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Comparing the effectiveness of cognitive-behavioral therapy and parent-child interaction therapy on Parent-child interaction in children with separation anxiety disorder

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ABSTRACT

Background and Aim: Anxiety disorders have significant negative effects on children's academic performance, relationships with peers, and family functioning. The purpose of the present study was to compare the effectiveness of cognitive-behavioral therapy and parent-child interaction therapy on Parent-child interaction in children with separation anxiety disorder. **Methods:** The current research was of the type of practical and quasi-experimental designs of pre-test-post-test and follow-up with a control group. The statistical population of this research included all children (girls and boys) suffering from separation anxiety disorder in Sari city in the first six months of 2021. The sample of this research includes 30 people who referred to Bamdad Counseling Center and Bavar Counseling Center who were selected using available sampling method and randomly divided into two experimental groups of cognitive-behavioral therapy and parent-child interaction therapy and the control group in the list. They waited. The data were obtained using the Strauss Parent-child interaction Questionnaire (1990), Spence Children's Anxiety Scale (1997). The data was analyzed using the method of analysis of variance with repeated measurements and SPSS-26 software. **Results:** The results showed that there is a significant difference between the two groups of cognitive-behavioral therapy and parent-child interaction therapy on Parent-child interaction in children with separation anxiety disorder ($F=14.09$; $P<0.001$). And cognitive behavioral therapy had a greater effect than parent-child interaction therapy on Parent-child interaction in children with separation anxiety disorder ($P<0.001$). **Conclusion:** Therefore, it can be concluded that cognitive behavioral therapy can be an effective intervention method to improve Parent-child interaction in children with separation anxiety disorder.

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Introduction

Anxiety disorders are one of the most common mental and emotional disorders among children. According to epidemiological studies, about 8 to 12 percent of children face one of the criteria for diagnosing anxiety disorder, to the extent that it disrupts their normal life and daily performance (Rees, Channon, and Waters, 2019). Anxiety disorders have significant negative effects on children's academic performance, peer relationships, and family functioning (Bewick et al., 2021). One of the most common childhood anxiety disorders is separation anxiety disorder. The main characteristic of separation anxiety disorder is excessive and disproportionate fear or anxiety about separation from attachment symbols or anticipation of separation (American Psychiatric Association, 2019).

Parent-child interaction is an uncomfortable interaction between two people who are unwilling or unable to listen to each other's concerns. Their behavior is accompanied by tension, hostility, and aggression, and communication challenges and conflicts that arise during the growth and change of family members make the ground for parent-adolescent conflict to occur. The term conflict refers to the inability to resolve differences and is mostly associated with tension, hostility, and aggression (Smith et al., 2019). Conflict is a state or action that occurs in conflict between thoughts, interests with different people (Allison, 2004). Considering that conflict is inevitable in family relationships and the results show that conflict and violence between family members increases the risk of children suffering from many behavioral problems and depression in the future. It is necessary to use effective and efficient methods to solve it (Herrinkol et al., 2009). In other words, Parent-child interaction can be constructive or destructive; Sometimes Parent-child interaction can be destructive, leading to anxiety in parents and children, low respect for children, and reducing children's adjustment in school (Rostami & Saadati, 2018; Zarb, 2014; Ali, 2010).

The first consistent step-by-step program that was developed based on the cognitive-behavioral approach to reduce separation anxiety, generalized anxiety and social anxiety of children and adolescents was cognitive behavioral therapy based on the "Coping cat" program (Van Starinbeorg et al., 2013). This program, based on the cognitive-behavioral theory, has its principles in 16 one-hour sessions and in two parts: Teaching psychological skills to identify feelings of anxiety and physical reactions, correcting anxious self-talk, problem solving, performance evaluation and self-rewarding, and practicing hierarchical exposure to anxiety-provoking situations (McNally Creehan et al., 2013). In order to evaluate the effectiveness of the "Coping cat" program, several randomized clinical trials have been conducted in America. The results of the first randomized clinical trial conducted by Kendall in 1994 on 47 children aged 9 to 13 with anxiety disorders indicated a high rate of improvement of symptoms of the disorder in children under cognitive behavioral therapy of 0.64 compared to the control group. These results were maintained in the follow-up periods as well (Bernhardt, 2019). As mentioned, one of the effective treatments in the treatment of separation anxiety disorder is cognitive-behavioral therapy (Parvandi et al., 2022).

