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The Effectiveness of Cognitive Behavioral Family Therapy on Parenting Style, Family Function and Social

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Abstract
The study aimed to determine the effectiveness of cognitive-behavioral family therapy on parenting style, family function and adaptation of adolescents with behavioral problems. The research method was quasi-experimental with pre-test and post-test. To this end, 24 adolescents with behavioral problems with their parents or socialization problems with their parents were selected as the main samples using the convenient and targeted sampling method, and then were divided into two groups of 12 with their parents. The experimental group participated in the training program, but the control group did not receive any training. The program was held in 16 sessions. The instruments used in this study were California Personality Inventory (1939), Baumrind Parenting Style Questionnaire (1973) and McMaster Family Valuation Device (1960). To analyze the data, multivariate covariance analysis was used. The results of this study showed

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that cognitive-behavioral family therapy increased the social adjustment of adolescents and had a positive effect on improving the performance of family and parenting style of parents.

**Keywords:** Cognitive behavioral family therapy, parenting style, family function, social adjustment

**Introduction**

The health of adolescents in every society is of particular importance and attention to their mental health makes them to be healthy mentally and physically and can play their social roles better (Khoddam et al., 2011). When the mental health of the adolescent is at risk, it has a negative effect on his development and performance. Meanwhile, behavioral disorders are debilitating disorders that cause many problems for teachers, family and the teenager themselves and they are associated with many social issues (Eslami, 2012). Adolescence is one of the most sensitive and important stages of development in every person's life and is associated with physical, emotional, and personality changes (Hajamini et al., 2008). In the passage of childhood to adolescence; social adjustment in adolescents is considered as the most important sign of their mental health; social adjustment like physical, emotional and intellectual growth, is a continuous quantity and gradually reaches perfection and it is achieved throughout life naturally and in dealing with experiences (Yarmohammadian and Sharafi Rad, 2011). With the passing of childhood and the advent of adolescence, psychosocial development is changed from simple transformation into a profound and qualitative transformation, and the adolescent can find his place in the relationship with people using social skills, and be socially accepted; success in social acceptance leads to social adjustment (Atkinson et al., 2010). The American Psychiatric Association (2000) defines social adjustment as: coordinating behavior to meet the environmental needs that often involves
modifying impulses, emotions, or attitudes (Hejazi, 2005). Social adjustment is a mechanism by which the teenager is able to belong to a group. For this reason, social adjustment requires changes in the individual, and it also requires the integration of the mechanisms by which the group accepts a new member (Sorkhabi, 2002). The components and signs of social adjustment include independence, accountability, decision-making ability, maintaining moderation in life's affairs, social skills, emotional capacity, or emotional intelligence (Hajjari, 2005; Salovey and Mayer, 2002). Also, parent recognition and their inferences about adolescent behaviors, motivations and beliefs, and his social orientation are important determinants of parenting styles and disciplinary methods. Parenting styles are methods parents use to deal with their children, and has a significant effect on the formation and growth of them in adolescence and their personality and behavioral characteristics. The experience of a safe and sustainable relation with parents and nurturing in a relaxed and orderly environment for the mental well-being and socialization of adolescent and his evolution are influenced by attitudes and relationships of parents (Maccoby & Martin, 2007). The family reaction process, such as the parent-child relation quality, has a great influence on the development of a sense of self-esteem and social adequacy during adolescence (Harrison, 2012). Parenting styles affect many psychological aspects, including social adjustment, self-confidence and even behavioral problems in adolescents (Belantin et al., 2010). Researchers categorized parenting styles based on two dimensions: "acceptance-response" and "expectation-control"; according to these dimensions, Baumrind presented three types of parental behavior patterns: a) an authoritative behavior pattern which its specifications are high levels of devotion and participation, sensitivity and accountability, reasoning and logic, control and limitation, encouragement and confirmation; b) authoritarian behavior pattern, which includes high levels of restriction, punishment, exclusion, control, rigor, and domineering behaviors,
c) permissive behavior patterns that represent high levels of accountability, warmth, acceptance, child-centered, extreme support (Grolnick and Ryan, 2000). One of the other variables related to the type of relationship is family function. Family function is one of the important indicators in the quality of life and mental health of family members. Family function is an important part of the family environment that affects the physical, social and emotional health of the adolescent. In fact, what happens inside the family and how it functions can be a key factor in creating flexibility among its members. Growing environments enable children to learn to progress. Conversely, family environments with inappropriate conditions can affect many aspects of child growth (Silbourn et al., 2006).

