




Comparing the Effectiveness of Social-Emotional Aspects of Learning (SEAL) and Parent Effectiveness Training (PET) on Improvement of symptoms of ADHD, in 6 to 12-Year-old Children with ADHD

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ABSTRACT

Objective: The purpose of this study is comparing the effect of Social-Emotional Aspects of Learning (SEAL) package with Parent Effectiveness Training (PET) package on the improvement of attention deficit hyperactivity disorder (ADHD) symptoms in children aged 6-12 years with ADHD.

Methods and Materials: This research was semi-experimental and a pre-test-post-test design was used with a control group (2 experimental groups and one control group). The statistical population of this research was all male and female students aged 6-12 years old with ADHD in Isfahan who were studying in the academic year of 2021-2022. The research sample was 48 parents and students with ADHD who were purposefully selected and randomly placed in groups. Students were selected according to the criteria for entering the research. Each training package included 8 sessions for children and parents, that SEAL package for children and PET package for parents. The Child Symptom Inventory-4 (CSI-4) questionnaire (Mohammed Ismail & Alipour, 2002) was used to collect data. To analyze the data, after checking the assumptions of the parametric tests, ANCOVA and MANCOVA analysis were used using SPSS-23.

Findings: The findings showed that there is a significant difference between the average scores before the intervention and after that. But after the intervention, a significant difference observed in the average scores of the experimental and control groups. ($P < 0/05$)

Conclusion: It can be concluded that the improvement of symptoms of ADHD after the training programs in the experimental group is different from the control group. So, the programs improved the symptoms of ADHD.

Keywords: Social-Emotional-Learning, Parent Effectiveness, Attention Deficit and Hyperactivity.

1. Introduction

Attention deficit and hyperactivity disorder is one of the Neurodevelopmental and chronic disorders that begins in childhood and can be diagnosed during the preschool years (American Psychiatric Association, 2022; Wagner & McNeil, 2015). The global prevalence of this disorder is estimated at 5.29% (American Psychiatric Association, 2022; Polanczyk et al., 2007) and has an early onset (Biederman, 2005). This disorder is one of the most frequent childhood diagnoses, which manifests as an unfavorable development in the field of attention and motor activity, which is classified as a childhood behavioral disorder. The main features of this disorder are attention deficit, hyperactivity, and impulsivity (Sadock et al., 2017; Willcut, 2012). These children do not have sufficient and necessary skills to monitor their behavior and unable to regulate their behavior for a long time (Bussing et al., 2012). In order to make a diagnosis of ADHD, the symptoms must be chronic, before the age of 7 years and observed in at least two different situations like home and school (Fabiano et al., 2008; Fabiano et al., 2006).

According to the report of the National Institute of Mental Health, attention deficit includes symptoms such as difficulty in paying attention and listening to commands and concentrating on it, getting tired of doing the job within a few minutes, bad handwriting, incoherence and unplanned movement, difficulty and inability to learn and sometimes they drown in fantasy. Impulsivity is the form of immature behavior, acting without thinking, reducing awareness and sensitivity to what is happening around, being hasty or showing a strong reaction to small and trivial problems, rushing into work and moving from unfinished work to another. Hyperactivity also has symptoms such as inability to wait in line, excessive activity or lack of rest, aggressiveness, engaging in dangerous activities without considering the consequences, talking too much and inability to play calmly (Yahya & Sochos, 2013). Among other problems of children with attention deficit hyperactivity disorder, learning disabilities and social and emotional problems can be mentioned (Katz, 2009). This research focused on emotional, social, educational, learning and educational aspects. Family is one of the most fundamental factors in the formation of children's personality. As long as children's emotions in the family are not understood and paid attention to, the individual's mental health will also be affected by the negative effects. Children with ADHD have little progress in school due to lack of

participation with others and resistance to their expectations and excessive inattention. These children often have problems such as reduced self-confidence and self-efficacy, impulsive behaviors, disorganization, depressed mood, and problems with parents, family members and school (Hagstrøm et al., 2020).