One of the relatively new treatments for both externalizing and internalizing disorders is parent-child interaction therapy. Parent-child interaction therapy is one of the behavioral programs of parent education based on research evidence. In this program, two categories of skills are considered in two successive stages of treatment. In the child-centered interaction stage, parents learn to use the usual play therapy skills in order to improve the parent-child relationship. In the phase of parental interaction, parents learn the necessary skills to increase their obedience and reduce their child's disruptive behaviors (Liniman et al., 2017). In the treatment of parent-child interaction, goals such as improving the quality of parent-child relationships, reducing behavioral problems and increasing social behaviors, increasing parenting skills, including positive discipline, and reducing parental stress are pursued. Also, in the process of this treatment, parents learn to form and strengthen constructive ways to deal with feelings such as failure (Iberg et al., 2001). McDiarmid and Begans (2005) emphasize that the treatment of parent-child interaction makes parents manage the child's behavior more effectively, and in this way, the child's desirable behaviors increase and undesirable behaviors decrease. Boggs et al. (2005) emphasize that parent-child interaction therapy by encouraging positive parent-child interactions and teaching

parents how to be stable and use non-violent discipline techniques helps to break parent-child negative wheel behaviors.

A mental challenge that has focused the minds of child therapists for a long time is the existence of a kind of dualism in explaining the cognitive dimensions of the cause of anxiety disorder. The two dimensions of the child's cognition and the child's parent's interaction explain anxiety symptoms in children to some extent. Cognitive therapists consider the existence of dysfunctional cognitions as one of the reasons for the formation of the aforementioned symptoms, while the supporters of the interactive approach point their sharp criticisms towards cognitive treatments in preschool children to the cognitive inability of children to benefit from treatments. The aim of the current study was to compare the effectiveness of cognitive-behavioral therapy and parent-child interaction therapy on Parent-child interaction in children with separation anxiety disorder.

Method

The current research was of practical and quasi-experimental designs of pre-test-post-test and follow-up with the control group. The statistical population of this research included all children (girls and boys) with separation anxiety disorder in Sari city in 2021. The sample of this research includes 30 people who referred to Bammad Counseling Center and Bawar Counseling Center, who were selected using the available sampling method. Then, they were randomly assigned to two experimental groups of cognitive-behavioral therapy, parent-child interaction therapy, and a waiting list group. The inclusion criteria were: receiving a diagnosis of separation anxiety disorder by a psychiatrist or a psychologist; Age between 9 and 11 years; He has not taken neuropsychological medicine during the last three months; do not suffer from an incurable physical disease such as cancer and the like; do not suffer from a serious psychiatric disorder such as psychosis and the like; be at least the third grade of elementary school; Completion of an informed consent agreement regarding participation in the research project by parents. Absence of more than two sessions in treatment; Suffering from a psychotic disorder was also considered as an exclusion criterion.

Materials

1. Parent-child interaction questionnaire. Strauss' Parent-child interaction Questionnaire (1990) contains 15 questions that measure 3 scales of reasoning, verbal and physical aggression in two parts of me and my mother. It is graded through a Likert scale and in 5 options. Score 0 means never, once a year score (1), two or three times a year score (2), often but less than once a month score (3), about once a month score (4) And a score of (5) is awarded more than once a month. In answering each question, the respondent evaluates the frequency of occurrence of each behavior by himself and the other side of the conflict. A higher score indicates more conflict. Ashtroas (1990), citing Sanai (2010), confirms the internal consistency of the subscales of argumentation, verbal aggression, and physical aggression, which are as follows: 12 alpha coefficient for verbal aggression scale, alpha coefficient from 0.62 to 0.88 and alpha coefficient for physical aggression from 0.42 to 0.96 have been reported. In the research of Zablei (2004), the scale of conflicts between girls and their mothers was used. In this research, the alpha coefficient for girls and mothers was obtained as follows: Argument scale 0.58 and 0.49 in verbal aggression subscale 0.65 and 0.65 and in physical aggression subscale 0.82 and 0.74 and in total 0.74 and 0.73. The content validity of this scale has been confirmed in the research of Zablei (2004). In this study, the reliability coefficient was obtained using Cronbach's alpha of 0.78.

