

## Original Article

# The effectiveness of play therapy based on cognitive-behavioral therapy on the rate of hyperactivity in primary school children

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### Abstract

Hyperactivity is one of the most common problems in children. Problems with hyperactivity disorder in children with hyperactivity disorder can prevent many of their functions. This study aimed to determine the effect of play therapy based on cognitive-behavioral therapy on the rate of hyperactivity in primary school children. The research was quasi-experimental with control and experimental groups. The population included hyperactive primary school children. The participants were selected by cluster random sampling. Thirty children were selected and randomly assigned to experimental and control groups. The data were analyzed using Connors Children's Hyperactivity Scale. The experimental group was trained in eight sessions. The results showed that play therapy based on cognitive-behavioral therapy has an effect on the rate of hyperactivity as well as children's behavior in the classroom, group participation and cooperation and attitudes toward power authorities in primary school and it improved children's performance ( $p < 0.05$ ).

### Keywords

Play therapy  
Hyperactivity  
Aggression  
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### Introduction

Elementary school is a good time to recognize the future emotional, social and educational problems of children and plays a crucial role in the development of adaptation. In this period, which is one of the most important stages of life, the person's personality is established and formed. Attention Deficit Hyperactivity Disorder is one of the most common and damaging childhood disorders. This disorder, which has a profound effect on the lives of thousands of children and their families, is classified into three forms based on the prevalence of specific disorders and problems which includes the type of impulsive hyperactivity without attention deficit, attention deficit-impulsivity and the combined type (American Psychiatric Association, 2013).

Transformational neurological disorders have a pervasive effect on parent-child interaction and lead to parental stress (China, 2013). Among neurodevelopmental disorders, Attention-Deficit/Hyperactivity Disorder has a frequency of 5 to 11%

among children aged 3 to 17 years (Castagna, Calamia & Davis, 2017) and with characteristics such as hyperactivity, impulsivity and attention deficit. They are associated with social, academic, and occupational performance (Rayan, Haroon & Melvin, 2015) and also experience more emotional, social, and behavioral problems than other children (Barkley, 2013). This disorder has a prevalence of about ten percent, which is associated with its extension in adulthood (Raggi & Chronic, 2016). In recent years, our awareness of over-mobility has increased dramatically, and attention to activity has shifted to deficiencies and then to broader issues of social development. This disorder is usually diagnosed for the first time in primary school, that is, when adjustment to school is impaired (Rabbanizadeh et al., 2016). One of the most important symptoms for parents in early childhood is that their child is very active. It requires a lot of support and cares to prevent accidents or possible injuries. Irritability, insomnia that does not always exist is seen as hardness, aggression, or immature interaction with siblings or other children that the child may encounter (Bek, Nazakat Al-Hosseini &

Abedi, 2019).

One of the treatment methods is to reduce or eliminate hyperactivity, play and play therapy, which brings beneficial and significant results (Rousseau et al., 2006). This type of therapy is a unique way to help children communicate by balancing emotional and evoked behaviors (Richards, Pillay & Fritz, 2012). One of the effective therapies in the field of behavioral sciences is played therapy. By providing an Ummah environment, play therapy causes emotional discharge and reduces tension and free expression of emotions and feelings, and research, its effectiveness on aggression, anxiety (Stulmaker & Ray, 2015). Urinary and fecal incontinence have been shown (Londres, 2002), and play therapy has been effective in aggression in hyperactive children (Azadi Manesh, Hossein Khanzadeh, Hakim Javadi & Mansour Watankhah, 2017).

The child explores and experiments through play. He discovers how to deal with the world around him, with the tasks of life, to master the symbolic skills and processes in his way (Rajabpour et al., 2012). The effectiveness of cognitive-behavioral play therapy on aggression in children with conduct disorder (Qaderi et al., 2006). Therefore, in this study, we answer the question: does play therapy based on cognitive-behavioral therapy affect the rate of hyperactivity in school children?

