

A Comparison of the Effectiveness of Cognitive-Behavioral and Psychodrama on Executive Functions of Children Aged 7 to 12 Years

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Abstract

Background: A review of research in the field of children shows that with the expansion and deepening of studies on children, in addition to physical development, their emotional-behavioral development has also received more attention. The aim of this study was to compare the effectiveness of cognitive-behavioral and Psychodrama on executive functions of children aged 7 to 12 years.

Methods: The research is pretest-posttest quasi-experimental study with control group and follow-up. It was conducted in the second half of 1398 in Avae Mehr Counseling Center in Pasargad (Fars Province, Iran) Available sampling was administered, based on which 24 children registered at the Avae Mehr Pasargad Counseling Center with the diagnosis of externalized disorder and met the necessary criteria participated in the study. The participants were divided into two experimental groups and one control group (8 individuals each). Cognitive-behavioral and Psychodrama therapies were performed for the experimental groups, but the control group did not receive any special intervention. Cognitive-behavioral therapy protocol was performed in 1-hour sessions during 11 consecutive weeks, once a week; and Psychodrama treatment in 1-hour sessions during 12 consecutive weeks, once a week. The research instruments included of executive functions software (Stroop word color test, and working memory reinforcement test); and the collected data were analyzed using frequency distribution, mean, standard deviation, analysis of variance, and analysis of covariance in SPSS-25 software .

Results: The results of analysis of covariance by modulating the effect of pre-test in post-test showed that there was a significant difference between the three groups in all variables except reaction time in Stroop test. This means that the groups of cognitive-behavioral therapy and psychotherapy had a significant effect on executive function. The results in the follow-up phase also showed that there was a significant difference between the three groups in all variables except the trial time and the number of errors (in the London Tower test), the incorrect number and the reaction time (in the Stroop test). However, there was no significant difference between the cognitive-behavioral and Psychodrama groups on the variable of executive function, meaning that the two therapies did not have different effects on executive function.

Conclusion: Both of the cognitive-behavioral and Psychodrama treatments have been significantly effective in the improvement of the participants' executive functioning. This means that the groups of cognitive-behavioral therapy and psychotherapy had a significant effect on executive function. But the effectiveness of these two treatments does not show a significant difference with each other.

Key Words: Children, Cognitive-behavioral, Executive functions, Psychodrama.

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1- INTRODUCTION

A review of research in the field of children shows that with the expansion and deepening of studies on children, in addition to physical development, their emotional-behavioral development has also received more attention (1). Cognitive Behavioral Therapy (CBT) is a short-term psychotherapy in which people are educated to change their feelings and behaviors by changing their thought patterns and beliefs. In fact, the basis of cognitive behavior therapy is that the type of thinking and thought patterns, our knowledge of the environment and ourselves, and of course our personal interpretation of life events cause our behaviors and feelings, and in general, we feel in accordance to our thoughts, and so our behaviors are shaped in proportion to the same thoughts and feelings (2). Cognitive behavioral therapy is also a Psychodrama approach, which targets dysfunctional emotions and maladaptive cognitive behaviors, processes, and themes through a number of systematic, explicit, and purposeful approaches. This method refers to behavioral therapy, cognitive therapy and a combination of the two based on the basic principles of behavioral and cognitive research. It deals with problems such as anxiety and depression based on a set of cognitive and behavioral methods. This methodology acknowledges that there may be behaviors that cannot be controlled through rational thinking (3).

Another intervention that can be effective in improving executive functions is Psychodrama treatment. Theatrical psychotherapy is a type of group psychotherapy that aims to promote coherence in cognitive structures about emotional experience in a theatrical play (4). In other words, this treatment is a kind of emotional discharge that reopens a

specific person's personality problems and presents some aspects of his/her life, showing his/her role in interpersonal relationships to the audience. In Psychodrama, past events with their fears and future with their hopes are transferred to the present and solved (5).

Psychodrama treatment combines cognitive analysis with experimental and action dimensions. In practice, implementing interpersonal interaction in a problem, involving the body and mind with an event which is taking place in the present, conveys ideas and feelings to a person's level of awareness that are not conveyed in the case of mere talking about that issue. Non-verbal aspects not only have an effect on the quality of the relationship, but also are clues to the underlying motivations and attitudes (6).

