

The effectiveness of play therapy in social behaviors of children with autism spectrum disorders

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Abstract

Introduction: The main feature in the diagnosis of autism spectrum disorder is the presence of behavioral patterns, tendencies or challenging behaviors. Challenging behaviors are behaviors that endanger the child or keep him away from social relationships; Therefore, the purpose of this research was to investigate the effectiveness of play therapy on the social behaviors of children with autism.

Research method: The design of the research was semi-experimental and pre-test-post-test with a control group. The statistical population of this research included all children (girls and boys) with autism spectrum disorders aged 6 to 11 years who referred to the Autism Center of Hope for Rehash in Bojnord city, who were selected by available sampling method; The number of subjects was 20 people who were selected by available sampling method and divided into two experimental groups (10 people) and control group (10 people). The measuring tool was the autism symptom rating scale (CARS2, 2013). At first, a pre-test was taken from both groups, and then the experimental group was exposed to the intervention method for 10 sessions, each session lasting 90 minutes. After that, a post-test was taken from both groups and a follow-up phase was done after one month. Multivariate analysis of covariance (MANCOVA) was used to analyze the data.

Results: The results showed that play therapy significantly improves the social behaviors of children with autism spectrum disorder.

Conclusion: Therefore, it is recommended to teach this method to parents, especially to mothers, as well as to families who do not have good financial income or are facing other problems.

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Introduction:

Neurodevelopmental disorders are a group of disorders that occur during development. These disorders generally start early in development, i.e. before school age, and are characterized by developmental defects that cause the destruction of personal functioning; social; They become his education or job. The range of these developmental defects is completely different and starts from a very specific limitation of learning or control of executive function and ends with general defects of social skills or intelligence. Neurodevelopmental disorders often occur together, for example, children with autism spectrum disorders often have mental retardation (developmental intelligence disorder) and children with attention deficit/hyperactivity disorder often have a specific learning disorder as well. Clinical manifestations of some of these disorders include a combination of increased or decreased symptoms and delays in reaching expected developmental milestones. For example, autism spectrum disorder is diagnosed only when social communication deficits with excessive repetitive behaviors; Limited interests and insist on uniformity. (1).

The characteristics of the spectrum of autism disorders include persistent deficits in social communication and social interactions in several different fields, including deficits in bilateral social interactions; non-verbal communication behavior used in social interactions and creating skills; Maintaining and understanding communication. In addition to social communication defects; Diagnosis according to autism disorders requires limited and repetitive patterns of behaviors; Interests or activities. Because these symptoms change with the child's growth and may be hidden by compensatory mechanisms; Diagnostic criteria are determined based on the individual's history. Although the current manifestations of the disorder must have caused obvious destruction.

When a person has one of the autism spectrum disorders, his individual clinical profile is determined using characteristics (with or without intellectual disability; with or without structural language impairment; with a known acquired/genetic or environmental disease) plus there are other characteristics that Symptoms describe the autism spectrum (age when symptoms are first observed; with or without loss of previously acquired skills). These characteristics allow clinicians to individualize the diagnosis of the disease and at the same time provide a more accurate clinical description of the affected individuals. For example, many people previously diagnosed with Asperger's now receive a diagnosis of autism spectrum disorder without intellectual and language deficits (1).

Cases of autism spectrum disorder that are accompanied by a known genetic or medical disease or environmental factor or accompanied by a behavioral disorder; They are psychiatric or neurodevelopmental and are recorded as autism spectrum disorder associated with (disease name; disorder or factor) (such as autism spectrum disorder with Rett syndrome). The severity of the illness should be recorded based on the amount of support needed in each of the two psychopathological domains mentioned (for example, the need for very strong support in the case of deficits in social communication and the need for less support in the case of limited repetitive behaviors). The presence or absence of intellectual impairment or impairment is the

next characteristic to be recorded. After that, the presence or absence of language disorder should be recorded; If there is a language disorder, the current level of verbal performance should be recorded, for example, along with language destruction - lack of speech, the concept of "or" along with language-speech defects, if there is catatonia; It should be registered separately as "catatonia associated with autism spectrum disorder" (1).

