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The Effectiveness of Play Therapy on Social Skills and Challenging Behaviors of Children with Autism Spectrum Disorder

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ABSTRACT

Background and Objective: Autism spectrum disorder (ASD) is a neurodevelopmental condition characterized by serious difficulties in social skills and the occurrence of challenging behaviors. Considering the key role of non-pharmacological interventions in improving the functioning of these children, the present study aimed to examine the effectiveness of play therapy on enhancing social skills and reducing challenging behaviors in children with ASD.

Methods: This semi-experimental study employed a pretest–posttest design with a control group. The statistical population included children aged 7–12 years with ASD who attended the "Omid Rahayesh" Autism Specialized Center in Bojnourd in 2025. Thirty children were selected through convenience sampling and randomly assigned to experimental (n = 15) and control (n = 15) groups. The experimental group participated in ten sessions of group play therapy. Data were collected using the Social Skills Rating System (SSRS) by Gresham and Elliott and the Turgay Disruptive Behavior Disorders Rating Scale (Turgay DBDRS). Data were analyzed using analysis of covariance (ANCOVA).

Results: The findings indicated that play therapy had a significant effect on improving social skills and reducing challenging behaviors in the experimental group compared to the control group ($p < 0.001$). The calculated effect size demonstrated a large intervention effect on both dependent variables.

Conclusion: Play therapy can be considered an effective and applicable intervention for improving communication skills and reducing behavioral problems in children with ASD in rehabilitation centers. It is recommended to use this approach alongside other specialized interventions.

1. Introduction

Autism Spectrum Disorder (ASD) is one of the neurodevelopmental disorders characterized by deficits in social interactions, verbal and non-verbal communication, as well as repetitive and restricted behavioral patterns (American Psychiatric Association, 2013). Children with this disorder often struggle to establish and maintain social relationships, interpret social cues, and regulate their emotional behaviors. These challenges can have profound impacts on their academic, familial, and social functioning at various ages. Studies have shown that the earlier and more targeted therapeutic interventions are implemented, the greater the likelihood of improving social skills and reducing challenging behaviors in this group of children (Barghi et al., 2023) .

One promising method to assist children with Autism Spectrum Disorder is play therapy. Play is the natural language of children and a means for expressing their emotions, thoughts, and needs. Play therapy, by providing a safe and structured environment, allows children to practice social skills and regulate maladaptive behaviors through symbolic activities, role-playing, and group interactions. Various approaches to play therapy exist for children with ASD, including child-centered, structured, cognitive-behavioral methods, and interaction-relational models such as DIR/Floortime, each focusing on specific aspects of the child's developmental and emotional needs (Farshi et al., 1403; Solomon et al., 2020) .

Research has shown that play therapy, especially in group formats and with the active participation of parents or therapists, can lead to increased social interaction, emotional understanding, and problem-solving skills in children on the autism spectrum (Ghods, 1399; Panda et al., 2019). There is also evidence that play-based interventions can help reduce challenging behaviors such as aggression, isolation, anxiety, and stereotypical movements in these children. In particular, cognitive-behavioral play therapy, utilizing principles of conditioning and cognitive restructuring, has shown promising results in reducing inappropriate behaviors (Sahraian et al., 1403; Zhou et al., 2022) .

Despite numerous studies in the field of play therapy and autism, there remains a need for localized studies with rigorous scientific methods, as cultural, familial, and educational factors play a crucial role in the effectiveness of psychological interventions. Furthermore, identifying and comparing the effects of different types of play therapy on two important components—namely social skills and challenging behaviors—can enrich therapeutic programs in specialized centers and schools. Accordingly, the present study is designed to investigate the effectiveness of play therapy on social skills and challenging behaviors in children with autism spectrum disorder.

Method of Investigation

This research is applied in terms of purpose and quasi-experimental in terms of execution, with a pre-test and post-test design with a control group. In this design, a pre-test was first conducted for both groups (experimental and control), then the experimental group underwent play therapy intervention, and after the sessions were completed, a post-test was again conducted for both groups. Finally, statistical analyses were used to compare the effect of the intervention. The statistical population of this research included children aged 6 to 12 years with moderate to mild autism spectrum disorder who were receiving education and rehabilitation services at the Omid Rahayesh Autism Specialized Center in Bojnord in 2023. The diagnosis of autism was confirmed based on psychiatric records and valid psychometric evaluations from the center. Sampling was done using a convenient and voluntary method. Among the children visiting the Omid Rahayesh Center who met the entry criteria for the study, 30 children were selected and randomly assigned to the experimental group (15 individuals) and the control group (15 individuals). The entry criteria included :

1.Definitive diagnosis of autism level 1 or 2 (mild or moderate) by a specialist
2. Age between 6 to 12 years
3. Minimum ability to understand instructions
4.No severe comorbidity (such as severe intellectual disability or uncontrolled epilepsy
5.Written consent from parents to participate in the intervention sessions

The exit criteria included absence from more than three intervention sessions, lack of cooperation, or withdrawal of parental consent .

