

THE EFFICACY OF COGNITIVE-BEHAVIORAL STRESS MANAGEMENT TRAINING ON DEPRESSION AND ANXIETY IN WOMEN WITH CANCER

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ABSTRACT

This study aimed to investigate the effectiveness of cognitive-behavioral stress management on anxiety and depression in women with breast cancer. This study was performed in quasi-experimental procedure with pre-test and post-test and control groups. The study population included all women referring to the Comprehensive Cancer Control Center in the Year 2012, among which 24 patients with cancer selected by accessible sampling and were replaced into control and experimental group accidentally. Instruments used in this study were a questionnaire, Beck depression and anxiety. Multivariate analysis of variance showed that cognitive-behavioral stress management training had a significant effect on reducing anxiety and depression in women with cancer (anxiety ($p < 0/05$), depression ($p < 0/05$)). Cognitive-behavioral stress management training for women with cancer can be taken as an effective way to improve the psychological status of these women.

Keywords: *Depression, Anxiety, Cognitive-behavioral Stress Management, Cancer*

INTRODUCTION

Despite significant advances in medical science, cancer continues to be one of the major diseases of our century and is known as the second leading cause of death after cardiovascular diseases. Now, more than 7 million people worldwide lose their lives due to cancer and it is predicted that the number of patients annually by 2020 from 10 million will reach to 15 million (Hamza *et al.*, 2011). Although nowadays diagnosis of cancer is not considered as imminent death, many studies (Brothers *et al.*, 2011) in western countries and some Asian countries has shown that such diagnosis cause deeply emotional problems in patients and their families. Some of the causes of these problems are the implications of this diagnosis in mind of the patient and his family, including malformation risk, pain, financial and social losses, dependence, disrupted family structure, death and dying process and the actual occurrence is some of these phenomenon's in life of patients. The most common psychiatric disorder in these patients, according to studies, is adjustment disorder with subtypes of affective disorders, such as adjustment disorder with anxiety, with depression, and with anxiety and depression. The second most common psychiatric diagnosis in these patients is major depressive disorder (Brown, 2012). Other studies have shown that these patients are suffered mostly by complains about anxiety and depression (Brothers *et al.*, 2011).

Depression is the most common mental disorder in recent years that its rate has increased (Gilchrist and Creed, 1994). Almost in everyone's life there are days that the feelings of boredom, sadness, frustration, disappointment, loneliness and dissatisfaction have been overcome that they are common experiences of depression. These feelings and the way they perceive in the realm of normal life and in the pathological experience field, have been associated with the concept of depression. Depression is the most common known cause of emotional pain and suffering and cause of significant reduction in life quality in life (Nuval, 2010). Including people who suffer from depression is people with cancer.

Anxiety is another factor that affects the lives of these patients. Studies have shown that cancer patients in comparison with healthy individuals have higher levels of psychiatric disorders such as stress and anxiety. A study by Basic and colleagues in Norway, over 140 cancer patients showed 19% of cancer patients

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were complaining of anxiety, the prevalence of anxiety in these patients was significantly higher than the general population (Hassanzadeh *et al.*, 2011). Studies have shown that about 25 to 40 percent of cancer patients suffer from anxiety, which affects the quality of life of these patients (the same reference)

Since anxiety and depression medications have many side effects, the use of non-pharmacologic therapies for the management of anxiety and depression in patients seems reasonable (Phillips, 2004). Now according to extent of psychiatric problems in cancer patients many researchers around the world are exploring several methods of supportive psychotherapy, cognitive and etc., to help these patients (Hamid *et al.*, 2011). Among these approaches, a comprehensive program entitled Cognitive-behavioral stress management displayed its multifaceted approach to reduce depression and anxiety in physical patients, in a way in which aspects of cognitive, behavioral, emotional, physical and social have been noticed (Ströhle, 2009; Salmon, 2001). The treatment plan is created for people with chronic illnesses and severe physical who deal with stress.