Family function depends on the family's ability to adapt to changes, conflict resolution, family solidarity, success in applying disciplinary patterns, observance of the boundaries between individuals, and enforcement of the rules and principles of this institution with the aim of protecting the entire family system. (Goldberg and Goldberg, 1998). In terms of function, families can be divided into two groups: functional and non-functional. Functional families solve their problems in different degrees and at different timescales. The space of such families is full of unconditional admission. Consequently, they endure the conflict and help each other with eagerness (Epstein et al., 2000). The non-functional family is closed and the members are emotionally abandoned and separated. The boundaries of relationships between family members are inflexible and ambiguous. The affection among them is conditional and the family refuses to accept the problem or request help, and it seems that the problem continues or occurs in other forms (Peikarestan, 2009). Although the family has different functions, but its main function is to meet the individual needs of family members,
this is one of the determinants of the healthy functioning of the family unit (Silborn et al., 2006).

One of the models that has been considered in explaining and preventing teenagers' problems is a cognitive-behavioral family therapy model; the family has a diverse educational capacity to learn and understand interventional programs, and since the family is the first place to form a behavioral and emotional relationship in child, it is very important. Although throughout the history of this approach, emphasis has been placed on the importance of thought, from the 1970s onwards, a coordinated effort has been made to apply the theory of cognitive-behavioral methods to couples and families (7).

In cognitive-behavioral family therapy, what family members are thinking about, and how they behave, is one of the most common forms of behavioral and cognitive-behavioral family therapy (Glading, 2003). The basis of parenting styles represents the parents' efforts for the growth and education of their children, because poor parenting will have significant effects on behavioral well-being and adjustment problems of children (Amato, 2003; Haqiqi, 2011). Many research results point to the effectiveness of cognitive-behavioral family therapy interventions in reducing behavioral problems in children and adolescents such as anxiety, aggression, hyperactivity/attention deficit, attention deficit disorder, and behavioral disorder. Among these, the study of Björnstand and Montgomery (2005) can be noted. This research shows that family therapy without medication can help manage children behavior and cope with distress and reduce the attention deficit / hyperactivity disorder in families. Sigeland, Rynn and Diamond (2005) examined the effectiveness of cognitive-behavioral family therapy and cognitive-behavioral therapy on reducing the generalized anxiety of adolescents aged 12-18. The results showed that cognitive-behavioral family therapy with cognitive-behavioral therapy alone is more effective in reducing the problems of adolescents aged 12-18.
Also, Sharma, Mehta and Sagard (2017) showed that cognitive-behavioral group therapy can reduce anxiety disorders in adolescents. Locket et al., (2006) also examined the effectiveness of family therapy on anxiety disorder in children and adolescents. Their results showed that family therapy for children with mental anorexia disorder was improved.

The results of Argys et al., (2006) show that there is a significant relationship between parenting styles, social adjustment and behavioral problems in adolescents. Keener's research (2010) at the University of Virginia shows that positive control of parents and their information on adolescence issues has a positive significant relationship with development, mental health and adolescent adjustment. Sanders (2012) in the family therapy intervention program for parents in positive parenting style of adolescents who suffered or are at risk of behavioral and contractual problems; the goals of all therapeutic levels of this approach are based on increasing the self-efficacy of parents in controlling adolescent behavior through parental training to promote adolescent development and personal and social adjustment. Tung et al., (2014) also state that the direct relationship between strict behavioral control of parents and negative emotions in the children is significant. Research results of Anli et al., (2010) also show that behavioral control by parents and negative emotions in the children have a significant relationship. Research also shows that there is a direct relationship between the low family function and the general health of children (Lashkari, 2004; Qamari, 2011; Qamari, 2014; Rish, 2005; Sheeber, 2007). Robbins et al., (2016), in a research on the development of applied family therapy as an evidence-based practice for adolescents with behavioral problems, concluded that there was an interaction between family and therapist and a key element in this approach was learning suitable communication skills in family members.
Therefore, it seems that family therapy interventions are as important as the family and the adolescent themselves. Accordingly, the purpose of the study is to test three hypotheses:

1- Cognitive-behavioral family therapy leads to improved family function.

