

**Research Paper:****Effect of Group Play Therapy on Emotional/Behavioral Problems of Children With Attention Deficit Hyperactivity Disorder Aged 6-12 Years**Sepideh Teimourian<sup>1</sup>, Hooshang Mirzaei<sup>1\*</sup>, Ebrahim Pishyare<sup>1</sup>, Samaneh Hosseinzadeh<sup>2</sup>

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**Citation** Teimourian S, Mirzaei H, Pishyare E, Hosseinzadeh S. [Effect of Group Play Therapy on Emotional/Behavioral Problems of Children With Attention Deficit Hyperactivity Disorder Aged 6-12 Years (Persian)]. Archives of Rehabilitation. 2020; 21(3):390-405. <https://doi.org/10.32598/RJ.21.3.3158.1>**doi** <https://doi.org/10.32598/RJ.21.3.3158.1>

Received: 08 Jan 2020

Accepted: 14 Aug 2020

Available Online: 01 Oct 2020

**ABSTRACT**

**Objective** One of the most significant issues in children with Attention Deficit Hyperactivity Disorder (ADHD) is emotional/behavioral problems, which disrupt their social communication at home and school. Some of these problems include social problems, rule-breaking behavior, and aggressive behavior. These problems, if left untreated in childhood, can cause problems in adulthood such as substance abuse, insubordination in the workplace, shorter stay at a job, and more anti-social acts. Nowadays, the use of play therapy for children with ADHD has become common. It is an active approach that allows the children to express their feelings through play. In group play therapy, children are asked to evaluate their personality according to their peers' reactions. The study investigates the effect of group play therapy on emotional/behavioral problems in children with ADHD aged 6-12 years.

**Materials & Methods** This is a randomized controlled trial. The study population consists of all children with ADHD referred to the Dostdaran Koodak Occupational Therapy Clinic in Isfahan City, Iran. Of these, 28 children aged 6-12 years (average age: 8 years), including 8 girls and 20 boys, were selected using a convenience sampling technique. First, the study objective was explained to the parents, and children were then randomly assigned into the intervention and control groups. Considering error (d)=3, with 95% confidence level and 80% test power, the sample size was determined 14 for each group. The intervention group received 12 sessions of group play therapy (2 sessions per week, each for 45-60 minutes), besides two sessions of individual occupational therapy per week. However, the control group received two sessions of occupational therapy per week only. The emotional/behavioral problems of subjects in both groups were assessed before and after the intervention using the CBCL. Data analysis was performed in SPSS V. 21 software using the Shapiro-Wilk test and ANCOVA.

**Results** After the group play therapy, there was a significant decrease in the scores of emotional/behavioral problems, including social issues, aggressive behavior, and rule-breaking behavior, as well as in the overall score (P<0.001).

**Conclusion** Group play therapy can be used as a complementary method with other common occupational therapies for reducing the emotional/behavioral problems in children with ADHD.

**Keywords:**

Attention deficit and hyperactivity disorder, Play therapy, Behavioral problem

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## Extended Abstract

### Introduction

**A**ttention Deficit Hyperactivity Disorder (ADHD) is one of the most common disorders diagnosed in childhood and is associated with impulsivity and impaired attention [1, 2]. According to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), the prevalence of ADHD is 5% in children and 2.5% in adults [1]. Its prevalence in Iranian children is 3%-7% [3]. The DSM-5 has listed 18 symptoms for ADHD, and at least 6 symptoms are required for its diagnosis. Depending on these symptoms, ADHD has three types: predominantly impulsive/hyperactive, predominantly inattentive, and the combined type [1]. Emotional/behavioral disorders in children with ADHD are manifested in two general forms of externalizing symptoms (e.g. stubbornness, aggression, lawlessness) or internalizing symptoms (e.g. isolation, depression, and anxiety).

Group play therapy helps to improve children's leadership and social skills [5]. It is effective in reducing children's emotional/behavioral problems [6-15]. To our knowledge, few studies in Iran have used group play therapy. Also, since group therapy is one of the subjects of occupational therapists, they have intervened less in this field. This study investigates the effect of group play therapy on emotional/behavioral problems in children with ADHD.

