

## The Effectiveness of Stress Management Training on Hardiness in Patients with Breast Cancer

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### Abstract

**Objective:** Since the stress management program can train necessary skills to cope with stress; therefore, the aim of the current study is to examine the effectiveness of stress management training on the hardiness of breast cancer patients.

**Method:** This quasi-experimental research designed with the pretest-posttest control groups. 60 women with breast cancer in the recovery period after chemotherapy were selected based on accessible sampling from cancer charity "Sepas" in Tehran and randomly divided into control and experimental groups. The experimental group, during 8 weekly 2-hour sessions was trained in stress management. Hardiness experimental and control groups once before and once after the program was evaluated using questionnaire Kobasa hardiness.

**Results:** Results showed that the experimental and control groups before the intervention of the variables are not significantly different. Multivariable analysis of covariance showed that there is a significant difference between pre-test and post-test score in the experimental group. Finally, the results indicated that stress management training increases the hardiness and its components (such as commitment, control, and challenge) in women with breast cancer.

**Conclusions:** Therefore, stress management training for women with breast cancer can be used as an effective way to improve psychological care for this group of women at health centers.

**Keywords:** Stress management; Hardiness; Breast cancer

### Introduction

Breast cancer ranks third in terms of burden of disease and the leading cause of death by more than 4 hundred thousand in the fifth position among the Iranian women (Annual Report on Cancer Registration in Iran, 2009). Continued negative impact on the treatment and follow-up by then, threaten the survival of these patients [1-3].

Cancer patients experienced many stress and symptoms during the course of the disease, diagnosis and treatment. Some symptoms of stress include fear of return, concerns about weakness and physical deterioration during treatment (such as chemotherapy and radiation therapy side) [4]. Women with breast cancer have psychological distress during diagnosis and treatment [5]. Psychological symptoms in breast cancer patients are depression, anxiety, and anger [6].

Many studies indicated that negative effects of chemotherapy and psychological symptoms influence function and quality of life of breast cancer patients [7,8]. According to the prior studies quality of life in breast cancer patients is less than the normal group [9]. In other words, fear of disease progression Melchior et al. [10], fear of being separated from family Drageset et al. [11], fear of complication Garcia-Ortega et al. [12], impairment of body image Falk Dahl et al. [13], decreased sexual desire Ussher et al. [14] and fear of recurrence Koch et al. [15] cause distress in breast cancer patients. These stress sources contribute to low self-esteem [16], feeling of disappointment and helplessness [17].

Inappropriate and ineffective actions to these conditions can lead to depression, reduction of social interaction and support, hostility, substance and acceleration the progression of the disease. One research showed that psychological pressure and stress associated with cancer, decreased immune responses for several years. In this case, we are

dealing with a disease that creates distributed cycle in patients and accelerates the progression of the disease [18].

Since the harmful stress reduces the individual, social and organizational performance. Therefore, several efforts were accomplished to identify the techniques and skills that are useful in managing stress. Personality characteristics are one of the relationship demographic variables between stress and illness. Kobasa's concept of hardiness tried to show that one of the variables that influences mental stress, is their personality characteristics Kobasa [19], these characteristics include commitment, control and challenge [20]. Commitment to being aware of the importance and value of their significant activities and control to influence the events of one's faith and challenge ability to cope with life changes and readjustment refers to them [21].

Past research shows that the impact of hardiness in preparation for a healthy character Zhang [22]. Hardiness have a positive impact to cope with cancer and hardiness increase people's tolerance in the face of disease [23]. The hardiness has mediating role between stress and disease Deborah et al. [24], the hardinee people act better in the face of difficulties and cope with life issues [25]. So Kobasa claimed

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Received April 29, 2016; Accepted May 24, 2016; Published May 30, 2016

**Citation:** Naeini EE, Zaker BS, Peyvandy P (2016) The Effectiveness of Stress Management Training on Hardiness in Patients with Breast Cancer. Abnorm Behav Psychol 2: 115. doi:10.4172/2472-0496.1000115

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that hardiness makes specific inner attitude that affects the people's approaches to life issues; so, that person is more realistic to stressful factors [26]. Different treatment methods can be used to increase the hardiness of and one of them is stress management training.