On the other hand, one of the variables that is affected by cognitive-behavioral and Psychodrama therapies and can play an effective role in improving the lives of children with disorders is executive functioning. Executive functions are among the forces that exist in the child from birth and they grow with the growth of the child, and at the age of 12, the executive functions of the child have the same functions as adults (7). The executive function has different tasks and roles that affect all people of all ages and genders according to their age, power of functions, and health of functions in life. In fact, this force, which is considered as a cognitive construct, deals with tasks such as problem solving, attention, reasoning, organizing, planning, memory, inhibitory control, impulse control, and preservation, provocation, and response inhibition. As a result, defects and disorders in this area are impaired in daily functions (8). Processes such as concentration, attention, planning, control of thoughts and behavior,

organization of reasoning and memory are among the cognitive functions through which human beings can have intelligent activities (9).

Few studies have examined the effectiveness of cognitive-behavioral and Psychodrama therapies on children's executive functions. For example, Rezaei Sharif et al. (2016), in a study showed that play therapy has no significant effect on improving the planning process of students with learning disabilities (10). Davari (2015) in a study on 40 children with ADHD Kinesthesia showed that an integrated family-centered cognitive-behavioral and motor therapy significantly affected the clinical symptoms and executive functions of children with the disease (11). Parhizkar et al. (2013), in a study entitled "The effectiveness of on improving executive actions of people with attention deficit / hyperactivity disorder", showed that the experimental group compared to the control group, significant improved in executive actions of time management, planning and organization, Showed self-motivation and emotional self-regulation (12). Shubina (2016) demonstrated that cognitive-behavioral therapy reduces behavioral problems in children patients with behavioral disorders (13). Akyurek et al. (2019) investigated the effect of cognitive therapy on executive functions and work routine in children with dyslexia. The results revealed that cognitive therapy is effective in their executive functions and work routine (14) Mak et al. (2019) reported that computer-based cognitive education is effective for dysfunction in schizophrenia (15). Due to the importance and role of comparing the effectiveness of cognitive-behavioral and Psychodrama therapies on the executive functions of children aged 7 to 12 years, the present study aimed to compare the effectiveness of these therapies on the executive functions of children in this age group.

2-MATERIALS AND METHODS

2-1. Study design and population

The present study is a pretest-posttest quasi-experimental research performed with a follow-up plan and a control group to compare the effectiveness of cognitive-behavioral and Psychodrama therapies on children's executive functions. For this purpose among children 7 to 12 years old referred to Ava Mehr Counseling Center of Pasargad who was referred by a psychiatrist of the hospital Were selected for diagnosis of externalized disorders.

Due to the fact that some clients did not want to participate in the research project and also some of them due to the severity of the problems - according to the psychiatrist - needed immediate treatment and medication, the 24 remaining children with the externalized disorder were selected as the available sample. The samples were randomly divided into three groups of cognitive-behavioral therapy intervention (n=8); Psychodrama intervention (n=8 and control group (n=8).

2-2. Instruments: validity and reliability

2-2.1. The Stroop Color and Word Test

The Stroop Color and Word Test (SCWT) was first developed in 1935 by Ridley Stroop to measure selective attention and cognitive flexibility (16). This test has been used in various studies in various clinical groups to measure the ability of preventive response, selective attention, cognitive variability and cognitive flexibility. This test, which is performed by a computer, consists of two steps as follows: First step- naming the color: In this step, the subject is asked to specify the desired color in a color set (for example, the color of a circle shown in four colors red, blue, yellow and green). The purpose of this step is only to practice, recognizing the colors and the location of the keys on the keyboard, and the final result has no effect. The second stage is the main stage of the Stroop test. At this stage, 48

matching color words and 48 matched-color words with red, blue, yellow and green colors are displayed to the subject. Matched-color words mean that the color of the word is the same as the meaning of the word. For example, the word green, which is indicated by green. Unmatched words mean that the color of the word differs from the meaning of the word, for example, the word green, which is indicated by red, blue, or yellow. A set of 96 matched and unmatched colored words is displayed randomly and sequentially. The subject's task is to determine only the appearance of the words, regardless of the

meaning of the words. The presentation time of each stimulus on the screen is two seconds. Researchers believe that the color-word task measures mental flexibility, interference, and response inhibition. In order to score and interpret the results of this test, three numbers of errors, correct number and reaction time are calculated separately for the groups of matched and unmatched words. An interference score called a "time interference error" is commonly estimated to more precisely interpret the test results. It is calculated as follows:

