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Comparing the Effectiveness of Parent Education Based on Field's Verbal Information Model and Play Therapy Based on Parent-Child Interaction on Increasing Social Skills of Children with Attention Deficit/Hyperactivity Disorder: A Randomized Controlled Trial

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Original Article

Abstract

Introduction: Social problems are one of the most prominent features of children with attention deficit/hyperactivity disorder (ADHD). The present study aims to compare the effectiveness of parental education based on Field's Verbal Information Model and play therapy based on parent-child interaction on increasing social skills of children with AHDH in Isfahan, Iran.

Materials and Methods: This was a randomized controlled trial in which the statistical population consisted of 5 to 6-year old children with ADHD and their mothers in 2018-2019 who were selected via the purposive and convenience sampling method from counseling and psychological services centers. The subjects were randomly divided into two experimental groups and one control group. The Child Symptom Inventory-4 (CSI-4) was employed for screening children and Social Skills Rating System (SSRS; Gresham & Elliott, 1990) for data collection. Data were analyzed using the analysis of covariance (ANCOVA) test.

Results: The results showed that there was a significant difference in social skills of children with ADHD, between the group of intervention based on verbal information and parent-child interactive play and control group (P = 0.0001). In addition, there was a significant difference between the group of intervention based on field verbal information and interactive play (P = 0.0001). Given the mean scores of social skills, the effect of interactive play was higher than (M = 60.23) interventions based on the Field's verbal information.

Conclusion: The results indicated that both interventions were effective on increasing social skills of children with ADHD. Therefore, the abovementioned methods can be used in counseling and psychological services and parent-child training workshops to enhance the social skills of children with attention ADHD.

Keywords: Field's verbal information model; Parent-child interaction; Social skills; Attention Deficit/hyperactivity disorder

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Introduction

Attention Deficit/Hyperactivity Disorder (ADHD) is a neuro-developmental disorder and its most important symptoms include attention deficit, excessive mobility, and impulsivity. According to the fifth edition of the Diagnostic and Statistical Manual

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of Mental Disorders (DSM-5), this disorder can be diagnosed before school age (1) and its prevalence in children under 7 years, is estimated at 2 to 8% (2). Failure to treat this disorder can lead to dire consequences for children in the social, educational, and occupational fields (3). Given these consequences, the earlier the treatment of this disorder is performed at a younger age, the less problems and the more success will be for the future of the child (4).

ADHD is associated with symptoms such as weakness in social skills (such as weakness in social interactions and inability to establish and maintain friendly relationships) (5). The results of studies show that the presence of these symptoms can have detrimental consequences for a person during life (6-8). Children with ADHD exhibit the lowest level of social interaction (9). About half of children and adolescents with this disorder, due to a lack of social skills, are considered unpopular from the very beginning of their relationship with their peers and are often rejected by their peer group and have fewer friends compared to other children and adolescents (11,12). In addition to problems with peers, these children do not have good relationships with teachers in the classroom and other people, including parents, due to destructive behaviors (13).

Parent-child conflict, parental stress, repeated blame and punishment, or neglect of parents and others around them, put the socialization process of children with ADHD at risk (14). In addition, the presence of traits such as deficiency in response inhibition, difficulty in understanding the feelings of others, and deficiency in executive functions leads to increasing difficulty in establishing and maintaining friendly relationships for these children (15). Numerous symptoms and consequences of ADHD have led to a wide variety of treatments, including medication (15), psychosocial therapy (16), diet control to improve eating disorders (17), herbal remedies, and homeopathy (18,19), biofeedback (20), and meditation (21) are used for these people; However, interventions are not limited to these therapies. Among these treatment strategies, psychosocial interventions such as parenting and medication have been used more (22).

Due to the essential role of parents in raising children and increasing the likelihood of successful treatment with parental involvement, this type of intervention has received more attention (11). Play therapy based on parent-child interaction is one of the interventions that has yielded success in the treatment of children (23). These interventions focus on improving the parent-child relationship through play and are based on the premise that improving this relationship through play improves the child's emotional and behavioral problems, in addition to ensuring the mental health of the parent and the child (24). The outcomes of various studies indicate that training of play therapy based on parent-child interaction is effective on the rate of behavioral disorders (25), anxiety (26), enhanced social skills (27), improved parent-child relationship (28), and parental stress (29).