Many factors influence the severity of these symptoms in hyperactive children. One of these factors is their relationship with their parents. Every child is a unique being who depends on his/her parents for growth and excellence (Denston et al., 2022). On the one hand, the relationship with the parents can turn the child into a complete, developed and normal human being, and on the other hand, if this relationship is destroyed, it can lead to all kinds of mental disorders and then all kinds of mental suffering for oneself and others (Khanjani, 2005). Research has shown that children's disorders are closely related to parents' psychological problems and their upbringing methods (Beirami, 2009). Parents of children with ADHD face unique challenges in the field of parental role (Crnic et al., 2005). Family performance scores in families with children with ADHD are lower than other families (Mohammadpour & Kasaei, 2013). These behaviors weaken the child's relationships at home, school and with adults and peers (Fabiano et al., 2006). Although the environmental and genetic conditions is effective in the type and severity of this disorder (Langley et al., 2007).

The results of Van den Hoofdakker et al. (2007) showed that mothers of children with attention deficit hyperactivity disorder, compared to mothers of normal children, use more authoritarian behavior when interacting with their children. They disagree more, they give less rewards to the child's appropriate behaviors, and their rewards are more random. Damages inflicted on these children, along with their impact on the family, increase the need for effective intervention and treatment. Multimodal programs are currently more useful for children with ADHD (Van den Hoofdakker et al., 2007). The most important treatment method for these children, along with medication, is teaching parents how to adapt and cope with children with developmental problems, as well as teaching these children emotional and behavioral control skills (Alizadeh, 2019; Evans et al., 2018; Schatz et al., 2020). Among these effective therapeutic interventions to increase psychological flexibility and adaptation of children with developmental disorders and their parents, we can mention Social-Emotional Aspects of Learning package and Parent Effectiveness Training package.

Barkley (2006) believes that 50 to 80 percent of hyperactive children have communication and social problems (Barkley, 2006). Although communication and social problems are not considered as part of the clinical diagnosis of attention deficit hyperactivity disorder (American Psychiatric Association, 2022); However, damage in communication functions can overshadow the situation of hyperactive children in the future (Gardne & Gerdes, 2013). Moreover, communication and social problems, in addition to aggressive behaviors, provide the basis for the occurrence of depression, anxiety, academic problems and low self-esteem (Mikami et al., 2008). In the field of therapy, researchers have formulated different approaches and methods to respond to the problems of children suffering from ADHD. Two of them, which have been developed in recent years, are the Social-Emotional Aspects of Learning and Parent Effectiveness Training programs.

Social-Emotional Aspects of Learning is an educational program for primary school students that helps them learn social, emotional and behavioral skills (DfES, 2005). After working and researching more than 500 primary schools, the United Kingdom Education Organization presented this method in the form of a specific framework (DfES, 2006). The content of the Social-Emotional Aspects of Learning package is learning based on Goleman's (2006) aspects of emotional intelligence, which strengthens children in the five areas of self-awareness, emotion management, motivation, empathy, and social skills. This program is designed to develop reasoning, evaluation, creativity, problem solving, research and information processing skills. Parent Effectiveness Training is also a comprehensive program in which parents acquire very special skills that strengthen the ways of communication between them and their children and learn new ways to resolve conflicts between parents and children, which makes these conflicts strengthen the relationship rather than worsening the situation and helps to improve children's skills (Gordon, 2000). In this program, the relationship that the child establishes with his/her parents is important and is considered the main core of the treatment. Various studies conducted on the effectiveness of the parenting program have shown that this program reduces behavioral problems (Eyberg et al., 2008), improves family relationships (Lundahl et al., 2006), improves parent-child interaction (Leung et al., 2011) and improves children's developmental skills (Shek & Keung, 2006).