## Method

Research method in this research, according to the subject of the research method, it is a semi-experimental type with a control and experimental group. The statistical population studied in this study included all primary school students with ADHD. The sample size is a quasi-experimental study. 30 people were selected and divided into control and experimental groups. Sampling in this study was done by cluster random method. Samples were selected from those who referred to schools that had a primary school, and then we asked the principals to introduce students to the researcher who had been referred to treatment clinics as hyperactive for treatment and who also had aggressive behaviors. Then, after obtaining the consent of the parents, a sample of 40 people was selected to participate in the study and through simple sampling, it was divided into two experimental groups of 20 students and a control group of 20 students. For the experimental group, 8 sessions of 45-minute game therapy training were given, but in the end, due to lack of cooperation in the study, 5 people from each group experienced a drop.

### *Pediatric Hyperactivity Test - Connors Scale*

The Connors Teacher Rating Scale is a useful tool for diagnosing children's behavioral problems and can be used by children aged 4 to 4 years. The Connors Teacher Rating Scale has 3 terms. Because teachers are often more careful and sensitive than parents to these behavioral details, and teachers are familiar with how a normal child should behave in the school environment, this scale is completed by the teacher.

This questionnaire has 38 questions and its purpose is to diagnose children with attention deficit hyperactivity disorder by teachers. The scoring method is as follows:

Selector switch	Not at all	low	Mediocre	Much
Score	0	1	2	3

This questionnaire has 3 dimensions, which are presented in the following table of dimensions and the number of questions related to each dimension:

Dimension	Questions
Child behavior in the classroom	1-21
Participation and group cooperation	22-29
Attitude towards power authorities	30-38

To score each dimension, calculate the sum of the scores for that dimension. To get the total score of the questionnaire, calculate the total score of all the questions together.

For evaluation in this test, it can be said that obtaining an average score of 1.5 or higher indicates the presence of attention deficit hyperactivity disorder. In other words, this questionnaire has 38 questions and therefore, the total test score will have a range from 1 to 114. If a child scores above 57, it indicates attention deficit disorder. The higher the score, the higher the child's disorder, and vice versa. Reliability Connors et al. (1999) reported the reliability of this scale as 0.90.

**Table 1.** Play therapy sessions

First session	Game Emotional words
Second session	Game Chairs
Third session	Anger Balloon
Fourth session	clock alarm
Fifth session	Slow movements
Sixth session	Bubble game
Seventh session	Bring the carrots to the rabbit
Eight session	Collect, post-test

Inferential statistics were used to analyze the data using descriptive statistics, sample characteristics and variables were examined. In descriptive statistics, indicators such as mean and standard deviation were used. In the inferential statistics section, analysis of covariance is used to determine the difference between the experimental and control groups. Covariance analysis was used to analyze the data and test the research hypotheses. The collected data were analyzed by SPSS software.

## Results

**Hypothesis:** Play therapy based on cognitive-behavioral therapy affects the hyperactivity of primary school children.

To test this hypothesis on hyperactivity in hyperactive preschool children, a one-way analysis of covariance has been used. The results of this analysis are presented in Table 2.

**Table 2.** Results of one-way analysis of covariance in ANCOVA text on the mean scores of hyperactivity in the experimental group (play therapy) and control with pre-test control

Variable	Source of change	Total squares	Df	MS	F	Sig	Squared eta
ADHD	Pre-exam	2040.89	1	2040.89	436.73	0.001	0.77
	Group	4392.30	1	4392.30	939.91	0.001	0.74
	Error	126.17	27	4.67			

As shown in Table 2, by controlling the effect of the auxiliary variable (pre-test) on the dependent variable, there is a significant difference between the two groups in terms of hyperactivity (significant value less than 0.05) or other words, play therapy in improving more Activity affects hyperactive school children. Table 2 shows the mean post-test and pre-test values of hyperactivity in hyperactive children in the control and experimental groups. This indicates that play therapy has been able to improve hyperactivity in hyperactive children and has significantly reduced the hyperactivity of these people in the experimental group. On the other hand, because the value of Eta squared for the group is equal to 0.74, it can be said that 74% of the total variance and scatter of the hyperactivity variable is explained by the effects of the group.