Time interference error = (The reaction time of unmatched words) – (matched words reaction time)

In a study by Malek et al. (17), based on the number of errors reported by the retest method, the validity was reported as 0.3. In the present study, the internal consistency coefficient was 0.76 by Cronbach's alpha test.

2-2-2. The N-back task

The N-number back test is a cognitive function task related to executive functions. It is commonly used in neuroimaging studies to stimulate subjects' brain function. This test was first introduced by Kirchner (18). The general procedure of the task is that a sequence of stimuli (usually visual) is presented to the subject in a step-by-step manner, the subject should check whether the current stimulus is compatible with the stimulus presented N step before. This experiment is performed with different values of N and by increasing the amount of N, the difficulty of the task increases. Thus, in the back-1 task, the last stimulus presented is compared to the previous stimulus, and in the back-3 task, the last stimulus presented will be compared to the previous 3 stimuli. For example, in the following series of numbers, in back-2 format, the target stimuli are displayed in red: 24818965316454953712946569. Since

this task involves both storing cognitive information and manipulating it. It is known to be very suitable for measuring the performance of working memory and has been widely used in this field in recent years (19). Studies show that different types of this test can be used in laboratory studies on working memory and other cognitive functions such as fluid intelligence. (19)

2-3. Intervention

The 24 children were randomly divided into three groups: experimental I (8 people; with cognitive-behavioral therapy intervention). Experimental II (8 patients; with Psychodrama intervention) and control group (8 patients; no intervention).

All participants responded to the items of the executive functions software (Stroop word color test, Active Memory Boost Test, Wisconsin Card Classification Test, and Tower of London Test) in 60 minutes (with resting breaks) under the supervision of a researcher. It should be noted that the Achenbach child behavior questionnaire was filled in by the parents; and the researcher entered and analyzed it in the software. The software was distributed among all three groups and after 3 months,

a follow-up test was performed in all groups including the control group, although they had not received any treatment.

a) The treatment protocol of the Cognitive-Behavioral Group: To perform the cognitive-behavioral

intervention, an 11-session intervention was administered using a treatment protocol developed based on a combination of back cognitive therapy (20) and Alice's rational-emotional therapy (21).

Table-1: The treatment sessions of the cognitive-behavior intervention

Meeting	Target	Content of training sessions
First session	Introduction	In this session, while introducing and familiarizing the members of the child group with each other and introducing the rules of the group, we will try to create a safe and appropriate environment for the subjects and encourage them to cooperate. After that, positive and negative thoughts, A.B.C training, and general familiarity with cognitive-behavioral therapy are explained, and then homework assignments will be identified.
second session	Thoughts, feelings, and what you do	Talking about the thoughts and feelings and the works that the child is doing, teaching how to replace fruitful thoughts, the practical work of the magic circle, the negative trap, and testing the if / after, what I think, what I do or how I feel. Finally, homework will be specified (through drawings and worksheets).
third session	Automatic thoughts	Thoughts and feelings, sadistic thoughts, good thoughts about ourselves, good and beautiful thoughts about my future, unpleasant thoughts about myself, worrying thoughts about what I do, what others think, playing cat-mouse and dog- cat thinking through painting And worksheets.
fourth Session	Mistakes in thinking and recognizing them	Mistakes, pessimism, black and white thinking, magnifying negatives, snowballs, not having positives, expecting failure, mind reading, fortune telling, emotional reasoning, trash tag, blame me, and wrong goals that lead to failure (through drawings and worksheets).
fifth meeting	Balanced thinking	Search for evidence, best friend, challenge, support, and fruitful thoughts. Balanced thinking, conflicting evidence, supporting evidence, thoughts, thermometer of thought (through drawings and worksheets)
Sixth Session	Basic beliefs	Identify basic beliefs, challenge basic beliefs, common beliefs, and measure thoughts (through drawings and worksheets).
Seventh session	Behavior control	Test your thoughts and beliefs, challenge the mind, search for positives, confrontational self-talk, worry safely, turn off the tape, practice success, stop thinking (through drawings and worksheets).
Session 8	how do you feel	Thoughts and feelings, activities and feelings, word search by the finder of emotion, where does the emotion go, my feelings and its color, what happens when I am sad, what happens when

