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Research Article


# The Effect of Cool Kids Therapy Program on Maternal Parenting Stress and Anxiety Symptoms of Children with Anxiety Disorders


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## Article Info


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## Abstract


***Aim:*** This study aimed to study the effect of Cool Kids Therapy Program on Maternal Parenting Stress and Anxiety Symptoms of Children with Anxiety Disorders.

***Methods:*** The research method was a semi-experimental design with a pre-test-post-test design with a control group. The statistical population of the study included all female students with anxiety disorders in the third, fourth and fifth grades of primary school in Bushehr in the academic year 1400-1401. Using the convenience sampling method, 30 female students with anxiety disorders were selected from the statistical population and randomly assigned to two control and experimental groups along with their mothers. The Child and Parent Anxiety Questionnaire (Spence) and the short form of the Parenting Stress Questionnaire (Abidin) were used to collect data. The experimental group received 8 therapy sessions, one session per week, and the control group participated in the study without receiving any intervention. Finally, the data obtained were analyzed using the statistical method of analysis of covariance and spss_24 software.

***Results:*** Data analysis showed that there was a significant difference between the scores of maternal parenting stress and children's anxiety in both child and parent forms in the experimental and control groups in the post-test by controlling for the pre-test score. The cool kids therapy program had a significant effect on maternal parenting stress and children's anxiety in the child and parent forms by 26%, 30%, and 36%, respectively.

***Conclusion:*** The results showed that the Cool Kids therapy program was effective on maternal parenting stress and anxiety symptoms in children with anxiety disorders. Overall, this program can be used as an effective protocol for treating children's anxiety and improving maternal parenting stress, independently or in addition to other methods in treatment centers.



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## 1. Introduction

Anxiety is an adaptive response to environmental stimuli that is present in all individuals to a moderate degree as part of modern human life. This reaction, as an internal alarm, makes individuals aware of potential dangers and, at an adaptive level, causes timely efforts and improves daily functioning. (Singh et al., 2024) Although anxiety and fear are a natural part of children's development, their intensification can have many negative effects on children's lives (Kahveci & Baki, 2023). Anxiety disorders in children are accompanied by symptoms such as sweating, palpitations, nausea, tremors, muscle spasms (Kowalchuk et al., 2022) and avoidance of certain situations (Freidi et al., 2017) and at younger ages, when facing or anticipating threatening situations, they show reactions such as crying, fussing or clinging to parents. These symptoms usually remain stable and disrupt the child's functioning in various aspects of life (Kowalchuk et al., 2022). Today, anxiety disorders are considered one of the most common psychological problems in children and adolescents (Dickson et al. 2024) and include types such as separation anxiety, phobia, social anxiety and generalized anxiety (Singh et al., 2024).

According to a survey by the US Centers for Disease Control and Prevention, about 1.7 percent of children aged 3 to 17, equivalent to 4.4 million people, have been diagnosed with anxiety disorders (Thapaliya et al., 2024). In Iran, the results of a national survey showed that 13.14 percent of children and adolescents aged 6 to 18 have anxiety disorders, which is the highest prevalence among other mental disorders (Zemestani et al., 2022). Anxiety leads to significant negative effects on the educational, social, and health performance of the child (Fisak et al., 2023) and if left untreated, it is associated with long-term consequences such as mood disorders, substance abuse, destructive behaviors, suicide, academic failure, and economic harm in adulthood (Strawn et al., 2021). On the other hand, research has shown that parental anxiety, especially mothers, plays an important role in increasing the likelihood of children developing anxiety disorders (Warner & Strawn, 2022). Parental anxiety problems (Siegel & Dickstein, 2012) and maternal parenting stress have a significant relationship with children's internalizing problems (Jarvers et al., 2023).