Multivariate analysis of covariance (MANCOVA) is used to measure the effect of play therapy on hyperactivity components. The results are as follows: To test this hypothesis, multivariate analysis of covariance (MANCOVA) was used. First, the results of the M-box test were checked to ensure that the same assumption of a variance-covariance matrix was not violated. If the significant value of the M box is greater than 0.001, this assumption is not violated (Palant, 2007; translated by Rezaei, 2010). As Table 3 shows, the significance value is greater than 0.001. Therefore, this assumption has not been violated.

**Table 3.** Results of the same hypothesis test of the variance-covariance matrix

Box's M	F	Df1	Df2	Significance
11.74	1.72	6	5680.30	0.11

The results of Mancova analysis on post-test scores of the dimensions of hyperactivity in the experimental and control groups are presented in Table 4.

As can be seen in the table above, the significance levels of all tests indicate that there is a significant difference between the experimental group (play therapy) and the control group in at least one of the dimensions of hyperactivity ( $p < 0.05$ ). Therefore, this research hypothesis is also confirmed. In other words, play therapy affects improving the dimensions of hyperactivity in primary school children with hyperactivity and has improved the dimensions of hyperactivity in the experimental group. The effect or difference is equal to 0.77. In other words, 77% of individual differences in the scores of the hyperactivity dimensions of the experimental group are related to the effect of play therapy.

**Table 4.** Results of MANCOVA analysis on the mean scores of the dimensions of hyperactivity

Test name	Value	F	Df Hypothesis	DF Error	Sig	Squared eta	Test power
Pillay effect	0.97	358.039	3	23	0.001	0.77	1
Wilks Lambda	0.021	358.039	3	23	0.001	0.77	1
Hotelling effect	46.70	358.039	3	23	0.001	0.77	1
The largest root of zinc	46.70	358.039	3	23	0.001	0.77	1

To find out which dimensions of hyperactivity differ between the two groups, a one-way analysis of covariance was performed in the ANCOVA test, the results of which are shown in Table 5.

**Table 5.** Results of one-way analysis of covariance in ANCOVA text on the mean scores of hyperactivity dimensions of experimental and control students with pre-test control

Variable	Source of change	Total squares	Df	MS	F	Sig	Squared eta
Child behavior in the classroom	Pre-exam	1583.84	1	1583.84	452.22	0.001	0.94
	Group	662.44	1	662.44	189.14	0.001	0.88
	Error	87.55	25	3.50			
Participation and group cooperation	Pre-exam	41.75	1	41.75	48.24	0.001	0.65
	Group	309.16	1	309.16	357.22	0.001	0.73
	Error	21.63	25	0.86			
Attitude towards power authorities	Pre-exam	39.07	1	39.07	34.96	0.001	0.58
	Group	463.27	1	463.27	414.49	0.001	0.84
	Error	27.94	25	1.11			

As shown in Table 5, by controlling the effect of the auxiliary variable (pretest) on the dependent variable, there is a significant difference between the two groups in terms of all dimensions of hyperactivity ( $p < 0.05$ ). This indicates that there is a significant difference between play therapy and the control group in improving the dimensions of hyperactivity in hyperactive primary school children and has improved and reduced the dimensions of hyperactivity in the experimental group (Table 2). In other words, play therapy is effective in improving all aspects of hyperactivity in hyperactive preschool children in Sirjan.

## Discussion

**Hypothesis:** Play therapy affects improving hyperactivity in hyperactive preschool children in Sirjan.

The results show that by controlling the effect of the auxiliary variable (pre-test) on the dependent variable, there is a significant difference between the two groups in terms of all dimensions of hyperactivity ( $P < 0.05$ ). This indicates that there is a significant difference between play therapy and the control group in improving the dimensions of hyperactivity in hyperactive preschool children in Sirjan and has improved and reduced the dimensions of hyperactivity in the experimental group.

