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ORIGINAL

The efficacy of Cognitive-behavior therapy based parenting for anxious children with cancer

La eficacia de la crianza basada en la terapia cognitivo-conductual para los niños ansiosos con cáncer

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Abstract

Aim: Cancer is one of the most distressing and life-threatening diseases. In many cases, people with cancer experience many psychological problems. Therefore, the design and implementation of psychotherapy interventions in this group is very important.
Method: This study was a randomized clinical trial with two CBT-based groups, plus pharmacotherapy and pharmacotherapy alone. Twenty-seven subjects participated in the present study.
Result: *The results of repeated measure analysis indicated a significant difference between the two groups of intervention and treatment as usual in the severity of anxiety after post-test (p <0.001).*
Conclusion: It seems that group CBT based parenting has a significant effect on reducing the severity of anxiety in children with cancer. Future studies are suggested to designing appropriate interventions to meet the needs of children with cancer.

Keywords: Cognitive-behavior therapy based parenting, anxiety, cancer.

Resumen

Objetivo: El cáncer es una de las enfermedades más angustiosas y amenazantes para la vida. En muchos casos, las personas con cáncer experimentan muchos problemas psicológicos. Por lo tanto, el diseño y la implementación de intervenciones psicoterapéuticas en este grupo es muy importante.
Método: Este estudio fue un ensayo clínico aleatorio con dos grupos basados en terapia cognitivp conductual (TCC), más farmacoterapia y farmacoterapia sola. Veintisiete sujetos participaron en el presente estudio.
Resultados: Los resultados del análisis de medidas repetidas indicaron una diferencia significativa entre los dos grupos de intervención y tratamiento habitual en la gravedad de la ansiedad después de la prueba (*p* <0,001).
Conclusión: Parece que la crianza grupal basada en la TCC tiene un efecto significativo en la reducción de la gravedad de la ansiedad en niños con cáncer. Se sugieren futuros estudios para diseñar intervenciones adecuadas a las necesidades de los niños con cáncer.

Palabras clave: Crianza basada en la terapia cognitivo-conductual, ansiedad, cáncer.

Introduction

Cancer is a growing chronic disease, and it is expected that by 2030 more than 3 million people in the UK will be diagnosed with cancer[1]. The prevalence of cancer in people aged 0-19 in the United States is 16,592 per million people[2]. Also, in Iran, the prevalence of cancer in children was estimated at 48-112 girls and 51-144 boys per million in 2010[3]. However, in recent decades, scientific advances have made significant contributions to cancer treatment and the likelihood that people will survive; the studies suggest that about greater than 80% of children with cancer will have a chance of 5-year survival[4,5]. As a result, many children in the world have experienced cancer and been successfully treated in the future. Therefore, the child has gone through this crisis physically. However, the negative psychological effects of cancer will remain in the child for the next years[6-8]. Anxiety is one of the major problems that people with cancer will experience even years after cancer treatment. Moreover, this anxiety will negatively affect their quality of life[9,10]. Studies indicate that anxiety in cancer survivors is from 9 % to 33%[11-13].

In addition, cancer and its treatment procedure may also lead to pain disabilities[14,15]. Therefore, it may people with cancer not be able to participate in psychotherapy and appropriate interventions. Therefore parent-focused treatment without children's contribution is more helpful in this group of children.

Many studies indicated that the most effective treatments for anxiety in children are CBT-based approaches[16-18]. Therefore, many studies have examined appropriate and adapted alternative approaches in children. Rapee et al. implemented the CBT approach on parents to reduce children's anxiety and indicated that parents-focused programs could indirectly reduce children's anxiety[16].

Similarly, Cartwright et al. designed a parenting-based group intervention known as "from timid to tiger" for anxious young children. This intervention is a CBT-based parenting program[19]. The results of a study found that the intervention can help reduce children's anxiety (18). The present study investigated the effect of this program on anxious children with cancer.

This program is derived from two broad categories of cognitive-behavioral therapy and parental behavioral training[19]. The efficacy of CBT approaches in adult anxiety is well established, and several meta-analyses support the efficacy of CBT in anxiety disorders[20, 21]. On the other hand, many parenting behavioral training programs have been designed. These programs are widely used in the treatment of many childhood disorders, especially externalization problems. Parenting programs have been used for decades, and there is ample evidence of their efficacy in anxiety disorders[22-25].

CBT helps patients identify cognitive distortions for reality testing, and learn new skills to challenge irrational thoughts[26]. In the present intervention, the CBT techniques are taught to the parents, and the children are transferred. Furthermore, many studies show that inappropriate parenting has a significant positive relationship with anxiety disorders. Many components, including parental punishment and anger[27], rejection[28], and neglect[29], have been identified in children's anxiety. Improving this environment and educating parents can play an important role in reducing children's anxiety. The present study aimed to perform "from timid to tiger" in anxious children with cancer.

Materials and methods

Ethics

This study was approved by the Iran University of medical sciences Ethics Committee (IR.IUMS.REC.1398.851) and confirmed in the Iranian Registry of Clinical Trials (IRCT20200728048237N1).