In different approaches to play therapy, promoting skills and interpersonal interactions is always one of the therapeutic goals (30); However, regardless of the effect and importance of the words used in parent-child interactions, this is not properly achieved (23). The effect of verbal interactions on children's upbringing is obvious (31); However, less attention has been paid to this issue in the design of studies and interventions. The verbal information model proposed by Field and Lawson attaches special importance to verbal information (32). Given this model, verbal information that is exchanged between parent and child plays a key role in creating fears, anxiety, and illness in children (33). This model is based on the Reichmann's theory who believed that anxiety and fear are created through three direct conditions, modeling, and false verbal information (34). These anxieties may be social (the child avoids communication) or pervasive (35). Such problems become more complex in children with ADHD.

Verbal information pattern can increase the child's fear (36) and incorrect verbal information among primary school children leads to the induction of misconceptions (37). It has also been shown that parents' verbal information contributes to children's anxiety (38). On the other hand, as false verbal information from parents can lead to stress, fear, and anxiety in children, these problems can be addressed through the provision of correct information and cognitive correction (39). In other words, providing positive verbal information corrects popular beliefs and behaviors in children (40). Given the investigations, no study has been performed on the relationship between providing verbal misinformation and problems in children with ADHD. Due to the positive interaction between parent and child in the Field Verbal Information Model, it is expected that the intervention provided based on this model will be effective on children with ADHD in various dimensions, especially in promoting social skills. Therefore, this study was carried out with the aim to compare the educational package of parents based on

the Field verbal information model with play therapy intervention based on parent-child interaction in social skills of children with ADHD.

Materials and Methods

This study was a quasi-experimental controlled randomized clinical trial with pre-test and post-test stages and control group. The statistical population of the study consisted of all preschool children aged 5 to 6 years and parents referring to the counseling and psychological service centers in Isfahan, Iran, in the school year 2018-2019, among whom the children with ADHD were diagnosed by a psychiatrist and clinical psychologist. Among the districts of Isfahan, districts 3 and 7 were selected as the middle area in terms of socio-economics. Sampling was performed by the convenience method. To do this, among the psychological and counseling service centers in Isfahan, which were licensed by the Psychology and Counseling Organization of Iran, the researcher referred to the centers and among the centers willing to cooperate, 56 children and their parents were selected using the purposive method. First, the cases of children with ADHD were reviewed, and the children who met the study inclusion criteria were selected and their parents were included in the education program. After 56 parents were selected purposively, their placement in the experimental and control groups was performed randomly by lottery in three groups: verbal information training (n = 15), interactive play therapy training (n = 15), and control group (n = 15). The sample size was determined based on similar studies (24,26,27) and also the recommendation of the book of Statistics and Research Methods (41). The study inclusion criteria included age range 5 to 6 years for children (due to age limit of the questionnaire), age range 20 to 45 years for mothers with at least a diploma degree (due to ensuring that mothers were literate enough to cooperate), written consent of mothers for the conscious and committed participation in the study, the real parents living together, and not participating in any other educational and medical courses. Moreover, absence from the training sessions, parents' dissatisfaction to continue cooperation in the study, suffering from a particular disease, drug use, and problems and disorders in parents that affected the intervention process, were also considered as yhe exclusion criteria.

Gresham and Elliott Social Skills Rating System (SSRS): This scale was designed by Gresham and Elliott in 1990 and has three forms for parents, teachers, and students and was prepared for three pre-school, primary and secondary, and high school courses. This scale measures the frequency of behaviors affecting social growth and adequacy and adaptation of the student at home and school and can be used for screening, classifying students, and social skills training planning (42). The teacher and parent form has two general scales of "social skills and behavioral problems" and the student form only examines social skills (43). This questionnaire includes 47 items in two sections of social skills (35 items) and behavioral problems (12 items). The items of the questionnaire are scored based on the three-point Likert scale as 0, 1, and 2 for the options of never, sometimes, and often, respectively, and the items in the behavioral problems section are also scored inversely. The SSRS scale was standardized on 304 girls and boys aged 6 to 12 in Shiraz in Iran (42).