The results of this study with the results of Zare and Ahmadi (2007), Janatian et al. (2008), Mostafavi et al. (2012), Siadatian et al. (2013), Bakhshipour et al. (2013), Ghadampour et al. (2015), Ashin et al. (2016), Murray (2002), Kuh et al. (2008), Wolf et al. (2008), Fifiner et al. (2008) are similar.

In explaining this hypothesis, it can be said that play therapy in children leads to the strengthening of bold behaviors and this increases self-esteem and reduces anxiety. Play therapy is a way by which children express their positive and negative emotions, feelings and emotions (Asli Azad et al., 2012) and establish relationships, self-disclosure, revealing needs and desires. The expression of emotions is expressed in observational behavior in play therapy. Through these behaviors, therapists find out about children's problems and concerns. During the game, children express their problems and why in a symbolic and childish language and find many ways to deal with their challenges and problems, which in turn leads to the power of the problem in children, and this also leads to. In turn, it reduces hyperactivity and anxiety. Play therapy promotes the child and reduces anxiety and related behaviors and internal and external behavioral problems and also increases social adaptation (Drews, 2010).

## Conclusion

Because children have motor activities while playing, and these motor activities are associated with a sense of pleasure, children often engage their whole body and concentration in play, thus helping to increase the power of attention and concentration. Also, play therapy is a restricted mechanism in maintaining the child's interest in therapeutic activities, and play therapy reduces problems such as monotony and reluctance to treatment and increases new skills and more learning (Ghorbani Ashin et al., 2016)

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## References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders Fifth Edition (DSM-5)*. Washington DC: American Psychiatric Association. <https://www.psychiatry.org/psychiatrists/practice/dsm>

Azadi Manesh, P., Khanzadeh, H., Hakim, A.A., Javadi, M., & Watankhah M. (2017). The effectiveness of puppet play therapy on aggression in children with attention-deficit/hyperactivity disorder. *Medical Journal of Urmia University of Medical Sciences*, 28 (2), 90-83. <http://umj.umsu.ac.ir/article-1-3850-fa.html>

Bakhshipour, E., Rahnama, N., Cortijo, H., Eskandari, Z., & Izadi Najafabadi, S. (1392). The effect of aerobic exercise program and group play therapy on

balance in children with attention deficit hyperactivity disorder. *Research in Rehabilitation Sciences*. 9 (2), 170-161. <https://elmnet.ir/export/102868621916?type=endnote>

Barkley, R.A. (2013). *Taking charge of ADHD: The Complete, Authoritative Guide for Parents*. New York: Guilford Publications. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2533839/>

Bek Meysam, N., Al-Hosseini, M., & Abedi, A. (2019). Evaluation of validity and reliability of cognitive-motor function test in attention-deficit / hyperactivity disorder. *Mashhad Paramedical Sciences and Rehabilitation Sciences*, 8 (1): 75-66. doi: 10.22038/jpsr.2019.25981.1692

Castagna, P.J., Calamia, M., & Davis, Y.E. (2017). Childhood ADHD and negative self-statement: Important difference associated with subtype and anxiety symptoms. *J of Behavior Therapy*. doi: 10.1016/j.beth.2017.05.002

Chin Lee, P. (2013). The parent-child intervention of mothers with depression and their children with ADHD. *Research in Development Disability*, 34(1), 656- 668. doi: 10.1016/j.ridd.2012.09.009

Fabiano, G.A., Pelham, W.E., Gang, E.M., Borrows-McLean, L., Coles, E.A., Chaco, A. (2007). The single and combined effects of multiples intensities of behavior modification and methylphenidate for children with Attention-Deficit/ Hyperactivity Disorder in a classroom setting. *School Psychology Review*, 36, 195-216. doi: 10.1080/02796015.2007.12087940

Ghadampour, E., ShahbaziRad, L., Mohammadi, F., & Abbasi, M. (2015). The effectiveness of unguided play therapy on reducing behavioral disorders in preschool children. *Educational Psychology (Psychology and Educational Sciences)*, 11. (38); 127-113. <https://www.sid.ir/fA/Journal/ViewPaper.aspx?id=302675>