### Materials and Methods

This research is a randomized controlled clinical trial. The study population consists of all children with ADHD referred to Doštaran Koodak Occupational Therapy Clinic in Isfahan City, Iran. Those with an average age of 8 years, including 8 girls and 20 boys, were selected as study samples using a convenience sampling technique. They were then randomly assigned to the intervention and control groups. The sample size [16] for each group was determined 14. The inclusion criteria were diagnosis of ADHD by a child psychiatrist, completion of written informed consent by the parents, aged between 6 and 12 years, a Child Behavior Check List (CBCL) score >60, no psychotic symptoms according to the Child Symptom Inventory-4 (CSI-4), and no previous history of participation in similar studies. The exclusion criteria were the absence of more than 2 sessions from the intervention and lack of parental cooperation.

The data collection tools were CSI-4 and CBCL. The CSI-4 items are never=0, sometimes=0, often=1, and always=1 [17]. Esmaeil, in a study on 715 normal students and 419 students with ADHD in Tehran, Iran, evaluated the psycho-

metric properties of the Persian CSI-4 [18]. He reported internal consistency of 0.76 for the predominant types of ADHD and 0.81 for the combined type of ADHD, and high criterion validity of 0.8 for most subscales. The CBCL measures 8 symptoms of anxious/depressed, withdrawn-depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, and aggressive behavior [16]. The CBCL consists of 113 questions, measuring the children's symptoms within the past 6 months scored on a 3-point Likert scale (not true=0, sometimes true=1, often true=2) [19].

After obtaining ethical approval and an introductory letter from the University of Social Welfare and Rehabilitation Sciences, and permission from the clinic, the samples were selected. Their parents signed the informed consent form and completed the demographic form, CSI-4, and CBCL. Then, they were randomly divided into two groups. Besides receiving 2 sessions of individual occupational therapy per week, the intervention group participated in group play therapy in 12 sessions (6 weeks, 2 sessions per week, each for 45-60 minutes). The control group received only 2 sessions of individual occupational therapy per week. After 12 sessions [20], the CBCL was filled out by the children's parents again.

### Results

The Mean±SD ages of children in the intervention and control groups were 8.1±1.6 and 8.0±1.8 years, respectively, and there was no significant difference between the two groups in terms of age. There were 5 girls (35.7%) and 9 boys (64.3%) in the intervention group and 3 girls (21.4%) and 11 (78.6%) boys in the control group.

As shown in Table 1, the mean scores of the two groups in the variables of social problems, lawlessness, and aggression in the pre-test stage were not significantly different, but in the post-test stage, the scores showed a significant difference. To test the effectiveness of group play therapy on emotional/behavioral problems in children, ANCOVA was used. First, the assumption of normality was checked using the Shapiro-Wilk test. Based on the results, there was normal data distribution ( $P>0.05$ ). As seen in Table 2, in the social issues variable, group factors and pre-test scores significantly affected post-test scores ( $P<0.05$ ). The effect of the intervention and pre-test score for the social issues variable were 0.82 and 0.84, respectively. This result means that the group play therapy and the pre-test social problems score could explain 82% and 84% of changes in the post-test social problems score, respectively. For rule-breaking behavior, group factors and pre-test scores also significantly affected post-test scores ( $P<0.05$ ). The effect

**Table 1.** Descriptive statistics of demographic characteristics and emotional/behavioral problems of children

Variables	Group	Mean±SD	
		Pre-test	Post-test
Social problems	Intervention	9.5±3.1	3.0±2.7
	Control	10.1±2.8	7.7±4.7
Rule-breaking behavior	Intervention	8.9±2.5	4.1±1.5
	Control	7.0±2.8	6.5±2.8
Aggressive behavior	Intervention	25.0±4.8	9.9±3.2
	Control	20.0±6.8	19.8±5.9

Archives of  
**Rehabilitation****Table 2.** Test of between-subjects effects using ANCOVA