Severity characteristics can be used to briefly describe existing symptoms with the explanation that the severity of the disorder will vary in different conditions and will fluctuate over time. Severity of social communication problems and restricted repetitive behaviors should be graded separately. Descriptive categories of severity should not be used to determine a person's eligibility and provide needed services. These issues can only be determined by examining individual preferences and personal preference goals. Considering the characteristic "with or without intellectual disabilities", it is necessary to determine the intelligence profile of a child or adult with autism spectrum disorders to interpret the diagnostic characteristics (this profile is often heterogeneous). Separate assessment of verbal and non-verbal skills is also necessary (such as the use of non-verbal tests without time to assess the potential abilities of people with language limitations) (1).

In order to use the characteristic "with or without accompanying language defects", the current level of verbal functioning of his evaluation should be described. Examples of specific descriptions of "co-language impairments" could include: lack of conceptual (non-verbal) words; only single words; phrasal speech Language level in individuals "without language impairment" should be further described, such as speech in complete sentences or fluent speech. Since in autism spectrum disorder sometimes the development of receptive language is delayed compared to expressive language, receptive and expressive language skills should be evaluated separately (2). The defects of non-verbal communication behaviors that are used in social interactions manifest themselves in the form of lack or reduced use or unusual forms of eye contact (according to cultural norms); gestures; Expression of facial emotions; Body posture and tone of voice show. One of the early characteristics of autism spectrum disorder is the reduction of joint attention, which is in the form of non-pointing; Showing or bringing objects to share one's interests with others. The child does not follow the pointing or the way others look at the objects. Patients may learn some practical gestures, but their reserve is less than others and they are often unable to use spontaneous gestures and gestures in their communication. In adults who have silicic expression; Problems in coordinating non-verbal communication with speech may cause their body language during strange interactions; to appear artificial or exaggerated. Each of these defects alone can be relatively minor (for example, the patient may make relatively good eye contact when speaking), but in social communication, poor integration of eye contact; Gesture; body position; The song of the word and the expression of facial emotions are visible.

These problems are especially evident in younger children; They don't engage in group play and make-believe like flexible age-appropriate pretend play. At older ages, there is an insistence

on games with very rigid rules. Older people struggle to understand what behavior is not appropriate. (such as casual behavior during a job interview) or what are the methods of using language to communicate. Another feature of autism spectrum disorder is repetitive limited patterns of behavior; The person's interests or activities, according to the person's age and abilities; Current therapeutic interventions and supports will have different manifestations. Patterned or repetitive behaviors include simple patterned movements (such as clapping hands, tapping fingers), repetitive use of objects (such as flipping a coin, lining up toys) and repetitive words (echoing words; parroting fast or delayed repetition of heard words; using the pronoun "you" to refer to oneself; using words in a pattern; expressions or tone patterns). Extreme adherence to current routines and restrictive patterns of behavior may manifest as resistance to change (e.g., discomfort with seemingly small changes such as the packaging of a favorite food; excessive insistence on following rules; inflexibility in thinking) with polite verbal and nonverbal behavior patterns. (like repeating questions; looping around a range). The intensity and focus of limited and fixed interests observed in autism spectrum disorder is abnormal. Some cases of repetitive routines or excessive interests can be related to an over- or under-reaction to the patient's sensory inputs, such as intense responses to certain sounds and textures; excessive smelling and touching of objects; frequent interest in luminous or rotating objects; or sometimes obvious indifference to pain; Heat or cold occurs. Overreaction or expression of certain manners to taste; smell; Extreme food shape or appearance or food taste restrictions are common and can be a feature of Autism Spectrum Disorder. (3)

Autistic children can learn many concepts through playing with their healthy peers as well as modeling from their playmates and teacher. They learn very early to imitate and follow the behaviors of their playmates. Healthy people adapt to various situations because they can identify social cues and respond appropriately to them, but people with developmental disabilities face deficits in a wide range of social behaviors (4). These people face unique social challenges in the fields of education, work environment, employment and society; Therefore, it is necessary to improve the social behaviors of autism spectrum disorder in life (5). Research findings also indicate the urgent need of this vulnerable population to provide games in order to improve social behaviors and increase their psychological well-being (6-8). In Iran, among the researches that have been conducted in the field of improving social behaviors for people with autism spectrum disorders; It is possible to refer to the study of Sharifi Amadadi (2012); The results of his study showed that teaching social skills to adolescents with autism spectrum disorders significantly leads to progress in overcoming the emotional deficiency of these adolescents;

