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THE EFFECTIVENESS OF CHILD-CENTERED PLAY THERAPY ON EMOTIONAL AND BEHAVIORAL PROBLEMS IN CHILDREN WITH CEREBRAL PALSY

Yasaman Shahriari[1], Samira Vakili[2*]

1. *MA' Student Psychology and Education of Exceptional Children in the Science and Research Branch University, Tehran, Iran.*
2. *Faculty Member of Science and Research Branch University, Tehran, Iran.*

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ABSTRACT

The purpose of this study was to determine the effectiveness of child-centered play therapy on the emotional and behavioral problems of children with cerebral palsy. The research method is quasi-experimental and applied; and a pretest-posttest design was employed. The statistical population included all 6-8 year-old children with cerebral palsy in one of Tehran's rehabilitation centers. For sampling, 30 children with cerebral palsy registered in medical records were selected and randomly assigned to two groups of 15 as the experiment and control groups. The sampling was done using purposive convenience sampling method. The emotional and behavioral problems in children were measured by pre-test and post-test using the Child Behavior Checklist. The child-centered play therapy was administered for 16 sessions (12 individual sessions and 4 group sessions), twice a week, and each session lasted 45 minutes for the experimental group. Data were analyzed by univariate covariance analysis (ANCOVA). The findings showed that child-centered play therapy reduced the emotional and behavioral problems (depression, anxiety and aggression) in children with cerebral palsy, but did not have a significant effect on decreasing their law-abiding behavior. Therefore, it can be said that child-centered play therapy can improve and reduce depression, anxiety and aggression in children with cerebral palsy.

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Introduction

Cerebral palsy refers to the damage to the central nervous system and the paralysis (lack of control) of the voluntary muscles. This disorder is caused by brain damage at the time of growth, in the form of a defect in the development or damage to the brain regions, by which these areas are not able to control the movements and physical condition of the person. The early signs of cerebral palsy usually appear before the age of three. Some of the symptoms include muscle stiffness, abnormal movements, problem in fine and gross motor skills, perceptual-sensory problems, neck imbalance and swallowing problems. The statistics show that from every 1,000 births in the world, approximately 2 of them have cerebral palsy, equivalent to 15% of the total population[1]. Reduction in oxygen levels, birth weight less than 1500 grams, brain infections such as meningitis, brain stroke, maternal infection during pregnancy (rubella), seizure, maternal blood disorders, high drug intake for the so-called comfortable childbirth, injuries to the baby's head, more than 4 weeks of premature baby stay in incubator, congenital cardiovascular disease, hydrocephalus, and bleeding during the 12th week of pregnancy are among the most important factors in the creation of cerebral palsy[2]. The type and extent of motor impairment depends on how much and which part of the brain is damaged. Cerebral palsy has several types, which is classified based on the number of organs involved and the type of motor disorder. The treatment of cerebral palsy depends on the type of dysfunction and includes different kinds of treatment, such as oral medication prescription like botulinum, implanting intrathecal baclofen pump, treatment of seizures, orthopedic disorders and sensory disorders[3] ,surgeries, care in place when the brain damage occurs, occupational therapy, and cognitive-behavioral therapies such as play therapy [4]. Emotional-behavioral problems refer to the condition in which the emotional-behavioral responses are inconsistent with the cultural, ethnic and age-related norms of society. Various extreme, chronic and deviant behaviors range from aggressive acts or abrupt arousal to depressive and corrosive actions; and includes psychological and

