

A Randomized Clinical Assessment of the Effect of Play Therapy on Reducing Behavioral Problems, Attention Deficit and Hyperactivity in Children

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Abstract

Aim: The aim of the present study was to examine effect of play therapy on ADHD children.

Methods: Present study was conducted at Indira Gandhi Institute of Medical Sciences (IGIMS) in Department of Paediatrics for a period of one year. In the present study by using randomized sampling 32 children of fifth and sixth grade (average age of 11 years) were selected based on the inclusion criteria through purposeful sampling. They were randomly divided into experimental and control groups (16 individuals each) and then the experimental group underwent eight, 90- min-sessions of play therapy with the cooperation of the school's psychological counseling officials.

Results: The post-test mean score of ADHD symptoms was lower than that of the pre-test. This variable of behavioral problems has also obtained a lower average in the post-test test in different components (anxiety and depression, aggression, social incompatibility, antisocial behaviors, attention deficit disorder). Based on the obtained results the values of the significance level of the variables are more than 0.05, so it was concluded that the variables are in a normal state for the analysis of covariance. Levin's test values are insignificant. In other words, the null hypothesis for the equality of the variances of the two groups was confirmed.

Conclusion: The findings of the present study indicate that educational Play therapy is efficacious in mitigating behavioral issues and attention deficit and hyperactivity symptoms in children diagnosed with ADHD. This therapeutic approach facilitates their socialization process, enabling them to integrate into society as productive and well-adjusted individuals.

Keywords: play therapy, ADHD, children

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Introduction

Attention deficit/hyperactivity has been identified as a significant concern among professionals in the fields of psychiatry, psychology, as well as among parents and educators. The behavioral characteristics exhibited by children, such as motor skill disabilities, attention deficits, learning disabilities, aggression, educational difficulties, and motor excitation, pose significant challenges for parents and peers. Moreover, these characteristics can hinder the child's developmental progress, impede their cognitive abilities, and affect their social-emotional skills. According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), Attention-Deficit/Hyperactivity Disorder (ADHD) is characterized by three core features: deficits in attention, impulsivity, and hyperactivity. The primary consequences arising

from issues like as perceptual, physical, emotional, and social changes manifest as stress. Subsequently, the kid may encounter learning and behavioral difficulties as a result of these inconsistencies. [1]

Conversely, the dynamic nature of social situations yields significant and profound consequences on the psychological and personal realm of a child. [2] The user's text is too short to be rewritten academically. Based on the fifth version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), the estimated occurrence of Attention-Deficit/Hyperactivity Disorder (ADHD) is 5% among children and 2.5% among adults. [3] Children diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD) often exhibit emotional and behavioral difficulties, which

can be categorized into two main types of symptoms: externalizing symptoms, such as stubbornness, violence, and lawlessness, and internalizing symptoms, such as isolation, depression, and anxiety. Pharmacological intervention is the prevailing approach utilized in the treatment of this particular illness. While stimulant medications have demonstrated considerable efficacy in treating ADHD in a substantial number of children, it is important to note that approximately 42% of these children do not exhibit a positive response to such medications. Furthermore, in certain cases, the use of these medications may further exacerbate behavioral issues in affected children. [4,5] Another therapeutic approach for ADHD is play therapy. Numerous research has demonstrated that play therapy is an optimal approach for addressing emotional and social difficulties. [6] Group play therapy has been found to be effective in enhancing children's leadership abilities and social skills. [7] The intervention has demonstrated efficacy in mitigating emotional and behavioral difficulties in children. [8] The implementation of these theatrical performances resulted in a reduction in the severity of symptoms related to hyperactivity and attention deficits in children aged 4 to 12 years. [9] Play therapy has been found to enhance individuals' levels of functioning and capacities in situations involving socially acceptable behaviors. Play therapy has been found to contribute to the regulation of impulsivity in individuals. It has been identified as efficacious in targeting cognitive abilities. [10-12] Hence the aim of this research was to examine following aspects:

- 1) Play therapy led to decrease hyperactivity children with ADHD.
- 2) Play therapy led to increase attention children with ADHD.