Play therapy for children is a unique learning experience, at its most developmentally enhancing, and is therefore approached from a developmental perspective with goals aligned with the school's goals, namely helping children learn about themselves and their world. . Play therapy is an adjunct to the learning environment and experience that helps children maximize

learning opportunities in the classroom. Much of what children learn in play therapy is not cognitive learning, but the growing intuitive experiential learning about themselves that occurs during the therapeutic experience. This type of learning about oneself in the child-centered play therapy relationship is a product of the type of relationship that is facilitated in play therapy (9). The game has a therapeutic aspect because it creates a safe relationship between children and adults. Therefore, the child has the freedom to express himself in his own terms, in his own way and in his own time, the child can learn the correct way of establishing social interactions through group games, drama, etc. (10). Experiences have shown that the effectiveness of these trainings and treatments on autistic children is more effective in an environment such as a play class rather than a place such as a treatment clinic (11). Among the people who have been active in the field of play therapy, the following people can be mentioned. Cox (1953) and Fleming and Snyder (1947) found out with the help of play therapy that playing in a group is very effective in personal and social adjustment. Pele (1972) also pointed out the effect of play therapy on children's social immaturity. Axline (1948) also discussed the effect of play therapy on the improvement of selective muteness in children. Brent (2001) also mentioned the effect of play therapy and children's adaptation (10)

Research method:

The current research was a semi-experimental type under the title of pre-test-post-test design with a control and follow-up group; that the effectiveness of play therapy on the social behaviors of autism spectrum children was implemented on the experimental group for ten sessions and then compared with the control group. After a five-week follow-up period, both groups were tested for the third time. The sample of the research is from Omid Rahish Autism Center with an average age of 6 to 16 years, who received rehabilitation services from this center in 2019 and are high-functioning autism students. The available sampling method was selected and used. In this research, the sample group of 20 people includes 8 girls and 12 boys, 10 people were randomly placed in the experimental group and 10 people in the control group. Before the test, the parents were told that we are going to conduct a research to investigate the effect of play therapy on the social behaviors of children with autism. And they were assured that your written information is completely confidential and will not be shared with anyone. In this study, using the Karz grading scale, the baseline of communication skills was drawn and information in these areas was completed by the special teacher of the students at the autism center. After the completion of the baseline stage, preparations were made for the implementation of the educational program according to the instructions of this program. This institute provides services and research in the field of autism spectrum disorders in cooperation with psychologists, psychiatrists and expert consultants. Before the implementation of the intervention, parents were given information about the program during a meeting. Effective

behavior management strategies including positive reinforcement, redirection, physical proximity, eye contact, hand signals, silence were used. Training sessions were held once a week in groups according to the following schedule. During the implementation of the intervention, the work test was completed again by the teacher of each student. In each session, the content of the sessions was recorded as an audio file and used to make changes and provide the required information. After the end of the training sessions, the Karz test was completed for the students. In order to obtain information in the follow-up phase five weeks after the last evaluation phase, the questionnaire was also completed by the students' teacher

CARS Children's Autism Rating Scale: The above test was prepared by Eric Skopler and his colleagues in 1988 with the aim of evaluating children over two years of age suspected of having autism. One of the major and essential features of this test is that it evaluates the child in comparison with peers and in this case presents the profile related to each child. The examiner observes the child. and also obtains information from parents. A child's behavior is graded on a scale based on behavioral regression compared to age. This test consists of 15 items and each item is graded from normal to severe level. The total score of each item is 1 to 4. Communication with people, imitation, emotional responses, use of the body, use of objects, adaptation versus change, visual response, auditory response, child's response to taste, smell and touch, fear or restlessness, verbal communication, non-verbal communication, activity level , the level and coordination of intellectual responses, general impressions. Each of these criteria receives a score between normal and severe (normal-mild-moderate-severe). This scale is completed by a doctor or therapist or parents based on the child's behavioral characteristics. Scores of 1.5, 2.5, 2.5, 3, 5.3, 4 are given according to behavioral characteristics. This test gives a score between 15 and 60. A minimum score of 30 is required to count autism (Rafei, 2015). The internal consistency of the CARS test is high and has an alpha coefficient of 0.94, which indicates a degree of fifteen scoring criteria that evaluates a single aspect instead of different individual behaviors (11). In this research, descriptive statistics, statistical analysis of variance with repeated measurements have been used. It should be noted that in studies where participants are measured more than two or three times, it is better to use the statistical method of analysis of variance with repeated measurements (Delavar, 2013). In this study, the data were analyzed using spss software version 24.