2. Spence Children's Anxiety Scale (SCAS). This questionnaire was designed to assess the anxiety of 8-15-year-old children based on the diagnostic and statistical classification of DSM-IV in 1997 by Spence in Australia. The Spence questionnaire has two versions for children (45 items) and parents (38 items). Scoring is based on a 9-point Likert scale of never (0), sometimes (1), often (2), always (3) and 6. It measures scales of separation anxiety, social anxiety, obsessive-compulsive, panic-market phobia, pervasive anxiety and fear of physical harm. The reliability of this scale is reported as 0.92 for general anxiety and 0.60 to 0.82 for subscales (Spence, 1998). In Mousavi et al.'s (2007) research, the reliability of this questionnaire was reported between 0.62 and 0.89 by Cronbach's alpha method, and the six

factors of the questionnaire were confirmed by confirmatory factor analysis.

3. Cognitive-behavioral therapy and parent-child interaction therapy. In the present study, cognitive behavioral interventions based on Kendall's coping program (1994) and parent-child interaction therapy based on the protocol of McNeil and Hembree-Kikin (2010) were conducted, and the summary of the content of the sessions of these two interventions is as follows:

Table 1. Brief description of cognitive-behavioral therapy sessions based on Kendall's coping program (1994)

Session	Content
1	Communicating with clients, determining therapeutic goals, identifying anxiety-provoking situations and the child's reaction to them
2	Identifying different emotions, identifying signs created in an anxiety-provoking situation
3	Teaching physical signs of anxiety, identifying physical reactions to anxiety
4	First meeting with parents, in order to increase their participation in the treatment process and answer possible questions
5	Diaphragmatic breathing training and stress relief
6	Familiarity with self-talks in anxiety situations, distinguishing between anxious and compromised self-talks
7	Helping clients to change anxious self-talks to adapted self-talks, teaching problem-solving skills to manage anxiety
8	Acquaintance of clients with the concept of reward and training to grade yourself based on performance
9	Second meeting with parents, in order to involve them in the treatment process and answer questions
10 - 11	Acquainting clients with the logic of confrontation, designing the hierarchy of fear and implementing confrontation exercises in situations with low anxiety
12 - 13	Implementation of exposure practice in situations with moderate anxiety
14 – 15	Implementation of coping exercises in high anxiety situations
16	Exercising exposure in a highly anxiety-provoking situation, designing a summary of therapy sessions in the form of a wall newspaper, making a short film by the child.

Table 2. Summary of parent-child interaction therapy sessions (McNeill & Hembree-Kiggin, 2010)

Session	Goal	Content
1	Initial assessment and determination of treatment direction	In the form of an interview, historical information about the child and the current problem was collected, and the therapist got the opportunity to get to know the child and the family's conditions. The therapist informs the parents about the goals, steps, treatment process and explaining the first homework.
2	Teaching child-centered interaction skills (without the child's presence)	First stage: child-centered interaction
3	Guidance session and practice of child-centered interaction skills (with the presence of the child)	In this meeting, parents are explained the logic of using brief daily play therapy sessions at home. After that, a set of skills that should not be done is presented as "avoidance" and a set of skills that should be done as "doing" and each skill is described with its logic. The therapist presents the concept of "strategic attention" and "selective gaze" in order to shape behavior. At the end of the session, skill booklets and homework sheets will be