2- Cognitive-behavioral family therapy leads to increased adolescent adjustment.

3- Cognitive-behavioral family therapy has a positive effect on adolescent parenting style.

Methodology
The study is applied in terms of purpose and quasi-experimental research in terms of data collection method with two-group design and random assignment with pre-test and post-test. In this design, the subjects were randomly assigned to experimental and control groups.

Society, sample and sampling method: The statistical population of this study was all adolescents studying in the academic year 2016-17 in the first grades of high schools of Tehran referring to psychological and counseling centers and their parents. In the sample, adolescents have relationship problems with parents or socialization problems that were assessed through diagnostic interviews and ASEBA-based screening tools and parent form (CBCL) and adolescent form (YSR), who didn’t fully complete the diagnostic criteria of behavioral disorders¹ and were on the verge of a disorder.

The criteria for participation in the research to match the subjects studied and in proportion to the characteristics of the training include: having parents who live together, at least a diploma education for mother and father, the interest of

¹Sub-clinical
participants in participating in research based on a written consent and having moderate to high IQ for adolescents (90 upwards). Also, the exclusion criteria for participants include: receiving another psychological intervention for adolescents at the time of conducting research, psychiatric disorder, initiating a drug therapy, or changing the type or amount of drug for psychological problems in adolescents within one month before intervention, receiving another psychological intervention for the mother and father at the time of the research, the acute or chronic physical illness of the father, mother and child; and passing a similar program by the parents. The research sample was selected based on target and were selected based on purposive sampling. Finally, in this study, 24 first-year students referred to the Psychological Services and Consultation Center, along with their fathers and their mothers, were selected through targeted sampling method as the main sample of the research according to the inclusion and exclusion criteria and then divided into two equal groups of fourteen adolescents with their parents, randomly as following: Experimental group: participants in the treatment program and control group (waiting list): No intervention was received.

**Tools**

Family Assessment Device (FDA)
Family Assessment Device (FDA) was used to measure family function variable. The main form of the questionnaire consists of 60 questions designed by Epstein, Baldwin and Bishop in the 1950. This tool examines the family condition with 7 components: problem solving, communication, roles, emotional reactions, emotional conflict, behavior control, and general family function. It should be noted that in the present research, only the score of family function has been used.

Yousefi (2015) has standardized the present questionnaire in Iran. The results of the factor analysis revealed seven
factors of McMaster's family measurement method using a direct oblimin rotation method and fitted them with confirmatory factor analysis. The internal consistency reliability coefficients including Cronbach's alpha and composition for 60 materials and seven factors were satisfactory (with 0.83 and 0.82, respectively). Also, convergent and divergent validity coefficients of McMaster's Family Measurement Scale with CPQ and LOCS questionnaires, emotional response subscales and mixing with others were 0.46, -0.36, 0.41, and -0.43, respectively which is significant at $P \leq 0.01$.

California Test of Personality (CTP):
The California Test of Personality was first published by Thorpe, Clark and Tiegs in 1939 (quoted by Aqa-Yousefiet al., 2014) and revised in 1953. The California Social Adjustment Standard Questionnaire (Clark et al. 1953, quoted by Akhondi, 2000) consists of 90 questions that have two social and individual adaptation poles. This test has 12 sub-scales. In the field of individual adjustment, 6 specific scores are related to the self-esteem, self-perception, personal freedom, a sense of belonging, rebellious tendencies, neuronal syndrome, and the sum of score of this section, a score is obtained as individual adjustment. In the field of social adjustment, 6 specific scores are related to social forms, social skills, antisocial interests, family relationships, school relationships, social relationships, and from the total scores of this section, a score is obtained for social adjustment.

The internal co-ordination of the test by split-half and Spearman method for social adjustment sub-criteria is from 0.87 to 0.90 and the individual adjustment from 0.85 to 0.88, which shows that all questions have a good internal consistency (Aqa-Yousefiet al., 2014).
Parenting Style Questionnaire (Baumrind):

The initial form of the questionnaire consists of 30 items that were designed by Diana Baumrind (1973). This questionnaire was translated by Hosseinpour (2002) and after a factor analysis it was found that questions 13, 14, 28, and 26 were not loaded on any factor, thus the questions were deleted. The questionnaire measures parenting styles in three dimensions. In this questionnaire, ten phrases measure authoritative styles, ten permissive style and seven authoritarian styles. In front of each phrase, 5 columns (totally agree, somehow agree, somehow disagree, disagree, totally disagree), are scored from 0 to 4, which are obtained by summing up the questions’ scores in each method and dividing it by the number of separate score questions. Borai (1991) used a differential method to examine the validity of this questionnaire and observed that the authoritative method had a negative relationship with permissive \( r = 0.38 \) and logical authority \( r = 0.48 \). The permissive method had no significant relationship with the logical authority (quoted by Vahedi et al., 2009).

