

The effect of family based cognitive-behavioral therapy on children's non-clinical anxiety

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Abstract

Introduction: The present study aims at determining the efficacy of family based cognitive-behavioral therapy on children's anxiety.

Methods: In a quasi-experimental study, 120 girls' with the ages of 10-11 with scores above 24 on the Spence Children's Anxiety Scale were enrolled. The mothers completed the Spence Children's Anxiety Scale-Parent Version. Mothers and children were randomly assigned to both control and case groups. The case group attended 8 sessions of family based cognitive-behavioral therapy (Cool Kids).

Results: The findings showed a significant difference between case and control groups in anxiety, with reduction in the case group. Case group mothers also, reported a significant reduction in their children's anxiety.

Conclusion: Based on these findings, we can apply family based cognitive-behavioral therapy as an effective means of reducing children's anxiety.

Keywords: Family Based Cognitive-Behavioral Therapy, Anxiety, Children

Introduction

Epidemiological data suggests that anxiety disorders are the most common disorders in childhood and place children at a rising risk of other forms of dysfunctions [1]. In a review of community studies, Costello et al. [2] found that the median prevalence rate of anxiety disorders was 8.1 per cent, ranging from 2 to 24 per cent. Anxiety disorders in children and adolescents include separation anxiety, phobias, generalized anxiety disorder, obsessive-compulsive disorder and post-traumatic stress disorder [3]. They are all characterized by excessive fear of particular internal experience or external situations, and avoidance of some experience [4]. Childhood anxiety disorders also, predict some problems in adulthood, including suicidal thoughts and attempts [5] and an overall reduced quality of life [6]. Even mild cases increase the risk of later anxiety, internal symptoms, social incompetence, isolation, and shyness [7], anxiety disorders in children who have some significantly serious and long-term negative consequences on the child's school performance [8], social functioning and family life [9]. These children are more likely at a risk of being bullied by their peers [10].

Theoretical models emphasize the role of parenting in developing and maintaining the child's anxiety, but reviews of the empirical literature have provided mixed support for the existing theories [11]. The importance of parental influences (including parents' own anxiety levels and a parenting style of overprotection, lack of warmth, and rejection) in the etiology of childhood anxiety is well recognized [12]. McLeod et al. [11] conducted a meta-analysis of 47 studies testing the relationship between parent and child anxiety. Through these studies, parenting accounted for only 4 percent of the

variance in the child's anxiety. The interaction between parental behavior and anxiety increases the risk of anxiety disorders [13]. In addition, *Micco* et al. [14] in a meta-analysis of some studies addressing the familial transmission of anxiety, over 15 studies have been conducted and subsequently documented the connection between parental and offspring anxiety at the syndrome level.

Clinical research on psychotherapy for anxiety disorders in children has considerably advanced in recent years [15]. A growing body of research supports the use of individual, group and family-based variants of cognitive-behavioral therapy (CBT) for treating anxiety disorders in youth [16]. Furthermore, these treatments are among the most effective interventions for the treatment of anxiety disorders, both in children and adolescents [17]. Through some studies [16, 18, 19, 20, 21, 22, 23, 24, 25] the effectiveness of family-focused cognitive-behavioral therapy has been confirmed. Nevertheless, other researches [26, 27, 28, 29, 30, 31] have not shown that this kind of therapy is more effective than individual child cognitive-behavioral therapy. However, there was an interesting finding from a three-year follow up study of the *Cobham* et al. [26] trial, indicating that children treated with CBT along with parental involvement were more likely to be diagnosed free after three years in comparison with the children treated with individual CBT [32]. In *Barrett* et al. [18], *Barrett* et al. [27], *Cobham* et al. [26, 32], *Boden* et al. [30] studies the most theoretically relevant parental components are included. These programs include contingent management training, psychopathology treatment in parents, parental cognitive modifying of thoughts, assumptions and beliefs, education and training in effective and appropriate problem solving methods and communication training in their parental involvement.