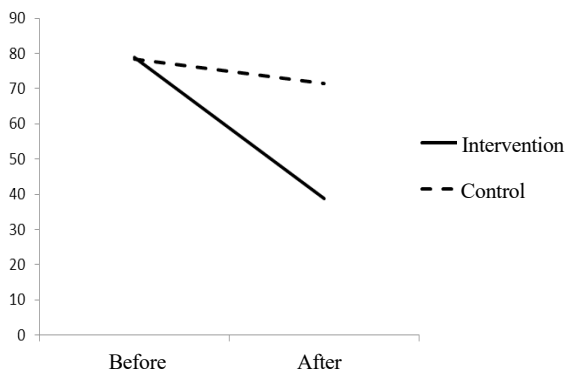
Dependent Variable (post-test)	Independent Variable	Sum of Squares	df	Mean Square	F	P	Partial Eta Squared
Social problems	Pre-test score	91.4	1	91.4	95.5	<0.001	0.841
	Group	78.5	1	78.5	82	<0.001	0.82
Rule-breaking behavior	Pre-test score	39.5	1	39.5	31.2	<0.001	0.635
	Group	78.5	1	78.5	62.1	<0.001	0.775
Aggressive behavior	Pre-test score	91	1	91	40.9	<0.001	0.695
	Group	825.7	1	825.7	371.2	<0.001	0.954

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of the intervention and pre-test score for rule-breaking behavior were 0.78 and 0.63, respectively. This result means that the group play therapy and the pre-test rule-breaking behavior score could explain 78% and 63% of changes in the post-test rule-breaking behavior score, respectively. For aggressive behavior, group factors and pre-test scores also significantly affected post-test scores ( $P<0.05$ ). The effect of the intervention and pre-test score for aggressive behavior were 0.95 and 0.7, respectively. This result means that the group play therapy and the pre-test aggressive behavior score could explain 95% and 70% of changes in the post-test aggressive behavior score, respectively. Overall, it can be said that group play therapy significantly affects social problems, rule-breaking behavior, and aggressive behavior of children with ADHD (Figures 1, 2, and 3).

## Discussion and conclusion

One study aimed to investigate the effect of group play therapy on the social problems of children with ADHD [21]. The scores of social issues over time showed a significant downtrend in both intervention and control groups. Comparing the two groups showed a significant difference between them where the decreasing trend was more in the intervention group than in the control group. This result is consistent with the results of Naderi et al. Soleimany, Karami, Cheng, Hensen et al. and Rosenberg et al. [15, 22-26]. According to Naderi et al. group play therapy is a suitable intervention for children who experience various problems. Group play therapy is an intervention that is not dangerous for children, and many studies have confirmed this approach. In this study, play therapy was an effective intervention for the social maturity of children with ADHD.

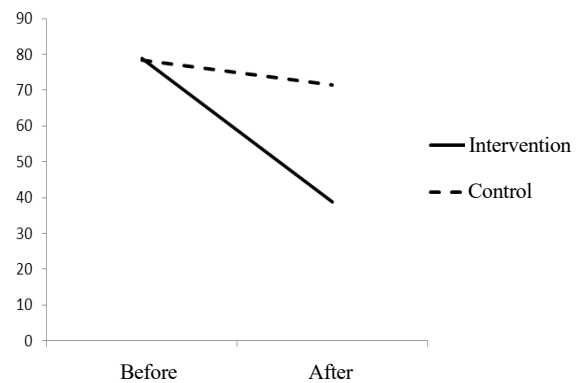


**Figure 1.** Comparing the mean score of social problems in two study groups before and after the intervention

However, it was not used in the study by Naderi et al. [42]. In Soleimany's research, which was quasi-experimental, he used rhythmic games, which finally led to improved social skills in children with ADHD [43]. Cheng, in a clinical trial, evaluated the impact of child-centered group play therapy on social-emotional assets of kindergarten children. After receiving the intervention, children made significant progress in empathy and social adequacy [16]. In Hensen et al. study, group play therapy also improved the social skills of children with ADHD [25].