Borai (1991) used the re-test method to calculate the reliability of the method and obtained the following results: 0.81 for permissive style, 0.86 for authoritarian style, and 0.78 for authoritative. He also calculated internal consistency using Cronbach's alpha, which yielded 0.75 for permissive style, 0.85 for authoritarian and 0.82 for authoritative style (quoted by Vahedi et al., 2009).

Procedure

At first, 28 adolescents with their fathers and mothers were randomly assigned to experimental and control groups and pre-test tools were administered to both groups. Participants completed pre-test questionnaires and demographic profile form. The experimental group participated in the training program, but the control group did not receive any training.
The program was generally held in sixteen sessions. The sessions consisted of 4 public and group sessions with the simultaneous presence of the parents (without children), then 6 group sessions for mothers, 5 individual sessions for each adolescent, and finally 1 dedicated session for each family with the presence of child under the training program by cognitive-behavioral method. At the end of the training, the post-tests were carried out simultaneously by researcher assistants.

It is worth noting that in summary, with the study of existing resources, the program's educational content has followed the following general objectives: Familiarity with the characteristics of adolescents, improving communication practices and interpersonal relationships of parents; understanding cognitive distortions, improving communication methods of parents with children; improving communication practices and problem solving training; and training management of challenging behaviors of adolescent (Table 1). After collecting data, multivariate analysis of covariance was used for analyzing the data, in addition to descriptive statistics.
The Effectiveness of Cognitive Behavioral Family Therapy on Parenting Style, Family Function and Social

Table 1 - *Cognitive-behavioral family therapy educational sessions*

<table>
<thead>
<tr>
<th>Session</th>
<th>Procedure</th>
<th>Goals</th>
<th>Content</th>
<th>Homework</th>
<th>Expected behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Group (parent)</td>
<td>Understanding the rules, goals, and generalities of the program</td>
<td>Introduction to the program - agreement on the rules - the characteristics of adolescents - improving the family relationship, communication in a healthy and unhealthy family - different communication styles - establishing a healthy and positive interaction in the family</td>
<td>Identifying the style of communication in family members</td>
<td>Awareness of existing conditions, strengths and weaknesses of the family, understanding the importance of family relationship</td>
</tr>
<tr>
<td>2</td>
<td>Group (parents)</td>
<td>Creating and sustaining the emotional bond of family members</td>
<td>Review of previous sessions, high quality time for myself - individual skills in adjusting mood: control of anger in family</td>
<td>Execution of skills learned at home</td>
<td>Reduction of anger and ability to solve problems</td>
</tr>
<tr>
<td>3</td>
<td>Group (parents)</td>
<td>Good parenting relationship</td>
<td>Good parenting relationship</td>
<td>Finding your communicational attraction and repulsion</td>
<td>Understanding the gender differences and applying attractions</td>
</tr>
<tr>
<td>4</td>
<td>Group (parent)</td>
<td>Parent relationship</td>
<td>Review of previous session, familiarity with cognitive causation and cognitive reconstruction in spouse relationships-communication barriers</td>
<td>Find your cognitive errors</td>
<td>Acceptance of communicational error</td>
</tr>
<tr>
<td>5</td>
<td>Group (mother)</td>
<td>Knowledge of teens features</td>
<td>Review of previous sessions, cognitive, physical, emotional changes</td>
<td>Mentioning the cognitive, physical, and</td>
<td>Awareness of your child's attributes</td>
</tr>
</tbody>
</table>

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The Effectiveness of Cognitive Behavioral Family Therapy on Parenting Style, Family Function and Social