Cognitive-behavioral stress management (CBSM) is one of the proposed interventions in patients with cancer, specifically breast cancer. It can reduce anxious thoughts and physical pressures thus it can reduce the negative experiences and increase positive experiences. As well as skills, reduce stress, increase awareness to the source of stress and stress factors, positive experiences and replace negative thoughts and cognitive and interpersonal coping skills training to improve the patient's ability to manage stress and maintain support networks, training [27].

Prior studies indicated that psychological interventions such as; cognitive behavioral therapy, modification of dysfunctional thoughts Khan et al. [28], problem-solving therapy Tsuchiya et al. [29], hypnosis Jensen et al. [30], guided imagery techniques Hosaka [31] and stress management Loprinzi et al. [32] have effective roles to reduce the psychological symptoms.

Antoni [27] in study showed that CBSM through relaxation (reduces anxiety), cognitive restructuring, coping styles and interpersonal skills training in a support group, increased psycho-social adjustment of women with breast cancer and changed parameters of Bio-behavioral that indicated the health. Antoni [33] in other study showed that cognitive-behavioral stress management was successful in reduction anxiety, distress on women with breast cancer. In another study by Antoni [27] conducted the stress management technique have significantly increased at psychological adjustment (increase mood, quality of life and reduce individual problems) in patients with breast cancer. In the same study other Mac Gregor et al. [34] showed that cognitive-behavioral stress management techniques, psychological distress (negative affect, concern about breast cancer using the scale of the event and the perceived stress) decreases in women within high risk of cancer. Phillips [35] showed that cognitive-behavioral stress management techniques can reduce cortisol levels and enhance the ability of relaxation perceived women with breast cancer. Safarzadeh [36] in the study evaluate the effectiveness of stress management and relaxation training on negative affect and quality of life of women with breast cancer payments, results demonstrated the effectiveness of stress management and relaxation in reducing negative affect and enhance the quality of life in women with cancer breast. Safarzadeh [37] in another study have shown the effectiveness of cognitive behavioral stress management on reduction anxiety, stress and depression in women with breast cancer. Khodabakhshi [38] in their study also showed that stress management training to improve the quality of women with breast cancer.

Accordingly, this intervention provides training to increase awareness of sources and indicators of stress, training to notice and replace negative thoughts, and training in cognitive and interpersonal coping skills to improve the ways patients manage stressors and maintain their social support networks [39]. Accordingly as noted above, the aim of the current study is to examine the effectiveness of stress management training on hardiness of patients with breast cancer.

## Method

The aim of the current study is to examine the effectiveness of stress management training on the hardiness of breast cancer patients. The present study is a quasi-experimental research with pre-posttest design and control group.

The study population included all women (n=120) diagnosed with breast cancer have improved after the chemotherapy and member of the cancer Institute "Sepas" in 2015 in Tehran. The sample group was composed of 60 women with breast cancer in the recovery period after chemotherapy were selected based on accessible sampling. The subjects were assigned to experimental and control groups randomly. The sample size was 30 participants in each group. Samples were selected with the following criteria: Entry criteria: minimum age of 20 years, at least high school education and want to work in groups. Exclusion criteria: physical and spiritual sickness, absence involves members more than 3 sessions- unwillingness to cooperate.

Kobasa PVS questionnaire were completed by experimental and control groups to measure the hardiness of women with breast cancer before the implementation of stress management. The stress management plan was implemented in the 2-hour time 8 weekly sessions for experimental group and the control group have been waiting in this period.

Stress management was implanted in 8 sessions (two hours for each session) for the experimental group. So the appropriate techniques of stress management designed to help patients to cope with their stress of disease problem.