So far, the Social-Emotional Aspects of Learning program has not been tested or researched on children with attention-deficit-hyperactivity disorder. Also, the Parent Effectiveness Training program has not been investigated on the parents of children with ADHD. From the above materials and the research background, and the current research, it is concluded that both educational programs of the Social-Emotional Aspects of Learning and Parent Effectiveness Training can have an effect on attention deficit hyperactivity disorder; Furthermore, in this research, the effectiveness of these two educational methods has been compared.

2. Methods and Materials

2.1. Study Design and Participants

In this research, according to its purpose, a semi-experimental data collection method was used with a pre-test-post-test design with a control group and a follow-up period. The statistical population of the study included all male and female students aged 6 to 12 with attention deficit hyperactivity disorder in Isfahan city, who were studying in the academic year of 2021-2022. The sample of the study was 48 parents and students with attention deficit hyperactivity disorder who were selected by multi-stage sampling method and randomly placed in experimental and control groups. The implementation of the research was as follows: to select the students, the centers of learning disorders in the 6 educational districts of Isfahan city were referred, and after checking the background, the students were screened by the Wechsler IV test, and the clinical interview was used for the final selection from which 48 mothers and students with attention deficit hyperactivity disorder were purposefully selected and randomly assigned to experimental and control groups. The experimental group of SEAL program was 16 students with ADHD, the experimental group of PET was 16 Mother of students with ADHD, and the control group was 16 students with ADHD.

In this research, during eight 90-minutes sessions, the social-emotional aspects of learning educational package were implemented on the experimental group of 6- to 12-year-old students with ADHD, and the parent effectiveness program was implemented in eight 90-minutes sessions on the experimental group of mothers who have a child with ADHD. Then the improvement of symptoms of ADHD in children aged 6 to 12 years with ADHD was measured in the pre-test, post-test and follow-up period in all three groups. The criteria for entering the research for the parents of the

students: 1. having at least a diploma in literacy 2. volunteering to participate in intervention or training 3. being the real parent of the child. Criteria for entering the research for students: 1. Suffering from attention deficit hyperactivity disorder 2. Willingness to participate in the study 3. Be in the age range of 6-12 years. 4. Do not have any other specific psychological disorder according to the diagnosis of a psychologist or psychiatrist. 5. Does not have any sensory defects, and physical illness and any disability such as mental disability, blindness, physical-motor disability, autism spectrum disorders in the child, suffering from non-verbal learning disorder according to the physician's diagnosis. Criteria for exiting the research: 1. Absence of more than two sessions of students or mothers in educational and intervention sessions 2. Irregular attendance in treatment sessions 3. Non-cooperation with the researcher and failure to do exercises and homework during two sessions 4. The presence of any problem that makes the intervention process difficult.

2.2. Measure

2.2.1. Child Symptom Inventory – 4 (CSI-4)

Child Symptom Inventory has two parent and teacher forms. The parent form has 112 questions that are set for 11 major groups and one additional group of behavioral disorders. These disorders include attention-deficit-hyperactivity disorder, defiance disorder, conduct disorder, generalized anxiety disorder, social phobia, separation anxiety disorder, obsessive-compulsive disorder, specific phobia, major depressive disorder, depressive mood disorder, schizophrenia, pervasive developmental disorder, Asperger's disorder, vocal and movement tics, post-traumatic stress disorder and excretion disorders (Mohammad Esmail & Alipour, 2002). This questionnaire has two types, parents and teachers, and is one of the common screening tools for diagnosing behavioral, emotional and cognitive symptoms of psychiatric disorders, including ADHD, which is based on the criteria of the diagnostic and statistical guide for mental disorders, and with the emergence of DSM-IV been revised by Gadow & Sparfkin (1995) with slight changes compared to the previous versions. The test-retest validity of the Child Symptom Inventory by Gadow & Sparfkin (1995) showed that the test-retest validity is significant at the 0.0001 level for all classes (Gadow & Sparfkin, 1997). In the research of Kalantari, NeshatDoost and Zarei (2001), the reliability of this questionnaire was obtained using the half-measure