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Group (mother)</td>
<td>Knowledge of teens features</td>
<td>Review of previous sessions, identification, self-centeredness, imagination of invulnerability, tendency towards peers</td>
</tr>
<tr>
<td>7 and 8</td>
<td>Group (mother)</td>
<td>Knowledge and use of effective strategies</td>
<td>Review of previous sessions, healthy education: strategies for increasing healthy behaviors and reducing unhealthy behaviors</td>
</tr>
<tr>
<td>9 and 10</td>
<td>Group (mother)</td>
<td>Knowledge and use of effective strategies</td>
<td>Reviewing the previous session, creating a sense of security, increasing responsibility, problem solving, listening, reasonable expectations, relying on strengths, unconditional acceptance of adolescents</td>
</tr>
<tr>
<td>11 - 15</td>
<td>Individual (Teen)</td>
<td>Counseling (cognitive-behavioral)</td>
<td>Individual counseling based on the characteristics and family circumstances of adolescents</td>
</tr>
<tr>
<td>16</td>
<td>Dedicative (father, mother, child)</td>
<td>Parent-child interaction-eliminating ambiguities</td>
<td>Review of the achievements of family members, answering questions and reviewing potential problems</td>
</tr>
</tbody>
</table>
Results
Since the design of this research is quasi-experimental and heterogeneous group design with pre-test and post-test, therefore, multivariate covariance analysis is used to analyze the data. The reason for using the covariance analysis is the effect of the random variable (pre-test). Considering that the dependent variables of this research have different components, multivariate covariance analysis has been used to investigate the effect of family-centered interventions on them.

Cognitive-behavioral family therapy is effective on family function components.

Family function has seven components: problem solving, communication, roles, emotional reactions, emotional involvement, behavior control and general family function. To investigate the effect of cognitive-behavioral family therapy on these seven components, the correlation of these components was first investigated using Pearson correlation test. The results of this study indicate that the correlation between variables is significant at P ≤ 0.01. Therefore, to analyze the effect of cognitive-behavioral family therapy on these components, multivariate covariance analysis has also been used.

The relationship between research variables is investigated using Pearson correlation coefficient. Because the results of the Kolmogorov-Smirnov test show insignificance of the z indices. Therefore, the distribution of research variables is normal.

In order to study the assumptions of multivariate analysis of covariance, we first examined the homogeneity of variances using Levine test.
The Effectiveness of Cognitive Behavioral Family Therapy on Parenting Style, Family Function and Social

Table 2 - *Levin Test - Homogeneity Analysis of Variance*

<table>
<thead>
<tr>
<th>Components</th>
<th>F-value</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem solving</td>
<td>1.01</td>
<td>0.35</td>
</tr>
<tr>
<td>Connections</td>
<td>0.66</td>
<td>0.31</td>
</tr>
<tr>
<td>Roles</td>
<td>0.95</td>
<td>0.39</td>
</tr>
<tr>
<td>Emotional reactions</td>
<td>0.48</td>
<td>0.71</td>
</tr>
<tr>
<td>Emotional involvement</td>
<td>0.88</td>
<td>0.43</td>
</tr>
<tr>
<td>Behavioral control</td>
<td>0.61</td>
<td>0.28</td>
</tr>
<tr>
<td>General performance</td>
<td>0.81</td>
<td>0.42</td>
</tr>
</tbody>
</table>

The F-value show that the difference in the variance of the groups is not significant at $P \leq 0.05$. Therefore, the variance of the groups has no significant difference with each other and the groups are in fact homogeneous. In this way, the use of multivariate covariance analysis is allowed.

Table 3 - *Covariance test credit indices*

The effect of cognitive behavioral family therapy on family function components

<table>
<thead>
<tr>
<th>Credit indices</th>
<th>Index</th>
<th>F-value</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pillai’s effect</td>
<td>0.47</td>
<td>2.54</td>
<td>0.0001</td>
</tr>
<tr>
<td>Wilk’s Lambda</td>
<td>0.57</td>
<td>2.54</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

The value of Pillai’s effect is 0.47 and the Wilk’s Lambda value is 0.57, both of which are statistically significant at $P \leq 0.01$. Therefore, the dependent variables of the two experimental and control groups are significantly different.
Table 4 - *Multivariate covariance analysis*

*The effect of cognitive behavioral family therapy on family function components*