Parenting stress can have many negative consequences for children’s development, which is defined as the perceived stress parents experience in their role as parents and during parent-child interactions (Stracke et al., 2023). Parenting stress is a normal parenting experience (Seipp et al., 2024), and all parents experience varying levels of it when raising their children (Lim & Shim, 2021), however, high levels of stress are associated with adverse outcomes such as decreased parental psychological well-being, increased use of punitive methods, negative interactions with the child, and internalizing and externalizing problems in children (Pasarelu et al., 2023). Parenting stress increases when parents feel that the demands of parenting exceed their resources and capabilities (Mulsow et al., 2002). Early childhood, as a critical stage in children's brain, cognitive, and emotional development, is very sensitive to parental pressures. During this period, negative interactions resulting from parenting stress can disrupt the family's psychological environment and be directly related to child anxiety (Xia et al., 2024). Goldberg et al (1997) also showed in their research that parenting stress at ages 1, 2, and 3 is significantly associated with internalizing problems in children at age 4, and children at ages 4 and 5 will show more symptoms of internalizing problems at age 11 (Kochanova et al., 2022). Overall, evidence suggests that parental anxiety can significantly increase the risk of children

developing anxiety disorders. In turn, child anxiety can also maintain parental symptoms to some extent. This bidirectional relationship between child and parent anxiety creates a maladaptive cycle and is considered an additional risk factor for the maintenance of childhood anxiety (Short et al., 2023). There are many therapeutic interventions to improve childhood anxiety disorders (Javadi & Saed, 2022) which includes behavioral therapy, cognitive-behavioral therapy, family therapy, and medication, or a combination of them (Saeedmanesh & Sedaghatpour Haghighi, 2020). However, cognitive-behavioral therapy has shown significant effectiveness in reducing children's anxiety and has been introduced as a first-line treatment (Ishikawa et al., 2022).

Cognitive-behavioral therapy has received the most empirical support for the treatment of anxiety disorders in children and adolescents (Fjermestad et al., 2017; Mohammadzadeh Farahani et al., 2024; Skumsnes et al., 2024). The main goal of cognitive-behavioral therapy is to help identify and correct irrational beliefs, monitor thoughts, and replace negative automatic thoughts with realistic and adaptive beliefs (Perihan et al., 2020). On the other hand, family-centered cognitive-behavioral therapies have been more effective (Creswell et al., 2023), especially in young children and girls (Ginsburg & Schlossberg, 2002).

One family-focused cognitive-behavioral program is the Cool Kids therapy program, which was designed at Macquarie University in Sydney, Australia, based on Kendall's Coping Cat and Barrett's Coping Koala programs for children aged 6 to 12 (Bergez et al., 2020). This intervention includes training in skills such as cognitive restructuring, gradual confrontation, problem solving, assertiveness, emotion management, and relaxation (Leigh et al., 2023). Active parental participation in this program, both in the role of role modeling and in the implementation of homework, plays a key role in its effectiveness (Rapee et al., 2022). Research evidence in Australia and Denmark has shown that between 60 and 80 percent of children who received this program achieved complete recovery or reduction in anxiety symptoms (Djurhuus & Bikic, 2019). Kidd et. al. (2024) in their study, they showed that the Cool Kids treatment program led to a significant reduction in the severity of anxiety in children with autism, and 72% of participants achieved complete recovery. Kilburn et al. (2024) also confirmed its effectiveness in their study and obtained similar results. In the study of Zikopoulou et al. (2021), a reduction in anxiety in children and parents was also confirmed after treatment and at a 6-month follow-up. In Iran, Rahgozar et al. (2018) also showed the effectiveness of the Cool Kids program in reducing children's anxiety and recommended it for use in schools and clinics. Yen et al. (2014) also showed from the results obtained in their study that cognitive-behavioral therapy significantly improved the severity of the C-PCI child domain adjustment subscales and potentially improved the anxiety symptoms of Taiwanese children and some child domains of the Parenting Stress Scale perceived by their mothers. In the study of Yuwono et al. (2023), mothers who received cognitive-behavioral therapy also showed a significant reduction in parenting stress. Despite extensive evidence regarding the effectiveness of cognitive-behavioral therapy on parenting stress, the specific role of the Cool Kids program in this regard has not yet been tested and needs to be investigated.