The reliability of this scale was reported as 0.94 by Gresham and Elliott using the Cronbach's alpha coefficient method (43). In the present study, the Cronbach's alpha coefficient for social skills was 0.82.

Child Symptom Inventory-4 (CSI-4): This inventory is used to assess ADHD symptoms. The CSI-4 questionnaire is a behavior grading scale that was first designed in 1984 by Sprafkin and Gadow to screen 18 behavioral and emotional disorders in children (44). Items 19 to 26 of this scale address ADHD. The validity of the questionnaire was confirmed by retesting method on 75 boys aged 6 and 10 years and the results on the intensity and screening scores for CSI in two executions were reported to be 0.75 and 0.89, respectively (45). In Iran, the sensitivity of the CSI-4 inventory based on the best cut-off score of 5 was 0.89 for ADHD (46).

Study methodology: After 56 parents were selected as a sample and placed in the experimental and control groups, the SSRS and CSI-4 questionnaires were distributed among the experimental and control groups and implemented as the pretest. Then, the parent training package based on the verbal information model and play therapy based on parent-child interaction was performed on the two experimental groups and the control group did not receive any intervention. In the next step, SSRS and CSI-4 were distributed among the experimental and control groups and implemented as the post-test, and the effectiveness of the interventions in the two experimental groups was evaluated in comparison with the control group. It should be noted that to observe research ethics, the intervention was also implemented on the control group after conducting the study based on the developed package.

Introduction and implementation of the verbal information training package based on the Field model

The Field verbal information training package was developed using the qualitative method of deductive thematic analysis. The deductive analysis process is presented in the form of three basic stages of "preparation, organization, and reporting". The analysis unit in the present study was the published articles and books related to the Field's verbal model. By carefully reviewing the sources, the basic concepts of the Field verbal model and the components forming the basis of this model were defined conceptually. The identification of variables or key concepts for classifying the primary codes was performed initially. In the next step, conceptual definitions for each category were determined using the Field model. As a result, 76 articles were identified and selected as the research community. The criteria for selecting articles for analysis were 1990 to 2018 in terms of time period and electronic and physical (book) in terms of context that finally, 28 articles were selected for analysis and reviewed. Then, by presenting and assuming specific definitions before starting the study, the designated texts were reviewed and by comparing the predetermined definitions and the analyzed texts, the presence or absence of instances of that definition in the desired texts was judged. In this type of content analysis, using a pre-defined classification that was obtained based on theoretical topics, the analysis began and finally, the package was designed. The steps of developing and determining the validity and reliability of the parent training package based on the Field verbal information model have been specifically discussed in another reference (33).

Before the start of the treatment sessions, the group members (parents) got acquainted with the therapist. Then the educational package was introduced and the parents' expectations were discussed. The sessions were held in groups as two hours and once a week in two months in one of the clinics (which allowed the sessions to be held). Each session began with a review of the content and assignments of the previous session. Besides, the exercises were performed and at the end of the session, parents were provided with homework related to that session to complete at home. In the next session, the homework was evaluated and reviewed (Table 1).

Table 1. Summary of parent education sessions based on Field verbal information model