		I am angry, what happens when I am anxious, what happens when I'm happy, emotions and places, emotion thermometers (through drawings and worksheets)
The ninth session	Emotion control	Strong emotion rooms, rebellious volcano, relaxation training, my relaxation place, my calming activities (through paintings and worksheets)
The tenth session	Changing behavior	Daily diary of activities, climbing ladders, things that make me feel good, things that make me feel uncomfortable, things I like to do, face my fears, small steps, throw your habits away (through drawings and worksheets)
Session Eleven	Learn problem solving	Why Problems Happen, Identify Possible Solutions, Use Others' Solutions, What are the consequences of my solutions, Search for solutions, Talk to yourself about doing work, Stand, Plan, Move traffic light). (Through drawings and worksheets)

b) The treatment Protocol of the Psychodrama intervention: To perform Psychodrama interventions, a 12-session

intervention based on Mourinho's theory of Psychodrama theory (22) was performed.

Table-2: The treatment sessions of the Psychodrama intervention

Meeting	Target	Content of meetings
First session	Introduction	Besides introducing and acquaintance of the group members with each other, some explanations were provided about Psychodrama, the purpose of the group, its elements, methods, time, and the rules of the group.
second session	Color-memory	In this meeting, an effort was made to make the group members pay more attention to their relationships with each other and try to get to know their group members. In this way, one of the moments of the subject's life should be given a color of his choice and he should express that moment for his friends. Here, the subjects are asked to talk about that memory and give it a special color and express their feelings about that memory.
third session	Build trust and perform expression cultivation exercises	The warm chair technique was used in such a way that the chairs were arranged in a circle towards the wall. Subjects were asked to sit on the chairs so that none of them will see each other. Everyone should be in complete silence. At the request of the director, one of the subjects told some words (grandfather, forest, summer, etc.), and the others explained their feelings or memories about those words.
fourth Session	Awareness of your own and others' emotions	The technique of walking with closed eyes was discussed. In fact, this exercise helps to build the subject's confidence. In the rehearsal, the subjects are asked to play the stories they told in the previous session in a dramatic way, and again after the end of the play, the others criticize and analyze the behavior of the people who were in the play.
fifth meeting	Familiarity with body	The hidden behind technique was performed. In this meeting, changes were made in the meeting space. The lights were turned off