## 2. Objectives

As mentioned, considering the special position of anxiety among children's negative emotions, which has a significant impact on their social, academic, and family functioning

(Fisak et al., 2023) and also the negative consequences of parenting stress on parents' psychological well-being and negative effects on children's development (Chen et al., 2017), the use of effective and evidence-based treatment models seems essential. In the meantime, the Cool Kids treatment program, which is a combination of cognitive-behavioral therapy principles and family therapy-based interventions, can play an effective role in reducing children's anxiety. However, despite significant international evidence about the effectiveness of this program, domestic studies in this field are limited, and its effect on parenting stress in particular has not been independently examined. Therefore, a research gap is felt and indicates the necessity of conducting the present study. Therefore, the purpose of the present study is to investigate the effect of Cool Kids program training on mothers' parenting stress and anxiety symptoms of children with anxiety disorders.

## 3. Methods

### 3.1. Sample and Procedure

The present study was a semi-experimental study with a pre-test-post-test design with a control group and random assignment of subjects. The statistical population included all female students with anxiety disorders in the third, fourth, and fifth grades of primary schools in Bushehr in the academic year 2022-2023. In the present study, convenience sampling was used. First, after receiving permission to conduct the study from the General Department of Education of Bushehr Province and the Education Department of Bushehr City, 10 girls' primary schools in Bushehr city that had previously been licensed were referred to, and relevant explanations were given to the principal and deputy principal regarding the content of the research plan and the necessity and benefits of participating in the study. Then, the Spence Anxiety Questionnaire, child and parent forms, was made available to the students online by the relevant schools. Out of 450 people who voluntarily completed the questionnaire, 50 people whose scores were higher than the cutoff point of 75 in the child form questionnaire and the cutoff point of 65 in the parent form questionnaire were invited to a clinical interview. Finally, 30 students who met the diagnostic criteria were selected and randomly assigned to two groups of recipients of the Cool Kids treatment program and the control group (15 people in each group).

During the treatment process, 5 subjects were removed from the experimental group due to withdrawal from the study due to travel, illness, and absence of more than two sessions. The number of subjects was reduced to 10. To equalize the number of the two groups, the control group was also reduced to 10. Finally, 20 subjects were selected as a sample. In the experimental group, subjects (10 subjects) completed the treatment, and the control group (10 subjects) participated in the study without receiving any intervention. Inclusion criteria included having completed the third to fifth grade of elementary school, diagnosis of anxiety disorders, education of at least a high school diploma for the mother, consent and ability to participate in the study, not taking medication due to a diagnosis of a psychological disorder, not simultaneously attending psychotherapy and counseling programs related to anxiety or other psychological problems, not having any other psychological disorder such as depression, oppositional defiant disorder, which was the child's main problem, as assessed by clinical interview. Exclusion criteria also included missing more than two sessions between the child and the mother, not cooperating with the therapist, and not doing homework.

### 3.2. Research Tools

#### 3.2.1. Spence Children's Anxiety Scale (Scale _ Child Form)

This scale was designed and developed by Spence in Australia in (1997) to measure and evaluate children's anxiety based on the Diagnostic and Statistical Manual of Mental Disorders (DSM_IV) (Ahlen, 2018). This scale consists of 44 questions, 38 of which are positive to reflect the symptoms and questions (11,17,26,31,38,43) and are designed to reduce the negative bias of the responses (Spence, 1998). The factors of interest are symptoms related to separation anxiety (questions 5-8-12-15-16-44), social anxiety (questions 6-7-9-10-29-35), obsessive-compulsive disorder (questions 14-19-27-40-41-42), panic disorder with agoraphobia (questions 13-21-28-30-32-34-36-37-39), generalized anxiety (questions 1-3-4-20-22-24) and fear of physical harm (questions 2-18-23-25-33). Scoring is based on a 4-point Likert scale (never: 0), (sometimes: 1), (often: 2) and (always: 3) and the maximum score is 114 (keramati et al., 2015) that a score of 75 or higher is clinically significant and higher scores indicate higher anxiety (Spence, 1998).