		given.
4	Guidance session with explanation of children's example from parents (with the presence of the child)	Reviewing and verifying homework is strengthening the therapeutic relationship with the family and providing support for the goals of this meeting. During guidance, the focus is more on behavioral descriptions and only positive feedback is provided without mentioning errors. At the end, more emphasis is placed on the strengths of the parents and they are asked to try harder to reduce the number of questions and increase the feedback in homework.
5	Guidance session with an emphasis on receiving support (with the presence of the child)	Examining and checking assignments, explanations are given about the fact that the formation of many undesirable behaviors is a result of children modeling the behaviors of their elders. While guiding the parents, it is emphasized not to use questions. Trainings are provided in the field of anger control. In homework, parents are encouraged to focus on increasing titled praise.
6	Guidance session emphasizing the issue of children's stress (with the child's presence)	Reviewing and checking assignments, "getting support" is an issue that is shared with parents and they are encouraged to get support from other people who are around them in an appropriate way when necessary. In homework, parents are encouraged to focus on skills that have not yet been mastered.
7	Teaching parent-centered interaction skills (without the presence of the child)	Reviewing and checking assignments, in this meeting parents are discussed about the effect of stress on children and children's emotional understanding. In the guidance process, special attention is paid to the use of skills in a combined manner. From this meeting onwards, if the parents had mastered the skills, the treatment enters the second stage.
8	guidance session (with the presence of the child)	In this session, parents are taught parent-centered interaction skills, which include discussing how to give effective instructions, praise the child's obedience, and properly implement the deprivation process in case the child disobeys.
9	Guidance session with the beginning of the generalization of skills outside the playroom (with the presence of the child)	At the beginning of the meeting, the whole process is reviewed with the parents, and then the deprivation procedure is explained to the child according to his/her level of development. If the work process in this session is carried out well and the session ends with the obedience of the child, the parents will be asked to do the first homework of the second stage of the treatment at home.
10	guidance session (with the presence of the child)	Marine skills of this stage continue. The criteria for acquiring skills are explained to parents. From now on, we are looking to generalize the skills to environments other than the playroom, so parents are asked to use the skills in the waiting room or after each session if needed. If the parents have completed the first homework successfully, they will be given another homework that includes the situation of collecting toys.
11	Guidance session with training on setting household rules (with the presence of the child)	The effects of the treatment on the child's behavior with the parents are reviewed and the improvement of the skills of both stages of the treatment continues. From now on, parents are asked to use the skills of this stage for issues where the child's obedience is important for parents, and for other issues, use other taught techniques.

12	Guidance session with behavior management training in public places (with the presence of children)	After guiding the parent-centered interaction, the remaining behavior problems will be reviewed with the parents. For each problem, it is determined which method is suitable. Parents are taught the process of determining house rules and how to implement them
13	Guidance session in a public place (with the presence of the child)	The guiding process continues and if the parents are far from the skills mastery criteria, more time will be spent guiding the interaction. If the previous house rules are established, new rules will be determined with the cooperation of the parents. The child's behavior in public places will be discussed and the necessary tips to control his behavior in these places will be given
14	Guidance session and solving problems that hinder the completion of treatment (with the presence of the child)	Preparing the family to complete treatment will be done through guided interaction at the beginning of this session in the playroom. Then, the tips taught about controlling the child's behavior in public places are reviewed with the parents. The middle part of the session continues to practice the same points in a public place
15	Graduation meeting (with the presence of the child)	While in order to prepare the family for the completion of the treatment, more focus will be placed on the weaker skills, attention will also be paid to the issues that prevent mastering the skills. If needed, parents play the role of weaker skills with a play therapist. If part of the remaining problems are related to the child's relationship with his or her sibling, you can give them the homework of the children's two-player game and even lead a meeting with the presence of the child's sibling. The objectives and program of this meeting can continue until the parents master the skills.

Implementation

Ethical considerations in this research were such that participation in this research was completely voluntary. Before starting the project, the participants were familiarized with the specifications of the project and its regulations. People's attitudes and opinions were respected. The members of the experimental and control groups were allowed to withdraw from the research at any stage. In addition, if interested, the members of the control group could receive the intervention performed for the experimental group in the same treatment sessions after the completion of the plan. All documents, questionnaires and confidential records were only available to the executives. Written informed consent was obtained from all volunteers. In the descriptive analysis of the data, the statistical indicators related to each of the research variables were calculated. In the inferential statistics section, analysis of variance test with repeated measurements and SPSS-22 software were used.

Results

The mean (standard deviation) age in the parent-child interaction group (PCIT) was 2.10 (1.46), cognitive-behavioral therapy (CBT) was 5.10 (1.53) and the control group was 0.10 (1.42). There was no significant difference between the three groups in terms of the age of the participants.