Participants

Thirty-eight children and their caregiver were recruited through the regular treatment of children referred to the Ali-Asghar hospital for any type of cancer and high level of anxiety. The children were between 6 and 10 years old. Inclusion criteria for a child's participation in the study were: at least six months had passed since the diagnosis of cancer and the acute period of the disease, and the child score on the CBCL scale internalization scale was above clinical cutoff. Exclusion criteria also included: the child or parent had moderate to severe learning disabilities, and the child had bipolar disorder or psychotic disorders.

Procedure

The present study was a randomized controlled trial. Both groups were assessed in four stages through pre-test, fifth session, post-test, and follow-up. In the present study, all children received the same dose of medication to treat their anxiety. After one month of medication, individuals were randomly divided into two groups of medication and medication with the present intervention. The intervention group used a parenting-based group intervention for anxious children (based on the treatment guide of Cartwright et al. (2010))[19].

Measures

Parent Report. Child Behavior Checklist (CBCL)

This scale is one of the assessment instruments in the family and was designed to assess children's emotional-behavioral problems and abilities[30]. It measures three dimensions of internalizing problems, externalizing problems, and general problems. In this study, the symptoms related to internalizing were considered. The CBCL has excellent internal consistency, test-retest reliability, and validity[31].

Spence Children's Anxiety Scale

This questionnaire was prepared to assess the severity of children's anxiety. The Spence Anxiety Scale is a self-report scale and consists of 44 items and six subscales. In the original version of the internal consistency questionnaire, this scale was 0.92 for general anxiety and 0.60 to 0.82 for other subscales. Reliability results of the retest were reported to be 0.63 for the whole scale and 0.51 to 0.75 for the subscales during 12 weeks[32]. This instrument has good psychometric properties in children aged 6-12 years[33] in Iran.

Results

The results of this study indicated that there is no significant difference between the studied groups in gender (x^2 = 0.068, sig = 0.795), mother (sig = 0.441, x^2= 9.99) and father education level (sig = 0.452, x^2=11.925).

The age range of the study participants was between 6-10 years, and their birth order was 1-3. Also, the mean and standard deviation of the total age of the participants were 8.92 and 1.16, respectively. There was no significant difference between the two groups in the age variable. Descriptive characteristics of anxiety severity are presented in **table I**.

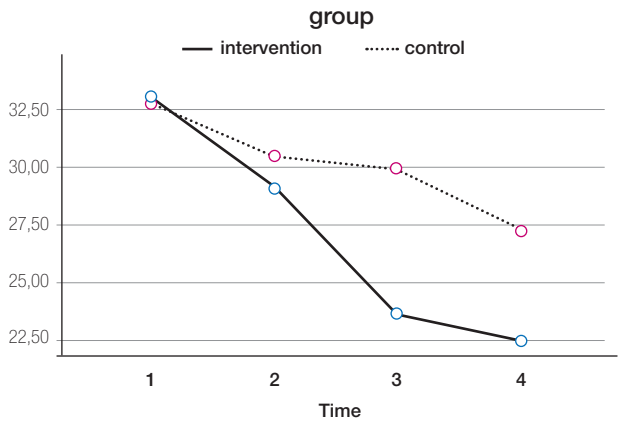
Table I: Descriptive characteristics of anxiety severity in children.

Variable / Group	Time	Mean	SD
Intervention	Pre-test	33.17	6.91
	Fifth-session	29.25	6.70
	Post test	23.58	6.21
	Follow-up	22.42	4.19
Treatment as usual	Pre-test	32.73	9.85
	Fifth-session	30.46	9.87
	Post test	29.87	8.59
	Follow-up	27.27	8.54

In order to analyze the effectiveness of the present intervention in reducing the level of anxiety in children, repeated measures analysis of variance was used. Before using this test, Leven's test, Box's test of equality of covariance, and Mauchely's Test of Sphericity were used, and none of them were significant. The results of tests of within-subjects effects are presented in **table II**.

The above table results indicate that the effect of time has a significant effect on the scores of children's anxiety symptoms. Therefore, regardless of the type of group, there was a significant difference between the pre-test, fifth session, post-test, and follow-up scores. The interaction between time and treatment group is also significant. Therefore, there is a significant difference between the two groups over time. **Figure 1** shows the difference between the two groups in the four stages of assessing child anxiety.

Figure 1: Comparison of changes in child anxiety symptoms in four stages.



Discussion

The study results indicated that the present intervention effectively reduces anxiety symptoms in the post-test evaluation phase in the intervention group, and there is a significant difference between the two groups. The researcher did not find a study that specifically examines the efficacy of the present intervention in the anxiety of children with cancer, and previous studies have examined the present intervention only on the anxiety of non-cancerous children[18]. However, the results of this study were consistent with studies that have examined this intervention in children with anxiety disorders[16]. Also, in the other studies, the parent-based intervention reduced the children's anxiety. For example, Ginsburg & Schlossberg[34] study, a parent-centered CBT-based therapy, was able to help reduce children's anxiety. Thompson et al.[35]. Also performed a parent-centered intervention on children; the results showed that the present intervention could improve the internalization symptoms of children. Finally, the manual of present intervention claims that through parenting, the same effects of cognitive-behavioral therapy can be created in children[19]. According to the researcher's data, there was no inconsistency with the current finding.

