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Combined effectiveness of the therapeutic benefits of clay in play therapy and cognitive-behavioral therapy on children's behavioral-emotional Disorder

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Abstract

Background: The individuals' physical, behavioral, and emotional growth is most significant during childhood and adolescence. The purpose of this study was to determine the effectiveness of play therapy with clay and cognitive-behavioral therapy on children's behavioral-emotional disorders.

Methods: The study was a quasi-experimental design with a pre-test and post-test. The participants were selected by simple random sampling and divided into an experimental (n= 15) and a control (n = 15) group. The statistical population consisted of all children aged 7 to 9 years, living in Mobarakeh, Iran, during 2017-18. The intervention of play therapy with clay and cognitive-behavioral therapy was conducted in ten 45-minute sessions; the participants were assessed by the Child Behavior Checklist and finally both prior to and one month after the intervention. Data was analyzed by the use of SPSS software version 23.0.

Results: The results of data analysis, on the 30 male participants with a mean age of 8.1 years, showed that after the therapeutic intervention, there was a significant decrease in the scores of behavioral-emotional problems ($p < 0.05$) of the participants in the experimental group compared to the control group.

Conclusion: According to the results, psychotherapeutic interventions of play therapy with clay and cognitive-behavioral therapy can help decrease the behavioral-emotional problems among 7-9-year-old children.

Key Words: Behavioral-emotional problems, Clay in play therapy, Cognitive-behavioral therapy.

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1- INTRODUCTION

Behavioral-emotional disorders are conditions in which the individual's emotional and behavioral responses at school differ from cultural, traditional, and ethnic norms, to the extent that they have negative effects on his/her academic performance, self-care, social relationships, personal adjustment, classroom behavior, and adaptation in the workplace (1). Most people with emotional disorders do not seek treatments, and on the other hand, the treatment of these disorders in adulthood is time consuming and more expensive than in childhood (2). Mental health problems in children and adolescents include a variety of emotional and behavioral disorders, such as depressive disorder, anxiety, and pervasive developmental disorders known as internal or external problems. Destructive behavioral problems such as mood swings, Attention Deficit / Hyperactivity Disorder, Coping Disorders and Behavior Disorders are also among the most common behavioral problems in preschool and elementary school children. Behavioral and emotional problems caused by childhood disorders have significant negative effects on the individual, family and society and are usually associated with poor academic, occupational and psychosocial performance. Recognizing, preventing and treating common mental health problems in children and adolescents is of particular importance to all health care professionals, especially pediatricians (3). Cognitive-behavioral therapy is considered as a useful treatment for a wide range of adult psychological problems (4-5).

In addition, a lot of research evidence has been reported on the effectiveness of this treatment in the emotional and behavioral problems of children and adolescents (6); so that cognitive-behavioral therapy has, currently, become the first line of treatment in children and adolescents (7). Cognitive-behavioral therapy offers a variety of techniques for children and adolescents, including teaching the child and parents about anxiety, progressive muscle relaxation exercises, deep breathing techniques, cognitive reconstruction through challenging the anxious thoughts, and Exposing the child to imaginative and realistic anxiety-provoking situations, along with providing him/her with some reinforcement sessions for preventing the recurrence of the problem (8). The results of the previous studies show the effectiveness of cognitive-behavioral therapy on reducing depression (9), sleep problems (10), aggression (11), hyperactivity, attention deficit and emotional dysregulation (12). For instance, Vigerland et al. reported in their study that cognitive-behavioral therapy combined with supportive therapy can reduce anxiety in children (13). Silk et al. also showed in their research that cognitive-behavioral therapy along with child-centered therapy reduces anxiety in children (14).

Play therapy is another treatment for pediatric disorders. The world of children is a world of endeavor and action, and the therapist can use the game to discover the world of the child. In fact, toys are considered as the child's language. Children are unable to express their emotions due to their low level of abstract thinking. Suppression and inability to express emotions, especially those of a negative nature, endanger the child's mental health, so play is a means by which the child can express himself (15). Play therapy is a method of therapy that allows children to express their problems during play, release their tensions, and replace them with pleasure (16). Therapists play with children whose social or emotional skills are weak and who have internalized problems such as depression, anxiety, and stress; trying to teach them more adaptive behaviors (17).