In Spence's (1998) study, the reliability of the subscales was reported to be between 0.60 and 0.82, and confirmatory factor analysis showed that the factor loadings of the questionnaire items were between 0.40 and 0.79, which confirms its multidimensional structure. Also, the concurrent validity of this questionnaire has been confirmed with a correlation of 0.50 to 0.75 with other valid anxiety measurement tools (Spence, 1998). In Iran, Mousavi et al (2007) also examined the Persian version of this questionnaire on a sample of Iranian children. The results of statistical analyses showed that this tool has good internal reliability and reported the reliability of the subscales to be between 0.62 and 0.89. Also, in order to examine the construct validity, confirmatory factor analysis was conducted, the results of which indicated a good fit of the six-factor model of the tool; So that the fit indices including CFI= 0.97, GFI= 0.85, AGFI= 0.83, RMSEA= 0.045 and RMR= 0.063 were all within acceptable limits. Also, in the study by Mashhadi et al. (2020). The overall reliability of the questionnaire was reported to be 0.91 using Cronbach's alpha.

#### 3.2.2. Spence Children's Anxiety Scale-Parent Form

The Spence Children's Anxiety Scale-Parent Form, like its child version, was developed by Spence in Australia in 1997 to measure and assess children's anxiety based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). The scale consists of 38 questions and one open-ended question that is not scored and includes six subscales: separation anxiety disorder (questions 5-8-11-14-15-38), social anxiety disorder (questions 6-7-9-10-26-31), obsessive-compulsive disorder (questions 13-17-24-35-36-37), generalized anxiety disorder (questions 1-3-4-20-24-22), specific phobia (questions 2-18-23-25-33), and panic disorder with or without agoraphobia (questions 3-4-5-6-7-8-9-10-11-12-13-14-15-36). 12-19-25-27-28-30-32-33-34) (Spence, 1997). The overall score of the test is obtained from the sum of the scores of the above subscales. Scoring is based on a 4-point Likert scale (never: 0), (sometimes: 1), (often: 2) and (always: 3) and the maximum score is 114, with a higher score indicating higher anxiety. (Harchegani & Ghazanfari, 2024). In the study by Nauta et al (2004), Cronbach's alpha coefficient for the entire parental form scale was reported to be 0.87, indicating good internal reliability. Test-retest reliability within a two-week period for the subscales was between 0.71 and 0.79. Also, confirmatory factor analysis confirmed the six-factor structure of the questionnaire and its

concurrent validity was confirmed with positive and significant correlations (between 0.50 and 0.070) with other valid anxiety instruments. In Iran, Mousavi et al (2007) also confirmed the validity and reliability of this questionnaire on 315 parents and children aged 6-12 years. This questionnaire had moderate to high internal consistency (alpha: between 0.65 and 0.89) and moderate to high test-retest reliability (correlation coefficients with other scales: between 0.39 and 0.67 with a two-week interval). Convergent validity was confirmed with a correlation of r=0.71 with the RCMAS anxiety scale. Also, the correlation between the subscales ranged from 0.39 to 0.81, and all were significant.

