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Effectiveness of training to control symptoms of attention deficit disorder/hyperactivity (ADHD) with cognitive-behavioral method for parents in reducing the signs of ADHD in elementary school children

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ABSTRACT

The current research was conducted with the aim of studying the effect of training the controlling skills with cognitive-behavioral methods for the parents having children suffering from ADHD on the reduction of signs of attention deficit / hyperactivity – impulsivity. This study is a semi-empirical research with pre-test, post-test and control group. The sample includes 30 parents having children suffering from attention deficit/hyperactivity deficit that visited the counseling centers in Qaem Shahr and they were chosen by the use of available sampling method, and they were randomly put into two experimental group (15 individuals) and control group (14 individuals). The current research tool was Vanderbilt Assessment Scale Parent Form including 45 questions. The Cronbach's Alpha of the questionnaire in attention deficit/hyperactivity-impulsivity was calculated and it was 0.78. The experimental group went under individual counseling for 12 sessions and then a post-test was conducted on the experimental and control group. SPSS19 statistical software was used for data analysis, and analysis of covariance was used for surveying the research hypotheses. The research results showed that training the controlling skills with cognitive-behavioral method to the parents having children suffering from ADHD had a significant effect on the reduction of their symptoms. The current research results were consistent with the previous researches. The current research findings show the necessity of paying attention to training the controlling skills with cognitive-behavioral method to the parents.

Keywords: Attention Deficit Disorder, Hyperactivity-Impulsivity Disorder, Cognitive-Behavioral Therapy (CBT), ADHD-Impulsivity.

INTRODUCTION

Researches in the field of behavioral and emotional disorders of children and teenager is one of the important and progressing fields in morbid psychology, and among the childhood disorders the attention deficit/hyperactivity disorder is the most common neurobehavioral disorder (3 to 7 percent in USA and 3 to 6 percent in Iran) being diagnosed (Sadock&Sadock, 2007; Hoath, 2006; Khoushabi and et al' 2002).

Based on the conducted studies in drug therapy, this point should be taken into account that although drug therapy is the first item of therapy in people suffering from ADHD (Hauth-Charlier S, Clement, 2009), using these kinds of drugs for children is associated with side effects, and usually the effects of these drugs are not long-term and stable (Sonuga-Barkley, Daley & Thompson, 2001).

Mussen, Kagan, Conger, & Huston (2003) believe that parents and children have interactions, in other words they mutually influence each other. Fisher (1990; Quoted by Abdolkarimi, 2012) claimed in a research that in the parents-children interactions the negative effect of children having ADHD on the parents is more than the effect of parents on them; because ADHD is mostly accompanied by aggression, rule breaking, disobedience and conflicts and it could be a reflection of parents' failure in utilizing an appropriate child raising method in order to control their children behaviors. In their review article Johnston & Mash (2001) observed that different researches show that ADHD in children is accompanied by a variable rate of chaos in the family performance, and marital relationships, disconnection of parents-children relations, specially decrease of self-efficacy in the parental relationships and increase of stress levels of parenthood and trauma in parents.

There is a point proposed in the clinical guide to ADHD that says therapy with the method of consultation with parents and implementation of behavior management techniques should be prioritized (Cho and et al, 2004). In the recent decades there has been an increasing attention toward inclusion of Parent Management Training in the treatment plan, lots of extensive related researches have been conducted indicating that such trainings could be effective in both reducing the stress and reducing the ADHD symptoms (Oord, Bogels&Peijnenburg, 2012; Sanders, 2011; Meftagh and et al, 2011; Haack& Schneider, 2010; Fabiano and et al, 2009; Pelham &Fabiano, 2008; Sanders & McFarland, 2006; Sanders and et al, 2004; Zargarinezhad, YekkehYazdanDoust, 2007).

Due to the more influence and contact with the children parents could have a significant role in running behavioral interventions in the natural living environment of the child (Carr, 2006). Barkely (2002) suggests that time intervals for training these children should be shortened, bigger tasks should be down sized into smaller tasks and immediate and deliberate rewards should always be taken into account. Most of the parents' training programs are based on behavioral control and most of the time they emphasize on operating preconditioning techniques. In these programs the CBT techniques are used as well (Bloom, 1996; Alizadeh 2007). In this training program parents learn some skills in order to improve the orders enhance the community-friendly behaviors and consider some consequences for the anti-social or inappropriate behaviors (Mohammad Ismail, 2010).