Session	Session content
1	Introduction/Objectives and expectations, Discussion about the characteristics and problems of children, Explaining problems within the framework of the verbal information model, Explaining the effect of negative and positive verbal information, Discussing and summarizing and answering ambiguities and questions, Determining homework (recording examples of daily interactions)
2	Assessing homework and problems in doing homework, accurately evaluating the verbal model using the homework sheet, identifying the dominant verbal model of the parents in relation to the child, describing the verbal model and classifying the verbal information of the parents as threatening, punishing, humiliating, aggressive, introducing the positive information model, homework assignment (continuing to record interactions and awareness of negative information and replacing positive information)
3	Assessing homework and its problems, evaluating negative information, anxiety, worry, and negative bias of parents themselves, presenting strategies to reduce anxiety and worry and correct negative information, discussion and brainstorming about positive alternatives to negative information based on parents' examples, reviewing positive alternatives and choosing them, homework and emphasizing the use of positive verbal models
4	Assessing tasks and problems, explaining the effect of verbal information based on their effect on the dimensions of cognition, emotion, and behavior, examining beliefs, fears, and avoidant and fearful behaviors in the mentioned dimensions, homework with emphasis on evaluating aspects of cognition, behavior, and excitement in the child
5	Identifying children's problems related to verbal model, examine children's cognitive errors and biases, including risk and threat bias or confirmation of danger, identifying avoidant behaviors and fears and anxieties, determining intervention goals, introducing appropriate methods of providing verbal feedback (about child's performance and characteristics with emphasis on abilities), assigning tasks
5	Discussion about children's problems in different dimensions of cognition, emotion, and behavior, reviewing information strategies to solve these problems and introducing information correction methods in the context of positive verbal interactions, introducing other effective information sources (TV, books, friends, etc.), summarizing and assigning homework
6	Assessing assignments, identifying other negative sources of information and their effect by providing negative information on the beliefs, fears, and concerns and behaviors of the child, methods of eliminating the effects of other sources of information, assigning homework
7	Discussing effective methods for correcting problems caused by other sources of information, introduction and practice of verbal problem solving, strengthening positive verbal skills in parents, homework
8	Discussing and summarizing the problems in the verbal communication pattern, predicting interactive situations and practicing verbal reinforcement methods, positive verbal information, providing positive feedback, discussing ways to strengthen verbal communication skills and obtain positive and realistic information to deal with future situations and problems (emphasis on preventive aspects)

Table 2. Summary of sessions play therapy based on the parent-child relationship

Session	Session content
1	Initial evaluation, introduction and familiarity with the goals and expectations of the group and the researcher and determining the orientation of the treatment
2	Training child-centered interaction skills (without the presence of the child)
3	Guiding and practicing child-centered interaction skills (with the presence of the child)
4	Guidance along with explaining the subject of children modeling from parents (with the presence of the child)
5	Guidance with emphasis on the issue of receiving support and stress (with the presence of the child)
6	Guidance with training behavior management in public places (with the presence of the child)
7	Guidance with the beginning of the generalization of skills outside the game room (with the presence of the child)
8	Guidance with training the regulation of home rules (with the presence of the child)
9	Guidance and solving problems that prevent the completion of treatment (with the presence of the child)
10	Graduation (with the presence of the child)

Play therapy based on parent-child interaction was derived from the study by Landreth and Bratton, which was based on theoretical principles and therapeutic techniques in the mother-child play therapy (32). In the following, the content of the sessions of the abovementioned method is presented, which was conducted in ten two-hour sessions on a weekly basis (Table 2).

The content of these educational sessions was based on improving the parent-child relationship and creating empathy and acceptance from the parents for the child. The practical program in this method of play therapy included ten training sessions and the content of the first two sessions included stating the importance of the game, the rules, and how to perform the parents' play sessions at home. The rules of the play session were trained and the type of toys needed in the sessions and the place and time of playing with the child were introduced. The third and fourth sessions included teaching parents about reflective responding to the child's feelings and emotions.

Session 5 focused mainly on reviewing the skills taught to parents in relation to child play. Teaching limitation skills for child misconduct or disobeying the rules of the game and teaching the child the right to choose to obey or disobey the rules were among the issues trained in the sixth and seventh sessions. The eighth session reviewed the exercises related to the skills learned in the previous sessions and generalize them to situations outside the game sessions. Self-esteem promotion responses to the child's behaviors and efforts were among the other issues discussed in this session. In the ninth session, the major problems of parents in some skills were solved and continuation of the game sessions on a weekly basis and further generalization of the skills were emphasized. In the final session, the strengths of the parents compared to the first session, the initial problems of the parents, and the improvements they gained were discussed.