### 3.2.3. Short Form Parenting Stress Questionnaire

The Parenting Stress Index is derived from the long form of this scale developed by Abidin in 1995. The short form of the Parenting Stress Index has 36 items that measure three main sources of stress in parents and includes the subscale of Parental Disturbance (questions 1 to 12), Dysfunctional Parent-Child Interactions (questions 13 to 24), and Problematic Child Characteristics (questions 25 to 36). The response scale to the questionnaire is a 5-point Likert scale (strongly agree to strongly disagree) (Operto et al., 2023). In Abidin's (1995) study, internal consistency (Cronbach's alpha) for overall stress, parental distress subscale, dysfunctional parent-child interactions, and problematic child characteristics were 0.91, 0.87, 0.80, and 0.85, respectively, and test-retest reliability over a six-month period was 0.84, 0.85, 0.68, and 0.78, respectively (Mohammadi et al., 2018). In Iran, Fadaei et al. (2010) also examined the factor structure, reliability, and validity of the short form of the Parenting Stress Index.The results of Cronbach's alpha were 0.90 for the total score, 0.80 for the parental distress subscale, 0.84 for the dysfunctional interaction, and 0.80 for the difficult child. The test-retest reliability coefficient was 0.75 for total parenting stress, 0.82 for parental distress, 0.73 for dysfunctional interaction, and 0.71 for the difficult child, and the convergent validity, construct validity, and content validity were also reported to be satisfactory (Kosari et al., 2023). In the study by Shirzadi et al. (2015), the reliability of the instrument was confirmed with a Cronbach's alpha coefficient between 0.59 and 0.86, and the correlation coefficient between the test-retest, which was conducted with an interval of 16 days, was obtained between 0.92 and 0.97, and the validity of the test was reported to be in the range of 0.38 to 0.84.

## 3.3. Ethical Considerations

In order to comply with research ethics, the participants were assured that the information obtained from them would remain confidential, and the parents read and signed the informed consent form before the intervention began.

## 3.4. Method of implementation

After receiving the necessary permits from the Bushehr Education Department and selected schools, and then distributing the questionnaires online, screening and diagnosing female students with anxiety disorders, and then randomly assigning them to two experimental and control groups, in the pre-test phase, the research-related questionnaires were administered to the two groups. The therapy sessions were held for 8 two-hour sessions, once a week, at the Mehr Family Specialized Clinic in Bushehr Port, with the presence of a child therapist and researcher (the first hour was dedicated to children and the second

hour to mothers), and at the end of each session, the entire group came together to review the session and the weekly practice assignments. The control group did not receive any intervention during the implementation process, and finally, at the end of the sessions, which lasted for two months, a post-test was taken from the participants in the experimental and control groups. In this study, descriptive statistical methods (frequency, mean, and standard deviation) as well as inferential statistics (covariance analysis method) were used to analyze the data. The statistical results were analyzed using the SPSS_24 statistical software. A summary of the sessions is presented in **Table 1** (Rapee et al., 2022).

**Table 1.** Summary of Cool Kids Therapy Protocol sessions for children and their parent

| Session | Purpose | Description of the meeting |
|---|---|---|
| First | Understanding Anxiety | Understanding and explaining anxiety, getting to know anxious children, identifying personal fears and concerns, writing a family contract, weekly homework. |
| Second | Learning How Anxiety Affects the Body, Thoughts, and Behaviour | Understanding anxiety, learning how anxiety affects the body, thoughts, and behaviour, recognizing types of emotions, getting to know the anxiety scale, learning the connection between thoughts and emotions, homework. |
| Third | Learning Realistic Thinking | Explaining and practicing realistic thinking (detective thinking) and how to find evidence to prove the truth or falsehood of anxieties. Showing the importance of thoughts, identifying self-talk in ambiguous situations, teaching relaxation techniques, practicing detective thinking for the weekly assignment. |
| Fourth | Parenting an Anxious Child | Teaching problem-solving techniques to children, setting rewards and practicing self-rewarding for children, and making this a weekly homework assignment for children. Discussing ways to deal with anxious children. Identifying mothers' current parenting practices, explaining the correct ways to deal with anxious children, teaching mothers problem-solving techniques. |
| Fifth | Ladders (Facing Fear) | Teaching the concept and steps of ladders, preparing a list of fears and concerns and building a ladder with the help of children and parents, implementing the initial step or steps of the ladder for weekly homework. |
| Sixth | Simplifying Thinking Detective | Facilitate detective thinking techniques and use clue cards, review ladders and troubleshoot them, complete ladder steps, and address concerns as weekly assignments. |
| Seventh | Teaching Social Skills and Assertiveness | Teaching body language, voice, conversation, friendship, and assertiveness, presenting a table of characteristics of passive, aggressive, and assertive children and playing their roles, teaching ways to deal with being ridiculed or bullied, weekly homework. |
| Eighth | Planning for the Future | Recurrence of anxiety symptoms and ways to deal with them, planning for similar situations in the future, granting children a certificate of completion of the course. |

## 4. Results

The demographic data of the participants showed that the average age of children in the experimental group (M=10.3, SD=0.674) and in the control group (M=10.3, SD=0.823) was as follows. Also, in terms of the distribution of educational level of the participants in the experimental group, there were 1 third grader (10%), 5 fourth graders (50%), and 4 fifth graders (40%). In the control group, there were 2 third graders (20%), 3 fourth graders (30%), and 5 fifth graders (50%).