Several studies have shown that stress management training can reduce differently symptoms of depression and anxiety in individuals. The most important and closest to this research to study Effectiveness of stress management training, cognitive - behavioral therapy on depression, anxiety and stress in women with breast cancer, has respectively approval (Safarzadeh *et al.*, 2012). Other research includes (Mokhtary, 2005; Hoseinzadeh, 2007) this studies reported that stress inoculation training resulted in a significant decrease in depression and increase the quality of life for MS patients. Also researchers reported on a study that consciousness-based stress reduction training reduced psychological symptoms of depression in MS patients (Moghaddam *et al.*, 2012). And others reported that Writing about emotions, feelings and issues in writing is effective in reducing depression in patients with cancer (Hassanzadeh *et al.*, 2011).

Finally, due to complications from cancer, the importance of this disease and its psychological effects on patients and their families to reduce pain and enhance the quality of life of cancer patients will be double. On the other hand, cognitive-behavior stress management program provides approved methods for managing stress and relaxation to reduce anxiety and depression, based on this the aim of this study was to determine the effectiveness of cognitive-behavioral stress management training on reducing anxiety and depression of women with cancer.

MATERIALS AND METHODS

Methodology

This study employed a semi-experimental method with a pre-test, post-test and control group. The study population included all women admitted to the Comprehensive Cancer Control Center in the Year 2013, among which 24 patients with mild to moderate depression selected by accessible sampling and randomly assigned to intervention and control groups, respectively. Required sample size was calculated using the mean and standard deviation of previous studies (Seghat *et al.*, 2003).

Criteria for inclusion in this study were as follows: women with any cancer except breast cancer between ages 40-60 years, mild to moderate depression score on the Beck Depression Inventory, a psychiatric or psychological therapy should not be received at the same treatment base on patient's records, The absence of a concurrent disorder in patient's records, passing at least the last three days of treatment (chemotherapy, radiotherapy, and surgery etc. and having a metastatic diagnosis. Exclusion criteria included: the creation of physical problems for individuals who interfere in the course of psychotherapy, Exacerbation of symptoms during treatment, the use of certain drugs in the treatment of cancer that are affecting the mood, Interfere with the cancer treatment process and absence more than one session in the healing process.

Before the study began, the martyr Beheshti University Ethics Committee Activities approval was obtained, a copy of the informed consent form of cooperation also provided to each subject after Acquiring the satisfactory study procedures were followed: People whenever they want to, they can withdraw from the study, there is no force to participate in the study, The name and identity and group

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information remains confidential the results obtained with the consent of the individuals of the group and organizations will be available to people.

Tools needed for this project include: a) depression: the Beck Depression Inventory (BDI-II): BDI-II test was revised in 1996 in fact, in response to changes in the diagnostic criteria in DSM-IV major depressive disorder was made. In the original BDI unlike BDI-II, the respondents are asked express how they felt in the last two weeks (and not in the last week). In BDI-II questions about body image; Hypochondrias and hard work were replaced. All of questions except three questions regarding the wording and statements were revised. In cut-off score on the BDI-II was modified as follows.

- * 13-0 non-depressed
- * 19-14: mild depression
- * 28-20: moderate depression
- * 63-29: severe depression.

One indicator of the usefulness of an instrument, is agreement and correlation with similar tools, in this sense, BDI-II positive correlation ($71\% = r$) for the Hamilton Rating Scale for Depression, which is a good sign the agreement. In addition one-week test-retest reliability was high BDI-II ($93\% = r$) indicates that the instrument is insensitive to changes in mood every day. High internal consistency test ($91\% = \alpha$) has been reported (Yaghoobi, 2008).

Anxiety: Beck Anxiety Inventory (BAI) to feel the need for a tool that can at times convergent validity, to distinguish between depression and anxiety, were made by Aaron.

The scale consists of 21 items; each one describes a common symptom of anxiety. Each subject is asked to determine to the extent any of the symptoms on a 4-point scale that ranges from 0 to 3 that have caused inconvenience and annoyance to him in recent months. Score of phrases are added together. Total score is ranging from 0 to 63. The classification below is suggested for the cutoff points of this test.

