## Comparison the Effectiveness of Pain Cognitive- Behavioral Therapy and Its Computerized Version on Reduction of Pain Intensity, Depression, Anger and Anxiety in Children with Cancer: A Randomized Controlled Trial

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Abstract: Background: Cancer is one of the medical problems that have been associated with pain. Moreover, the pain is combined with negative emotions such as anxiety, depression and anger. Poor pain management causes negative effects on the quality of life, which results in negative effects that continue a long time after the painful experiences. Objectives: The aim of this research was to compare the effectiveness of Common Cognitive Behavioral Therapy for Pain and its computerized version on the reduction of pain intensity, depression, anger and anxiety in children with cancer. Methods: The research method of this "Randomized Controlled Clinical Trial" was a pre, post-test and follow-up with a control group. In this research, we have examined the effectiveness of Common Cognitive Behavioral Therapy for Pain and its computerized version on the reduction of pain intensity, anxiety, depression and anger in children with cancer in Ahvaz. Two psychological interventions (cognitive behavioral therapy for pain and the computerized version) were compared with the control group. The sample consisted of 60 children aged 8 to 12 years old with different types of cancer at Shafa hospital in Ahwaz. According to the including and excluding criteria such as age, socioeconomic status, clinical diagnostic interview and other criteria, 60 subjects were selected. Then, randomly, 45 subjects were selected. The subjects were randomly divided into three groups of 15 (two experimental and one control group). The research instruments included Spielberger Anxiety Inventory (STAY-2) and International Pain Measurement Scale. The first experimental group received 6 sessions of cognitive-behavioral therapy for 6 weeks, and the second group was subjected to a computerized version of cognitive-behavioral therapy for 6 weeks, but the control group did not receive any interventions. For ethical considerations, a version of computerized cognitive-behavioral therapy was provided to them. After 6 weeks, all three groups were evaluated as post-test and eventually after a one-month follow-up. Results: The findings of this study indicated that both interventions could reduce the negative emotions (pain, anger, anxiety, depression) associated with cancer in children in comparison with a control group (p<0.0001). In addition, there were no significant differences between the two interventions (p<0.01). It means both interventions are useful for reducing the negative effects of pain and enhancing adjustment. Conclusion: we can use CBT in situations in which there is no access to psychologists and psychological services. In addition, it can be a useful alternative to conventional psychological interventions.

Keywords: pain, children, psychological intervention, cancer, anger, anxiety, depression

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