In the process of play therapy, it is tried that the treatment session be based on the needs of the child. For example, in play therapy with dolls, the child is confronted with a room full of various dolls, while being free to choose any of these dolls; and in this way the child with the help of the therapist can show his/her conflicting feelings, thoughts and beliefs (18). Recent research shows that play therapy reduces aggression, resentment and violence in children (19). Play therapy has been also reported to be effective in reducing negative emotions and anxiety in children (20). Cheng and Ray reported in their study on 43 children that group play therapy enhances social and emotional skills in preschool children (20).

Considering the sensitivity of childhood, the results of research findings on the usefulness of play therapy and cognitive-behavioral therapy in reducing childhood disorders, as well as the use of various play therapy methods such as play therapy with clay can increase the richness of information about solving emotional behavioral problems in children. However, there is a lack of research evidence on the effects of combinational interventions implementing play therapy with clay along with cognitive-behavioral therapies in groups; Thus, this study was conducted to determine the combined effectiveness of play therapy with clay and cognitive-behavioral therapy on behavioral-emotional problems in 7-9-year-old children in Mobarakeh city, Iran.

2- METHOD

2-1. Study design and population

The present study was a quasi-experimental one with pre-test, post-test, experimental and control groups. The statistical population included all elementary school students aged 7 to 9 years in Mobarakeh, a city in Isfahan province, Iran, during 2017-18. A total of 30 people were selected through available sampling after reviewing the inclusion criteria; and were randomly divided into the experimental and control groups.

2-2. Inclusion and exclusion criteria

Inclusion criteria consisted of having high scores on the scale, being in the age range of 7-9 years, having no history of receiving play therapy with clay and cognitive-behavioral therapies. The exclusion criteria were having a serious medical illness, or having not attended in or delaying three sessions of the treatment.

2-3. Method

At first, by referring to the education department of Mobarakeh city, the research permission was obtained. Then, an elementary school was selected by an available sampling method. After explaining the research objectives and attracting the participation and cooperation of the first, second and third grade teachers of the male students, behavioral-emotional problems questionnaires were distributed among them. The teachers were asked to carefully study the questions and select the desired answers according to the characteristics, beliefs, feelings, experiences and behaviors of the students and try not to leave any question. After completing the questionnaires for all students of three levels, 30 students who had the highest scores in the questionnaire were selected and randomly divided into two equal groups (15 individuals each). The experimental group attended ten 45-minute sessions of group play therapies with clay in combination with cognitive-behavioral therapy; but no intervention was performed on the control group. At the end of the treatment sessions, the teachers completed the behavioral-emotional problems questionnaire for both of the experimental and control groups. The description of the treatment sessions is given in **Table 1**. It should be noted that the behavioral techniques were used

during the ten sessions depending on the situation for each student.

Table-1: Description of the treatment sessions

Title	Teaching Method
1	Familiarity and creating a relationship: Doing a few games to create communication and intimacy, introducing and getting acquainted with all students, playing with clays in the child's desired manner, talking about group rules and types of rewards, giving homework for the next session.
2	Focus on depression: recalling the previous session, checking homework, playing with clay and making a happy person, asking all students why it is happy; making a sad person and then asking why it is upset, searching for a solution with the help of the children themselves, giving homework For the next meeting.
3	Focus on aggression and awareness of physical states: recalling the previous session, checking homework, playing with clay and making an angry dummy, asking the students why their dummy is angry, learning about body postures during anger by playing a role play, teaching strategies for anger role played the by students, giving homework for the next session.
4	Focus on Anxiety and Worry: Reminiscing about the previous session, checking homework, playing with clay and making a worried puppet, asking students why it is worried, teaching relaxation and deep breathing with a few games of the Big belly bear, Cloth puppet and Uncooked pasta, Giving homework for the next meeting.
5	Teaching coping strategies: recalling the previous session, checking homework, playing with clay, hitting and punching it, teaching problem-solving methods with the story of the turtle strategy role played by the students, giving homework for the next session.
6	Focus on the problems Note: Reminding the previous session, checking homework, playing with clay and making a pattern, playing cross movements, playing animal book, giving homework for the next session
7	Developing Emotional Intelligence: Reminiscing about the previous session, checking homework, playing with clay and making a clay puppet like one's self, asking how they feel about that person, asking other students' opinions about that person, assignments for the next session
8	Positive self-talk training: recalling the previous session, checking homework, playing with clay and making a clay puppet like one's self, teaching internal conversation with the help of a hand puppet, repeating positive sentences about his/herself, homework for the next session
9	Collaboration and group participation: recalling the previous session and checking homework, cooperation of all students in building an animal farm by the students 'own choice and learning to respect others' compositions.
10	Final conclusion: Reminiscing about the previous session, playing with clay freely, a review from the first to the last session and asking students about these ten sessions