method for the teachers' version and 0.85 for the parents' version (Kalantari et al., 2001). The content validity of this questionnaire was confirmed by 9 psychiatrists in the research of Mohammad Ismail and Alipour (2002). The test-retest method was used to determine the reliability, and the correlation coefficient was 0.96 for teachers and 0.92 for parents (Mohammad Esmail & Alipour, 2002). In order to determine the validity of this test, the content validity and correlation of the data of the first stage of the teachers with the first stage of the parents was used, which was equal to 0.89 (Shojaei et al., 2008).

2.3. Interventions

2.3.1. Social and Emotional Aspects of Learning (SEAL)

The Social-Emotional aspects of Learning Curriculum is a special educational program for primary school students that helps them learn social, emotional and behavioral skills (DfES, 2005). Social and emotional aspects of learning underpin all aspects of life at home, school and community. Different terms are used to describe the social-emotional educational method of learning; including personal and social growth, emotional literacy as well as social and emotional competence. After working and researching more than 500 primary schools, the United Kingdom Education Organization presented this method in the form of a specific framework (DfES, 2006). The content of the social-emotional aspects of learning educational package is based on Goleman's aspects of emotional intelligence, which strengthens children in the five areas of self-awareness, emotion management, motivation, empathy, and social skills (Goleman, 2006). The SEAL is designed to develop the skills of reasoning, evaluation, creativity, problem solving, research and information processing, and the goals of the primary education of this program are conscious awareness of vocabulary that promotes feelings and from the beginning of education, students are taught the necessary vocabulary to describe their feelings. Understanding that thoughts, feelings, and behaviors are skills that are directly related to learning and success, decision-making, and relationships. Emotion management training, which causes the development of skills in humans, and a person can satisfy his needs without violating the rights of others. Teaching students to gain self-esteem is at the heart of this program, which makes children feel good about themselves and others.

Conflict management training through effective anger management strategies and interpersonal skills, Teaching

understanding of group dynamics through active participation of students in the group, Teaching communication skills by improving the ability to express the child's thoughts and feelings and understanding that social relationships are mutual (Olson et al., 2023). It is a comprehensive, whole-school approach to promoting the social and emotional skills that are thought to underpin effective learning, positive behavior, regular attendance and emotional well-being (DfES, 2007). It was first implemented as part of the National Behavior and Attendance Test in 2003 (Hallam et al., 2006) and is now used in over 80% of primary schools across England. The SEAL curriculum is presented in three "waves of intervention". The first wave of implementation of the social-emotional learning curriculum focuses on whole-school development designed to create an atmosphere in which social and emotional skills can be more effectively promoted. In wave 2 of the social-emotional aspects of learning program, the focus of evaluation is on small group interventions for children who are thought to need more support to develop their social and emotional skills (DfES, 2006).

2.3.2. Parent Effectiveness Training (PET)

Parent effectiveness training is a comprehensive program in which parents acquire very specific skills that strengthen the communication paths between them and their children and learn new ways to resolve conflicts between parents and children, which makes these conflicts strengthen the relationship rather than worsening the situation and helps to improve children's skills (Gordon, 2000). This training package is designed in 8 group training sessions for mothers.

2.4. Data Analysis

At the descriptive level, using tables and graphs of frequency and percentage of frequency, calculating the mean and standard deviation, and at the inferential level, after checking the assumptions of the parametric tests, from the univariate and multivariate analysis of covariance tests were measured using SPSS-23.