Table 3. Demographic information by all three groups

variable		PCIT		CBT		Control		Diff.
		Freq.	Percentage	Freq.	Percentage	Freq.	Percentage	Chi-square
Age	9	6	42/9	5	35/7	4	28/6	0/900*
	10	3	21/4	4	28/6	5	35/7	
	11	5	35/7	5	35/7	5	35/7	

Class	3th	5	35/7	6	42/9	4	28/6	0/924*
	4th	4	28/6	3	21/4	5	35/7	
	5th	5	35/7	5	35/7	5	35/7	
Gender	Girl	7	50	7	50	7	50	0/999*
	Boy	7	50	7	50	7	50	

The demographic information of the three sample groups is shown in age, educational status, and gender indicators. Considering that P<0.05 was obtained, there is no significant difference between the demographic variables in the three groups in the chi-square test. Therefore, the demographic variables represent the control variable in the research.

Table 4. Mean and standard deviation of pre-test and post-test scores of Parent-child interaction in the experimental and control groups.

		Pre-test		Post-test		Follow-up	
Dependent variable	Group	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
PCI	CBT	26/64	4/79	21/71	3/02	21/64	4/06
	PCIT	26/71	6/52	16/64	3/03	16/57	2/06
	Control	26/57	4/79	26/43	5/50	26/36	5/90

The information in Table 4 shows that the average scores of the Parent-child interaction pre-test in the two experimental groups (parent-child interaction and cognitive-behavioral therapy) and the control group are almost equal. However, in the post-test, the experimental group's average scores of Parent-child interaction (parent-child interaction and cognitive-behavioral therapy) were far different from the average scores of the control group. In addition, it can be observed according to the follow-up values in two experimental groups (parent-child interaction and cognitive-behavioral therapy) and control.

Table 5. Skewness and kurtosis of data and assumption of normality of variables

		Pre-test		Post-test		Follow-up	
Dependent variable	Group	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness
PCI	CBT	0/092	0/424	0/949	0/424	0/024	-0/260
	PCIT	0/229	0/495	-0/402	-0/462	0/299	0/449
	Control	0/945	0/042	0/990	0/242	0/342	-0/421

According to table 5, all the values obtained from the kurtosis and skewness are in the range (2 to -2). Therefore, the data distribution is normal.

Table 6. Values and (significance level) of research variables in the Shapiro-Wilks normality test

		Pre-test		Post-test		Follow-up	
Dependent variable	Group	Statistics	Sig.	Statistics	Sig	Statistics	Sig.
PCI	CBT	0/706	0/701	0/705	0/702	0/540	0/933
	PCIT	0/614	0/846	0/655	0/785	0/614	0/845
	Control	0/619	0/838	0/513	0/955	0/630	0/822

According to Table 6, the values of Shapiro-Wilks statistic in pre-test, post-test and follow-up scores, cognitive regulation of emotion, anxiety, Parent-child interaction and loneliness in children with separation anxiety disorder, separately from the two experimental and the control groups, are significant in the variables. It represents the normality of the distribution of variables. The assumption of sphericity is established and according to the results obtained from the test of homogeneity of variance (Mochli sphericity) the values are not significant, so the homogeneity of variances is confirmed in three times of the study. A summary of the analysis of variance of repeated

measures for intra-group and inter-group factors is presented in Table 7.

Table 7. Summary of the results of repeated measures (mixed) analysis of variance with grouping, treatment stages and interaction

variable	Source	Sum of squares	df	Mean square	F	Sig.	Effect size
PCI	Group	881/159	2	440/579	14/091	0/01	**0/419**
	Stage	550/298	1	550/298	36/622	0/01	**0/484**
	Interaction	345/167	2	172/583	11/485	0/01	0/371

The results of Table 7 show that the F value calculated for the effect of steps (pre-test, post-test and follow-up) is significant at the 0.01 level. Specifically, it was obtained in the interaction of the group and treatment stages for Parent-child interaction (0.371, Eta2 = <0.01, P=11.485, F). As a result, there is a significant difference between the average pre-test, post-test and follow-up scores of Parent-child interaction scores of children with separation anxiety disorder in the three stages of pre-test, post-test and follow-up treatment. The Bonferroni post hoc test results were calculated to check the difference between the means in the treatment stages.

