

## Original Article

## The Effectiveness of Cognitive-Behavioral Play Therapy on Anxiety and Academic Achievement among Children with LD

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### Abstract

**Introduction:** The slow progression of academic achievement is one of the symptoms of children with learning disabilities (LD), which can be regarded as an obstacle to achieve educational goals along with anxiety. Play therapy is a way of changing the behavior of the child that is based on the interaction between parents and the child. This aim of the study was to investigate the effectiveness of cognitive-behavioral play therapy on reducing the anxiety and academic achievement of children with LD.

**Methods:** In a double blind randomized clinical trial, 30 students with learning disabilities were randomly selected through targeted method and were assigned into two experiment and control groups through completely randomized blocks method. Play therapy was presented based on Landreth's protocol to the experimental and the control group received merely the training of motivational skills. Subjects were evaluated in two time intervals of pre-test and post-test by the Spence Children's Anxiety Scale and three mathematical, dictation, and Persian courses. Data were analyzed by covariance analysis through SPSS software.

**Results:** Primary outcomes indicated that play therapy was effective in reducing the anxiety index. Also, secondary outcomes indicated intervention based on play therapy was associated with increased academic performance ( $p < 0.000$ ).

**Conclusion:** These results can be of importance in influencing psychological interventions as an independent or complementary approach along with other therapies in children with special needs.

**Declaration of Interest:** None.

**Key words:** Play therapy, Anxiety, Academic achievement, Learning disabilities.

### Introduction

In recent years, by expanding the study of childhood and overcoming the evolutionary approaches in modern psychiatry and

psychology, promising areas have been opened up to researchers in this field (1). In the past, it has been believed that children's problems are an aspect of growth process that is transient.

But, the continuation of these symptoms until adulthood, was a warning to researchers in this field.

Today, psychiatric pathology tends to look for the bases of forming childhood trauma, moving from diagnosis to developmental explanations. The basis for forming the early intervention in the field of psychiatry can be believed to be the importance of prevention in youth populations. Early interventions for cognitive impairment in children are often interactive and therapeutic play (1).

Students with learning disabilities account for more than half of all students with special needs. Due to the large number of these students, planning is necessary to identify and help solve problems related to their learning disability (2). Learning disabilities are a group of disorders that refers to the acquisition and use of abilities such as listening, speaking, reading, writing, and doing math problems. This category does not include children who have learning problems and problems for other causes such as blindness, deafness, motion disability, mental retardation, emotional distress, and lack of appropriate cultural and economic environment. Students with learning disabilities are less successful than students without learning disabilities with the same age and intelligence levels. These children, despite being physically fit, good height and weight, intelligence and self-help skills, are normal and roughly similar to peers, but when entering school, they are having difficulty in reading, writing, or doing math problems and showing poor academic performance (3). Therefore, one of the early signs of children with learning disabilities is that they are not good in academic achievement.

Students' academic achievement is an important indicator of evaluation in education. In general, society and the education system are interested and concerned about the fate of children, their successful development and their position in the community, and expect students to be advanced and excelled in a variety of aspects, including cognitive dimensions and acquisition of skills and abilities, and also in emotional and personality dimensions (4). Therefore, academic

achievement is a program aimed at evaluating and identifying students, including students with disabilities in learning (5).

In this regard, children with learning disabilities show poor performance in reading, writing, and doing calculations that this poor performance that reduces their confidence and can lead to the development of anxiety. Therefore, anxiety is one of the most commonly found cases in children with learning disabilities and this anxiety is a big obstacle to learning. Children with anxiety have many stresses and concerns, their concerns sometimes reach the extent that the child is unable to perform purposeful activity, make decision and even think about things (6). In the meantime, stressful life events are also considered as a risk factor for childhood anxiety disorders (7).

The importance of early detection of early symptoms and interventions is a progressive nature and the evolutionary nature of this syndrome. Evidence suggests that anxiety syndrome often appears early in life. However, despite the importance of these disorders in childhood, these symptoms are not well known, and the effects of anxiety have been studied only in adolescents, with consequences such as aggression, behavioral problems, depression and substance abuse (8). This past-oriented and consequential-centered vision is now replaced with prospective dynamic attitudes due to change in the early etiology process. Therefore, clear knowledge and understanding of anxiety disorders in early childhood is important for identifying and early and effective interventions during preschool years (9).