### Group stress management training session

Protocol of stress management session with cognitive behavioral approach was written based on Cognitive behavioral stress management (CBSM) that were desinged by Antoni in Florida University [40].

#### Training Session: Content of session

**First session:** Introducing participant and a brief description about 8 session, welcoming, saying aim and rules, necessary do the home work Express definitions and descriptions of stress, Description of the sources of stress and physiological and psychological of stress, training exercises, deep breathing and relaxation techniques.

**Second session:** Identify negative automatic thoughts and cognitive distortions, Training coping skills with stress including muscle relaxation.

**Third session:** Discover the automatic negative thought and replace positive thought instead of negative thoughts, training problem solving skills.

**Fourth session:** Teach healthy lifestyles, have a healthy diet and adequate sleep and exercise, physical methods for coping with stress, training muscular relaxation with 7 muscles.

**Fifth session:** Teach anger management training (anger definition, correct and effective communication styles, , teaching them how to control anger), Time management training (priority on important tasks, split tasks into smaller part). Practice diaphragmatic breathing and relaxation.

**Sixth session:** Social support (need and maintain social support and interpersonal relationships and communication networks for coping with stress), express their feelings to others during times of stress and sadness, solve the problem by the good negotiation.

**Seventh session:** Expressiveness education (addressing self-esteem, self-confidence, self-importance. Increased personal relationships, empathize with others, express feelings to others, training muscular relaxation with 4 muscles.

**Eighth session:** Analysis what you learned up to now and review

previous session and techniques. Ensure that ambiguous points are solved; get the feedback and comments from the participant, done the past test.

### Measurement

Kobasa hardiness questionnaire has 50 items and three subscales control (17 articles), commitment (16 females) and fighting (17 articles) that has a level scale of 4 degrees is the 11 question positively and 39 questions the reverse is the case. Zero indicates that the item is not true in terms of subjects and the number 3 indicates that the subject is absolutely correct statements. Higher score in one component shows that characteristic is less in him. The total score for the hardiness and three separate scores for each components were obtained [41]. The reliability test have been reported in 0.70 commitment, control 0.52 and challenge 0.53 and 75% for the entire scale [42]. In the research was conducted to determine the validity of personal opinion, the relation between this questionnaire and sub-scale pathological criteria of the Minnesota multifaceted questionnaire was between 16% and 53% [43]. Cronbach's alpha coefficient was obtained 78% in this study.

Then collected data was analyzed by SPSS-20 software. Data was analyzed by multivariable analysis of covariance.

### Results

According to Table 1, results showed that the experimental and control groups before the intervention of the variables are not significantly different. In the control group mean hardiness and scales in patients with breast cancer in pre-test was obtained 68/19 and in post-test was obtained 68/80, so there is no significant difference between means of hardiness and its subscales between pretest and post test in control group. In the experimental group, hardiness and scales in patients with breast cancer in pre-test was obtained 54/22 and in post-test was obtained 67/20. The mean hardiness experimental group in pre-test was 12/98 score higher than pre-test. The results in Table 1 showed the significant difference of hardiness between pretest and post test in experimental group. As shown in Table 1, there is a significant difference between two groups in hardiness and its subscales in the past-test after the intervention so the stress management has influence on the hardiness in the experimental group.

Analysis of covariance was used for quasi-experimental design pretest- posttest to obtain the effects of pretest. Befor analyze the assumption, leven's test is used for homogeneity of variance in first step. According to leven's test, the test value F (1.700) and the signification level is greater than 0.05 (Sig=0.197), this assumption of homogeneity of variance is approved.