Summary of play therapy sessions for children with autism spectrum disorder

1		view and interviewing and communicating with the child and completing the Karz questionnaire form (pre - test)
2	Close and open button And putting on and taking off Socks, clothes and shoes	We divide the steps of putting on and taking off clothes into different steps , first with The coach 's help is then done independently .

	standing on one leg	The subject should stand motionless on one leg for 10 seconds, rest for 30 seconds, stand on one leg, then do it with the opposite leg.
3	walking the line	A line or rope is stretched on the ground and the subject tries to get out of them by walking on the lines.
	Mirror activity	The child shows different parts of the body in the mirror and imitates the teacher 's actions in front of the mirror .
	Make bubbles	We make bubbles and the child follows the bubbles and lifts them up
4	catch the ball	The coach throws the ball and the child passes the ball with both hands
	Pass the maze	Mazes are drawn by the teacher and the child passes through the maze with a pencil .
	Make a puzzle	we use a two - piece puzzle , then we add pieces .
5	Fastening and unbuttoning , putting on clothes and taking off socks, clothes and shoes	We increase self-help skills including buttoning and putting on socks using appropriate tools.
6	Imitation of construction with BRICS parts	a Brix piece, the teacher puts the piece in different angles and asks the child to put the piece in the same way .
	Cutting and touching the heel	The child jumps _ He touches his heel with his hand at the same time
7	Performance games	Both the teacher and the child use finger puppets to play the role of doctor and patient .
	riding a horse	The trainer rides on a piece of wood with the child and pretends it is a horse
8	talking on the phone	The teacher and the child start to talk and communicate by phone
	throw the ball	the ball to the child and calls the child's name at the same time
9	Sorting and sorting colored cubes	the colored cubes in front of the child and the child must separate the red cubes from the others.
	Sorting and sorting the cards with pictures of animals and fruits	The teacher asks the child to put the cards of fruits and animals in separate categories
10		Assessing the child using observation and interview and completing the Karez questionnaire (post-test)

Results:

Descriptive data (mean, standard deviation and minimum and maximum score) of research variables are presented in Table 1

Table 1. and descriptive features related to the research variables

Variables	group	Average	Average	standard deviation	most	least
cars	experiment	pre-exam	68/4	28/4	116	31
		post-test	88/8	22/8	138	43
		Follow up	48/6	24/3	133	54
	Control	pre-exam	53/3	20/8	94	22
		post-test	64/2	22/6	106	22
		Follow up	75/8	26/2	111	22

As Table 1 shows , the average And Deviation Standard scores Test cars in the group the experiment At before Test 68/41 and 28/4 in the post - examination of 88/8 and 22/8 At Follow up It was 84/6 and 24/3 . Average And Deviation Standard scores At group Control At before Test 53/3 and 20/8 In the post - exam 64/2 And 22/6 and in follow-up 75/8 and It was 26/2 . To in general Average scores At Scale cars in both group Increase had Is That Of course this Increase scores At group the experiment Ratio To group counter l, More Was e is _Indicators Descriptive related To grades _ small Communication skills scale At Table Presentation number 2 done is _

Table2. and the descriptive features related to the communication skills subscale

Variables	group	Average	Average	standard deviation	most	least
Speech/Language/Communication (communication skills)	experiment	pre-exam	7/4	6/2	21	0
		post-test	11	5/71	23	4
		Follow up	12/6	6/16	25	6
	Control	pre-exam	7/7	5/18	17	1
		post-test	9	5/84	20	1
		Follow up	10	6/04	21	2

As Table No. 2 shows , the subscale of communication skills has increased in both groups, although this increase in scores was greater in the experimental group than in the control group; Thus, the average scores The subscale of communication skills in the experimental group in the

pre-test 4.7 in the post-test 11 And it is in follow-up on 12/06. The average scores in the control group are 7.7 in the pre-test, 9 in the post-test and 10 in the follow-up.