Corresponding Author: Samira Vakili, E-mail: samiravkl@yahoo.com

behavioral imbalance below the normal level at the society without having a low IQ, which is also intense, repetitive, and persistent at different times and places and their appearance is far off the expectation of the observer. These behaviors have a negative impact on the child's development and adaptation process with the environment [5; 6; 7), disturbing others' lives and harming the individual functioning (8). The emotional and behavioral problems in the children disrupt their performance and ability, making them susceptible to other problems in the future. Children with behavioral problems exhibit emotional instability (9). Some researchers categorized behavioral disorders into two categories: internal behavioral disorders including depression and anxiety, which are associated with emotional conflicts and involve the individual's inner world; and the external behavioral disorders which include cases such as breaking the law and aggression (10, 11, 12). About half of children with cerebral palsy have visible emotional and behavioral problems, indicating a high prevalence of mental health problems in these children (13, 14; 15; 16). The results of scientific studies show that from every four children with cerebral palsy, one child is exposed to behavioral problems (17). Treatment of emotional and behavioral problems is practiced by both drug and non-pharmacological methods: pharmacological treatments regulate the electrical activity of the brain. The non-pharmacological therapies include cognitive therapy, behavioral therapy, cognitive-behavioral therapy, play therapy, etc. (18). The negative signs of behavioral problems do not often decrease naturally, and paying attention to timely intervention is important in reducing symptoms (19; 20;21). Play therapy can be considered as a set of attitudes in which children can fully reveal themselves, in their own way and with sufficient freedom, so that they can ultimately achieve security, worthiness and value through emotional insight (22). One of the most important methods in child play therapies is the Child-Centered Play Therapy, which refers to a relationship between a trained therapist and a child with behavioral and emotional problems using a variety of activities in the game that leads to therapeutic changes in the subject (23). This technique is based on the reflection of the child's behavior (24). This model of play therapy is derived from Rogers'; his theory was based on this humanitarian principle that, if individuals are given freedom and emotional support, they are capable of turning into functioning humans and solving their problems, turning to free themselves from inner conflicts and anxiety (25). The goals of child-centered play therapy include: self-awareness, self-direction in the child, increased self-esteem, more control over the environment, solving emotional barriers, reducing anxiety, depression and anger, self-expression, reducing the sense of separation, and increasing positive self-concept. Axline (26) provided eight basic principles for guiding the child-centered therapeutic playing process: 1. developing relationship, 2. accepting the child, 3. establishing a sense of freedom of action, 4. sympathetic recognition and reflection of emotions, 5. respecting the child's ability to solve problems, 6. guiding the child, 7. not hurrying the therapy along, 8. putting limitations .The therapist helps the child to correct the cognitive distortions through playing, and to find self-insights through the space that the therapist employs. Through teaching child-centered play therapy skills to caregivers at child care centers, it was concluded that the relationship between caregivers and children in the center was improved; it also played an important role in improving interpersonal relationships among children (27). Due to the combination of physical and psychological problems, children with physical problems associated with depression also experience anxiety problems (28). The child-centered play therapy has achieved remarkable results in all groups of exceptional children. In a cross-cultural study, it was concluded that the child-centered play therapy is an innovative and effective way for improving children's well-being in different populations (29). In addition to disrupting the child's performance and ability, children's emotional and behavioral problems will challenge them against future problems, and children with behavioral problems exhibit emotional instability(30). Thus, this research has been considered necessary as an effort to eliminate and reduce the emotional and behavioral problems in children with cerebral palsy, as well as strengthening the normal and desirable behaviors in these children and ultimately having mental health and a good life in the present and future. For the first time in Iran, the present study has used a child-centered play therapy technique to eliminate and reduce the emotional and behavioral problems in children with cerebral palsy. The purpose of this study was to assess the effectiveness of child-centered play therapy on emotional and behavioral problems in children with cerebral palsy. In this regard, four hypotheses have been examined as follows.

The 1st hypothesis: the child-centered play therapy is effective on reducing the anxiety of children with cerebral palsy.

The 2nd hypothesis: Child-centered play therapy is effective on reducing the depression of children with cerebral palsy.

The 3rd hypothesis: Child-centered play therapy is effective on reducing the law-abiding behavior in children with cerebral palsy.

The 4th hypothesis: Child-centered play therapy is effective on reducing the aggression of children with cerebral palsy.