Table 8. Summary of Bonferroni post hoc test results to determine the difference between pre-test, post-test and follow-up

Pre-test	Stage 1	Stage 2	Mean difference	Standard error	Sig.
Parent-child interaction	Pre-test	Post-test	5/048	0/900	0/001
	Pre-test	Follow-up	5/119	0/846	0/001
	Post-test	Follow-up	0/071	0/910	0/938

The results of Table 8 show a significant difference between the Parent-child interaction scores of children with separation anxiety disorder in the stages of pre-test and post-test, pre-test and follow-up. The difference between the post-test and the follow-up is not significant, which is due to the stability of the treatment. The comparison of means shows that the Parent-child interaction of children with separation anxiety disorder is significantly different in the post-test and follow-up phase compared to the pre-test phase.

Table 9. Summary of Tukey's post hoc test results for two experimental groups

variable	Groups	Mean diff.	Standard error	Sig.
PCI	Exp 1 & Exp 2	3/357	1/220	0/01

The results of Table 9 show a significant difference between the Parent-child interaction scores in children with separation anxiety disorder in the parent-child interaction group and the cognitive-behavioral therapy group. According to the average indicators and effect size obtained in parent-child interaction therapy, it caused more changes in the Parent-child interaction in children with separation anxiety disorder, and this treatment is stronger than cognitive-behavioral therapy in this group of patients.

Conclusion

This study aimed to compare the effectiveness of cognitive-behavioral and parent-child interaction therapy on Parent-child interaction in children with separation anxiety disorder. The findings showed a significant difference between the two cognitive-behavioral and parent-child interaction therapy groups on the Parent-child interaction in children with separation anxiety disorder. In addition, the findings showed that cognitive behavioral therapy had a greater effect than parent-child interaction therapy on Parent-child interaction in children with separation anxiety disorder. The results of this finding were consistent with the results of the following studies: Zarghami, Heydari Nasab, Shoairi, and Shahrivar (2015); Abbasi et al. (2010); Ghasemzadeh and Jani (2013); Love (2010) concurred.

In explaining this finding, it can be said that parents play an important role in treating children with anxiety disorders. When parents influence their child's behavior, they better understand their fear and anxiety and know

effective ways to teach their child how to cope with a fearful situation. Parents sometimes fuel their child's anxiety by reinforcing or punishing their child's anxiety or expecting too much or too little of themselves. In the case of these parents, behavior management techniques are used with parent-child interactions.

Studies in which anxious children have been treated with cognitive-behavioral therapy have proven the importance of parents' planned and systematic involvement in the treatment process. At the same time, parents learn to cope with their discomfort, they also learn to be aware of their anxiety responses during mental pressure, and they play the role of a problem-solving model for their children. In cognitive-behavioral therapy, cognitions are assumed to mediate behavioral responses. Therefore, maladaptive behavior can be the result of maladaptive cognitions. So if we change maladaptive cognitions, maladaptive behavior will change. Cognitive-behavioral treatment of children's anxiety disorders focuses on changing maladaptive perceptions, thoughts, ideas, and beliefs by manipulating and reconstructing these distorted cognitions (Warwick et al., 2017).

Cognitive behavioral therapy for children must match the basic cognitive model, cognitive level, and the type of referral problem, which can significantly help in choosing the most appropriate treatment method. Cognitive-behavioral therapy for children and families requires the basic rules of cognitive-behavioral therapy with children's developmental and emotional needs and abilities. Involving the family in the treatment and paying attention to the developmental, emotional, and cognitive elements can be considered a decisive phenomenon in planning the appropriate treatment for the child as a unique person with a unique problem. Cognitions are based on attitudes or hypotheses developed from previous experiences, considered the most important links in the chain of events that lead to unbalanced behavior or psychological disorders. A complex interaction between cognitive events, processes, structures, cognitive outcomes, emotions, overt behaviors, experiences, and environmental contexts contributes to the formation of disordered behavior. In working with children, a specific problem is usually considered, or special techniques are used to train the child to use intellectual and cognitive strategies to guide behaviors and thus improve the Parent-child interaction.

The limitations of this research were: the available sampling method, the sample may need to be a complete representation of the statistical population, and it is better to generalize the results only to the population from which the sample was selected. The existence of intervening variables, such as the cultural load of some sentences and words in the questionnaires, as well as the refusal of people to answer all the questions in the questionnaire, which the researcher spent much time in order to collect the questionnaires. It is suggested that this research be done in other groups and by random sampling methods.

Conflict of Interest

According to the authors, this article has no financial sponsor or conflict of interest.

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