High prevalence of ADHD and its adverse impact on the family functioning and parents-children relationships on one hand and not much long-term impact of drug therapy on the ADHD on the other hand and necessity of employing more efficient and more stable therapies for ADHD redouble the importance of researches and utilizing complementary therapies. The current research aims to study the effect of training controlling skills with cognitive-behavioral method to parents having children suffering from ADHD in order to reduce the symptoms of ADHD-Impulsivity.

The current research is a semi-empirical (empirical) research and from the point of aim it is an applied research with pre-test, post-test and control group.

Participants

The population includes mothers of 7-12 year old children suffering from ADHD residing at QaemShahr which have been diagnosed in counseling centers of QaemShahr with ADHD.

The samples were chosen by the use of available sampling method. Firstly mothers of children suffering from ADHD residing at QaemShahr that was prepared for the training sessions were introduced to the researcher by the people in charge in the counseling centers. Then a clinical interview was conducted on the visitors and the NICHQ test was conducted on them in order to determine the level and type of disorder. At the end according to the inclusion and exclusion criteria and the results of NICHQ test 30 individuals were chosen and they were randomly put into two groups of experimental and control group. It must be noted that participants' age should be 45 years and their educational level should be diploma, and if they suffered from each of the disorders of code 1 in DSM-IV-R and if they suffered from drug abuse or suffered from personality disorder and also psychotic symptoms they would not have the permission for participating in the research.

Measuring Tools

Tools used for data collection was Vanderbilt assessment scale of NICHQ (National Initiative for Children’s Healthcare Quality). This questionnaire is achieved from the Vanderbilt assessment scale (teacher’s form, VADTRS) (Wolraich and et al, 1998). This scale includes all of the DSM-IV criteria for ADHD, additionally 8 criteria are included for oppositional defiant disorder 12 criteria are included for conduct disorder, and 7 criteria are included for child’s morbid behavior (Lindgren, S., &Koepl1987) which indicate the anxiety and depression, This questionnaire includes 45 questions which are responded by never, sometimes, often and very much and they give respectively scores of 0-1-2-3.

In a research Alqahtani (2010) gained the Cronbach’s alpha coefficient for the sub-scales of ADHD-Impulsivity and they were respectively 0.80 and 0.80. In order to determine the reliability of the current research the Cronbach’s alpha was used, and the Cronbach’s alpha coefficient for attention deficit disorder, hyperactivity disorder and impulsivity and ADHD impulsivity was respectively 0.64, 0.68, and 0.78.

MATERIALS AND METHODS

After choosing the participants for the training 12 individual sessions, each session 45 minutes and one session per week were performed for the experimental group. It should be mentioned that two groups of ADHD patients were evaluated in the pre-performing training session and post-performing training session by the use of NICHQ test. The current research treatment plan was produced based on the cognitive-behavioral therapeutic model (Table 1). It must be noted that the performer of training to control the symptoms with the cognitive-behavioral method is a master of clinical psychology that has been trained in the course of specialized course of cognitive - behavioral therapy.

Table 1: Training to control the symptoms of ADHD with cognitive-behavioral method

Session	Plan
1	Introducing the ADHD to parents; introduction and communication and performing pre-test
2	Cognitive-behavioral model training for parents; determining the frameworks and stating the basic principles of cognitive-behavioral therapy
3	Assisting parents in order to change their thoughts and attitudes toward the child’s behavior; skill training for parents-modifying thoughts and attitudes toward cognitive approach
4	Review on parents’ observations and previous sessions discussions
5	Surveying the child’s behavioral problems and providing effective strategies
6	Reinforcement training; Introducing positive reinforcement, negative reinforcement, extinction and punishment
7	Communicational skills training for the family; Creating an appropriate relationship between parents and child
8	Review on the parents’ observations and previous sessions discussions
9	Problem solving method training and self-study
10	Studying the parents’ observations and review on the discussions
11	Focus increasing methods training
12	Summary and conclusion; review on the proposed issues in previous sessions, performing post-test

Data Analysis

The one-way ANOVA test was used for analyzing data. All of the analysis levels are conducted by the use of SPSS19 software.

RESULTS

The descriptive data related to mean, standard deviation, pre-test post-test, attention deficit disorder scores, hyperactivity-impulsivity, and ADHD-impulsivity of both groups are provided in table 2.