- *0-11.....Asymptomatic
- *12-18...mild anxiety
- *26-29...moderate anxiety
- *27-36...very severe anxiety

In this study cognitive-behavioral stress management program was used. This program focuses on the techniques of stress management and relaxation skills which during 10 1.5-hour sessions which participants will be presented.

In this program, each session by reviewing the previous session and follow the instructions provided in this instruction, the next instruction begins (Goldman, 2005).

First Session: Stressors and stress responses: The introduction of educational programs, familiarity with other participants, the introduction of stress management training program of cognitive - behavioral, introduced the first elements of progressive muscle relaxation exercises for stress and the first 16 muscle groups.

Second Session: Stress and awareness: In this session, how stress can affect thought patterns, emotional states, behavior, and the physical sense will be thought and progressive muscle relaxation training and also training a muscle group only 8 instead of 16 groups of will be done.

Third Session: Communication of thoughts and emotions: In this session on how thoughts, emotions and physical sensations, interact with each other and create a cycle that eventually leads to negative consequences will be discussed.

Forth Session: Negative thinking and cognitive distortions: The meeting was to identify negative thoughts, specifying the type of distortion, how to combine imagery with progressive muscle relaxation and diaphragmatic breathing passive will be discussed.

Fifth Session: Replacing rational thoughts: First, the difference between rational and irrational self-talk will be detected and each will be identified and then the fifth step replacing logical thinking and the importance of relaxation training in stress management is discussed.

Sixth Session: Coping efficient: This session will provide definitions of coping and coping strategies are efficient and inefficient introduced.

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Seventh Session: Implementation of effective coping responses: This session introduces the steps for an efficient coping, coping strategies, and choose suitable technique called software that is helpful in accepting stressful circumstances, training will be given.

Eighth Session: Anger Management: In this session participants will respond to their anger and become aware of certain patterns and learn a better way to manage anger.

Ninth Session: Assertiveness training: In this session, effective communication, barriers and steps assertiveness behavior, how to deal with conflict using problem solving is discussed.

Tenth Session: Social Support: In the last session the importance of social resources, assessment of social support networks, identify barriers to creating and maintaining a social support network will be discussed and personal stress management program for participants after the intervention program will be planned.

People in the group were experimental group participated in the 10 weekly 1.5-hours sessions, but the control group received no treatment. After the end of treatment and after 48 hours, and test and post-test of the control group were taken. Data for the analysis were entered into spss software and after checking assumptions, analysis of covariance, a statistical method was used for analysis. The assumptions of the statistical methods: linear relationship between variables, homogeneity of variances using Lion and Normality with Kalmogrov- Smirnov test, the sum of the assumptions in this study were reviewed and approved. 95/0 confidence level were considered in this study.

RESULTS AND DISCUSSION

Results

In this section, descriptive and inferential findings of this study will be provided. In Table 1, the mean and standard deviation of the experimental and control groups at pretest and posttest are presented. By comparing the total mean of two groups in the show that the post-test experimental group is higher than control group. Assumption of a linear relationship between the independent variable and the dependent variable, homogeneity of variances using Lion (Table 2) and Normality Kalmogrov- Smirnov test (for the pre-test anxiety and depression at pretest 331% to 541%) of these assumptions the study has been reviewed and approved.

Table 2 reviews the test power. If this value (significance level) be closer to the 1 show test power is good. The research shows that the test power is moderate.

As seen in Table 3 and 4 group effect or the intervention with the removal and control of experimental variables were statistically significant in both variables anxiety and depression. For the variable of Anxiety ($p < 0/05$) and for the variable depression ($p < 0/05$).