Method: this study is applied in terms of purpose, and in terms of data collection, it is a quasi-experimental research with pre-test and post-test design with control group.

Statistical population, sample and sampling method: The statistical population of the present study included all 6-8 year old children with cerebral palsy in Rofideh Rehabilitation Center located in Tehran. For sample selection, 30 children (boy and girl) aged 6 to 8 years old with an average age of 7 years, who were recognized by mild to moderate paraplegia and monoplegia cerebral palsy were selected. Then, the sample was randomly divided into two groups of control and experimental (n=15). The sampling was done by convenient purposive sampling method. 16 sessions were held for the experimental group (12 individual sessions and 4 group sessions) twice a week by the researcher, each lasted 45 minutes; while the control group did not receive any intervention.

The inclusion criteria included: 6 to 8 years old children cared at Rofideh Rehabilitation Center, emotional and behavioral problems based on Children's Behavioral Checklist, interest in collaboration and participation in research based on written consent of the legal guardian, IQ higher than 55 (based on the information contained in the medical records of the center the lowest IQ was 55 and the highest 70, and the average IQ was 62.5), not receiving other treatments except medication, the ability to use language and the ability to speak, registered cerebral palsy injury in medical records, a relative ability to use hands in the games based on the type of injury in the medical records, either monoplegia or paraplegia examined through muscle tone, growth of reflexes, assessment of the condition and movement, and assessment of daily life activities listed in the Therapy Report.

Exclusion criteria included: Uncontrollable aggression, more than two absences, receiving other interventions during research, except for drug treatment. Data collection method and research tools: At first, the consent form of participation in the present study was completed by the legal guardian of each child. Then, to collect data, each mother who was responsible for the care of children, completed the children's behavioral checklist before and after the treatment sessions, as the pre-test and post-test. Research Tools: Child Behavioral Checklist: This test was designed, modified, and standardized by Tomas Achenbach in the 1960s. This questionnaire was completed by parents, or those who supervise the child and who are "fully aware of". In this form, the respondent calibrates the children's clinical, emotional, behavioral and social problems. Children's behavior checklist has two general scales of internalizing and externalizing. The number of questions in this test is 115, and evaluates the age group of 1.5-18 years old subjects. The scoring is based on the Likert scale ranging from 0 to 2, and it balances the child's status based on the child's condition during the past six months. Its reliability tested using Cronbach's alpha was 0.87 and the correlation between identical versions is confirmed. Its validity was confirmed by examining the correlation of the test with Conner's Behavior Scale and Revised Behavior Problem Checklist of Quay and Peterson, 0.88 (boys)-0.52 (Girls). In the present study, children with a T-score more than 60 in experience-based scales (anxiety/depression, anxiety/isolation, physical complaints, lawbreaking and aggression) have been studied (in the borderline and clinical range). This test was used in the present study to assess the severity of children's emotional and behavioral problems, and also as the pre-test and post-test (to evaluate the effectiveness of the independent variable on the dependent variable).
Administration: In these sessions, children expressed their problems through playing, and the therapist tried to help the children without imposing a subject on children, or directing their behavior to a particular direction, in order to help them gain insight into their own problems and solutions. The structure of sessions was as follows: Sessions 1-4: First sessions were used to build a relationship between the child and the therapist. In these sessions, the therapist stated the rules of the game in the course of communicating, telling them the duration of the session, the last 5 minutes and the final minute in each session; as well as, if necessary, and the limitations. The children were told that in this room and at this time, they can do whatever they want to, and if there was something that they cannot do, the therapist told them (in this approach rules are expressed in this way). Sessions 4-12: During these sessions, the child discussed her/his problems through the game, and the therapist tried to give the child enough insight without trying to impose a subject on the child or directing their behavior to a particular direction, in order to help them gain insight into their own problems and solutions. Sessions 12-16: Children got ready for the final treatment.