3. Findings and Results

According to the demographic information, the 50% of girls and 50% of boys are in SEAL group, PET group and the control group and the number of boys and girls in each group is equal. In the SEAL group 31.3 % and in the PET group 43.8% of the children are 7 years old, and in the control group, 25% of the children are 8 or 10 years old. In the SEAL group the mother's literacy of the 50% of participants is the fourth grade of high school; and in the PET and control groups, mothers of 50% of the participants in the research have a bachelor's degree. In SEAL, PET and control group, fathers of the participants respectively 37.5%, 56.3%, and 56.3% have a bachelor's degree. In the SEAL and PET groups, 43.8 and 50% of the participants have one sibling, respectively, and in the control group, 56.3% of the participants have 2 siblings. In the SEAL, PET and control groups, respectively, 93.8, 87.5, and 87.5 percent of the parents of the participants live together. In the SEAL, PET and control groups, respectively, the average age of the mother of the participants is 32.62, 34.50, 32.75 and the age of the father is 36.0693, 38.75, 37.93. The obtained information has been analyzed using descriptive statistics based on the samples and then using inferential statistics according to the main research questions.

Table 1

Comparing the Mean and standard deviation of experimental and control groups in the improvement of symptoms of ADHD in the pre-test, post-test and follow-up stages

Variable	Group	SEAL Group		PET Group		Control Group	
		Statistical indicators	Mean	SD	Mean	SD	Mean
Improvement of symptoms of attention deficit and hyperactivity	Pre-Test	45.56	13.53	53	9.08	54.81	14.06
	Post- Test	33.56	12.99	40.68	10.05	55.31	13.96
	Follow-Up	33.62	11.44	52.62	13.62	55.43	14.14

The results of Table 1 show that the average improvement scores of ADHD symptoms in the experimental group have decreased in the post-test and follow-up phase compared to the control group.

Levene's test results showed that the assumption of homogeneity of variances for the improvement scores of ADHD symptoms in children aged 6 to 12 years was met, with a significance level of 0.078 for the post-test (F = 3.026,

df1 = 2, df2 = 45) and 0.141 for the follow-up (F = 2.046, df1 = 2, df2 = 45). The test for the homogeneity of regression slopes indicated no significant interaction between the pre-test and group (sum of squares = 1010.344, df = 3, mean square = 336.781, F = 1.008, significance level = 0.401). The multivariate analysis of variance (MANOVA) showed a

significant difference between the experimental and control groups in the improvement of ADHD symptoms, with a Wilks' Lambda value of 0.792, F = 6.397, a significance level of 0.001, an eta square of 0.396, and a statistical power of 1.000.

Table 2

Covariance analysis (multivariate) of improvement scores for attention deficit and hyperactivity in the studied groups

Source	Test	sum of squares	Df	mean square	F	p	Eta ²	Statistical power
Pre-Test	Post-Test	1439.811	1	1439.811	11.450	0.002	0.206	0.911
	Follow-Up	1326.377	1	1326.377	9.086	0.004	0.171	0.838
Group	Post-Test	2560.808	2	1280.404	10.182	0.001	0.316	0.980
	Follow-Up	2729.905	2	1364.952	9.350	0.001	0.298	0.970
Error	Post-Test	5533.002	44	125.750				
	Follow-Up	6423.060	44	145.979				
Total	Post-Test	100435	48					
	Follow-Up	119323	48					

As the results of Table 2, there is a significant difference between the groups at the P<0.05 level. And considering that the average improvement scores of ADHD symptoms in the experimental group are lower than the average of the control

group in the post-test and follow-up; This difference is in favor of the experimental group. That is, the SEAL and PET has been able to improve ADHD symptoms in the post-test and follow-up phase.

Table 3

Adjusted Mean scores of ADHD improvement in experimental and control groups

Test	Group	Mean	SD
Post-Test	SEAL	36.094	2.902
	PET	39.834	2.815
	Control	53.634	2.847
Follow-Up	SEAL	36.055	3.126
	PET	51.806	3.033
	Control	53.827	3.067

The results listed in Table 3 indicate that in the adjusted average scores, for the improvement of attention deficit and hyperactivity symptoms in the experimental group of the

SEAL package is lower than that of the PET group and the control group.