Materials and Methods

Present study was conducted at Indira Gandhi Institute of Medical Sciences (IGIMS) Patna in department of paediatrics for a period of one year. In the present study by using randomized sampling 32 children of fifth and sixth grade (average age of 11 years) were selected based on the inclusion criteria through purposeful sampling. They were randomly divided into experimental and control groups (16 individuals each) and then the experimental group underwent eight 90- min-sessions of play therapy with the cooperation of the school's psychological counseling officials.

The content of the 8-session play therapy training was as follows:

The 1st session: People are introduced to each other. In this meeting, in order to create a friendly

relationship and a sense of security, the games suggested by the group are played.

The 2nd session: in the form of role- playing games (similar to theater), people learn desirable social behaviors; they also play their favorite roles and express their dreams and ideas in the form of assumed roles.

The 3rd session: The therapist explains the game process to the child: "we want to play the bell game. I give you some cubes and a clock is set". The child is engaged in an activity (painting or building a tower) for 2 minutes, without looking up and without paying attention to anything else. If the child completes this game, he gets 10 extra tokens. If he performs an activity other than the intended task, one token will be taken from him. After playing the game three times, if he can collect 25 tokens (having only 5 mistakes), he can take a prize from the treasure box.

The 4th session: First, the therapist explains the game to the child. The therapist asks the child to tell him the emotions he can feel and the therapist draws them on a piece of paper (happy, sad, angry, crying and surprised). Then they are arranged on the table and the therapist starts telling the story, and every time one of these feelings is mentioned, the child puts a token on the paper associated with that feeling. After the therapist finishes the story, the child tells a story and tokens are placed on the feelings by the therapist and the child.

The 5th session: Bubble making game; the therapist starts making bubbles in the room, most of the children start popping them when they see the bubble. Then a bubble maker is given to the child and the child starts making bubbles. Then the child is asked to make big bubbles by explaining that big bubbles can be made by taking deep breaths into the chest and abdomen and letting them out slowly. With this action, the therapist explains to the child that when he is angry and anxious, the brain needs more air, but the lungs do not work well at that time. If he breathes deeply, the brain orders the heart to beat more slowly and the lungs to work better; so, deep breaths (like making big bubbles) reduce anger.

The 6th session: Sit and walk in a direct and reverse way; Students should execute the sudden orders of the examiner immediately and in a group; and after learning, they are to do it in reverse. Then, they practice the training of the previous sessions.

The 7th session: People are taught good social behavior by using puppets.

The 8th session: A pantomime game was performed in the group. The students gave different

feedback about the performances. Finally, the post-test and a general summary were presented.

Instruments

a) Rutter's Behavioral Problems Questionnaire (Parent Form):

This test was prepared by Michael Rutter (1967) to distinguish between normal children and children with behavioral problems. The subgroups of the test are aggression, anxiety, depression, antisocial behavior, social incompatibility, and attention deficit hyperactivity disorder. This test has been translated and used in Iran by Mehriar et al. In Mehriar's research (1997), the concurrent reliability of the scale with psychiatric diagnosis regarding the presence of the disorder and its subtypes was significant at the level of 0.001. In Rutter's research (1975) using the split-half method, its reliability was reported to be about 0.89. In Bagheri's research (1993) its retest reliability was found to be 0.87. In Abolghasemi's research (2013), the split-half reliability and Cronbach's alpha coefficients of this questionnaire were reported as 0.83 and 0.91, respectively. The scale consists of 30 statements. In the scoring, each question is given a minimum of 0 and a maximum of 2 marks.

b) Connor's grading scale:

In order to check the severity of children's symptoms of attention deficit and hyperactivity disorder, the Connors grading scale of parent form was used. The parent form has 48 questions that can be used to evaluate five groups of children's disorders, including learning disabilities, behavioral disorders, psychosomatic problems, hyperactivity, and anxiety. Ten questions are devoted to hyperactivity disorders. This scale is made for the age group of 3 to 17 years old and each question is answered as never, a little, almost a lot, or a lot which are given a score from 0 to 3. Obtaining an average of 1.5 or higher indicates hyperkinetic disorder. Cronbach's alpha reliability of the questionnaire was found to be 0.93. The mean score of the scale was 21.42 with a standard deviation of 16.28. Finally, the collected data was analyzed by SPSS-24 software by the use of descriptive (mean and standard deviation) and inferential statistics (analysis of covariance for hypothesis testing).