The descriptive indices of the variables of children's anxiety (child and parent form) and mothers' parenting stress are presented in **Table 2**, separated by groups and type of test.

**Table 2.** Mean and standard deviation of impulsivity in experimental and control groups

| Variables | Groups | Pre-Test (Mean SD) | Post-Test (Mean SD) | (Pre-Test) Highest Score | Lowest Score | (Pre-Test) Highest Score | Lowest Score |
|---|---|---|---|---|---|---|---|
| Child | Experimental | 80.60 (12.63) | 45.70 (16.79) | 113 | 67 | 73 | 11 |
| Anxiety | Control | 82.30 (15.42) | 66.40 (17.08) | 103 | 55 | 90 | 30 |
| Parent | Experimental | 78.60 (10.76) | 41.20(16.27) | 93 | 60 | 72 | 15 |
| Anxiety | Control | 80 (10.32) | 66.40 (18.75) | 98 | 66 | 92 | 39 |
| Parenting | Experimental | 111.30 (18.02) | 90.50 (23.31) | 142 | 85 | 122 | 46 |
| Stress | Control | 114.40 (16.71) | 112.90 (19.81) | 140 | 76 | 146 | 84 |

*Note*. *SD* = Standard Deviation

The results show that the Cool Kids treatment program has led to a significant reduction in children's anxiety scores (child and parent form) and parenting stress. In the post-test phase, the scores of the aforementioned variables in the experimental group decreased, while no significant change was seen in the control group.

To examine the effectiveness of the Cool Kids treatment program on children's anxiety (parent and child form) and mothers' parenting stress, multivariate analysis of covariance (MANCOVA) was used. Before presenting the results of the multivariate analysis of covariance, the assumptions of this parametric test were evaluated.

First, Levine's test was used to examine the homogeneity of variances of the anxiety variables (child and parent form) and mothers' parenting stress. In this test, if the significance level of the test is greater than 0.05, it can be concluded that the assumption of homogeneity of variances is valid.

**Table 3.** Levine's test significance level related to the variables under study

| Variables | F | Sig |
|---|---|---|
| Child Anxiety | 0.129 | 0.724 |
| Parent Anxiety | 1.419 | 0.249 |
| Parenting Stress | 2.030 | 0.104 |

The results obtained from the Levine test in **Table 3** indicate that the assumption of homogeneity of variances in the anxiety variables (child form and parent form) and maternal parenting stress in the experimental and control groups has been met (P >0.05).

In the next step, the homogeneity of the regression slope F of the interaction of the covariate variable (pre-test) and the independent variable (experimental and control groups) was examined. If this index is not significant (P >0.05), it can be concluded that the assumption of homogeneity of the regression slope has been met.

**Table 4.** Significance level of homogeneity of the regression slope of the studied variables

| Variables | F | Sig |
|---|---|---|
| Child Anxiety | 0.40 | 0.845 |
| Parent Anxiety | 0.16 | 0.901 |
| Parenting Stress | 1.88 | 0.292 |

The findings in Table 4 show that in the anxiety variables (child form and parent form) and the mothers' parenting stress variable, given that the F index was not significant (P >0.05), the assumption of homogeneity of the regression slope was met. According to the above tests, all the conditions for using the multivariate analysis of covariance test are met.