Table 1: a summary of the structure and treatment sessions of one of the subjects

Session	Description	Objective
1	Before starting the sessions, the child was taken to a play therapy room individually in a personal session	Reducing the sensitivity to the play therapy room / communicating with the therapist in order to achieve a sense of relaxation and security for better participation in the treatment sessions.
2	The child played his/her favorite games and the therapist had a mediating role	Matching children with the environment and the researcher.
3	Use of animals and toy people	Discovering the main sources of depression and anxiety of the child by discovering their fear or the reasons of avoiding to make a relationship with others, and ultimately discovering things that estranged them from a normal evolution.
4	Reviewing the games with animals and toy people at the previous session (games were repeated by children, comet games)	Studying the roots of children's problems
5	Playing the basket and throw game	Increasing the sense of excellence and mastering dilemmas or problems and increasing self-esteem
6	Use of cards that include images of certain occupations and citizenship duties	Talking about each card in turn, getting to know the consequences of breaking the law
7	Cutting colored paper with scissors (There were two warnings for the child in this session and remained at the warning stage)	Deleting negative emotions, increasing subtle skills, increasing attention and focus; in this game, the child freely cuts papers and shapes them and finally tells a story about them.
8	Painting using finger-paints (holding a group session)	Expressing the excitements, storytelling and problem solving along with the therapist
9	Play-Doh	Play-Doh ductility facilitates the ability of the child to play with it and shape and control important issues. It is also useful as a metaphor for change and allows the expression of a wide range of emotions, hopes and worries
10	Use of cards with different pictures, choose a card and talk about it	s/he asks some questions from the therapist, who discusses the child's questions
11	Use of cards with different pictures	Making the emotions tangible in the selection of cards

12	Use of balls with positive emotions such as joy painted on them	Identify and name positive emotions
13	Use of balls with negative emotions such as anger, anxiety painted on them in the ball pool (he asked the therapist to be in the pool)	Identify and name negative emotions
14	Use 3 sizes of balls in 3 different colors and tell different stories (holding a group session)	Making tangible the varying degrees of emotion
15	The game of design with colored yarns on cardboard: There is no right and wrong design in this game, and everything that the child mind reaches can be designed and talked about.	Confidence, reduced fear of criticism
16	the past sessions were reviewed and summarized and feelings were expressed	The association and practice of past sessions for mental consolidation was done and children were prepared for the end of treatment

Results: As observed in Table 2, the average score in all variables in the experimental group in the post test stage was lower than the control group.

Table 2: Mean and standard deviation scores of variables in experimental and control group and the total score in two stages

Variables	Groups							
	Experimental				Control			
	Pre-test		Post-test		Pre-test		Post-Test	
	M	SD	M	SD	M	SD	M	SD
Anxiety	11.00	3.30	6.31	3.09	9.73	3.10	9.13	3.38
Depression	6.92	3.45	4.08	2.33	7.13	2.92	7.07	2.58
Breaking the lows behaviors	7.77	2.424	6.77	2.204	8.40	2.473	8.27	2.434
Aggressive behaviors	13.00	4.80	9.08	4.39	10.87	4.82	11.80	4.63

To examine the significance of the difference between the experimental groups' mean score, after considering the initial difference between the groups and calculating the correlation of the initial values and the dependent values, as well as assessing the impact of the intervention or experimental manipulation with controlling the pre-test scores univariate covariance analysis (Ancova) was used to confirm or reject the research hypotheses

Hypothesis 1: Child-centered play therapy is effective on reducing the anxiety of children with cerebral palsy. According to Table 3, the F test in covariate or pretest is 50.47 which is significant at the level of 0.01; and the correlation between covariate variable (the pre-test) with dependent variable (post-test score) is equal to 0.818 and its explained variance is 0.669. That is, 66.9 percent of the dependent variable (post-test score) is explained by pre-test. F test for independent variable (experimental and control group) was 27.66, which was significant at 0.01 level, and the correlation between independent variable (experimental and control groups) and the dependent variable (post-test score) was 0.725 and the value of the explained variance is 525%, ie. 52.5% of the dependent variable is explained by the effect of the group. Based on the estimated effect, the effect intensity is 0.53. It can be concluded that the effect of the provided conditions in the experimental group was significant, or in other words, the child-centered play therapy has been effective on reducing the anxiety of children with cerebral palsy.