The Shapiro-Wilk test was used to evaluate the distribution of the social skill scores and the Levene's test to examine the homogeneity of the variance of the analyzed groups. The study hypotheses were also tested using the analysis of covariance (ANCOVA) test. For the pairwise comparison of the groups in the social skills variable in the post-test stage, the Least significant difference (LSD) post hoc test was employed. The reliability of the questionnaires was determined using the Cronbach's alpha coefficient. Finally, the data were analyzed in SPSS software (version 23, IBM Corporation, Armonk, NY, USA) considering $P < 0.05$ as the significant level. The intention-to-treat (ITT) analysis was not performed due to no drop in participants in both groups.

Results

The face and content validity of the tests were assessed based on the opinion of the research team; Thus, the team experts confirmed the face and content validity of these tests in terms of relevance, clarity, and understandability, and applicability to measure the variables of the present study. The reliability of the questionnaire was obtained as 0.78 using Cronbach's alpha test. In the present study, 45 preschool children were present, with 15 children placed in each group. The demographic information of the groups is presented in table 3.

The results showed that there was no significant difference among the three groups in the variables of child age, mother age, child gender, and mother education ($P > 0.050$). The distribution of the social skill scores in each of the three groups followed the normal distribution ($P > 0.050$) and the results of the Levene's test were indicative of homogeneity of the variance of scores in the groups ($P > 0.050$).

The ANCOVA test was employed to compare the three groups in the social skills in the post-test stage (Table 4). The findings suggested that there was a significant difference between the experimental and control groups in terms of social skills.

Table 3. Demographic characteristics of the studied groups

Variables		Field verbal information group	Play therapy group	Control group	Inter-group comparison
Child age (year) (mean ± SD)		5.00 ± 0.76	4.86 ± 0.83	5.00 ± 0.76	P = 0.865, F = 0.145
Moder age (year) (mean ± SD)		32.13 ± 4.32	31.93 ± 4.32	33.20 ± 4.78	P = 0.718, F = 0.335
Gender [n (%)]	Boys	7 (46.66)	7 (46.66)	7 (46.66)	P = 0.870, χ^2 = 7.578
	Girls	8 (53.33)	8 (53.33)	8 (53.33)	
Mother's education [n (%)]	Diploma	8 (53.33)	8 (53.33)	9 (60.00)	P = 0.051, χ^2 = 2.291
	Bachelor	4 (26.70)	2 (13.30)	1 (6.70)	
	Master	2 (13.30)	4 (26.70)	4 (26.70)	
	Ph.D.	1 (6.70)	1 (6.70)	1 (6.70)	

SD: Standard deviation

Table 4. Comparison of mean scores of variables by group membership using the analysis of covariance (ANCOVA) test

Source	Group membership
Sum of squares	160.332
Degree of freedom	3
Mean squares	80.166
F statistic	85.847
P	0.0001
Eta coefficient	0.807
Test power	1.00

In other words, interventions based on the Field verbal information and interactive games were more than 80% effective on social skills in the post-test phase (Table 5).

For the pairwise comparison of the three groups in social skills, the LSD post hoc test was used (Table 6).

Given the results of table 6, in social skills, there was a significant difference between the groups of interventions based on the Field verbal information and interactive games with the control group (P = 0.001). Furthermore, there was a significant difference between the Field verbal information-based interventions and interactive games (P = 0.050). Comparison of the Field verbal intervention group with the interactive games group showed a 58% effect of the interactive games. Additionally, the comparison of the Field verbal information group and control group indicated that the effect of the Field verbal information-based interventions on social skills was more than 69%. Comparison of the interactive games group and control group showed that the effect of the interactive games on social skills was more than 84%. Although there was a statistical difference between the effectiveness of interactive games and Field verbal information-based interventions, the comparison of means revealed that considering this value, the difference should be cautious clinically.