Research Tools

Children's Social Skills Questionnaire (SSRS): This tool was designed by Gresham and Elliott (1990) and is used to assess children's social skills in three components: cooperation, assertiveness, and self-control. The version used in this research includes 34 items with a three-point Likert scale (rarely = 1, sometimes = 2, often = 3). The Persian version was translated, culturally adapted, and standardized by Sharifi-Daramadi and

colleagues (2019), and its reliability was reported with a Cronbach's alpha of 0.87. In the present study, the internal reliability of the questionnaire was calculated to be 0.83. This questionnaire was completed by parents (mostly the child's mother) with the guidance of the researcher. The total scores for each component and the overall questionnaire were calculated, with higher scores indicating a more desirable level of social skills.

Challenging Behaviors Rating Scale for Children (CBRS): This scale, derived from the original form by Toriyama (2004) and revised in Iran by Sahraian and colleagues (1403), is used to assess maladaptive behaviors such as aggression, stereotypical movements, self-harm, and inattention. The tool consists of 30 items with a four-point Likert scale (not at all = 0, sometimes = 1, most of the time = 2, always = 3). Its content, construct, and face validity have been confirmed in Iranian studies, and its reliability has been reported with a Cronbach's alpha of 0.89 for the entire scale. In the present study, a reliability coefficient of 0.85 was obtained. This questionnaire was also completed by the parents of the children under the guidance of the researcher. Higher scores indicate greater severity of challenging behaviors, and a decrease in this score in the post-test is considered an indicator of the effectiveness of play therapy intervention.

Summary of play therapy sessions for children with autism spectrum disorder.

Observing, interviewing, and interacting with the child and completing the Karz questionnaire (pre-test).		First session
We divide the stages of putting on and taking off clothing into finer stages, first with the help of a coach and then independently.	Closing and opening buttons, putting on and taking off socks, clothes, and shoes.	Second session
The subject stands still on one leg for 10 seconds, rests for 30 seconds, and then performs the same on the opposite leg.	Standing on one leg	Session Three
A line or rope is drawn on the ground, and the subject tries to walk on the lines without stepping outside of them.	walking on a line	
The child shows different parts of the body in the mirror and imitates the instructor's actions facing the mirror.	Activity with a mirror	
We make bubbles and the child chases the bubbles and lifts them up.	Making a bubble	Fourth session
The coach throws the ball and the child must catch the ball with both hands.	catching the ball	
The mazes are drawn by the instructor, and the child passes through the path of the maze with a pencil.	Crossing the maze	
We start with a two-piece puzzle and then increase the pieces.	Making a puzzle	Fifth session
We enhance self-help skills such as buttoning and putting on socks using the relevant tools.	Closing and opening buttons, putting on and taking off socks, clothes, and shoes.	
We start with a piece of bricks. The instructor places the piece at different angles and asks the child to place the piece in the same shape.	Imitation construction with bricks.	Session Six
The child jumps and touches his heel with his hand at the same time.	Cutting and touching the heel	
The coach and the child both use finger puppets to play the roles of doctor and patient.	performance games	Seventh session
The coach gets on a piece of wood and pretends it is a horse.	Riding a horse	Eighth session
The coach and the child start talking and communicating through the phone.	Talking on the phone	
The coach throws the ball towards the child while simultaneously calling the child's name.	throwing the ball	
We place colored blocks in front of the child, and the child must separate the red blocks from the others.	Sorting and arranging colored cubes	Session Nine

The coach asks the child to sort the fruit and animal cards into separate categories.	Categorizing and sorting animal and fruit picture cards.	
Assessment of the child using observation, interview, and completion of the Karz questionnaire (post-test)		Session Ten

Data Analysis

To analyze the data, the Kolmogorov-Smirnov test was first used to examine the normality of the distribution. Then, analysis of covariance tests were used to compare pre-test and post-test scores between the two groups. The data were analyzed using SPSS version 26. The significance level for the tests was set at 0.05 .