Table3. Summary of the results of repeated measures analysis of variance related to the effect Game therapy in social behaviors on the research variable

The dependent variable	sum of squares	df	mean square	f	p	Effect size
cars	268/44	2	134/22	13/244	0.001	0.453
Speech/Language/Communication (communication skills)	24/14	2	10/07	10/06	0.001	0.386

As Table 3 shows , the scale used in this research was generally statistically significant at the $P<0.05$ level, and it means that play therapy reduces scores. cars has been effective . In the cars subscale , as the table shows , the speech /language/communication subscale (communication skills) is significant at the $P<0.05$ level ; In order to determine which research variables have a significant difference in which stage of the test, post hoc tests were used, the results of which are shown in Table 4 .

Table4The results of the post - test of research variables in three stages of testing .

Variables	exams	difference in averages	standard error	P
cars	Pre-test-post-test	-12/88	1	0.001
	Pre-test-follow-up	16/33	1/3	0.001
	Post-test-follow-up	3/44	1	0.001

As Table No. 4 shows , the value of the significance level in all three stages of the pre-test, post-test and follow-up in the cars test It is significant and this shows that the intervention made in all three stages had a significant effect

Discussion and conclusion:

As stated, this research was conducted with the aim of investigating the effectiveness of play therapy on the social behaviors of children with autism. The results of this research showed that play therapy was effective in increasing the scores of cars at the level of $P<0.05$. The difference in averages in both experimental and control groups shows the effectiveness of play therapy. It should be noted that in clinical and interventional research, a difference should be made between statistical significance and clinical significance. What indicates significance in the researches, mostly means the statistical significance that is obtained with a small difference between the experimental and control groups, but clinical significance is not easily achieved.

(12). Also, the subscales of speech/language/communication (communication skills) were significant at the $P < 0.05$ level, in other words, the social behaviors of autistic children improved through play therapy; And specifically, it has been effective in increasing speech and the number of words, as well as in the child's communication with others (communication skills). These findings are consistent with the results of previous studies.

Nowadays, due to the increasing prevalence of autism spectrum disorder, it is necessary to give more importance to research in this field and perform various interventions to reduce the problems of these children. Considering all the issues, it is necessary to use play therapy to reduce or eliminate many symptoms of autism spectrum disorder. The results of the research were consistent with the results of Qasimpour et al. (13) and showed that emotion recognition training leads to the improvement of social skills and the reduction of social interaction deficiencies and even the reduction of communication deficiencies of people with high-functioning autism compared to the control group, and it can be said that, play therapy is based on the reflection of the child's behavior and it is necessary to identify the child's feelings and convey it to the child so that the child becomes aware of his actions and behavior. The results obtained are in line with the research results of Rajabi Behjat (2019). In this research, an art therapy program was conducted to improve the social interaction of students in 6-12-year-old students of schools with behavioral disorders in Tehran. Art therapy has had a positive effect on the social interactions of independent students. The obtained results are also in line with the results of Mukhtarpour's research (2012), in this research, it showed that the intervention methods showed a significant difference on the level of selective attention and empathy of high-functioning autistic children. The results of the research are in line with the results of Gholami et al. (14), and it was found that the training of the picture exchange communication system (PEX) improved social skills and its dimensions. This program is derived from a behavioral point of view and at the beginning, it teaches the person to use the image and by exchanging it, he can get his favorite food or toy. In this program, a picture symbol has been replaced for each object. The use of images in communicating and educating people with autism spectrum disorders is common. (15).

Ethical considerations:

Before the test, the parents were told that we are going to conduct a research to investigate the effectiveness of play therapy in the social behaviors of children with autism spectrum. And they were assured that your written information will be completely confidential and will not be shared with anyone, and due to the parents' obsession, we decided to use only the children's names and their ages in the questionnaire, and if the children's names were the same as the Abbreviation should be specified.

Research limitations:

Children on the autism spectrum experience confusion and severe misbehavior on some days for various reasons, this issue was always problematic during the implementation of the current intervention method and made it difficult to continue working; Also, this research is included

in the age range of 6 to 11 years and includes elementary school children and cannot be generalized to all ages.

Application of research:

Finally, according to the results of the research and the positive effect of play therapy on the social behavior of children with autism spectrum, it is suggested that this method be taught to parents, especially mothers, as well as to families who do not have good financial income or are facing other problems.

Conflict of interest:

There is no conflict of interest between the authors.

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