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The play therapy effectiveness in improving adaptive skills of children with physical-motor disabilities

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ABSTRACT

Background and Objective: Play therapy provides an opportunity for children with disabilities to experience and learn new skills. The aim of this study was to evaluate the effectiveness of play therapy in improving the adaptive skills of children with physical-motor disability (PMD).

Methods: The method of the present study was quasi-experimental using pre-test and post-test design with control group. The statistical population of this study included all 6-8-year-old PMD children referred to Behesht Occupational Therapy Clinic in Isfahan in the first half of 2020. According to the inclusion criteria, 30 children were selected through convenience method and randomly divided into two groups of 15 ones as the experimental and control groups. The Lambert Adaptive Behavior Scale was used to collect the data. Finally, the data were analyzed by one-way covariance test using SPSS 21.

Findings: These findings showed that there was a significant difference between the pre-test and post-test in adaptive skills in the experimental group (F=72.8; P=0.01). This difference was not found in control group (170.7±10.06; 171.3±10.6; P>0.05).

Conclusion: According to the results, play therapy helps the children to learn the adaptive skills; therefore, it is suggested that the play therapy, in addition to conventional treatment methods, could be used for these children in rehabilitation centers to establish a happy and creative environment.

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Introduction

Physical-motor disability (PMD) is one of the major disabilities of children in many countries [1]. World Health Organization (WHO) uses disability as a general term for injuries as well as functional and participation constraints, leading to dysfunction of the body and depriving the person of participation in daily personal and social activities [2]. A person with PMD refers to one who, for any reason, has a weakness, disorder or disability in the motor system or needs some mobility aids to move [3]. The prevalence of PMD varies in different countries. Its prevalence has been reported 0.41%, 0.334% and 1.2% in china, France and the United States [1]. According to the official statistics, the number of disabled people was 1166282 ones in Iran in 2016 [4] Children with PMD often face limitations in their daily lives [5].

They are often deprived of the opportunity to participate in social life activities, and these deprivations not only are contrary to fundamental human rights, but also affect the health and wellbeing of individuals. The most important factor in the child's participation in daily activities is the interaction between the environment and activities [6]. There is evidence that continuous and desirable interaction with the social environment has positive effects on a person's health and wellbeing [7].

According to studies, most disabled children show low levels of cognitive and individual readiness required for adaptive and social adjustment [8]. The PMD can lead to social isolation, negatively affect people's adaptive skills, and limit their social activities [9].

A study has indicated that adaptive skills are necessary for children to achieve a positive self-image [10]. The conducted researches represent that play therapy is used to teach children different skills [10-13]. Play therapy is described as a dynamic interpersonal relationship between a child and therapist trained in the play therapy process that facilitates the development of a secure relationship for the child [12].

In this regard, Kouvava et al. (2011) have demonstrated that games with group activities increase children's social skills and adaptation [14]. Other studies have also displayed that play therapy helps reduce fear and anxiety [15] and increase self-esteem and social skills [16]. Play therapy has an effect on increasing adaptive behaviors [17-19].
Play is the most important method for treating children's mental and emotional disorders and strengthens their social development [20]. Despite the adjustment and social competence of PMD children in the early years, most of these children represent several emotional problems at later ages. Because training the adaptation skills is important for PMD children, these children eventually enter into the society. Therefore, the aim of this study was to evaluate the effectiveness of play therapy in improving the adaptive skills of PMD children.

Methods

The method of the present study was quasi-experimental using pre-test and post-test design with control group. The statistical population of this study included all 6-8-year-old PMD children referred to Behesht Occupational Therapy Clinic in Isfahan city from March to August in 2020. The inclusion criteria for the study were: 1- The PMD children should be identified by a pediatrician doctor and physiotherapist, 2- The PMD children should not be children of divorce, and 3- The PMD children should not be mentally disabled. Exclusion criteria included: 1- Absence from therapy sessions for more than three sessions, and 2- Simultaneous participation in play therapy or other entertainment therapy. Then, from 60 children selected by convenience sampling, 30 ones (experimental and control groups, 15 in each group) who had the lowest scores in the adaptive skills in questionnaire were chosen for the study. The sample size was 15 schoolchildren for each group based on the effect size of 0.25, alpha of 0.05 and test power of 0.80.