Table 1 Mean and standard deviation of the experimental and control groups in the pretest and posttest

Post test pretest			Variable group
Mean(standard deviation)	Mean(standard deviation)	Number	
20/83 (4/89)	24/01 (3/85)	12	anxiety
20/50 (5/21)	21/00 (6/19)	12	experimental
20/66 (5/20)	22/50 (5/02)	24	Control
			Total
21/00 (5/70)	25/08 (4/12)	12	Depression
24/74 (5/35)	24/24 (7/80)	12	experimental
22/87 (5/52)	24/66 (5/96)	24	Control
			Total

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Table 2: The results of Levin test to review homogeneity of variances of depression and anxiety during the study

Significance level	Degree of freedom 2	Degree of freedom 1	F	Variable
0/325	22	1	0/299	anxiety
0/165	22	1	0/591	depression

Table 3: ANCOVA to compare post-test scores of anxiety in the experimental group and control

SIQ	F	Mean squares	Degree of freedom	Source of variance
0/004	11/95	195/67	1	Pre test
0/014	6/56	115/02	1	Group
		14/54	21	Error
			24	Total

Table 4: The results of ANCOVA to compare post-test scores of depression in the experimental group and control

SIQ	F	Mean squares	Degree of freedom	Source of variance
0/049	5/01	175/55	1	Pre test
0/03	12/23	355/41	1	Group
		24/84	21	Error
			24	Total

Discussion

The aim of this study was to evaluate the efficacy of cognitive-behavioral stress management training on reducing anxiety and depression of women with cancer. After the implementation of cognitive behavioral stress management training intervention program for women with cancer in 10 sessions and implementation of the pre-test and post-test questionnaires for depression and anxiety, It was observed that the results obtained in this study indicate significant differences between the experimental group and the control group (for the variable of Anxiety ($p < 0/05$) and for the variable depression ($p < 0/05$)). According to negate the effects of anxiety and depression in the pre-test, we can say that the difference is caused by conducting independent variables in the experimental group. The hypothesis proposed in this study include: Cognitive-behavioral stress management training on methods to reduce depression in patients with cancer. Cognitive-behavioral stress management training and the way to reduce anxiety in women with breast cancer is confirmed. Similar results were obtained in other studies (Safarzadeh *et al.*, 2012; Mokhtary, 2005; Hoseinzadeh, 2007; Moghaddam *et al.*, 2012). These studies showed that cognitive - behavioral stress management training; reduce depression, anxiety and stress in women with breast cancer. Stressors and their processing method which stress may influence the process of psycho-neuro-immune recognition cause depression and anxiety. Cognitive-behavioral stress management the intervention can be had through an increased sense of control, self-esteem, adaptive coping and social support, the process is effective and reduce anxiety and depression in these patients. Many factors, including social and familial affects mental health women suffering from cancer, and this causes they often have a depressed mood which this depressed mood, encourage them tend to isolation and detachment from others. Therefore, in this study, using cognitive restructuring techniques, identify negative automatic thoughts and cognitive distortions and dysfunctional attitudes, negative automatic thoughts and challenges associated with the disease (the fourth and fifth sessions) could reduce depressive patients (Younesi and Mirafzal, 2013; Younesi, 2004). It can be said that in this study using behavioral strategies such as relaxation, stress management and relaxation of muscle (first and fourth sessions)

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decreased stress and anxiety, and these patients have been able to identify stress-related physical symptoms and by dominating in relaxation which is incompatible with stress, reduce their anxiety (Habibi et al., 2013).

This study is faced by limitations the most important was loss of samples and the use of quasi-experimental design that reduce the ability to generalize the findings Therefore authors also encourage other researchers other educational interventions Including skills training, positive thinking and stress inoculation training to suggest that in future studies, use experimental designs, larger sample size or number of departments, including men and women simultaneously to increase the general liability of findings.

Conclusion

At the end it can be concluded that in stress management program including relaxation skills, diaphragmatic breathing, muscle relaxation, meditation, identify negative automatic thoughts and cognitive distortions, replacing rational thoughts, teaching coping skills, anger management and expressiveness will provide reduction in anxiety and depression of woman with breast cancer. It is suggested to study the role of stress management program on reducing deterministic thinking of cancer patients because the deterministic thinking (Younesi and Mirafzal, 2013) to be one of factors of depression and anxiety (Younesi, 2004).

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