	language	and each subject was asked to stand individually behind the designated position. His other friends and teammates were then asked to talk about their friend's good and bad behaviors.
Sixth Session	Use non-verbal methods to be aware of emotions	In this session, a part of the inner mate technique was implemented. In this technique, a person stands behind the protagonist (the main character) as if he has become a part of him and implicitly states something on the stage. It seems to be a new feeling or thought that has happened to him. When he speaks twice, he must use a special tone in his speech, as if it is the sound of conscience or the inner speech of the main character.
Seventh session	Encourage members to recount their problems in the form of role-playing	The empty chair technique was used. This technique uses an empty chair, for example, one of the subjects is asked to work on a problem he has with family members or close friends. In such a way that the subject should put his mother on a chair and talk to her. The subject is asked to describe the person and how he / she sees him (by stating the objective and physical details). Such expressions provide the necessary excitement and a natural bridge between the person and the subject, and now he can address the empty seat and make complaints to the person in question.
Session 8	Encourage members to recount their problems in the form of role-playing	The method of sociometry was discussed. It is actually a live image. Instead of being represented by a circle on a piece of paper, the child actually sits or stands in the center and expresses how he or she feels about each member of the family. By placing the group members at a distance from him, he shows (distance and closeness). Meanwhile he tells each member a famous sentence that the person says more at home and then has a conversation with them.
The ninth session	Skills in expressing emotions verbally	The technique of rhythm was applied. The director claps his hands with a simple 2-1 rhythm. He asks the person standing next to him to repeat it and add something to it. They move around the room until the last person repeats the whole sequence of rhythm.
The tenth session	Behavioral training	In this session, the technique of masks was discussed. All subjects were asked to come together and help make the masks. Smileys with colored paper were designed on the masks, with the help of the director and their own opinion. This activity stimulates creativity in itself and helps the group to cooperate. Masks can reveal every basic human characteristic. Masks are especially useful for discovering and searching for the contradictions that exist in the human condition: youth, Aging, seriousness, stupidity, ugliness, beauty, meanness, kindness, coldness, warmth.
Session Eleven	Skills in non-verbally expressing emotions	In this session, the mind- or self-realization technique was used, in which a person, with the help of his helping selves, attempts to show his ideal plans for life, depict his ideals and objectify the world. He has used his mind or self-realization.
Session Twelve	Communication skills	The technique 5 years later was used. All subjects were asked to imagine the physical and mental condition of one of the members in the next 5 years. In fact, the image of the future always reveals human desires, fears and worries. Meanwhile, the main person's own image helps to better understand the possibilities, abilities and mental limitations of the main person.

2-4. Ethical consideration

This article is taken from the doctoral dissertation of the first author in the field of general psychology with the confirmation number 106206606772051/98 from the Vice Chancellor for Research, Faculty of Psychology and Educational Sciences, Islamic Azad University, Arsanjan Branch.

2-5. Inclusion and exclusion criteria

Inclusion criteria were as follows: The subject's being in the age range of 7 to 12 years; being diagnosed with the symptoms of externalized disorder, at the time of the study; not having any other disorders such as visual or hearing impairment, no psychiatric problems and diseases affecting cognitive functions, and no chronic physical diseases; not having received any psychological treatment in the past to treat emotional and academic problems; not being treated with psychiatric drugs; His life having had a normal course from 6 months before the research without the occurrence of a special event or incident that is considered as a crisis in life, such as the death of a

loved one, incurable disease in family members, change of residence, or severe parental disputes. Parents of the subject should have consented for their child's participation in the study.

Criteria for excluding subjects from the study included absence of more than two sessions in therapeutic interventions; unwillingness of the parents or subjects themselves to continue the intervention process; failure to complete the softwares in different stages of the research.

2-6. Data Analyses

In order to describe and analyze statistical data in this study, descriptive statistics such as mean and standard deviation were used and at the level of inferential statistics, analysis of covariance was applied. It should be noted that all calculations were performed by SPSS-25 statistical software.

3- RESULTS

In this section, the analysis of findings is presented in the form of descriptive statistics.

Table-1: Frequency distribution of demographic characteristics of experimental and control groups

Property		Cognitive-behavioral group (8 people)		Psychodrama group (8 people)		Control group (8 people)		Chi-square test
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	
Gender	Girl	5	62.5	0.789	50	5	62.5	0.789
	Boy	3	37.5		50	3	37.5	
Age	7 to 8 years	2	25	0.852	25	2	25	0.852
	9 to 10 years	4	50	3	37.5	3	37.5	
	11 to 12 years	2	25	3	37.5	3	37.5	

According to the descriptive findings in **Table 1**, in the cognitive-behavioral group,

25% were between 7 and 8 years of age, 50% between 9 and 10 years, and 25%

between 11 and 12 years. In the Psychodrama group, 25% were between 7 and 8 years, 37.5% between 9 and 10 years, and 37.5% between 11 and 12 years. In the control group, 25% were between 7 and 8 years, 37.5% between 9 and 10 years, and 37.5% between 11 and 12 years of age. Moreover, in the behavioral

cognitive group, 62.5% were girls and 37.5% boys. In the Psychodrama group, 50% were girls and 50% boys. In the control group, 62.5% were girls and 37.5% boys.