According to Table 2, the test value F (35/655) and df=1, with acceptable error of less than 0.01 (Sig=0/000) and the degree of confidence could be the result of more than 99/0 there was no significant difference between the average hardiness. The null hypothesis ( $H_0$ ), indicating no relationship is rejected and, therefore, this hypothesis is confirmed. The stress management training increases hardiness dimensions (control, commitment, challenge) on patients with breast cancer. Multivariable analysis of covariance showed that there is a significant difference between pre-test and post-test score in the

Hardiness	Group	Amount	Pretest		Posttest	
			Mean	St.deviation	Mean	St.deviation
	Experimental	30	54.22	7.793	67.20	9.004
	Control	30	68.19	17.622	68.80	12.677

Table 1: Descriptive summary of the results of pre- and post-test scores.

Source	Df	Mean square	F	Sig.
Corrected model	1	2528.071	35.655	0.000
Intercept	1	221166.531	3119.275	0.000
Group	1	2528.071	35.655	0.000
Error	58	70.903		
Total	60			

Table 2: Covariance test for investigating the effect of stress management on hardiness after education.

experimental group. These results demonstrate that stress management has major influence on the hardiness in breast cancer patients. Therefore, there is a significant difference between the subscales after intervention.

### Discussion

The findings of this study showed that stress management training increases the hardiness of women with cancer. The result of other research Antoni [27,34] shown the effectiveness of stress management training to improve the quality of life and mental status of women with breast cancer. Finally results show a positive effect on hardiness, stress management training for patients and also in women with breast cancer. In fact, stress management contributes to women with cancer that adapt better to their life stressors. Hardiness is one of the most important topics in positive psychology; recent research indicates not only a link between hardiness and disease, but also the hardiness and longevity, and even the best predictors of mental health. Maddi and Pagna also note that hardiness provides flexibility and protects public health [44]. Therefore, people who have hardiness are physically and mentally healthy, and this causes their satisfaction with their lives. In addition, it is more likely that hardiness people assess the stressful situations positively. Strong people mainly see life events interesting, varied, informative and challenging. They consider life events realistic or with generosity, so they are optimistic over the total life events. Therefore, may be this optimism makes strong people more resistant to unpleasant and unexpected incident and illnesses [25].

Given that there is no research on the effectiveness of stress management to increase the hardiness especially women with breast cancer, this research is innovative and fresh. Previous studies showing a positive effect of hardiness on the lives, hardiness, major predictor of psychological adjustment and physiological variables Pollock et al. [45], and increase tolerance in the face of disease Brooks [46], the role of hardiness effective in regulating stress Wiebe [47] and coping with the stressors [48].

Dupont [49] showed that intrusive thoughts increased pain, depressive symptoms, and physical function. Training coping strategy with cognitive distortion and negative automatic thoughts can help the patients to replace them with rational thoughts. Then this method influence on the interpersonal relationships and social skills. Also, stress management influenced social life and increased self-esteem with training anger management skills and increased assertiveness.

Considering these results, we can say hardiness is an effective stimulus to encounter patients with cancer and increase the commitment and ability to control them so one can go up to the believe that the change is a normal aspect of life. Fighter identify consider Positive and negative situation, such as cancer that need readjustment, as an opportunity for learning and growth rather than a threat to their safety and security. Hardiness people do not give up in stressful situations like cancer disease did not attempt to deal with the disease

and that will boost the immune system, people are trying to cope with the disease. They are not a threat to its security [50].

Another positive feature of hardiness can be said that a person with characteristics such as hardiness even fatal disease, cancer decides to live therefore welcome to life at home, at work, or in game.

## Conclusion

In person, the desire to live and the emergence of the specific reasons for being there. He simply wants to overcome problems, good life and be successful, optimistic attitude towards life and has found himself and expects his favor before the events of life. As a result of frustration, anxiety and depression sees safe. Having a sense of control over the situation, an active stance in times of difficulty, resistance against it, its holding in critical situations and adversity as an opportunity for growth and development of knowledge, all of the things that helps people to achieve progress. Therefore stress management training is one of the strategies that will help people in this way. Stress management offers new viewpoints to patients who can be used to reach the quality of life and challenging the problems of sickness.

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