Ghorbani, Y., Talebi, Gh. R., Jahandar, B., & Rabbani Zadeh, Ma. (2016). The effectiveness of play therapy on reducing the symptoms of hyperactivity disorder and lack of attention in primary school children. *Development of Jundishapur education*, 7; 58-53. [https://edj.ajums.ac.ir/?\\_action=xml&article=79776](https://edj.ajums.ac.ir/?_action=xml&article=79776)

Janatian, S., Nouri, A., Shaft, S.A., Mawlawi, H., & Samavatian, H. (2008). The effectiveness of cognitive-behavioral play therapy on the severity of ADHD/ Attention Deficit Hyperactivity Disorder in 9-11-year-old male students with ADHD. *Behavioral science research*, 6, (2), 118-109. <http://dorl.net/dor/20.1001.1.17352029.1387.6.2.7.5>

Londres, G.L. (2002). *Play therapy: the art of the relationship*. New York: Brunner \_ Routleder.

Mostafavi, S.S., Poetry, M. R., Asghari, Moghaddam., M.A., & Mahmoodi Qaraei, J. (2012). The effect of play therapy training based on the parent-child relationship according to Landers model to mothers on reducing children's behavioral problems. *Clinical Psychology and Personality (Behavior Scholar)*, 19

- (7), 42-33. <https://elmnet.ir/export/279754-1261?type=endnote>
- Qaderi, N., Asghari Moghaddam, M.A., & Shari, M.R. (2006). Evaluation of the effectiveness of cognitive-behavioral play therapy on aggression in children with conduct disorder. *Knowledge of behavior, Aban*, 13, (19); 84-75. [http://cpap.shahed.ac.ir/article\\_2570.html](http://cpap.shahed.ac.ir/article_2570.html)
- Rabbani Zadeh, M., Victim of Ashin Yasman, Talebi Gholamreza, Jahandar Baharak. The effectiveness of play therapy on reducing the symptoms of hyperactivity disorder and lack of attention in primary school children. *Development of Jundishapur education*, 7, 58-53. <https://www.sid.ir/fa/journal/ViewPaper.aspx?id=277767>
- Raggi, V.L., & Chronic, A.M. (2006). Intervention to address academic impairment of children and adolescents with ADHD. *Clinical Child and Family Psychology Review*, 9, 85-111. doi: 10.1007/s10567-006-0006-0
- Rajabpour, M., Makond Hosseini, Sh., & Rafiei Nia, P. (2012). The effectiveness of parent-child relationship group therapy on aggression in preschool children. *Clinical Psychology. Spring*, 4, (1); 74-65. doi: 10.22075/jcp.2017.2080
- Rayan, G.S., Haroon, M., & Melvin, G. (2015). Evaluation of an educational website for parents of children with ADHD. *International Journal of Medical Informatics*, 84(1), 971-981. doi: 10.1016/j.ijmedinf.2015.07.008
- Richards, D., Pillay, J. & Fritz, E. (2012). The use of sand tray techniques by school counselors to assist children with emotional and behavioral problems. *The Arts in Psychotherapy*, 39 (5), 367-373. doi: 10.1016/j.aip.2012.06.006
- Siadatian, S.H., Abedi, A., & Sadeghian, A.R. (2013). The effectiveness of play therapy on improving visual attention in students with learning disabilities spelling. *Disability studies*, 3 (3). <http://dorl.net/dor/20.1001.1.23222840.1392.3.3.2.8>
- Stulmaker, H.L., ^ Ray, D. C. (2015). Child-centered play therapy with young anxious children: A controlled trial. *Children youth serv Rev*, 127-133. doi: 10.1016/j.chilyouth.2015.08.005
- Zare, M. & Ahmadi, S. (2007). The effectiveness of cognitive-behavioral play therapy in reducing children's behavioral problems. *Thought and Behavior (Applied Psychology). Spring*, 1, (3) 28-18. <https://www.sid.ir/fa/journal/ViewPaper.aspx?id=127924>