One of the effective interventions in reducing the problems of children with learning disabilities is play therapy (9, 10). The play therapy is very effective in recalling the damaging memory of the child in order to familiarize them with fear and anxiety (11). Play therapy skills such as tracking, content retrieval, and reflection of emotions are a way of establishing a parent-child relationship (12). Global program of CBT cure for combating anxiety in children was developed by Bart. The effectiveness of this treatment was

evaluated on a global scale in the form of randomized trials. The effectiveness of this treatment has prompted the World Health Organization (WHO) to recognize it as a solution to children's anxiety and depression symptoms in 2004 (1). Cognitive-behavior therapy based on anxiety prevention program has been carried out in Europe, North America and Australia (8). The most popular anxiety-prevention program is the FRIENDS program, which was first developed in Australia. Cognitive-behavior therapy is used as a series of non-medicated psychotherapy in the treatment of clinical symptoms of anxiety in children and adolescents, and its efficacy has been reported in some studies (1).

The play is the most basic child's tool for communication, and due to this feature, the play can be considered as a tool for therapeutic interventions. The play process allows the child to reveal his or her own experiences or tendencies threatening him or her (13). A play for the child can be a therapeutic approach, since it can overcome the obstacles in expressing feelings of emotion. Play therapy originates from Filial Therapy method of Guerney that presented in 1964 and is based on the fundamental assumption that since the parents have a strong emotional relationship with the child and that the therapists lack it, the existence natural and inherent association between parent and child is the key to efficacy and the results of therapy in parent-child interaction (14).

The cognitive behavioral play therapy, which is one of the direct methods of play therapy, is the combination of traditional techniques of play therapy with behavioral techniques. Studies show that play therapy is effective in developing social skills, problem solving, and other adaptive and compatible cognitive-behavioral strategies and are useful in coping with emotional stress in children with learning disabilities (15). The results of Zorbakhsh et al. (16) show that play therapy are effective in reducing the anxiety and frustration of children with stuttering and coordination in behavior management along with play therapy (home and school) has been shown to be more effective in reducing the severity of these symptoms.

In this regard, Akay and Bratton (17) studied the effect of play therapy on the perfectionism and anxiety of children. The results of this study showed that play therapy is considered as a promising intervention to adjust the perfectionism of the incompatibility of children and to treat anxiety. Blanco et al. (18) investigated the effectiveness of a long-term play therapy on academic achievement with the normal functioning of children. The results of this study showed that 26 sessions of play therapy were associated with academic achievement in the test of children's domination and increased reading ability, mathematics and spoken language. Participants also demonstrated steady progress in improving academic grades. The results of this study indicated that play therapy could be used as an intervention in the academic achievement of first grade students with clinical application. In this regard, a number of studies conducted in Iran showed the effectiveness of play therapy in reducing mood and behavior challenges. Moreover, results of the study by Pirnia et al (8) showed that play therapy reduced the aggression index in all three physical, verbal and relational components in children. Consistent with previous studies, Mikaeili and Haghi (19) studied the effectiveness of play therapy on the improvement of symptoms in children with hyperactivity disorder.

In general, from the point of view of the time, primary school periods are good years to intervene quickly and affect the increase of social skills and popularity among adults (20), the nature of parent-child relationships creates social skills. Children with learning disabilities often face the psychological consequences of their disabilities. The most significant of these consequences can be described as anxiety disorders. In fact, with the experience of anxiety and in the form of a faulty cycle, cognitive, skill and educational functions are damaged. Perhaps the most important point in the application of cognitive-behavioral play therapy is its interactive nature, which allows the child to distance from the purely cognitive treatment protocol and the treatment takes the interactivity and recreational form. Because children with learning disabilities face with

problems in focusing and attention on targeted activities, cognitive-behavioral play therapy can be considered as a useful option for these children. Due to the the existence of a wide range of psychological and behavioral problems in children with learning disabilities and in view of the promising results of play therapy and considering the research gap and the few studies conducted in Iran, the aim of this study was to examine the effectiveness of cognitive-behavioral play therapy on reducing the anxiety and academic achievement of children with learning disabilities. We hope that the results of this study can be used to plan medical programs and early intervention.

### **Methods**

Double-blind randomized clinical trial with pre- and post-test was utilized in this study. Female students with learning disabilities attending primary and secondary school in Tehran on 2017 and 2018 were participated in this study. 30 subjects were selected through targeted sampling method and randomly assigned to two groups of experiment ( $n = 15$ ) and control ( $n = 15$ ). Inclusion criteria were diagnosis of learning disabilities based on DSM-5 criteria, the age range of 8-10 years in children, the age range of 20-45 years for mothers, and the ability to read and write. The exclusion criteria for mothers and children were lack of normal intelligence, more than three months of using psychiatric drugs, and more than 2 sessions of absenteeism in medical sessions.