Table 4

Pairwise comparison of ADHD improvement scores in experimental and control groups

Test	Group	Group	Mean Difference	p
Post-Test	SEAL	PET	-3.740	0.365
		Control	-17.541	0.001
	PET	Control	-13.800	0.001
Follow-Up	SEAL	PET	-15.751	0.001
		Control	-17.772	0.001
	PET	Control	-2.021	0.639

The results listed in Table 4 indicate that there is a significant difference between the improvement scores of

ADHD in the experimental groups and the control group in the post-test phase. There is no significant difference

between the improvement scores of ADHD in the SEAL and PET groups in the post-test phase. There is a significant difference between the improvement scores of the ADHD of the SEAL group, the PET group and the control group in the follow-up phase. There is no significant difference between the improvement scores of ADHD of PET group and the control group.

4. Discussion and Conclusion

The present study was conducted with the aim of comparing the effectiveness of SEAL and PET educational programs on the improvement of ADHD symptoms in children aged 6 to 12 years with ADHD. The results showed that the SEAL and PET packages were able to improve the symptoms of ADHD in children aged 6 to 12 years with this disorder in the post-test and follow-up phases. This research is aligned with the research of Yaghoubian and Golshani (2023), who showed that parent training with Barclay's approach improved parenting dimensions (parental participation, positive parenting, instability in discipline, weakness in monitoring and physical punishment) in mothers and reduced anxiety in children with ADHD (Yaghoubian & Ghandehari, 2023); Furthermore, it is aligned with the research of Bayat et al. (2023) who showed that the treatment based on parent-child interaction with the virtual education method is effective in improving the executive functions of students with ADHD (Bayat et al., 2023). This research is aligned with the research of Dehghani et al. (2019) who showed that both group training therapy to improve parent-child interaction and a stress reduction program based on mindfulness on the symptoms of attention deficit/hyperactivity disorder and disobedience disorder in children with hyperactivity disorder and attention deficit disorder is associated with effective oppositional defiant disorder (Dehghani et al., 2023). Moreover, the result was in line with the results of Shah et al. (2021), which showed that the intervention of parenting skills training can have a positive effect in improving ADHD symptoms (Shah et al., 2021). In addition, Rahali et al. (2023) showed in research that the expected changes in parenting lead to the improvement of symptoms of ADHD, which is consistent with the current research (Rahali et al., 2023). Also, Peñuelas-Calvo et al. (2021) showed in research that the severity of symptoms of ADHD has a negative effect on the quality of life of parents and family functioning in inattention and mixed subgroups, and by teaching social skills to children and teaching parents, the severity of ADHD

symptoms can be reduced; which the results were consistent with the present study (Peñuelas-Calvo et al., 2021). The results of this research are also in line with the results of Jia et al. (2021), who showed that the high social competence of parents has an effect on the parent-child relationship and the child's improved behavior, as well as the child's social skills, and teaching correct communication skills to parents can increase the social resilience of children with ADHD (Jia et al., 2021). It was aligned with the study of Shelleby and Ogg (2020) which showed that parent training programs are effective in improving ADHD symptoms, improving lifestyle, self-efficacy, parental satisfaction, parental adjustment and parental relationships, and the quality of child care (Shelleby & Ogg, 2020). The results of the research are in line with the prior findings (Beelmann et al., 2023; Buchanan-Pascall et al., 2023; Dekkers et al., 2021; Evans et al., 2018; Kaiser et al., 2020; Mikolajczak et al., 2019; Olson et al., 2023; Siu & Lo, 2020; Wang et al., 2023; Wolraich et al., 2019; Wylock et al., 2023). likewise, the results of the related study showed that the parent training program using new strategies for managing children's behavioral problems is effective on the symptoms of ADHD and behavioral disorders (Daunic et al., 2021). In order to explain the findings consistent with the findings of this research, it can be said that the treatment based on SEAL and PET had a significant effect on reducing ADHD symptoms in children by increasing the social skills of children and increasing the quality of mother-child interaction. In line with the research literature, many experts admit that special skills can be transferred through education, which will keep the relationship between parents and their children bilateral and cause to resolve effectively differences and conflicts between parents and children. to remove the distance and instead of worsening the situation between them, their relations should improve and they should have a sense of closeness with each other (Qazavi & Varnik, 2018). According to the results it can also be said that in the parent effectiveness training program, which is designed based on Gordon's (2000) model, the child's relationship with his parents is considered the core of treatment, and the main foundations of this program are teaching parenting styles, communication skills, and resolving conflicts between parents and children. Paying attention to one's role as a parent depends on the parent's interaction with the child (Gordon, 2000). SEAL and PET trainings, by teaching the proper use of objective and empathetic reinforcements, verbal and non-verbal encouragements appropriate to the child's behavior in any situation and training parents to

