective way of improving the skills of self-restraint in children with ADHD. Art therapy improves and expands communication skills, self-consciousness, feelings and emotions in these children. Using art therapy intervention due to its low cost and availability, does not need to an expert trainers, ability to use different temporal and spatial situations, great attraction for children, and its effectiveness in different groups and situations, is recommended.

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