Play therapy based on the Landert protocol was provided to the experimental group for 10 weekly sessions and the control group received merely the training of motivational skills. Students were unaware of how to assign to a play therapy or motivational group. To achieve this, in parallel with the main treatment for the experimental group, the modified protocol for increased motivation was presented with the number of sessions similar to the play therapy for the control group. Similar to this plan, the coaches of the course were different from collectors and data analyst so that awareness of the allocation of subjects to groups not leads to bias in the results. The subjects were evaluated in two time intervals of pre and post-

test by the Spence Children's Anxiety Scale (SCAS) and assessing three courses of math, dictation and Persian. The data were analyzed by analysis of covariance in the software environment of SPSS 24 (SPSS, Inc., Chicago, IL, USA) and significance was considered as 0.05. All stages of the study were performed after obtaining written consent from parents and based on the latest version of the Declaration of Helsinki (2002 revised version). In this study, a structured clinical interview, Demographic data gathering form, Spence Children's Anxiety Scale and Academic Achievement.

**1. Demographic Checklist:** This questionnaire was developed by the researcher to collect personal information such as parental age, children, and parent education.

**2. The Structured Clinical Interview for DSM-4 (SCID-4):** It is a clinical interview that is used to diagnose axial disorders based on DSM-IV. The reliability coefficient for assessors for SCID is reported to be 60% (21). The diagnostic agreement of this instrument in Persian was favorable for most of the specific and general diagnosis with reliability greater than 0.6. Kappa coefficient for all current diagnoses and life expectancy diagnosis was obtained equal to 0.52 and 0.55, respectively (22).

**3. The Spence Children's Anxiety Scale (SCAS):** This questionnaire was designed to evaluate the anxiety of children aged 8-15 years old based on the diagnostic and statistical classification of DSM-IV in 1997 by Spence in Australia. The Spence questionnaire has two versions of the child (45 items) and the parent (38 items). Scoring is based on the 4-degree Likert scale (never (0), sometimes (1), often (2), always (3), and 6 measures of separation anxiety, social anxiety, obsessive-compulsive obsession, panic-phobias, general anxiety, and fear of physical harm. The reliability of this scale for general anxiety is equal to 0.92 and for subscales has been reported equal to 0.62 to 0.82, 0 (Spence, 1998). In the study by Mousavi et al., (2007), the reliability of this questionnaire was reported through Cronbach's alpha of 0.62 to 0.89, and six factors of the questionnaire have

been confirmed by confirmatory factor analysis.

**4. Academic Achievement:** In order to assess the academic achievement index, the grades of mathematics, dictation, and Persian were used in the first and second semester of the students.

**Results**

To analyze the data, analysis of covariance test was used and the effect of pre-test was deleted. Before applying the parametric test of

analysis of covariance, its assumptions were examined. The assumption of normal distribution of the data was evaluated by Shapiro–Wilk test ( $p > 0.05$ ). Also, the results of Leven's test were showed the equalization of variances ( $p > 0.05$ ).

The mean age of children was 8.3 years with a standard deviation of 1.2, and mean age of parents was 37.4 with a standard deviation of 4.3. Also, the highest level of education was belonged to BSc and then diploma.

Table 1: Anxiety and academic achievement scores of subjects in two groups of experiment and control

Variable	Group	Pre-test	Post-test
		Mean (The standard deviation)	Mean (The standard deviation)
Anxiety	Experiment	10.33 (1.91)	7.33 (1.23)
	Control	15.73 (1.27)	15.13 (1.64)
Academic achievement	Experiment	13.73 (1.48)	16.53 (1.91)
	Control	13.25 (1.22)	13.50 (1.23)

As shown in Table 1 the mean scores of students in the control group in the pre-test stage of anxiety and academic achievement are 15.73 and 13.25, respectively. These scores in the post-test are 15.13, 13.50, and the mean

score of the students in the experimental group in the pre-test stage of anxiety and academic achievement is 10.33, 13.73, respectively. These scores in post-test are 5.33 and 16.53, respectively.

Table 2: Results of analysis of covariance on the effectiveness of play therapy on anxiety and academic achievement

Variable	Group	Root squares	Degree of freedom	Mean squares	F	Significance level
Anxiety	Pre-test	11.040	1	11.040	7.447	0.011
	Group	252.300	1	252.300	170.189	0.000
	Error	40.027	27	1.482		
Academic achievement	Pre-test	14.927	1	14.927	41.380	0.000
	Group	58.800	1	58.800	163.004	0.000
	Error	9.740	27	0.361		

As the results of Table 2 show, the difference between the mean of anxiety and academic achievement in the experimental and control groups is significant ( $p < 0.000$ ). These results show that play therapy have been effective in reducing anxiety index and increasing academic achievement.