create fun activities, reduces the maintenance of the parent's constant care of the child and thereby reduces the resulting tension level in the family. It clearly reduces parent-child relationships and improves parent-child interaction and thus reduces ADHD symptoms in different contexts such as home and school (Sellers et al., 2021). These programs increase children's and parents' sense of self-governance and competence and social adequacy by teaching appropriate behaviors to children and parents to exercise timely control and create constructive behaviors in children (Powell et al., 2021). Therefore, it is likely that these intervention programs have a favorable effect on reducing ADHD symptoms in children with this disorder. According to mentioned studies, many findings indicate that the problems of children with special needs are the result of parents' failure to manage behavior in the family and apply parental rules and the inability of these children to control and regulate their emotions; By using unstable rules, low and permissive supervision, or high supervision and excessive support, the parents of these children push the child's behavior towards more problems, including aggression, stubbornness, and disobedience (Buchanan-Pascall et al., 2023; Olson et al., 2023; Sellers et al., 2021). Since parents usually have the most contact with their children and are in a better position to change children's maladaptive behaviors and increase positive behaviors in them; Therefore, many experts emphasize teaching communication patterns to parents, children and family-centered interventions. The findings of this study can be important in order to confirm the effectiveness of interventions based on parent-child interactive education and social-emotional education for children in the design of preventive and therapeutic interventions for children with special needs and normal children. Since improving the emotional, social and functional abilities of students with ADHD as well as empowering their parents to face the challenges of raising children is of particular importance, it is suggested that both trainings be combined as effective trainings to improve the symptoms of ADHD in the educational centers used by children with ADHD.

5. Limitations & Suggestions

The present study, like any scientific study, has limitations. including that the study was conducted on children aged six to twelve; Therefore, caution should be taken in generalizing the results to older ages. The measurements were done on a sample of 48 people, so

caution should be taken in order to generalize to the whole society. The participants in the research have volunteered to participate in the research, which can lead to the learning motivation and active participation of the volunteers participating in the research and influence the results.

Therefore, at the research level, it is suggested that to increase the ability to evaluate the findings of this research, the training packages used in this research should be taught many times and implemented with more samples. Furthermore, it is suggested that researchers in future studies implement educational packages on healthy children or children with other neurodevelopmental disorders such as autism or learning disorders, and the effect of these educations on the performance of these children in the family and society be studied. Also, it is suggested that both trainings be used in a consolidated manner as effective trainings for children with ADHD in the centers referred by these children. The effectiveness of these two educational packages can be tested to reduce the stress of children with other disorders. Considering that SEAL and PET packages had a positive effect in reducing symptoms of ADHD, it is suggested that this method of intervention be taught to school counselors at the elementary school level and used simultaneously with other counseling methods. Since it is possible that some teachers do not have enough knowledge of how to properly relate to students with ADHD, it is recommended to hold meetings in elementary schools about teaching two packages so that they can communicate effectively with their students.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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