**Table 5**. Results of the Multivariate Analysis of Covariance (MANCOVA)

| Effect | Value | F | Hypothesis df | Error df | Sig |
|---|---|---|---|---|---|
| Pillais Trace | .36 | 3.12 | 3 | 16 | .05 |
| Wilks Lambda | .63 | 3.12 | 3 | 16 | .05 |
| Hottelings Trace | .58 | 3.12 | 3 | 16 | .05 |
| Roys Largest Root | .58 | 3.12 | 3 | 16 | .05 |

To examine the changes in Cool Kids program training on anxiety (child form and parent form) and parenting stress, multivariate analysis of covariance (MANCOVA) was used. Considering the significance of multivariate analysis of covariance (MANCOVA), it is concluded that the groups have a significant difference from each other in at least one of the variables. To examine this point, univariate analysis of covariance (ANCOVA) was used.

**Table 6.** Mixed analysis of variance to investigate changes

| Variables Partial | Sum of Squares | df | Mean Squar | F | Sig | Eta Squared |
|---|---|---|---|---|---|---|
| Child Anxiety | 1994.40 | 1 | 1994.40 | 7.405 | 0.015 | 0.303 |
| Parent Anxiety | 3018.32 | 1 | 3018.32 | 9.383 | 0.006 | 0.367 |
| Parenting Stress | 2022.06 | 1 | 2022.06 | 6.047 | 0.025 | 0.0262 |

According to the results of Table 6, the effect of the Cool Kids program on anxiety scores (child form), after controlling for pre-test scores, is significant (F= 7.405). The significance level and effect size ($\eta^2$= 0.303) indicate that the intervention was able to explain about 30 percent of the changes. Also, the effect of the Cool Kids program on child anxiety (parent form) was reported to be significant (F= 9.383). The significance level and effect size ($\eta^2$= 0.367) indicate the high effect of this program in reducing child anxiety (parent form). The results also indicate a significant difference between the groups in the variable of parenting stress. The significance level (F = 6.047) and effect size ($\eta^2$ = 0.262) indicate that the type of intervention was able to explain about 26 percent of the changes in parenting stress scores. Therefore, it can be concluded that the intervention was significantly effective in reducing children's anxiety and mothers' parenting stress.

## 5. Discussion

The present study aimed to determine the effect of Cool Kids therapy program training on mothers' parenting stress and anxiety symptoms in children with anxiety disorders. The first finding of the study showed that the Cool Kids therapy program led to a reduction in anxiety in children with anxiety disorders. The present finding is consistent with the results of the studies of Kilburn et al. (2024); Kidd et al. (2024) Mclellan et al. (2024); Scaini et al. (2022); Gali et al. (2023); Zikopoulou et al. (2021); Djurhuus & Bikic (2019); Zikopoulou et al. (2021). Anxiety disorders disrupt children's cognition, emotion, and behavior, leading to maladaptive responses (Muris & Field, 2008). Cognitive distortions, low self-esteem, and physical problems (Nelson et al., 2005). In this regard, the Cool Kids therapy program affects the three main components of anxiety (cognition, emotion, and behavior). By

challenging anxiety-related beliefs and using cognitive restructuring through the training of "detective thinking," the program helps children form more logical and realistic alternative thoughts. In this process, children learn to identify emotions such as anxiety, fear, and stress along with their associated thoughts and become more aware of them. The use of techniques such as "creating a fear ladder" with the participation of parents provides the basis for the child to gradually confront anxiety-provoking situations. In addition, teaching social skills and problem-solving within the framework of this program helps increase the child's emotional tolerance to anxiety-provoking stimuli and directs his or her focus towards daily activities, which leads to a reduction in the child's performance concerns in daily life. Also, the Cool Kids treatment program, by placing parents at the center of the treatment, has increased the effectiveness of the treatment and has been able to create longer-term effects. Therefore, it has exercises and tasks in the field of identifying and challenging unrealistic and anxious thoughts for parents, and in addition, it prepares parents to face their own fears, and by playing the role of a courageous behavior model for the child and attracting their participation to actively participate in the implementation of the program, it plays a significant role in the treatment of children's anxiety.