Results

Table 1: Pre-test and post-test mean (SD) scores of ADHD symptoms, behavioral problems, and their dimensions in control and experimental groups

Variable name	Name of the component	test	control group (n=16)		experimental group (n=16)	
			Average	standard deviation	Average	standard deviation
Symptoms of attention deficit hyperactivity disorder	Symptoms of ADHD	pre-test	18.02	4.48	18.82	4.96
		post-test	17.43	4.26	12.38	4.26
behavioral problems	Anxiety and depression	pre-test	5.52	1.14	6.26	1.27
		post-test	5.43	0.78	4.52	1.05
	aggression	pre-test	8.02	1.75	7.52	1.45
		post-test	7.53	1.36	3.77	1.36
	Social incompatibility	pre-test	9.27	1.26	8.82	1.03
		post-test	8.52	1.18	4.52	1.09
	Antisocial behaviors	pre-test	9.43	1.45	9.59	1.26
		post-test	9.42	1.38	5.64	0.86
Attention deficit disorder	pre-test	10.08	1.38	10.76	1.46	
	post-test	9.46	1.32	5.85	1.41	

The post-test mean score of ADHD symptoms was lower than that of the pre-test. This variable of behavioral problems has also obtained a lower average in the post-test test in different components (anxiety and depression, aggression, social incompatibility, antisocial behaviors, attention deficit disorder).

Table 2: Kolmogorov-Smirnov test results, checking the normal distribution of the variables of ADHD and Behavioral problems in the post-test

Variables	Test	The significance level
Symptoms of attention deficit hyperactivity disorder	post-test	0.282
Stress and depression	post-test	0.420
Aggression	post-test	0.184
Social incompatibility	post-test	0.246
Antisocial behaviors	post-test	0.518
attention deficit disorder	post-test	0.412

Based on the obtained results the values of the significance level of the variables are more than 0.05, so it was concluded that the variables are in a normal state for the analysis of covariance.

Table 3: The results of Levin's test regarding the equality of variances of ADHD symptoms in the two groups

Variable	F	First degree of freedom	Second degree of freedom	The significance level
Symptoms of ADHD	0.582	1	24	0.107

Levin's test values are insignificant. In other words, the null hypothesis for the equality of the variances of the two groups was confirmed and it can be said that in the entire test, the variances of the two groups are equal in the variable of ADHD symptoms.

Table 4: The results of univariate covariance analysis regarding the effect of play therapy on ADHD symptoms

Sources		sum of squares	Degree of freedom	mean square	F	The significance level
post-test	Symptoms of ADHD	386.324	1	382.314	598.316	0.001
group	Symptoms of ADHD	5.255	1	5.255	8.122	0.010

The two groups were significantly different in mean scores of ADHD symptoms in the post-test stage; therefore, it can be concluded that play therapy has been effective in reducing the symptoms of attention deficit and hyperactivity disorder in children.

Table 5: Levin's test of the equality of variances in the post-test

Plan	Variables	F	Degree of freedom 1	Degree of freedom 2	The Significance level
Post-test	Stress and Depression	0.404	1	22	0.734
	Aggression	0.409	1	22	0.532
	Social incompatibility	0.096	1	22	0.766
	Antisocial behaviors	0.316	1	22	0.416
	attention deficit disorder	0.518	1	22	0.236

Levin's test values are insignificant. In other words, the null hypothesis for the equality of the variances of the two groups was confirmed and it can be said that in the entire test, the variances of the two groups in the components of behavioral problems are equal.