Table 3. A summary of the results of the covariance analysis of post-test scores in both experimental and control groups, with pre-test (covariate) score and anxiety

Source	*SS*	*df*	*MS*	*F*	*Eta*
Pre-test	57.183	1	57.183	**47.50	**47.50
Group	602.100	1	602.100	**66.27	**66.27
Error	93.90	25	637.3		

df= degree of freedom, ss= sum of squares, MS= mean squares
F=F-test ،Eta= Correlation between variables
01.0<*P* **

Hypothesis 2: Child-centered therapy is effective on decreasing the depression of children with cerebral palsy. According to Table 4, the F test in the covariate or pretest is 36.59 which is significant at level of 0.01, and the correlation between the covariate (pre-test) and the dependent variable (post-test score) is 0.77 and the explained variance is 0.594. That is, 59.4% of dependent variable (post test score) is explained by pretest. F test for independent variable (both experimental and control groups) was 22.26, which was significant at level of 0.01 and the correlation between independent variable (group: experimental and control groups) and dependent variable (post-test score) is equal to 0.686 and the explained variance is 0.471; that is, 47.1% of the dependent variable is explained by the effect of the group. Based on the estimated effect, the intensity of the effect is equal to 0.47. It can be concluded that the effect of the provided condition in the experimental group was

significant; in other words, the child-centered play therapy has been effective on the reduction of depression in children with cerebral palsy.

Table 4: A summary of the results of the covariance analysis of post-test scores in both experimental and control groups, with pre-test (covariate) score and depression

Source	*SS*	*df*	*MS*	*F*	*Eta*
Pre-test	*93.78*	*1*	*93.78*	**59.36	594.0
Group	062.57	1	062.57	**26.22	471.0
Error	08.64	25	563.2		

df= degree of freedom, ss= sum of squares, MS= mean squares
F=F-test ،Eta= Correlation between variable
*0</01*P **

Hypothesis 3: Child-centered play therapy is effective on the reduction of breaking law in patients with cerebral palsy. According to Table 5, the F-test in the covariate or pre-test is 22.42 which is significant at the level of 0.01 and the correlation between the covariate variable (pre-test) with the dependent variable (post-test score) is 0.69, and the explained variance is 0.473. That is, 47.3% of dependent variable (post-test score) is explained by pretest. F test for independent variable (both experimental and control groups) is 2.63, which is not significant and the correlation between independent variable (experimental and control groups) and dependent variable (post-test score) is equal to 0.308 and the value of explained variance is 0.095, i.e. only 9.5% of dependent variables are explained by the effect of the group. Based on the estimated intensity of the effect, the intensity of the effect is equal to 0.095. It can be concluded that the effect of the conditions provided in the experimental group was not significant, or, in other words, the child-centered play therapy does not have an effect on the reduction of the law-breaking behavior of children with cerebral palsy.

Table 5 : A summary of the results of the covariance analysis of post-test scores in both experimental and control groups, with pre-test (covariate) score and law-breaking

Source	*SS*	*df*	*MS*	*F*	*Eta*
Pre-test	78.66	1	78.66	**42.22	473.0
Group	83.7	1	83.7	63.2	095.0
Error	46.74	25	97.2		

df= degree of freedom, ss= sum of squares, MS= mean squares
F=F-test , Eta= Correlation between variable
*0</01*P **