The mean and standard deviation of research variables in the three groups are presented in **Table 2**

Table-2: Mean and standard deviation of the studied variables in the experimental and control groups in pre-test, post-test and follow-up

variable	Phases	cognitive-behavioral	Psychodrama	Control
		Mean ± SD	Mean ± SD	Mean ± SD
memory reinforcement test	pre-test	57.62± 14.62	54.25±16.23	59.37±6.59
	post-test	65.50± 15.98	62.37±13.28	58.50±8.34
	follow-up	63.62± 15.32	63.25±11.63	58.62±8.36
Stroop test	pre-test	4.50±3.42	3.87±4.09	4.87±5.22
	post-test	1.50±1.19	1.62±2.07	5.25±4.83
	follow-up	1.56±1.51	1.87±1.25	5±4.07

According to **Table 3**, multivariate analysis of covariance (MANCOVA) showed a significant difference between the experimental and control groups in at least one of the dependent variables. **Table 4** shows the analysis of covariance

(ANCOVA) results for post-test scores for the dependent variables.

As shown in **Table 4**, there was no significant difference between the experimental and control groups in terms of memory enhancement and strope as a dependent variable.

Table-3: Results of multivariate analysis of covariance in the post-test stage

Variables	Value	df	F	P- value	η ²
Pillai's Trace	0.62	4	4.29	0.006	0.31
Wilks Lambda	0.38	4	5.49	0.001	0.38
Hotelling's Trace	1.57	4	6.69	0.001	0.44
Roy's Largest Root	1.56	2	14.83	0.001	0.61

Table-4: Results of analysis of covariance in the post-test stage

Dependent variable	Source	SS	df	MS	F	P	η ²
memory reinforcement test	group	353.28	2	176.64	9.07	0.002	0.49
Stroop test	group	53.79	2	26.89	11.07	0.001	0.54

As shown in **Table 5**, the difference between the mean of the cognitive-behavioral group and the control group in

the memory variable is 8.41, which is significant at the level of 0.004. This finding indicates that cognitive-behavioral

therapy has been effective in improving children's memory.

Table-5: Bonferroni post hoc test for pairwise comparison of memory reinforcement test and Stroop test in post-test stage

Variables	groups	Mean difference	SE	P-value
memory reinforcement test	Cognitive behavioral- Psychodrama	0.36	2.23	1
	Cognitive behavioral - Control	8.41*	2.21	0.004
	Psychodrama - Control	8.06*	2.26	0.006
Stroop test	Cognitive behavioral- Psychodrama	0.61	0.79	1
	Cognitive behavioral - Control	3.47*	0.78	0.001
	Psychodrama - Control	2.86*	0.80	0.006

The difference between the mean of the Psychodrama group and the control group in the memory variable is equal to 8.06 which is significant at the level of 0.006. This finding shows that Psychodrama treatment has been effective in improving children's memory. Also, the difference between the mean of Psychodrama and cognitive-behavioral groups in the memory variable is 0.36, which is not significant at the level of 0.05. This finding reveals that there is no significant difference between the cognitive-behavioral and Psychodrama groups on the memory variable, showing that the two treatments did not have different efficacies in the improvement of this variable. The difference between the mean of cognitive-behavioral group and control group in the executive function variable is 3.47, which is significant at the level of 0.001. This finding indicates that cognitive-behavioral therapy has been effective in improving children's executive function. The difference between the mean of the Psychodrama group and the control group in the executive function variable is 2.86, which is significant at the level of 0.006. This finding indicates that Psychodrama therapy has been effective in improving children's executive function. Also, the difference between the mean of cognitive-behavioral and Psychodrama groups in the executive function variable is

equal to 0.61, which is not significant at the level of 0.05. This finding shows that there is no significant difference between the cognitive-behavioral and Psychodrama groups on the executive function variable. This means that the two treatments did not have different efficacies in the improvement of this variable.