The goal of the present study was the analysis of the efficacy of family based cognitive-behavioral therapy on children's anxiety. Considering the results of the previously conducted researches and the issue that the family based cognitive-behavioral therapy plan for children's anxiety have not been designed in Iran (so far we have looked), we attempted to answer this question "how important is the role of family based cognitive-behavioral therapy in decreasing the children's anxiety symptoms?"

Methods

The study cases were selected from the available population of the 4th and 5th grade elementary school students. The students who met the inclusion criteria (120 students) were selected and the girls whose anxiety scores were higher than the cutting point of Spence Anxiety Scale (SCAS) were enrolled, as well. The selected students were randomly assigned into intervention and control groups (15 for the case group, and 15 for the control group). After on, their mothers were assessed. Three mothers in the control group did not attend the assessment, so the number of participants in the control group declined to 12 children and 12 mothers and in the case group there were 15 children and 15 mothers. During the treatment course, three members in the experimental group dropped out at the first and fourth sessions. Eventually we had equally 12 participants in both experimental and control groups.

Inclusion criteria: In order to be included in the study, mothers had to have a high school diploma or higher degree. Also, the students had to be fourth and fifth grade elementary school students with an average score of 19 (out of 20), no obvious physical diseases, lack of significant psychological diseases (except anxiety), and they had to have a father and also had to be living with their parents.

The Spence Children's Anxiety Scale (SCAS; Spence, [33]) is a self-report measure of anxiety originally developed to examine anxiety symptoms in children aged 8–12 years. The SCAS consists of 44 items, 38 of which assess specific anxiety symptoms concerning six sub-scales, namely social phobia, separation anxiety, panic attack/agoraphobia, obsessive-compulsive disorder, generalized anxiety and physical injury fears. The remaining six items serve as positive "filler items" in an effort to reduce negative response bias. Respondents are asked to indicate frequency with which each symptom occurs on a four-point scale ranging from Never (scored 0) to Always (scored 3). A total SCAS score is obtained by adding up the scores of the 38 anxiety symptom items. As already mentioned, the previous studies have demonstrated high internal consistency, high concurrent validity with other measures of child and adolescent anxiety, and adequate test-retest reliability. This scale was applied by *Mousavi* et al. [34] on 450 male and female students. The validity and reliability are shown in tables 1 and 2.

Table 1. The reliability of Spence Children's Anxiety Scale (Cronbach's Alpha)

	Social Anxiety	Separation Anxiety	Generalized Anxiety	Panic with Agoraphobia	Phobia of Physical Injuries	Obsessive-Compulsive Disorder	General
Cronbach's alpha	.67	.69	.72	.75	.65	.62	.89

Table 2. The reliability of Spence Children's Anxiety Scale

X2	df	p	RMSEA	CFI	RMR	GFI	AGFI
1068.14	650	<.001	.045	.97	.063	.85	.83

Spence Child Anxiety Scale for Parents (SCAS-P; Spence, [35]). The items of the SCAS-P were formulated as closely to the corresponding item of the child version of the SCAS. The items referring to an internal state (e.g. item 4, I feel afraid) were rephrased into observable behavior for parents (e.g. my child complains of feeling afraid).

The positive filler items were not included in the SCAS-P, leaving 38 items in the scale on the same 0 (never) to 3 (always). The validity and reliability of this test in Iran has been determined by *Mousavi* [34]. The correlation coefficient between the first and second run of this test was found to be 0.97.

Cool Kids Treatment Plan: This program has been created based on cognitive-behavioral therapy and adopted from the Coping Cat program [25] and Coping Koala [27]. The program is designed for families in small group formats. Cool Kids groups consist of 5 to 7 families, including children and possibly both parents. The treatment plan is held in eight 2-hour sessions. Every meeting begins with welcoming members of the group and reviewing prior meetings (10 to 15 minutes). The therapist will spend 40 to 60 minutes of the session with children and parents separately. At the end of each session, all participants join again and review the session and practice the tasks of the week (10 to 25 minutes). During each session, one of the activities of the workbook was practiced, and extra activities were assigned to children and parents as their homework.