Table 2: The descriptive indicators in attention deficit disorder, hyperactivity-impulsivity, and ADHD-impulsivity

Group	Variable	No.		Pre-test		Post-test
		Mean	SD	Mean	SD	
Experimental	AD	15	19.26	3.75	8.13	3.75
Control	AD	15	19.33	2.76	16.40	3.96
Experimental	Hyperactivity Impulsivity	15	14.93	4.94	3.20	3.00
Control	Hyperactivity Impulsivity	15	18.46	3.13	18.26	3.34
Experimental	AD/HD Impulsivity	15	32.06	6.68	10.66	4.93
Control	AD/HD Impulsivity	15	35.53	4.70	32.86	4.65

The ANOVA results related to the comparison of symptoms of attention deficit disorder, hyperactivity-impulsivity and symptoms of ADHD-Impulsivity after removing the effect of pre-test are provided in tables 3, 4 and 5.

Table 3: ANOVA test of difference in mean of symptoms of attention deficit disorder in both groups' post-test after removing the effect of pre-test

Source of changes	Total square	fd	Mean square	F	Significance level
Pre-test	102.76	1	102.76	5.94	0.56
Group	507.07	1	507.07	47.77	0.001
Error	286.57	28	10.23		
Total	896.4	30			

As it is observable in table 3 the independent variable (therapy) had a significant effect on the dependent variable (decrease of symptoms of attention deficit) ($F=47.77$ and significance level smaller than 0.001); which means that the cognitive-behavioral therapy method had an effect in the decrease of symptoms of AD.

Table 4: ANOVA test of difference in mean, decrease of symptoms of hyperactivity-impulsivity in both groups in post-test after removing the effect of pre-test

Source of changes	Total square	df	Mean square	F	Significance level
Pre-test	21.75	1	21.75	1.07	0.78
Group	1226.16	1	1226.16	139.36	0.001
Error	237.55	28	8.48		
Total	1485.46	30			

Table 4 data shows that the independent variable (therapy) had a significant effect on the dependent variable (decrease of symptoms of hyperactivity-impulsivity) ($F= 139.36$ and significance level smaller than 0.001). Thus the cognitive-behavioral therapy method also had an effect on the decrease of symptoms of hyperactivity-impulsivity.

Table 5: ANOVA test of difference in mean, decrease of symptoms of ADHD-Impulsivity in both groups in post-test after removing the effect of pre-test

Source of changes	Total square	df	Mean square	F	Significance level
Pre-test	14.38	1	14.38	0.98	0.33
Group	2847.62	1	2847.62	195.13	0.001
Error	237.55	28	8.48		
Total	1485.46	30			

Table 5 results show that the independent variable (therapy) had a significant effect on the dependent variable (decrease of symptoms of ADHD-Impulsivity) ($F= 195.13$ and the significance level smaller than 0.001). Thus the cognitive-behavioral therapy method had an effect on the decrease of symptoms of ADHD-Impulsivity.

DISCUSSION AND CONCLUSION

Usually the inappropriate and stressful relations between parents and the hyperactive child are put in a vicious cycle (Liffore, Harold and Thapar, 2008) thus the problem in parents-child relationship in families having child suffering from ADHD is considered as one of the features of such families (Motevali-pour and Rashidi, 2009). As Kimiaee and Beigimanaged to detect the vicious cycle in parents-child relationships in families having troubled children (such as ADHD children) they called it Vicious cycle of maladaptive behavior. According to this cycle, the maladaptive behavior of the child creates an appropriate feeling in parents and it affects their reaction and their behavior toward their children. Considering this issue, training parents could be a complementary interfering psychotherapy for ADHD. As the current research findings have shown, training the skills of controlling the symptoms of ADHD with cognitive-behavioral method for the parents is effective in decrease of symptoms of such disorders in children suffering from ADHD. The main part of training based on assisting mothers to detect and modify the attitudes engaged in relationships with children is finding the useful behavioral interfering methods with positive reinforcement and training. These finding are consistent with the research findings of Oord, Bogels, Peijnenburg (2012), Sanders (2011), Haack & Schneider (2010), Pelham and Fabiano (2008), Meftagh and et al (2011) along with the effect of training parents on the decrease of symptoms of ADHD.

Based on the current research findings and the previous conducted researches it could be concluded that training to control the symptoms of ADHD with cognitive-behavioral method for the parents could be used as a method for decreasing the symptoms of attention deficit disorder/hyperactivity-impulsivity in children suffering from ADHD-Impulsivity.

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