The second finding showed that the Cool Kids treatment program has led to an improvement in parenting stress in mothers of children with anxiety disorders, which results are consistent with previous research, including Chen & Jiang (2024); Rahimi et al.(2023); Yuwono et al.(2023); Ngai et al. (2016); Izadi-Mazidi et al.(2015) and Yen et al. (2014). Parenting stress is associated with reduced quality of parenting, increased harsh behaviors, and instability in the parenting role. According to the Parent-Child Relationship Model, there is a bidirectional relationship between parenting stress and children's emotional problems, such that the exacerbation of children's behavioral problems increases parenting stress, and this cycle can weaken the mental health of parents (Seipp et al., 2024). In this regard, the findings of the present study show that the Cool Kids treatment program, by adding a parenting component as the central part of the treatment and providing parenting education to mothers, has led to improvements in effective parent-child interactions and reduced conflicts between parents and children, which in turn has led to improved parental behavior and the use of correct parenting styles in mothers, and has reduced children's emotional and behavioral problems. Following its reciprocal effects, parenting stress has also decreased, especially in the area of ineffective parent-child interactions and problematic child characteristics.

The findings of this study are also consistent with previous research, showing that mothers reported greater use of supportive strategies such as positive reinforcement, modeling, and reassurance in dealing with their child's anxiety after receiving cognitive-behavioral therapy. In parallel, a decrease in the use of strategies that lead to increased dependency in the child was also observed. Also, a decrease in anxiety symptoms in children could be associated with a decrease in mothers' criticism and excessive emotional involvement towards their child; changes that in turn may have contributed to the reduction in parenting stress in this study. On the other hand, a decrease in child anxiety could also indirectly reduce parenting stress through reciprocal parent-child interaction (Yen et al., 2014).The Cool Kids therapy program, based on a cognitive approach, teaches mothers realistic thinking and problem-solving skills; skills that increase self-awareness, identify individual strengths and weaknesses, and correct dysfunctional attitudes and

beliefs. Also, training in emotional management skills such as relaxation and problem-solving strengthens mothers' ability to cope with negative moods and increases their efficiency in managing conflicts, which can also be a reason for the improvement of parenting stress in this study (Izadi-Mazidi et al., 2015). Finally, empathy, support, and joint presence of mothers in the group therapy setting facilitate their coping and adaptation process by creating an experience of normalizing problems and can be an effective factor in reducing parenting stress.

## 6. Limitation and Recommendation

Among the limitations of the present study, it can be noted that it is not possible to follow up on the persistence of the effects of the treatment due to the fact that it coincided with the beginning of the summer holidays and, as a result, the lack of access to the participants. Also, the lack of fathers in the treatment sessions was another limitation of this study, which could have led to more beneficial and comprehensive results from the intervention if implemented. In addition, the limited sample size makes the generalization of the results cautious, and the focus of the statistical population solely on the city of Bushehr is another limitation that should be considered in interpreting and generalizing the results. In future research, it is recommended that the Cool Kids treatment be compared with other similar approaches such as Coping Cat, Friends Program, Taming the Dragon of Worry, and Self-Esteem Program. It is also recommended that the effectiveness of the Cool Kids program be examined separately for different types of anxiety disorders to determine its effectiveness in each disorder more precisely. At the practical level, it is also suggested that therapists use the Cool Kids treatment program as an independent intervention or in combination with other common treatment methods, and in cases where parental anxiety is also a concern, they prioritize this program due to its two-way and family-based approach.

## 7. Conclusion

In general, the results of the present study show that the Cool Kids treatment program, focusing on correcting dysfunctional thoughts, teaching emotional-behavioral skills, and strengthening effective parent-child interactions, simultaneously affected the cognitive, emotional, and behavioral components of the child and the parent, leading to a reduction in anxiety in children with anxiety disorders and an improvement in parenting stress in their mothers.

## 8. Author Contributions

In the present study; all authors participated in the process of design, data collection and analysis, and interpretation of the results. Also, All authors have drafted the manuscript and read and approved the manuscript.

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## 10. Conflicts of Interest

There are no conflicts of interest.

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