As demonstrated in **Table 6**, multivariate analysis of covariance (MANCOVA) showed a significant difference between the experimental and control groups in at least one of the dependent variables. **Table 7** shows the ANCOVA results for the follow-up scores for the dependent variables.

The findings, in **Table 7**, showed a significant difference between the experimental and control groups in terms of memory enhancement and Stroop as a dependent variable.

As can be seen in **Table 8**, the mean difference between the cognitive-behavioral group and the control group in the follow-up stage in the memory variable is equal to 6.20, which is significant at the level of 0.004. This finding suggests that the effectiveness of cognitive-behavioral therapy on improving children's memory has continued. The mean difference between the display group and the control

group in the memory variable is 8.20, which is significant at the level of 0.006.

Table-6: Results of multivariate analysis of covariance in the follow-up stage

Variables	Value	df	F	P- value	η^2
Pillai's Trace	0.69	4	5.04	0.002	0.35
Wilks Lambda	0.36	4	5.93	0.001	0.40
Hotelling's Trace	1.60	4	6.80	0.001	0.44
Roy's Largest Root	1.50	2	14.21	0.001	0.60

Table-7: Results of analysis of covariance in the follow-up phase

Dependent variable	Source	SS	df	MS	F	P	η^2
memory reinforcement test	group	282.06	2	141.03	8.65	.002	.48
Stroop test	group	46.77	2	23.38	8.24	.003	.46

Table-8: Bonferroni post hoc test for pairwise comparison of memory reinforcement test and Stroop test in the follow-up stage

Variables	groups	Mean difference	SE	P-value
memory reinforcement test	Cognitive behavioral-Psychodrama	2	2.04	1
	Cognitive behavioral Control	6.20*	2.02	0.004
	Psychodrama Control	8.20*	2.06	0.006
Stroop test	Cognitive behavioral-Psychodrama	0.74	0.85	1
	Cognitive behavioral Control	3.29*	0.84	0.003
	Psychodrama Control	2.55*	0.86	0.02

This finding indicates that the effectiveness of Psychodrama therapy on improving children's memory has continued. Also, the mean difference between psycho-visual and cognitive-behavioral groups in the memory variable is 2, which is not significant at the level of 0.05. This finding shows that there is no significant difference between the cognitive-behavioral and Psychodrama groups on the memory variable. This means that the two treatments did not have different efficacies in this respect. The mean difference between cognitive-behavioral group and control group in the follow-up stage in the executive function variable is equal to 3.29, which is significant at the level of 0.003. This finding indicates that the effectiveness of cognitive-behavioral therapy on improving

children's executive function has continued. The mean difference between the display group and the control group in the memory variable is 2.55, which is significant at the level of 0.02. This finding indicates that the effectiveness of Psychodrama therapy on improving children's executive function has continued. Also, the mean difference between cognitive-behavioral and Psychodrama groups in the executive function variable is 0.74, which is not significant at the level of 0.05, showing that there is no significant difference between the cognitive-behavioral and Psychodrama groups on the executive function variable. This means that the two treatments did not have different efficacies in improving the scores on this variable.

4- DISCUSSION

The purpose of this study was to compare the effectiveness of cognitive-behavioral and Psychodrama therapies on executive functions in children aged 7 to 12 years. The results showed that the mean difference between the cognitive-behavioral group and the control group in the memory variable was 8.41 and the difference between the mean of the Psychodrama group and the control group in the memory variable was 8.06. Demonstration has been effective in improving children's memory and there is no significant difference between the cognitive-behavioral and Psychodrama groups on the memory variable. On the other hand, the difference between the mean of the cognitive-behavioral group and the control group in the executive function variable is 3.47 and the difference between the mean of the Psychodrama group and the control group in the executive function variable is 2.86. The children in both groups have shown improvements in their executive functions and there is no significant difference between the cognitive-behavioral and Psychodrama groups on the variable of this variable, meaning that these two treatments did not have different efficacies in improving memory and executive functions.