The Lambert Adaptive Behavior Scale was used to collect research data. This scale was initially developed by Lambert et al. (1974) and standardized on elementary school students. This scale consists of 2 sections and 270 items in 12 areas, its first section deals with issues of growth, measuring skills and developmental habits, and the second section is designed to measure maladaptive behaviors related to personality and behavioral disorders [20-21].

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The second section of this scale has been standardized in Iran. Each question is answered with one of two options including sometimes and repeatedly. Option "sometimes" assigns one score and option "repeatedly" assigns two scores, and the sum of scores of one and two "is the score of a question. Next, the raw score of a domain is determined by the sum of the scores of several questions. Then, the raw score related to each domain according to the age of every student in the standardized tables in Iran is converted into a percentage score, and if the percentage scores of each student in at least two skill areas are higher than 75%, the limitation on his/her adaptive behavior will become apparent and use as one of the criteria for recognizing mental retardation [20-21]. For the experimental group, the play therapy was performed in eight 45-minute sessions. Practical games were played in each session. At the end of each session, the main points of play therapy were discussed again, and exercises were presented as complementary activities in accordance with the objectives of each session in the class and homework. The children in the control group were not given any training and they covered their usual curriculum. Play therapy sessions were held by the researcher in the Game Room of Behesht Clinic on Tuesdays from 10:00 to 11:00. A summary of play therapy sessions and their content [22-23] is given in table 1. All sessions were held by first author who had M.A. in Rehabilitation Counseling and certificate in play therapy with special needs children.

In order to comply with ethical principles, the officials of the Occupational Therapy Center and the mothers of the children were assured that the extracted information and the names of the participants were confidential. Moreover, written the informed consent was obtained from the mothers, and it was suggested to them that they could watch their children's play through the one-sided mirror. Questionnaires were completed by the researcher and mothers. In order to evaluate the resulting changes, first, a pre-test was performed on both groups. After performing the pre-test, the experimental group was exposed to the intervention, and then both groups were administered post-test. After the intervention, four sessions of play therapy were carried out for the control group.

Finally, the descriptive statistical methods including mean and standard deviation (SD) were used to analyze the research data. The analysis of covariance ANCOVA was utilized in inferential statistics. The data were collected through SPSS 21 and analyzed at the significant level of $P < 0.05$.

Table 1. Summary of group play therapy sessions

Sessions	Training
First session	Good communication, family drawing test, spinning bottle game, funny animal game and playing new names to increase self-awareness, self-confidence and strengthening the self-concept; tell me quickly what was on the table and games related to auditory memory (repeat everything you heard)
Second session	Playing emotional words and playing the alarm clock to identify key emotions, boosting self-confidence, focus and self-control; tell me quickly what was on the table and games related to boosting auditory memory (repeat everything you heard, but this time with newer words)
Third session	Game of painting your life, emotional and action thermometer to identify the main emotions, raising self-awareness and –confidence; see and say game and games related to auditory memory (whatever you hear, jump on it)
Fourth session	Chairs game, role-playing game and word games to teach communication skills, assertiveness, solving the problem and increasing the concentration, game of passing objects to teach cooperation skills; games related to visual memory (see and say game with newer words) and auditory memory (whatever you hear, hit the ball)
Fifth session	Request to participate, join the activity and leave the activity in the form of a play and by the children, themselves, under the guidance of the therapist; games related to visual memory (say what you saw) and auditory memory (painting everything you hear)
Sixth session	Through puppet play, providing empathy training (game of arrogant goldfish) as the basis of interpersonal relationships; games related to strengthening visual memory (through a collection of images) and auditory memory (search and find everything you hear)
Seventh and eighth sessions	Game of Mortal Kombat to increase concentration and role-playing game (Design situations with an emphasis on basic rights in a relationship and put the children in that situation one by one, then let others criticize his/her behavior until the bold behavior is achieved); repetition of games related to visual and auditory memory, but with newer words
Ninth session	Run a play and repeat previous games depending on the needs of the children; repetition of games related to visual and auditory memory, but with newer words
Tenth session	Evaluate and repeat previous games depending on the needs of the children