<table>
<thead>
<tr>
<th>Statistical feature/ Source of changes</th>
<th>Sum of squares</th>
<th>Degrees of freedom</th>
<th>Mean squares</th>
<th>F-value</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem solving</td>
<td>1133.41</td>
<td>1</td>
<td>1133.41</td>
<td>3.62</td>
<td>0.0001</td>
</tr>
<tr>
<td>Connections</td>
<td>1312.53</td>
<td>1</td>
<td>1312.53</td>
<td>14.72</td>
<td>0.0001</td>
</tr>
<tr>
<td>Roles</td>
<td>2637.15</td>
<td>2</td>
<td>1318.57</td>
<td>7.34</td>
<td>0.0001</td>
</tr>
<tr>
<td>Emotional reactions</td>
<td>2134.48</td>
<td>1</td>
<td>2134.48</td>
<td>13.90</td>
<td>0.0001</td>
</tr>
<tr>
<td>Emotional involvement</td>
<td>1154.70</td>
<td>2</td>
<td>577.35</td>
<td>3.21</td>
<td>0.0001</td>
</tr>
<tr>
<td>Behavioral control</td>
<td>924.34</td>
<td>1</td>
<td>924.34</td>
<td>10.87</td>
<td>0.0001</td>
</tr>
<tr>
<td>General function</td>
<td>1017.99</td>
<td>1</td>
<td>1017.99</td>
<td>13.61</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

The separate review of dependent variables shows that the F value obtained in all variables is significant at $P \leq 0.01$.

In the problem-solving component, the pre-test score was 29.7 and in the post-test, 3.01, in the communication component, the pre-test score was 26.5 and in the post-test, 2.17, in the role component, the pre-test score was 32.5 and the post-test, 3.17, in the component of emotional reactions, the pretest score is 30 and the post test is 2.9, in the emotional involvement component, the pretest score is 32.2 and in the posttest is 3.2, in the behavioral control component the pretest score is 30.33 and in the posttest is 13, in the family general function variable in pre-test score is 42.83 and post-test is 14.83. On the FDA scale, the high scores indicate a poor family function and low scores indicate a favorable situation.
Considering the decrease in post test score in the experimental group, it can be said that cognitive behavioral family therapy has a positive effect on the problem solving, communication, roles, emotional responses, emotional interactions, behavioral control and family function. Cognitive behavioral family therapy is effective on adolescence adjustment.

Adjustment has two components: individual and social adjustment. To investigate the effect of cognitive-behavioral family therapy on these two components, the correlation of these components was first studied using Pearson correlation test. The results of this study indicate that the correlation between variables is significant at $P \leq 0.01$. Therefore, to analyze the effect of cognitive-behavioral family therapy on these components, multivariate covariance analysis has also been used.

To study the assumptions of multivariate analysis of covariance, we first examined the homogeneity of variances using Levine test.

Table 5 - Levin test - homogeneity analysis of variance

<table>
<thead>
<tr>
<th>Components/Statistical Indicators</th>
<th>F-value</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual adjustment</td>
<td>0.82</td>
<td>0.32</td>
</tr>
<tr>
<td>Social adjustment</td>
<td>0.52</td>
<td>0.46</td>
</tr>
</tbody>
</table>

The F values show that the difference in the variance of the groups is not significant at $P \leq 0.05$. Therefore, the variance of the groups is not different from each other and the groups are in fact homogeneous. In this way, the use of multivariate covariance analysis is allowed.
Table 6 - Credit indicators of covariance test on the effect of cognitive behavioral family therapy on adjustment

<table>
<thead>
<tr>
<th>Credit indices</th>
<th>Index value</th>
<th>F-value</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pillai’s effect</td>
<td>0.30</td>
<td>2.35</td>
<td>0.01</td>
</tr>
<tr>
<td>Wilk’s Lambda</td>
<td>0.70</td>
<td>2.35</td>
<td>0.01</td>
</tr>
</tbody>
</table>

The value of Pillai’s effect is 0.30, which is significant at $P \leq 0.01$, and the Wilk’s Lambda value is 0.70, which is significant at $P \leq 0.01$. Therefore, the dependent variables of the two experimental and control groups are significantly different.