2-2. Research instruments

2-2-1. Child Behavior Checklist (CBCL)

Achenbach designed the Child Behavior Checklist, in 1991, for assessing the Behavioral-Emotional Problems (21). This tool has parent, teacher and child forms and examines mental health status from several aspects. In this questionnaire, the behavioral-emotional problems are divided into three groups: *Internalization disorder*, which includes over-controlled behaviors that are directed by the inside environment. Externalization disorders involve problems which are directed by the outside environment; and are shaped in conflict with other people and the environment. In Achenbach's experience-based measurement system, the data are based on three sources: parents, teachers, and the child or adolescent himself. In this study, only the teacher form was used. This form is completed by the teacher based on the subject's status in the last 6 months. CBCL has three main parts: 1- Demographic information 2- Competency and Competitiveness scales 3- Experience-based scales and diagnostic and statistical guidelines for mental disorders. In CBCL, each question is scored with no (equal to zero), sometimes (equal to 1) and yes (equal to 2); Will be answered. The overall reliability coefficient of this scale was 0.97 and 0.94 using the test-retest reliability. The validity of this test is also desirable (22). In Minaei's research conducted in Iran, the Cronbach's alpha coefficient for the teacher form has been reported to be 0.86 (23).

2-3. Ethical consideration

This article is an excerpt from the first author's master thesis. This research has the approved code of ethics IR.IAU.EMU.REC.1398.028 from the research ethics committee of Isfahan University of Medical Sciences. All the people who contributed to this research including the participating children are appreciated and thanked.

2-4. Data Analysis

After collecting the required data on the children's behavioral-emotional problems, the descriptive analyses were performed on the demographic characteristics of the sample as well as the mean and Standard Deviation (SD) of the research variables in the two groups. In the next section, the normality of distribution and the equality of variances were checked as the statistical presuppositions required for the use of parametric tests. Then the main hypothesis was examined using the Univariate Analysis of Covariance (ANCOVA) and the sub-hypotheses were examined by Multivariate Analysis of Covariance (MANCOVA) using SPSS-23 software; and $P < 0.05$ was considered as the significance level.

3-RESULTS

In this study, 30 male children with a mean age of 8.1 years were studied. In **Table 2**, means and standard deviations of pre-test and post-test scores of behavioral-emotional problems including: anxiety / depression, isolation / depression, physical complaints, social problems, thinking problems, attention problems, law-breaking behavior, aggressive behavior and other emotional behavioral problems were presented for the experimental and control groups. The results in **Table 2** show that the pre-test scores of the two groups are not significantly different, but in the post-test scores, the difference between the two groups has increased significantly. In the experimental group, the results indicate a decrease in scores in the post-test stage, while in the control group, there was no significant difference in the pre-test and post-test scores.

In order to more accurately analyze the existing differences and answer the question whether this difference is statistically significant or not, Multivariate

analysis of covariance was used. The normality of data distribution was also confirmed using the Kolmogorov-Smironov test. Also, since one of the conditions for performing analysis of covariance is the homogeneity of variances between groups; to test this hypothesis, Levene's test was also performed, the results of which are reported in **Table 3**.