On the other hand, many studies on pediatric cancer studies have examined the effectiveness of cognitive-

Table II: Results of repeated-measures analysis of variance for within-subjects effects.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Effect size	Power
Time	1017.238	3	339.079	23.395	0.001	0.483	1.00
Time*group	194.461	3	64.820	4.472	0.006	0.152	0.863
Error	1087.021	75	14.494	-	-	-	-

behavioral psychotherapy. For example, previous research has shown that cognitive-behavioral play therapy can help improve the symptoms of depression and anxiety in children with cancer[36]. In this intervention, the first important technique of the first session is to secure the parent-child relationship through play therapy[19], and the findings of this study are in line with previous research.

In explaining these findings, paying attention to the underlying approaches of the present intervention can be very helpful. This intervention is based on the cognitive-behavioral model and parenting training[19]. In the cognitive-behavioral model, it is assumed that there is a relatively stable set of dysfunctional beliefs in anxiety disorders. Moreover, challenging with these thoughts can help reduce anxiety[37]. In addition, the goal of parenting programs is to change the parenting environment[38], and when the environment changes, child problematic behaviors improve[39]. In the first session of the present intervention, the fundamental beliefs of a self-confident and healthy child are introduced to the parents. Furthermore, all techniques work to create these beliefs[19].

Studies show that CBT interventions that directly treat the child are not very effective[18]. As in cognitive-behavioral therapy, clients are encouraged to specialize in their minds. In this program, parents are encouraged to be specialists in their child's anxiety. Therefore, when new problems arise, parents can provide a solution without consulting a psychologist confidently. Thus, in this treatment, important components of cognitive-behavioral therapy were passed on to children through parents[19].

On the other hand, in this intervention, parental behavioral training takes place. Parental behavioral education is also based on the behavioral approach and social learning theory. Many studies have investigated the effectiveness of this approach and shown effective results in improving children's problems[19]. Another issue that could be explained in this finding was that many parents said that reporting children's cancer was very harmful to them and their children during the sampling. Moreover, often the parents did not receive special psychological support at the center after receiving cancer diagnosis. Some parents even said that sometimes parents were reprimanded for diagnosing cancer and being late. It seems that one of the reasons for the effectiveness and active participation of parents in the present treatment was the strong need for such an environment where parents could receive the necessary psychological support and talk to other parents. Numerous studies have shown that support and being in a group can be effective on their own[40]. Part of the treatment also introduced a technique for parents to hide their unpleasant feelings from their children[19]. In this technique, parents were told not to say anything or show any emotion if they could not control themselves. The parents reported that the technique was very helpful during the child's physical treatment, such as injections and chemotherapy. Therefore, the transmission of parental anxiety to children was prevented. This finding can be justified by social learning theory, which believes that imitation plays a key role in many disorders[41]. Furthermore, many studies have found the role of imitation and maternal Psychological Control in the development of anxiety disorders and have shown that anxious parents are more likely to raise anxious children[42,43].

Finally, the present treatment was expressed to parents in simple language with metaphor and example. In recent years, many studies had shown that metaphors and stories increase the efficacy of treatments[44]. The most important metaphors in the intervention were related to fight and flight response and avoidance. Many parents stated that children showed signs of anxiety before the present intervention (such as heart rate, screaming, etc.) during physical therapy for cancer. Parents were afraid that this anxiety would lead to a recurrence and worsening of cancer. However, parents felt more comfortable when the fight and flight response was normal and safe. They acknowledged that anxiety is an inevitable part of life and that children who can cope with their fears can better manage their anxiety in the future.

On the other hand, sometimes children used to say "you do not love me" or "I do not love you" and so on during the cancer treatment procedure. When told to parents, these phrases are very common in young children (even those without cancer) and are completely meaningless; they could more easily use the technique of ignoring these sentences and felt better emotions.

Conclusion

In this intervention, the principles of cognitive-behavioral therapy were transferred to children through parenting components. The results of this study also confirm the claim of the underlying theory of the present intervention. Furthermore, the present intervention was able to reduce anxiety symptoms in children. The present study had several limitations that warrant consideration. Firstly, Due to the prevalence of coronavirus pandemic, dropout was unavoidable. Secondly, In this study, self-report tools were used, which if possible, it is better to use objective tools in future studies. Thirdly, the follow-up period was two months due to time and commuting limitations. Naturally, longer follow-up periods can increase the assurance of treatment stability. Additionally, further efforts are suggested to adjusting a new intensive and specific version of the current manual for reducing anxiety in children with cancer. Furthermore, in pandemic situations, designing online parenting programs that target children with cancer is more suitable for children with disabilities and diseases.

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