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Results

The mean age of children participating in the study was 7.4 years.

Table 2 illustrates the mean and SD of "adaptive skills" in the experimental and control groups.

Table 2: Mean and standard deviation (SD) of "adaptive skills" in the experimental and control groups

Experimental group					
Variables		Experimental		Control	
		Mean	SD	Mean	SD
Violent and destructive behavior	Pre-test	24.5	2.9	23.4	2.8
	Post-test	22.9	3	23.3	2.7
Antisocial behavior	Pre-test	28.4	4.05	28.2	4.2
	Post-test	26.6	3.8	27.2	4.2
Rebellious behavior	Pre-test	25.2	3	24.7	3.5
	Post-test	24	3.3	24.2	3.4
Unreliable behavior	Pre-test	7.6	1.4	7.7	1.9
	Post-test	6.2	1.2	7.7	1.6
Isolation	Pre-test	14	2.7	15.2	2.6
	Post-test	12.8	2.4	14.7	2.9
Stereotyped and strange behavior	Pre-test	13.8	2.4	13.7	2
	Post-test	12.2	2.5	13.4	2.3
Bad social behaviors	Pre-test	7.5	0.9	7.8	1.1
	Post-test	6.2	0.88	7.8	1.4
Bad voice habits	Pre-test	7.7	0.8	6.9	1.1
	Post-test	6.4	0.9	7	1.3
Bad and strange habits	Pre-test	25.2	3.7	24.2	3.1
	Post-test	24.6	4.1	24	3.2
Attention-deficit hyperactivity disorder (ADHD)	Pre-test	6	0.75	5.2	0.96
	Post-test	5.66	0.72	5.6	0.98
Psychological disorders	Pre-test	25.6	3.7	23.2	3.6
	Post-test	25	3.3	24.6	3.7
Total score	Pre-test	185.6	10.1	170.7	10.06
	Post-test	182.8	10.6	171.3	10.6

As can be seen, the mean and SD of the total score of adaptive skills in the pre-test stage of the experimental group is equal to 185.6 and 10.1 and in the post-test stage is equal to 170.7 and 10.06, respectively.

The mean and SD of the total score of adaptive skills in the pre-test stage of the control group were 182.8 and 10.6 and in the post-test stage were 180.3 and 10.6, respectively. In addition, statistical indicators of other components can be seen in the table.

Table 3: Results of univariate analysis of covariance on post-test scores of adaptive skills

Variables	F	Significant level	Effect size
Violent and destructive behavior	23.3	0.01**	0.46
Antisocial behavior	5.7	0.023*	0.176
Rebellious behavior	2.9	0.099	0.09
Unreliable behavior	20.1	0.01**	0.42
Isolation	5.7	0.024*	0.17
Stereotyped and strange behavior	22.35	0.01**	0.45
Bad social behaviors	16.4	0.01**	0.37
Bad voice habits	21.4	0.01**	0.44
Bad and strange habits	0.56	0.45	0.02
ADHD	2.9	0.099	0.09
Psychological disorders	33.5	0.01**	0.55

•*Significance at the level of 0.05*

** *Significance at the level of 0.01*

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As shown in table 3, the F-ratio analysis of covariance is obtained for the components of social adaptive skills. As observed, play therapy had a significant effect at the level of 0.01 on the subscales of "violent behavior", "unreliable behavior", "formal and strange behavior", "bad social behaviors", "bad voice habits" and "psychological disorders" as well as had a significant effect at the level of 0.05 on the subscales of "antisocial behavior" and "isolation".