Table-2: Mean and standard deviation of scores of behavioral-emotional problems in the experimental and control groups

Post-test	Pre-test	group	Variable
Mean (SD)	Mean (SD)		
5 (4.16)	10.66 (4.33)	Test	Anxiety / Depression
7.33 (3.9)	7.4 (4.11)	Control	
2.26 (2.01)	5.86 (2.87)	Test	Isolation / Depression
4.8 (3.3)	4.53 (3.52)	Control	
0.73 (0.88)	1 (0.92)	Test	Physical complaints
1.06 (0.88)	0.67 (0.72)	Control	
4.06 (4.02)	8.4 (3.94)	Test	Social problems
5.4 (3.1)	5.93 (3.2)	Control	
0.73 (1.09)	1.66 (1.49)	Test	Thinking problems
1.4 (1.12)	1.07 (0.88)	Control	
14.93 (9.7)	24.13 (10.99)	Test	Attention problems
19.07 (6.99)	19.47 (7.67)	Control	
3.53 (2.26)	5.4 (2.72)	Test	Law-breaking behavior
5.53 (3.29)	5.5 (3.68)	Control	
7.13 (6.68)	13.53 (10.11)	Test	Aggressive behavior
11.73 (8.08)	12 (8.92)	Control	
1.8 (1.61)	3.8 (2.93)	Test	Other emotional behavioral problems
2.6 (1.8)	2.4 (1.91)	Control	

Table-3: Levene's test to examine the homogeneity of variances

P Value	*df2*	*df1*	*F*	Variable
0.092	28	1	037/3	Anxiety / Depression
0.621	28	1	0.249	Isolation / depression
0.588	28	1	0.300	Physical complaints
0.325	28	1	1.003	Social problems
0.470	28	1	0.536	Thinking Problems
0.011	28	1	4.481	Attention problems
0.303	28	1	1.100	Law-breaking behavior
0.412	28	1	0.694	Aggressive behavior
0.762	28	1	0.093	Other emotional behavioral problems

According to **Table 3**, Levene's test results are significant only in attention deficit disorder ($p < 0.05$) and not significant in other variables; in this study, uniform dispersion was considered and the assumption of homogeneity of variances is also established. The results of multivariate analysis of covariance of behavioral-emotional problems in the post-test are presented in **Table 4.**

Since the result of the U-box test was found to be significant, the result of the Pillay multivariate test was reported to be resistant to the assumption of variance-covariance matrix. According to **Table 4**, there is a significant difference between the experimental and control groups in the post-test stage in the scores related to behavioral-emotional disorders ($p < 0.05$); But this significance does not indicate the variables in which the groups are different from each other; for this purpose, the Univariate analysis of covariance has been used, the results of which are reported in **Table 5**.

Table-4: MANCOVA results to investigate the effect of the intervention on children's behavioral-emotional problems

Test power	Effect size	P Value	F	Degrees of freedom	Test
0.884	0.752	0.022	3.709	9	Pilay effect

Table-5: ANCOVA results to investigate the effect of the intervention on behavioral-emotional problems in children

Test power	Effect size	P Value	F	Total squares	Source of changes	Variable
0.994	0.542	0.001	22.46	113.89	Group	Anxiety / Depression
1.00	0.655	0.001	36.11	67.64	Group	Isolation / Depression
0.289	0.103	0.156	2.18	1.23	Group	Physical complaints
0.995	0.548	0.001	23.02	52.25	Group	Social problems
0.655	0.245	0.022	6.82	4.58	Group	thinking problems
0.965	0.455	0.001	15.88	277.91	Group	Attention problems
0.797	0.313	0.008	8.66	15.03	Group	breaking behavior
0.804	0.317	0.008	8.81	114.71	Group	Aggressive behavior
0.942	0.422	0.001	13.87	16.63	Group	Other emotional behavioral problems

According to **Table 5**, there is a significant difference between the experimental and control groups in the variables of anxiety / depression, isolation / depression, social problems, thinking problems, attention problems, law-breaking behavior, aggressive behavior and other emotional behavioral problems ($p < 0.05$). But in the variable of physical complaints, there is no difference between the two groups. Therefore, it can be concluded that the combination of play therapy with clay work and cognitive-behavioral therapy is effective in improving all research variables except physical complaints in primary school children aged 9-7 in Mobarakeh.