Hypothesis 4: Child-centered play therapy is effective on reducing the aggressive behavior of children with cerebral palsy. According to Table 6, the F test in the covariate or pretest is 60.47 which is significant at the level of 0.01; and the correlation between the covariate (pre-test) with the dependent variable (post-test score) is 0.840 and the explained variance is 0.707. That is, 70.7 percent of the dependent variable (post-test score) is explained by pre-test. F test for independent variable (group: experimental and control groups) is equal to 20.69, which is significant at 0.01 level and the correlation between independent variable (experimental and control groups) and dependent variable (post-test score) is equal to 0.673 and the explained variance is 0.453, that is, 45.3% of the dependent variable is explained by the effect of the group. Based on the estimated effect, the effect intensity is equal to 0.45. It can be concluded that the effect of the conditions provided in the experimental group is significant; in other words, the child-centered play therapy reduces the aggressive behavior of children with cerebral palsy.

Table 6 : A summary of the results of the covariance analysis of post-test scores in both experimental and control groups, with pre-test (covariate) score and aggression

Source	*SS*	*df*	*MS*	*F*	*Eta*
Pre-test	91.375	1	91.375	**47.60	707.0
Group	62.128	1	62.128	**69.20	453.0
Error	42.155	25	22.6		

Attention symbols: df= degree of freedom, ss= sum of squares, MS= mean squares
F=F-test , Eta= Correlation between variable
*0</01*P **

Discussion and Conclusions: The purpose of this study was to determine the effectiveness of child-centered play therapy on the emotional and behavioral problems of children with cerebral palsy. Despite their physical limitations and their dependence on others for doing daily tasks, children with cerebral palsy experience the feeling of lack of independence, which reduces self-esteem and self-sufficiency in the individual, and provides for the emergence of depression, anxiety and aggression symptoms. In a child-centered play therapy, the child can disclose all aspects of him/herself, at a specified time with the present limitations and self-control skills taught by the therapist. Most internal and foreign studies have confirmed the effectiveness of play therapy on the treatment and reduction of depression (31; 32; 33;34). Desi and Ray's research in Australia therapy indicated that a significant improvement in social and emotional functions was achieved by child-centered play (35). In general, the results of most studies in this area show that play therapy has an effect on the reduction of anxiety in children with internalized emotional and behavioral problems (36;37;38;39;40;). Play therapy has an effect on the reduction of aggressive behavior in children with externalized emotional and behavioral problems as well (41, 42; 43). According to the profiles of experience-based scales and the children's behavioral checklist, law-breaking behavior is a subset of the externalized behaviors,

which is included in this research as one of the dependent variables; however, according to researcher's studies so far, there has been no study on the reduction of law-breaking behavior with the independent variable of child-centered play therapy, and in most researches on law-breaking behavior, aggressive behavior has been investiagated .In general, according to the researches and the theoretical background, and the consistency of the results of the present study with the existing literature, it can be claimed that the child-centered play therapy is effective on decreasing the anxiety, depression and aggression of children with cerebral palsy; however it had not a significant difference on law-breaking behavior. Research Limitations: Considering the limitation of sampling in terms of age in this research, tone should be cautious with generalizing the findings to other age groups. The questionnaires were completed by the main caregivers of children at the center, who might have had problem in the diagnosis of symptoms and giving the correct answers to questions due to their perceptual, cultural and educational differences. This research was a "cross-sectional study" and examined the positive effects of this intervention in just a few months. Research suggestions: The results of this study can be used to reduce the emotional and behavioral problems of children with cerebral palsy and prevent further acute problems in the future. The results of this study are useful for child psychologists, welfare organizations, rehabilitation centers and boarding centers and families in order to reduce the symptoms of children with cerebral palsy and the physical problems associated with emotional and behavioral problems. It is also suggested that a similar study is performed on a larger sample in order to extend its generalization. Future studies can examine the effectiveness of child-centered play therapy on the emotional and behavioral problems of children with cerebral palsy in different age groups, and conduct this intervention considering the effect of gender. Research in different areas is also required to allow its generalization to different societies. Other studies can be conducted on children who are kept in a place other than daily care centers in order to increase the possibility of generalization.

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