Discussion

Numerous behavioral problems in children in different years have been considered by parents and professionals, with various treatments designed for these problems. ADHD is a neurodevelopmental disorder that, if left untreated, can have dire consequences for children in the social, educational, and occupational settings (3). The aim of this study was to compare the effectiveness of parental education based on the Field verbal information model with play therapy based on the parent-child interaction on increasing social skills of children with ADHD. Taking into account the results, it can be concluded that the parent education package based on the Field verbal information model and interactive games had a significant effect on children's social skills. The pairwise comparisons also demonstrated that the effect of interactive games was greater than that of the Field verbal information. In the section of effectiveness of the Field verbal information model in most studies, the children's anxiety and fear score has been examined (31) and based on the reviews performed, the children's social skills were not examined in previous studies, therefore it was not possible to compare this finding with previous studies.

However, training parents based on the Field verbal information was effective in reducing fear and anxiety (20,21,23,25,26) and modifying beliefs and behaviors in a socially acceptable manner (28) and in terms of effectiveness, parents' verbal information improved and increased the children's behaviors favored by parents and society; these previous findings were consistent with the results obtained in the present study.

Table 5. Social skills scores by three groups

Variable	Stage	Field verbal information group	Play therapy group	Control group	P (intergroup)
Social skills	Pre-test	56.13 ± 8.36	55.20 ± 7.62	57.26 ± 6.97	0.763
	Post-test	58.86 ± 8.48	60.33 ± 7.59	57.73 ± 6.89	0.0001
P (intragroup)		0.0001	0.0001	0.1720	

Table 6. Least significant difference (LSD) post hoc test results for pairwise comparisons of groups in the social skills variable in the post-test stage

Variables	Group (I)	Group (J)	Mean difference	Measurement error	P	Eta coefficient
Social skills	Interventions based on Field verbal information	Interactive games	-2.394	0.353	0.0001	0.584
		Control	2.259	0.354	0.0001	0.697
	Interactive games	Control	4.653	0.355	0.0001	0.844

Social problems are one of the most prominent features of children with ADHD (33). Hyperactive and impulsive behaviors destroy the relationships of these children with their peers. These behaviors cause the person to experience problems while waiting and taking turns (47). Moreover, impulsivity causes these children to constantly interrupt other people's conversations. Uncompromising cognitive and emotional biases of children with this disorder prevent them from establishing relationships with peers (31). These children have more hostile and aggressive behaviors compared to children without the disorder (34) and, therefore, are less accepted among peers (48). Therefore, it can be said that the Field Verbal Information Parent-Based Education Package probably affects their information processing by emphasizing the transmission of positive information to children. Children with ADHD have a negative self-concept of lack of social ability due to negative feedback from the environment. The feedback received can be the result of the child's frequent experiences that teach him/her to avoid future communication and remains as an anxiety in the child. This anxiety may have a social aspect and the child may avoid communication or have a pervasive aspect and affect other dimensions of the child's behavior (24). It has been observed that providing positive verbal information modifies children's beliefs and fear behaviors (28). Therefore, the Field Verbal Information Parent Training Package may be able to address these anxiety situations by providing accurate information and cognitive correction by influencing the information process in these children (27).

It can be claimed that the first sign of a deficit in children's social skills occurs at home and in relation with parents (22). Therefore, by teaching the training package designed for parents, including recognizing children's emotions and behaviors and their communication problems and discussing and brainstorming about them, as well as emphasizing a variety of solutions through positive verbal information, one can strengthen one of the social circles of these children. The positive consequence of the child's improved behavior at home or improved communication and interaction can be extended to other social functions in different environments. Children also improve their control techniques through positive feedback formed during the intervention; This ability is effective in improving their social skills (35). The effect of interactive play therapy based on parent-child relationship on social skills of children with ADHD in the present study was in line with the results of some studies (16,36,37). This parent-child approach provides a context in which the parent interaction with the child with ADHD goes beyond just discipline and daily obedience and addresses issues related to improving the mental health of the child and parent. It has previously been suggested that one of the behaviors that makes a child with ADHD hateful to their peers is aggression (49). According to the combined model theory, this behavior and other antisocial behaviors that cause social problems and threaten children's mental health are learned in the chain of hostile parental interactions (38). Play therapy based on parent-child interaction, with the initial assumption of the development of dysfunctional parent-child conflicts (39) and positive verbal behaviors of parents towards children that lead to the improvement of child self-concept (40), teaching special communication skills and managing behavior with children and most importantly, accepting of child behavioral constraints, breaks down the vicious cycle of negative parent-child interaction (38). Parents learn the skills of building safe relationships for their children's development, thus increasing the child's socially desirable behaviors and decreasing his/her negative behaviors. When parents learn to be close to their children, the children gain the first experience of a close emotional relationship, which is the prelude to forming intimate relationships in the educational environment and findings friends (40).