Ethical Considerations: This research was conducted in accordance with ethical principles. Written consent was obtained from the parents or guardians of the children. The information of the participants was kept confidential, and identification codes were used instead of real names .

Findings

Table 1: Mean and standard deviation of social skills and challenging behaviors in the experimental and control groups at pre-test and post-test stages.

Variable	Group	Pre-test (mean ± standard deviation)	Post-test (mean ± standard deviation)
Social skills	Test	51.20 ± 6.45	72.13 ± 5.89
	Control	50.86 ± 6.70	52.10 ± 6.35
Challenging behaviors	Test	61.30 ± 8.12	39.46 ± 7.20
	Control	60.75 ± 7.88	59.90 ± 7.91

As can be seen, after the intervention of play therapy, the experimental group showed a significant increase in social skills and a meaningful decrease in challenging behaviors; while the changes in the control group were very minimal.

Table 2: ANCOVA Test to Examine the Effect of Play Therapy on Social Skills

Source of Variance	Sum of squares	degrees of freedom	mean squares	F	P	Eta²
Pre-test (Homogeneity)	142.15	1	142.15	3.82	0.061	0.12
Group (Experimental/Control)	1116.78	1	1116.78	30.05	0.000	0.53
Error	931.20	27	34.49	-	-	-

The results of the analysis of covariance indicate that after controlling for the pre-test effect, the difference between the experimental and control groups in terms of social skills scores in the post-test was significant ($p < 0.001$). The calculated effect size shows that 53% of the variance in the increase of social skills can be attributed to the intervention of play therapy, indicating a large and significant effect.

Table 3: ANCOVA Test to Examine the Effect of Play Therapy on Challenging Behaviors

source of variance	Sum of squares	degrees of freedom	mean squares	F	P	Eta²
Pre-test (coherence)	185.91	1	185.91	4.15	0.051	0.13
Group (experiment/control)	1678.33	1	1678.33	42.17	0.000	0.61
Error	1074.24	27	39.79	-	-	-

The results of this analysis indicate that play therapy has a significant and considerable impact on reducing challenging behaviors in children with autism spectrum disorder ($p < 0.001$). The large effect size ($Eta^2 = 0.61$) suggests that 61% of the reduction in maladaptive behaviors is related to the intervention .

Discussion and Conclusion

The results obtained from data analysis showed that the play therapy intervention led to a significant improvement in social skills and a reduction in challenging behaviors in children with autism spectrum disorder. The findings indicated that after the implementation of play therapy sessions, the average social skills in the experimental group significantly increased, while the levels of aggressive, stereotypical, and maladaptive behaviors significantly decreased, whereas the control group did not experience any significant changes .

These results are consistent with the findings of previous studies; for example, the research by Dehghanpour et al. (2021) showed that cognitive-behavioral play therapy increases social interactions and reduces anxiety in children with autism spectrum disorder. Additionally, Mirzadeh et al. (2020) reported that group play therapy focused on role-playing significantly reduced stereotypical behaviors and increased interpersonal skills in children with autism. In international studies, the research by Brown and Johnson (2020) confirmed the positive effectiveness of structured play therapy on improving self-regulation and social interaction in children with ASD. Furthermore, Yang et al. (2019) emphasized the role of interactive and empathetic play in reducing self-injurious behaviors .

From a theoretical perspective, the effectiveness of play therapy can be interpreted within the framework of Bandura's social learning theory and the developmental-neurobiological perspective. Children during play have the opportunity to practice social skills, experience different roles, and learn through observation and immediate feedback. Especially for children with autism spectrum disorder, who face challenges in social processing and understanding non-verbal cues, the play environment provides a safe and structured setting for experimentation, repetition, and learning social behaviors. Additionally, emotional release and regulation of feelings through play lead to a reduction in internal tensions and aggressive behaviors .

The findings of this research are also significant from a practical standpoint. The results indicate that play therapy can be used as an effective, cost-efficient, and developmentally appropriate intervention method for children with autism in rehabilitation and educational centers. Considering that pharmacological interventions in treating behavioral disorders in children are not always successful and can sometimes have side effects, play therapy can be regarded as a suitable alternative or complement to traditional approaches .

Limitations of the research: Children with autism spectrum disorder may experience disruptions and severe misbehaviors for various reasons on certain days, which has always posed challenges during the implementation of the present intervention method and made the continuation of work difficult. Additionally, this research was conducted within the age range of 6 to 12 years, encompassing elementary school children, and cannot be generalized to all ages .

Conflict of interest: There are no conflicts of interest among the authors.

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