The treatments protocol includes: Dictionary - View detailed dictionary

First Session: Understanding Anxiety- Anxiety was defined. Children with anxiety disorders were introduced, and personal fears and concerns were identified. The goals of the treatment plan for each family were determined. Parents were taught about the causes of anxiety. A contract was signed. Mothers were assigned to identify personal fears and worries.

Second Session: Understanding Anxiety- They were taught about the impact of anxiety on the body, thoughts and behavior. Various emotions were recognized. The Worry Scale was introduced. They were also taught about the links between thoughts and feelings. Understanding the links between thoughts and feelings, and distinguishing them were practiced.

Third Session: Learning realistic thinking- Realistic thinking (detective thinking for children) was explained. Children learned how to find evidence to prove true or false anxiety. The importance of the thoughts was shown. Self-talks in ambiguous situations were identified. They were also taught the relaxation techniques.

Fourth Session: Parenting an anxious child- Different ways to deal with anxious children were discussed. Current methods of maternal parenting were determined. Procedures to deal with anxious children were explained. Problem solving techniques were also taught to the children and mothers. Rewards were determined and self-esteem was taught to the children.

Fifth Session: Stepladders (facing with fear) - They were taught the concept and steps of stepladder. A list of fears

and concerns was used to make stepladders.

Sixth Session: Simplifying the detective thinking and troubleshooting stepladders- Facilitating the detective thinking techniques and the use of cue cards. Reviewing stepladders and troubleshooting.

Seventh Session: Training assertiveness and social skills. They were taught about the body language, voice, dialogue, friendship and assertiveness. A table of passive, aggressive and assertive characteristics of children, and their role-playing was presented to participants. They were also trained about the methods to deal with bullying or being ridiculed.

Eighth Session: Planning for the Future - All treatment sessions were reviewed. Recurrence of anxiety symptoms and ways to deal with them were discussed. Situations that they may come up with in the future were discussed and planned for. Children were advised to continue practicing detective thinking, assertiveness and completing stepladders. Finally, they were awarded the course completion certificate [36].

For the purpose of current study, the treatment group compared to the no-treatment control group. Covariance analysis (ANCOVA) was computed to examine the efficacy of treatment plan on children's anxiety.

Results

Based on demographic information, the mean of children's age in the experimental group was 10.75 and in the control group 10.5. Also, the mothers' mean age was 39.58 in the experimental group and 37.08 in control group and mean of fathers' age was 45.33 in experimental and 42.5 in control group. Moreover, the mean of marriage duration in the experimental group was 19 years and in the control group 16.75 years.

For means and standard deviations see Table 3. Levene's test shows that the variances of the case and the control group in general anxiety are equal in children ($p \geq .05$). Therefore, the Covariance test can be used to analyze data.

The results of analyzing data with covariance test were shown in Table 4. As shown in Table 4, the pre-test score of anxiety has a significant effect on the post-test score in children ($p \leq 0.05$) and the intervention, after removing the effect of pre-test, had a significant effect ($p \leq 0.0001$) on post-test scores. The effect of intervention on post-test scores in the case group was 55.4 percent. Likewise, mothers' assessment showed that the pre-test score of general anxiety had a significant effect on post-test score ($p \leq 0.0001$) and the intervention, after removing the effect of pre-test, had a significant effect ($p \leq 0.0001$) on post-test score, which was 60.7 percent.