Table 7 - Multivariate covariance analysis on the effect of cognitive behavioral family therapy on individual and social adjustment

<table>
<thead>
<tr>
<th>Statistical feature/ Source of changes</th>
<th>Sum of squares</th>
<th>DF</th>
<th>Mean squares</th>
<th>F-value</th>
<th>Significance level</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual adjustment</td>
<td>413.12</td>
<td>1</td>
<td>413.12</td>
<td>12:12</td>
<td>0.0001</td>
<td>0.92</td>
</tr>
<tr>
<td>Social adjustment</td>
<td>377.54</td>
<td>1</td>
<td>377.54</td>
<td>10:36</td>
<td>0.0001</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Separate analysis of dependent variables shows that the F value obtained in both components is significant at $P \leq 0.01$.

In the individual adjustment component, the pre-test score is 32.77 and the post-test is 68.09, in the social adjustment component, the pretest score is 23.14 and the posttest is 57.40. Considering the increasing scores in the post test of the experimental group and the small decrease in the scores in the control group, it can be said that cognitive-behavioral family therapy has a positive effect on the individual and social adjustment of adolescents.
Cognitive-behavioral family therapy is effective on parenting styles of adolescent parents.

To study the assumptions of multivariate analysis of covariance, we first examined the homogeneity of variances using Levine test.

Table 8 - *Levin test* - homogeneity analysis of variance

<table>
<thead>
<tr>
<th>Component /Statistical indicators</th>
<th>Permissive style</th>
<th>Authoritarian style</th>
<th>Authoritative style</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-value</td>
<td>1.00</td>
<td>0.59</td>
<td>0.61</td>
</tr>
<tr>
<td>Significance level</td>
<td>0.23</td>
<td>0.44</td>
<td>0.41</td>
</tr>
</tbody>
</table>

The values of F obtained show that the difference in the variance of the groups is not significant at P≤ 0.05. Therefore, the variance of the groups has no significant difference and the groups are in fact homogeneous. In this way, the use of multivariate covariance analysis is allowed.

Table 9 - *Credit indicators of covariance test on the effect of cognitive behavioral family therapy on parenting styles*

<table>
<thead>
<tr>
<th>Credit indices</th>
<th>Index value</th>
<th>F-value</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pillai’s effect</td>
<td>0.25</td>
<td>2.19</td>
<td>0.001</td>
</tr>
<tr>
<td>Wilk’s Lambda</td>
<td>0.75</td>
<td>2.19</td>
<td>0.001</td>
</tr>
</tbody>
</table>

The value of Pillai’s effect is 0.25, which is significant at P≤ 0.01 and the Wilk’s lambda value is 0.75, which is significant at P ≤ 0.01. Therefore, the dependent variables of the two experimental and control groups are significantly different.
Table 10 - *Multivariate covariance analysis on the effect of cognitive family therapy on parenting styles*

<table>
<thead>
<tr>
<th>Statistical features/Source of changes</th>
<th>Sum of squares</th>
<th>DoF</th>
<th>Mean squares</th>
<th>F-value</th>
<th>Significance level</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permissive style</td>
<td>201.34</td>
<td>1</td>
<td>201.34</td>
<td>9.98</td>
<td>0.0001</td>
<td>0.87</td>
</tr>
<tr>
<td>Authoritarian style</td>
<td>316.28</td>
<td>1</td>
<td>316.28</td>
<td>13.07</td>
<td>0.0001</td>
<td>0.91</td>
</tr>
<tr>
<td>Authoritative style</td>
<td>287.54</td>
<td>1</td>
<td>287.54</td>
<td>12.51</td>
<td>0.0001</td>
<td>0.90</td>
</tr>
</tbody>
</table>

Separate analysis of dependent variables shows that the F value obtained in all styles is significant at $P \leq 0.01$.

In the permissive style, the pre-test score is 31.14 and the post-test is 18.21, in the authoritarian style the pre-test score is 26.86 and the post-test is 18.47, in the authoritative style the pre-test score is 12.45 and the post-test is 23.72. Considering the increase in the score of authoritative style and the reduction of the score in permissive and authoritarian styles, family therapy can have a positive effect on parenting style.