Moreover, the results indicated that play therapy had no significant effect on the subscales of "rebellious behavior", "bad and strange habits" and "attention-deficit hyperactivity disorder (ADHD)". The results of effect size represented that play therapy had the most and least effect on the subscales of "psychological disorders" with the effect size of 0.55 and "bad and strange habits" with the effect size of 0.02, respectively.

Discussion

The results of tests demonstrated that play therapy has been effective to increase adaptive skills in PMD children. In this regard, Garza et al. (2016) have expressed that play therapy has positive effect on reducing violent problems and other behavioral problems of Spanish children. They concluded that the child learns anger management skills, effective communication skills with peers and positive ways of expressing violence through play therapy which can raise his/her self-esteem [24]. In addition, Khodabakhshi-Koolaee et al. indicated the effect of Gestalt play therapy on self-esteem and social adjustment in children with ADHD [13].

Play is an enjoyable and natural activity that basically represents the cognitive, affective-social and psycho-motor development of the child. During the game, different abilities such as agility, attention and perception were developed, children's personality was formed and many changes occur in their characteristics. The game increases curiosity and power of innovation and causes to feel the true sense of personality and experience the reality [15]. Additionally, group play therapy program strengthens children's sense of self-confidence via boosting cognitive-emotional skills, leading to decrease indifference and ultimately isolation [25]. Moreover, Khodabakhshi-Koolaee et al. showed that the puppet play therapy increased adaptive behavior and social skills in male children with intellectual disability [26].

Play therapy provides the opportunity for child to present an image of her/his inner world and facilitates the expression of emotions. The main function of play therapy is to resolve any conflict in the child that interferes with his or her effective functioning in the environment. Play therapy provides a safe environment in which children gradually express their emotions, tensions, feelings of insecurity, aggression, and repressed fears [16, 25]. Play therapy strengthens children's adaptive skills and behaviors [26-27].

Play-related interventions in PMD children change their strange and stereotyped behaviors as well as its most important consequence is the cessation of strange and stereotyped behaviors and the shift to other behaviors [28]. Besides, the findings represented that the acquisition of play skills early in life might prevent the increase of stereotyped and strange behaviors in PMD children [29-30].

Furthermore, the results of the present study revealed that group play therapy training was effective in improving appropriate social behaviors in PMD children. Group play therapy provides ways of socialization for PMD people so that they enter into the community as a useful and healthy member and are protected from the tendency to inappropriate social behaviors.

This means that PMD children learn how to make decisions, think creatively and critically, increase their sense of responsibility, and most importantly, treat with their peers appropriately [31-32]. Children will only be able to achieve some acquired levels of social skills like their peers if they are properly trained [33].

The current study had some limitations. First, by the beginning of 2020, schools were recessed owing to Covid-19 virus, and it was impossible to follow-up for evaluating the effect of the interventions. Secondly, the ongoing study was limited to PMD children to Behesht Occupational Therapy Clinic in Isfahan.

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Conclusion

The findings of the current study demonstrated that play therapy was effective in increasing the adaptive skills of PMD children. The social capacity of PMD children is remarkably limited. Specific behavioral patterns include aggression, restlessness and unwillingness to relate to others. Play can help a child connect with the real and outside world. Therefore, the use of play therapy as an effective and dynamic intervention can be applied in rehabilitation and treatment centers for these children.

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Ethical Code

This dissertation has been registered with the ethical code of IR.IAU.SRBU.REC.1399.065 in the Ethics Committee of Tehran Islamic Azad University, Science and Research Branch.

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Conflict of interest

The authors declare that there is no conflict of interest.

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