Discussion

The results of this intervention have shown a decrease in children anxiety. These findings are consistent with the findings of *Barrett et al.* [18], *Mendlowitz et al.* [19], *Silverman et al.* [20], *Spence et al.* [21], *Rapee* [22],

Table 3. Descriptive indices of variable general anxiety and Levene's test to assess equality of the variances

Variables	Groups	mean	SD	Leven's test		
				F	Sig.	
Anxiety (Children's Assessment)	pretest	Experimental group	65.8	11.56	3.31	.82
		Control group	66.5	13.59		
	posttest	Experimental group	33.7	21.8		
		Control group	71.8	17.71		
Anxiety (Mothers' Assessment)	pretest	Experimental group	41.5	16.12	.62	.63
		Control group	38.7	15.81		
	posttest	Experimental group	23.2	12.29		
		Control group	49.8	18.49		

Table 4. The results of analyzing covariance on the mean of post-test scores for general anxiety in both groups, compared with pre-test scores

Dependent Variable	Source	Mean Square	df	F	Sig.	Partial Eta Squared
Anxiety (Children's Assessment)	Pretest	2049.76	1	6.54	.018	.24
	Group	8166.01	1	26.04	.0001	.55
Anxiety (Mothers' Assessment)	Pretest	2550.83	1	18.76	.0001	.47
	Group	4403.78	1	32.39	.0001	.61

Manassiss et al. [23], *Bogels and Siqueland* [26] and *Suveg et al.* [16] studies. On the other hand they are not consistent with the findings of *Cobham* [26], *Wood et al.* [28], *De Groot et al.* [29], *Bodden et al.* [30] and *Breinholst et al.* [31] studies.

Wood et al. [28] studied anxiety in children and their mothers' evaluation of their anxiety. Although mothers reported a significant decrease in their children's anxiety, this decrease was not significant in children.

To clarify these differences, we can mention the following points: They enrolled children of 6 to 13 years old. *Wood* [28] was likely unable to teach cognitive and confronting concepts, which are essential parts of cognitive-behavioral therapy to children under 9. Besides, parents did not supervise their children's practicing when they came up with scary and worrying situations. In fact, children did not have any confrontation, or did confront just as their homework. In other words, they did not learn that such situations are not dangerous, or on second thought they should put up with fear and anxiety. So mothers see their children face fear, but the child still experiences the anxiety just like before.

Among the presented studies, *Wood's* study [28], like the current study, surveyed the report of anxiety decrease with both children and mothers' assessment. Whereas, mothers reported a significant decrease in their children's anxiety but in their children's assessment this decrease was not significant. Nonetheless, *Wood* finally concluded that family-based cognitive behavioral therapy is more effective than individual CBT. To clarify these differences, we can mention the following points: in *wood's* study there is a possibility that while children were exposed to a frightening issue, their mothers did not have enough monitoring on their doing exercises and the children did the tasks just for reward without learning necessary lessons (non-risky situations or

objects and having the ability to deal with and to tolerate the fear). Therefore, mothers see their children's face with his/her fears but the children are experiencing anxiety as much as before.

In *Cobham's* research [26] with a wide range of age (7-14 years old) and also in *Wood's* research with the age ranging from 3 to 13, it seems that there is no feasibility to teach the entire cognitive concepts, which are necessary for this kind of treatment, for younger children. As in *Breinholst et al.'s* meta-analysis study [31] the extensive age range is known as one of the causes of inconsistency as a result of family-focused cognitive-behavioral treatments.

Generally, *Breinholst et al.* suggested [31] in their study that the reasons of lack of coordination of family-focused researches result, besides the age range, are the number and sexuality of engaged parents, differentiations in methodology, not systematic targeting the parental behaviors which are related to child's anxiety.

On the other hand, this significant effect of treatment in the current study likely results in being non-clinical subjects. Nevertheless, regarding the fact that this study has been done in the Iranian society; therefore, engaging parents in the treatment of anxiety could have a high influence on the results of therapy.

Conclusion

Based on the findings of this study, we can apply family-based cognitive behavioral therapy (Cool Kids Package) as an effective technique in reducing children's anxiety. Therefore, it is recommended that this type of psychological treatment be used for either prevention in schools or treatment in psychological clinics and children's section of psychiatric hospitals for anxious children.

Resources

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