Discussion

Childhood is widely recognized as a critical phase in motor development, wherein a notable feature is the ongoing progression of physical, motor, cognitive, and emotional capabilities. The acquisition of knowledge and skills during the early developmental stages of an individual's life has a profound impact on their subsequent learning endeavors. [13] One of the significant illnesses prevalent during this period is attention-deficit/hyperactivity disorder (ADHD). Attention-deficit/hyperactivity disorder (ADHD) is a prevalent neurodevelopmental condition observed in children, persisting throughout adolescence and adulthood. [14] Attention deficit hyperactivity disorder (ADHD) is widely recognized as a prevalent childhood disorder. Attention-deficit/hyperactivity disorder (ADHD) is a prevalent and consequential disorder that frequently manifests during childhood. This condition, which significantly impacts the lives of numerous children and their families, is categorized into three distinct kinds based on the frequency of associated deformities and challenges. The

classification encompasses three distinct subtypes: hyperactive impulsivity without attention deficit, attention deficit without impulsivity, and the combination kind. [15]

The mean score of ADHD symptoms after the intervention was found to be lower than the mean score before the intervention. The variable pertaining to behavioral disorders has exhibited a decreased mean score in the post-test assessment across many domains, including anxiety and depression, aggression, social incompatibility, antisocial behaviors, and attention deficit disorder. Games offer children the chance to depict their internal world and facilitate the articulation of emotions. In the context of the Kolmogorov-Smirnov test, it is necessary for the significance level of the variables to exceed 0.05 in order to establish the normal distribution of said variables. Consequently, the results obtained indicate that the significance levels of the variables surpass 0.05, leading to the conclusion that the variables are in a normal state for the purpose of conducting covariance analysis. The primary objective of play therapy is to address and resolve issues that impede the ability of individuals to effectively interact with their surroundings. Play therapy offers a secure setting in which children can gradually articulate their emotions, tensions, feelings of insecurity, and repressed fears. [16] Furthermore, via engaging in diverse forms of play both independently and

collaboratively using a range of playthings, children acquire heightened consciousness regarding their emotions and thoughts. They also acquire knowledge pertaining to significant challenges they encounter, as well as strategies for effectively addressing these challenges. Additionally, engaging in play facilitates the exploration and resolution of conflicts and the management of distressing emotions. Additionally, individuals are confronted with the repercussions of their actions and acquire the ability to sustain focused attention throughout the game while simultaneously diminishing their levels of arousal.

The test values of Levin are found to be statistically insignificant. To clarify, the null hypothesis regarding the equivalence of the variances between the two groups was validated. Typically, children diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD) exhibit significant behavioral difficulties and encounter numerous obstacles in the development of their social skills. The behavioral difficulties exhibited by young children are significantly associated with negative maternal conduct and communication, as well as maternal stress. Consequently, the child's troublesome behavior contributes to a decline in the mother's self-assurance. Indeed, the behavioral difficulties exhibited by youngsters have a profound impact on familial dynamics and behaviors. Children diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD) encounter notable difficulties in their social functioning. Therefore, while discussing the results of the effectiveness of play therapy in reducing behavioural problems among preschool children who have been diagnosed with ADHD, it might be suggested. Play therapy facilitates an increased level of self-awareness in children, allowing them to recognise their behaviours and difficulties, and consequently cultivate more appropriate problem-solving approaches. Given the challenges experienced by children with ADHD in regulating and anticipating their behaviors and emotional responses, including anxiety and depression, it is imperative to implement a specialized intervention program that emphasizes cognitive and metacognitive strategies to facilitate behavior management. The implementation of play therapy, which is rooted on the cognitive behavioral paradigm, resulted in a notable decrease in both hostility and hyperactivity exhibited by the participants. The play therapy program, which adhered to cognitive behavioral models, was executed over the course of eight sessions. This program placed significant emphasis on the active involvement and accountability of the child within the treatment process.

The mean scores of ADHD symptoms in the post-test stage shown a significant difference between the two groups. This finding suggests that play

therapy has proven to be beneficial in mitigating the symptoms associated with attention deficit and hyperactivity disorder in children. The test values of Levin are found to be statistically insignificant. To clarify, the null hypothesis regarding the equality of variances between the two groups has been supported. Therefore, it can be concluded that during the entire test, the variances of the two groups in terms of behavioral disorders are equivalent.

Conclusion

The findings of the present study indicate that educational Play therapy demonstrates efficacy in mitigating behavioral issues and attention deficit and hyperactivity symptoms in children diagnosed with ADHD. This therapeutic approach facilitates socialization skills development, enabling affected individuals to integrate into society as productive and well-adjusted members. In addition, students acquire skills in decision-making, creative and critical thinking, enhance their feeling of responsibility, and crucially develop appropriate interpersonal conduct with their peers.

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