**Discussion**

This study was conducted aimed to evaluate the effectiveness of play therapy on the anxiety index and increase of academic achievement. The results of this study showed

that the implementation of ten weeks of play therapy intervention was accompanied by a decrease in the level of anxiety and increased academic achievement. In this regard and in line with the results of this study, the results of the research by Pirbbasi and Safarzadeh (23), showed that using group play therapy for 10 sessions of 60 minutes was associated with decreasing behavioral problems and increase memory in female students with learning disability disorder. Also, Zeini et al., (24), in their research, confirmed the effectiveness of teaching play therapy strategies, and showed

that this intervention can be effective on spelling problem of students with learning disabilities and improved their performance in this field of study. Also, in line with the results of this study, the results of Zarbakhsh et al., (16) and Najafi and Sarpoolaki (25) show that play therapy improved the symptoms of various learning disabilities, such as spelling learning disability, attention deficit / hyperactivity disorder and improving the social abilities of students.

Blanco et al. (26) conducted a research aimed to investigate the effectiveness of the child's play therapy on the performance of anxiety and academic achievement, and found that elementary students who received play therapy showed a significant increase in academic achievement and anxiety reduction compared to the control group. Also, Guerney (27), in his research by emphasizing the extent of the effectiveness of play therapy in improving the educational status of children with learning disabilities, hyperactivity, mild intellectual disability, showed that play therapy, in addition to improving academic status, can reduce anxiety in children. The results of this research are similar to the results of Blanco et al., (18).

In explaining the results of this study, it can be acknowledged that the play therapy it creates a safe environment for the gradual expression of tensions, insecurity, aggression and suppressed fears (25). From this perspective, the child can be confronted with anxiety by correct confrontation with issues that have caused him anxiety and stress (23). The research findings of Yaghoubi et al., (28) confirmed the above hypothesis and showed that the play significantly reduced the apparent anxiety and adaptation to the environment in children, and regular and scientific play therapy were effective in removing hidden children's anxiety.

On the other hand, many studies have shown that play therapy, by improving visual, auditory and verbal skills, improve the focus on learning environments and, in particular, achievements in courses such as dictation and Persian. Reading and writing requires a lot of abilities, including visual accuracy,

phonological awareness, phonological memory, and naming speed (29). Baggerly and Parker (30) showed that play therapy improves the skills of children by improving these skills, including attention and visual skills. Strengthening visual skills and improving visual memory in children can help the child to pay attention to the writing process and set goals for this activity, learn the correct patterns for spelling and use it for self-correction. Also the skills learned in other situations and, by increasing the sense of self-confidence in children, help self-management in the educational environment (31).

Finally, play by creating an environment for expressing children's feelings freely can help children to use the symbols in the play environment to find solutions to their problems in the real world, and by controlling and modifying external events, find a way to manipulate their surroundings (25). Additionally, problem-solving experiences will help children to apply these skills to the real world. In this regard, the research by Bakhshayesh and Mirhosseini (32) showed that play therapy is effective in increasing the children's awareness about their problems, learn how to deal with conflicts correctly, maintain consistent attention during play and reduce symptoms of arousal, increase the mathematical scores of children with a lack of attention disorder and can be used as an effective way to improve the educational performance of these children.

In this regard, and in confirming the effectiveness of cognitive-behavioral play therapy on psychological components, Bana et al. (33) studied the effectiveness of this intervention on self-esteem index in children with intellectual disabilities and the results showed that cognitive-behavioral play therapy had a significant effect on increasing self-esteem in these patients. Also, the findings of Ghodousi et al. (34) showed that cognitive-behavioral play therapy is associated with decreasing aggression syndromes and extracted behaviors in street and work children.

In general, it can be acknowledged that play therapy increase the interest of students in

learning, and this approach can be associated with clinical applications. It is suggested that examining other play therapy methods make additional research into the broad dimensions of learning disability.

This study was accompanied by some limitations in the implementation process. Due to the limited sample in the second and third grade students with learning disabilities in primary and secondary school, the generalization of the results is not possible to other groups, and the lack of follow-up of therapeutic changes due to time constraints can be cited by the limitations of this study. It is suggested that future studies along with the paper and pen tool should be used to evaluate the efficacy of the treatment through biological evaluations. Also, a clinical trial in boys with specific needs can be a good route for future studies.

The outcomes of this study showed that the implementation of ten weeks of play therapy intervention was accompanied by a decrease in the level of anxiety and increased academic achievement. These results can be of importance in influencing psychological interventions as an independent or complementary approach along with other therapies in children with special needs and with clinical implications.

### **Conflict of interest**

The authors declare that there is no conflict of interests.

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