Given what stated above, play therapy based on parent-child interaction was more effective than parent education package based on Field verbal information model. Explaining this section, it can be declared that play therapy based on parent-child interaction focuses more on the analysis of behavioral components compared to the Field verbal information treatment, and rather than focusing on a behavioral dimension, it is a broad theory that

examines it from different angles depending on the type of abnormal behavior being treated (50). Emphasis on the interaction dimension is a special advantage of this treatment (51) which creates more changes in the relationship of the clients.

On the basis of the outcomes, both the interactive play therapy based on the parent-child relationship and the parent education package based on the Field verbal information model had an effect on the social skills of children with ADHD. However, the comparison of means showed that these changes were small compared to the control group. Explaining these findings, it can be said that the formed behaviors of parents and characteristics of children with ADHD are such that the lasting and profound effectiveness of interventions and trainings requires a long period, while studies like the present one are conducted in a short period. On the other hand, the results of studies suggest that changing parental behavioral interactions is effective in improving the symptoms of preschool children with ADHD and parents of children with ADHD need more specific parenting skills in comparison to the children without this complication and parent education is more important than other family interventions and its positive therapeutic effects are also observed in subsequent follow-ups (52).

Limitations

Among the limitations of the present study was the convenience and limited sampling. In addition, the study was conducted in Isfahan and the necessary care should be taken in generalizing the results. The authors did no evaluate other training provided to mothers in educational institutions on the issues of children with ADHD.

Recommendations

It is suggested that the study be conducted in other cities and other education areas of Isfahan considering the socio-economic differences of the residents of these areas. Moreover, given the role of the environment in the development or exacerbation and persistence of some childhood disorders and the importance of this period, other parent and family-based treatment methods should be considered for disorders of this period.

Conclusion

Play therapy based on the parent-child interaction and parent education based on the Field model had a significant effect on improving social skills of children with ADHD. These two methods can be used as an effective intervention alone or in combination with other approaches by modulating negative emotions and modifying the parent-child relationship.

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Authors' Contribution

Haleh Darmiyani-Tabtabaei: study design and ideation, attracting financial resources for the study, data collection, manuscript preparation, specialized evaluation of the manuscript in terms of scientific concepts, approval of the final manuscript to be submitted to the journal office, responsibility to maintain the integrity of the study process from the beginning to the publication, and responding to the referees' comments; Salar Faramarzi: study design and ideation, providing study equipment and samples, manuscript preparation, specialized evaluation of the manuscript in terms of scientific concepts, approval of the final manuscript to be submitted to the journal office, responsibility to maintain the integrity of the study process from the beginning to the publication, and responding to the referees' comments; Farah Naderi: study support, executive, and scientific services, manuscript preparation, specialized evaluation of the manuscript in terms of scientific concepts, approval of the final manuscript to be submitted to the journal office, responsibility to maintain the integrity of the study process from the beginning to the publication, and responding to the referees' comments; Amir Ghamarani: analysis and interpretation of results, manuscript preparation, specialized evaluation of the manuscript in terms of scientific concepts, approval of the final manuscript to be submitted to the journal office, responsibility to maintain the integrity of the study process from the beginning to the publication, and responding to the referees' comments; Zahra Eftekhar-Saadi: specialized statistical services, manuscript preparation, specialized evaluation of the manuscript in terms of scientific concepts, approval of the final manuscript to be submitted to the journal office, responsibility to maintain the integrity of the study process from the beginning to the publication, and responding to the referees' comments.

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Conflict of Interest

The authors do not have a conflict of interest.

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