The findings of Parhizkar et al. (12) and Akyurek et al. (14) are also in agreement with our results, while those of Kabiri et al. (23), Shubina et al. (13), Mak et al, (15) are inconsistent with ours. These researchers state that cognitive-behavioral therapy emphasizes the important role of thinking in the etiology and persistence of problems, and the goal of cognitive-behavioral techniques is to correct the thought patterns that have played a role in creating patient problems, as well as correcting the problematic behaviors. In this treatment, the principles of conditioning and learning are used. In

other words, the goal of cognitive-behavioral therapy is to teach clients that although they cannot control all aspects of the world around them, they can control how to interpret and deal with things in the environment. On the other hand, the cognitive-behavioral approach includes specific strategies to compensate for important behavioral problems. Problem solving, self-education, documentary retraining, and stress relief training are used effectively to improve behavior. The intervention typically involves teaching children the process of identifying internal and external stimuli as well as the use of internal stimuli such as self-talk, problem solving, and mental imagery (24).

Due to the fact that children with executive functioning problems lack appropriate social skills, they basically have problems in relationships with others. These children have an inappropriate and hostile perception of the situation ahead when dealing with stressful stimuli. They also do not have the ability to use problem solving when confronted with stimuli. On the other hand, the fundamental hypothesis of the Psychodrama style of acting is that acting allows a person to express his problems, to express his emotions, to bring his deep conflicts to the surface, and finally to face them and his environment (25).

Expressing and displaying emotions and receiving the reflection of the therapist and the audience, the externalization and objectification of the clients' imaginations in the Psychodrama and the creation of new realities in the treatment strengthen the individual and adjust his emotional self-control. Some Psychodrama techniques such as mirror techniques and inverse roles make a person more aware of his behaviors and emotions and as a result he can better control his emotions. Given that children with externalizing disorders have negative emotions of which they are unaware, Psychodrama provides an opportunity through which individuals can

re-experience past situations and emotions; That is, by providing a situation, it causes the unspoken and repressed feelings and emotions to be reconsidered and incited by the individual and to be resolved by re-expression and re-experience (26). Psychodrama specifically aim at psychological refinement, trying to clear the mind of what it has provided for the ruminant during the performance phase, and then to find an effective way to deal with it emotionally and cognitively. In fact, Psychodrama provides the ground for re-experiencing the situation with all its cognitive and emotional features. Children with externalizing disorders, due to their negative emotions and poor social functioning, require that the process of forming their emotional responses be carefully examined and that the shortcomings of each of these stages be identified and eliminated with repeated exercises (25).

In cognitive-behavioral therapy, patients are required to follow predetermined patterns in treatment, and if repeated and practiced, the space for improving memory, especially short-term memory and working memory, will increase. Processes such as concentration, attention, planning, control of thoughts and behavior, organization of reasoning and memory, which are the origin of the brain, are among the cognitive functions through which human beings can have intelligent activities (27). Executive functions are among the forces that exist in the child from birth and this force also grows with the growth of the child, and at the age of 12, the executive functions of the child have the same function as in adults. The executive function has different tasks and roles that affect all people of all ages and genders according to their age, power of functions, and health of functions in life. In fact, this force is considered as a cognitive construct (28).

4-1. Limitations

One of the limitations of this study is the lack of control over some intervening variables, including the state of physical health when attending meetings and children's motivation. Therefore, caution should be exercised in generalizing the results. Furthermore, in coordination with the subjects to conduct research and conduct tests at different stages, the researcher was faced with limitations, such occasional bans on attending meetings.

5- CONCLUSION

Both of the cognitive-behavioral and Psychodrama treatments have been significantly effective in the improvement of the participants' executive functioning. This means that the groups of cognitive-behavioral therapy and psychotherapy had a significant effect on executive function. But the effectiveness of these two treatments does not show a significant difference with each other.

Therefore, considering the usefulness of cognitive-behavioral therapy and Psychodrama therapy on improving the executive functions of children with externalizing disorders, and considering the short duration of these interventions, it seems that using these methods beneficial on a wide range of behavioral and cognitive problems, such as autism, ADHD and social phobia. It is also suggested to the officials and managers of medical clinics for children that by providing the necessary funds to activate specialized psychotherapy counseling centers, to expand the possibility of better performing such interventions.

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