**Discussion and conclusion**

The study aimed to investigate the effectiveness of cognitive-behavioral family therapy on parenting style, family function and social adjustment of adolescents with behavioral problems. A survey of collected data showed that considering the decrease in post-test scores in the experimental group, cognitive-behavioral family therapy has a positive effect on family function. In other words, in the post test of the experimental group, there is a significant decrease, and in the post test of the control group, there is no significant difference in the scores. Therefore, the first hypothesis of the study “cognitive-behavioral family therapy has a positive effect on family function” is confirmed. Regarding family function, the
process of modeling is the focus of attention. This is one of the key elements in juvenile behavioral control. Any good or bad parenting behavior is a behavioral pattern for adolescents. In explaining this, Bandura believes that the behavior of children is a reflection of their parents' behavior (Markel and Weiner, 2014). If lying and irregularities are evident in parenting behavior, how can one expect a behavior contrary to this from the teenager? So the teenager model what he sees in practice from his parents, such as disorder, lies, theft, screaming, mischief, beating, and vice versa (Petot, Rescorla & Petot, 2011). Formation of proper behavior patterns in parents facilitates the development of treatment of children's behavioral problems. Improving parents' behavior with each other, solidarity and coordination in parenting and family management, family affection, and respect-based relationships in family are effective in reducing the symptoms of behavioral disorders in children (McLeod, Wood and Weisz, 2007). Family education can improve the overall function of families by improving parental behavior, eliminating their psychological pressures, increasing parental parenting skills, improving parental relationships with each other, and increasing parental skills in controlling the behavior of adolescents with problems. Improving family function can reduce adolescent undesirable behaviors.

Also, based on the results of the present study, in the adjustment variable, the mean post-test in the experimental group was accompanied by an increase in the scores; this variable has two components: individual and social, and based on the increase in the scores of the post-test of the experimental group and the small change in scores in the control group, it can be said that cognitive-behavioral family therapy have a positive effect on social adjustment. Therefore, the second hypothesis of the present study “cognitive-behavioral family therapy is effective on social adjustment of adolescents” is confirmed. The results are consistent with the
studies conducted by Brody et al. (2012), Elaine et al. (2016), Krishna (2015). Brody et al., (2012) in designing a family-centered intervention program for adolescent with behavioral problems syndrome, after implementing the program, concluded that social adjustment was higher in them and their behavioral problems decreased. In fact, the family-centered intervention program has been able to change the social adjustment of adolescents at a significant level after the program's implementation. According to the obtained statistics, the mean scores of the experimental and control groups in the pre-test and post-test are significantly different from each other. Meanwhile, the control group did not significantly change in all components in the pre-test and post-test. It would be said in justification that the family affects the health and social adjustment of the adolescent; the interaction of parents with their children during the teenage years, plays a very important role in their evolution. How parents interact with their teenager shows that parents' behavioral patterns have long-term effects on the behavior and function of their children. Since the role of family is important in adolescent life, proper parenting interactions are predictive of social adjustment in adolescents.

Also, with regard to parenting methods and considering the increase in scores of an authoritative style and reduce in the score of permissive and authoritarian styles, it can be said that cognitive-behavioral family therapy has also had a positive effect on parental parenting style. In fact, the third hypothesis “behavioral cognitive family therapy causes changes in adolescent parenting styles” is confirmed and by explaining the results of this hypothesis and parenting styles and components, which include permissive, authoritarian and authoritative styles, and based on reduction in scores of authoritarian and permissive parenting styles in post-test and increase in scores of authoritative parenting styles in post-test, it can be said that cognitive behavioral family therapy can predict the components of parenting style,
in other words, cognitive-behavioral family therapy can positively influence the perception of parental and adolescent parenting styles. In line with it, Kimberly (2007), Spijkers, et al. (2014) and Larson (2009) found similar results. The results are consistent with the result of confirming the third hypothesis in this study, and also according to the results of Kimberly (2007) entiteld “parenting styles and adolescents” that serve as a guide for parents’ educators and professionals working with adolescent; among authoritarian, authoritative and permissive parenting styles, the authoritative parenting style is associated with positive growth outcomes and the correct interaction in these families is high and is very low among problematic parents.

In explaining the results of hypotheses and considering the strong background and analysis of researchers, it can be admitted that by teaching correct behavior, cognitive-behavioral family therapy can affect the components of social adjustment and perception of parenting style and general family function. Therefore, family education is important and in this regard, family education programs should be prioritized.

Also, given that the selected sample is related to Tehran, generalization of the results to other parts of the country should be carried out with caution, and this is part of the research constraints, and it is suggested to conduct the research in other regions and compare their results with each other.
The Effectiveness of Cognitive Behavioral Family Therapy on Parenting Style, Family Function and Social

References
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