4- DISCUSSION

The aim of this study was to determine the combined effectiveness of play therapy with clay work and cognitive-behavioral therapy on behavioral-emotional disorders of the 7-9-year-old students. The findings showed that there was a significant difference between the post-test scores of the experimental and control groups. In fact, the effectiveness of combining play therapy with clay work and cognitive-behavioral therapy is significant in students and it can be

concluded that this combinational therapy improves behavioral-emotional disorders in children except for physical complaints.

The findings of the present study were consistent with the results of other studies, including Oud et al. (2019) who showed that using cognitive-behavioral therapy can reduce depression (9). Scott et al. (2018) also reported that cognitive-behavioral therapy reduces aggression in children (11). Similarly, Vacher et al (2020) confirmed the effectiveness of cognitive-behavioral therapy on hyperactivity, attention deficit and emotional dysregulation. Likewise, the results of research by Chilamakuri et al. (19) and Akbari and Rahmati (24) show that play therapy reduces the rate of aggression, resentment and violence in children. In the same line, Fardoost and Soleimani (25) and Nikpour et al. (1397) stated that using play therapy can reduce negative emotions, anxiety, isolation and shyness in children (26). And Cheng and Ray reported that play therapy can improve children's social and emotional skills (20).

In explaining the combined effectiveness of play therapy with clay work and cognitive-behavioral therapy on behavioral-emotional disorders in children, it can be said that the first step in cognitive-behavioral treatment programs is to identify and recognize emotions. The child then realizes that there is a thought behind every emotion, and as that thought changes, so does the emotion. Using relaxation training techniques as well as the emotional intelligence training that includes training feelings of sadness, happiness, anger, anxiety as well as teaching positive self-talk can reduce anxiety, depression and isolation in children (25, 26). In addition, the use of problem-solving techniques, role-playing, teaching coping strategies, as well as the emotional release created by working with clay, can reduce law-breaking and aggressive behavior in children. One of the play therapy methods is the method of working with clay, which has been used in this research. It is one of the favorite and enjoyable games for children. Children enjoy playing with clay a lot and are satisfied mentally and psychologically when they create new things with their initiation and creativity (11, 25). During the play, children observe the result of their actions that increase their self-confidence, think, make decisions and create something using their imagination. Playing with clay can provide the child with an opportunity to express unpleasant and repressed feelings and to be psychologically drained and relieved. When several children play together, they enjoy participating and trading to make their favorite objects and develop their social skills. In addition, in play therapy, when a child expresses problems in a symbolic language, he or she has the capacity to accept new principles and to rethink. This is why play therapy increases the problem-solving power in children. During play therapy, children re-imagine the difficult and traumatic experiences of the past in their games in order to gain a better understanding of them and to be able to have more control over the future. They also learn how to better manage their relationships and conflicts. As a result, play therapy can have general consequences, such as reducing anxiety and increasing self-esteem, or specific outcomes, such as changing behavior and improving relationships with family and friends (25).

4-1. Study Limitations

This study, like other studies, faced limitations, including the fact that the present study was conducted on a sample of thirty 7-9-year-old boys in the city of Mobarakeh, so in generalizing the results to other communities, caution should be observed. Other limitations include the use of available sampling methods and failure to follow up results in the long run. As a

result, it is recommended to focus on the community of female students in future studies and to investigate other psychological features.

6- CONCLUSION

In general, the combined treatment of play therapy with clay work and cognitive-behavioral therapy on a sample of 7-9-year-old boys in Mobarakeh city could strengthen their self-confidence, social and emotional skills, problem solving skills and behavioral regulation. Therefore, it can be considered as one of the appropriate psychological therapies to reduce behavioral-emotional problems in children. Finally, it is suggested to use this combined in counseling centers, clinics, welfare and schools to treat or reduce behavioral-emotional problems in children.

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