Two other purposes of this study were to investigate the effect of group play therapy on rule-breaking behavior and aggressive behavior of children with ADHD. The results showed a significant decrease in the score of these behaviors in both groups after the intervention, where the decreasing trend was more in the intervention group than in the control group. This finding is consistent with the results of Almeraisi [46]. He used cognitive-behavioral play therapy on children with ADHD, which reduced their aggressive behaviors. Our result regarding the reduction of aggressive behavior is also consistent with Ray et al. [19]. Smith [22] used group play therapy for children with ADHD and witnesses of domestic violence to reduce their rule-breaking and aggression behaviors, respectively and reported its positive effects. However, in these studies, the impact of group and individual play therapy was assessed equally, and there was no significant difference between them. Azadimanesh used puppet play therapy, and Kahrizi applied sand play therapy to reduce the aggression of children with ADHD [48, 49].

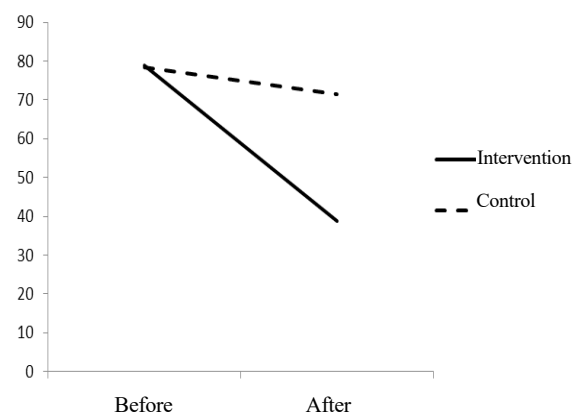
From an observational and clinical perspective, children's emotional and behavioral problems were very high before group play therapy in our study. The children were so anxious that it affected their social participation. The aggression level also increased, and the children were very aggressive towards each other in the first sessions, and there



**Figure 2.** Comparing the mean score of rule-breaking behavior in two study groups before and after the intervention

was an incompatibility between them. Some children disregarded the rules of the group therapy and tried to play their games. After the intervention, significant changes were observed in them such that their anxiety level decreased and social communication improved. Their violence and aggression towards each other also reduced, and they followed the rules of the group better. Parents also reported an overall improvement in their children's relationship with classmates and teachers after the intervention. According to them, the children's participation in the classroom, social interaction, obedience at home, and participation in individual occupational therapy sessions also increased.

Group play therapy can be used as a complementary method and other common occupational therapy methods for reducing the emotional/behavioral problems of children aged 6-12 years with ADHD. The main limitations of the present study were sampled by a convenience sampling method, time limitation of group play therapy, and lack of follow-up assessment. In future studies, it is recommended



**Figure 3.** Comparing the mean score of aggressive behavior in two study groups before and after the intervention

to pay attention to the durability of treatment effect after the intervention and the long-term impact of the intervention on behavioral disorders of these children.

## **Ethical Considerations**

### **Compliance with ethical guidelines**

This study is a registered clinical trial (Code: IRCT20190924044875N1) and has ethical approval from the Research Ethics Committee of the University of Social Welfare and Rehabilitation Sciences (Code: IR.USWR.REC.1397.089).

### **Funding**

The present paper was extracted from the MSc. thesis of the first author, Department of Occupational Therapy, School of Rehabilitation, University of Social Welfare and Rehabilitation Sciences.

### **Authors' contributions**

Ideation and conceptualization: Houshang Mirzaei and Sepide Teimouriani; Research analysis: All authors; Review of sources: Ebrahim Pishyare, Sepide Teimourian; Drafting, editing and finalization: Houshang Mirzaei, Ebrahim Pishyare, Sepide Teimourian; Supervision: Houshang Mirzaei, Ebrahim Pishyare, Samaneh Hosseinzadeh; Management: Houshang Mirzaei.

### **Conflict of interest**

The authors declared no conflict of interest

### **Acknowledgments**

The authors would like to thank the staffs of Tohid occupational therapy clinics.