

# The effectiveness of positive mental imagery of recovery and cognitive behavioral therapy based on religious beliefs on anxiety and life quality in women with breast cancer

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## SUMMARY

**Introduction:** Breast cancer is a common condition among women that can cause psychological problems and may negatively affect their life quality in the future. Religious beliefs and attitudes have been associated with improved life quality and reduced anxiety in women. The objective of present study was to examine the effectiveness of positive mental imagery of recovery and cognitive behavioral therapy based on religious beliefs on life quality and anxiety among women suffering from breast cancer.

**Methods:** This study is an experimental research with pre-test, post-test, follow-up, and control group. The present research work was performed on 30 women with breast cancer who were included based on some criteria including age, disease duration, educational status, having a standard deviation above the mean value in anxiety test among others. Afterward, they were classified into the control group (n=15) and the experimental group (n=15) randomly. Patients in the experimental group received 12 sessions (of 45 minutes) of positive mental imagery of recovery and cognitive behavior therapy based on religious beliefs, while the patients in the control group received no intervention. Data analysis was performed using the statistical technique of multivariate analysis of covariance (MANCOVA).

**Results:** According to the results of the present study, there was a significant difference between the control and experimental groups ( $p \leq 0.0001$ ). In the experimental group, anxiety was significantly decreased and life quality was significantly improved compared with the pre-test and control group. These results persisted at the end of the follow-up period.

**Conclusion:** The results of this study revealed that positive mental imagery of recovery and cognitive behavior therapy based on religious beliefs are important factors in improving life quality and reducing anxiety in patients suffering from breast cancer.

**Key words:** positive mental imagery of recovery, cognitive behavior therapy based on religious beliefs, anxiety, life quality, breast cancer

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## INTRODUCTION

Breast cancer is a solid, painless mass that mostly develops in superior and exterior parts of the breast, however, it may also involve other parts such as the tip of the breast. Breast cancer may advance to lymphatic glands located at the cavity area under the arms and spread to other parts of the body [1]. This type of cancer can cause pains and general disorders, skin-burns due to radiotherapy, mastectomy-related deformity, hair collapse, chemotherapy-related conditions in patients among others. Diagnosis of breast cancer is scarier for patients than of the disease itself, since the most annoying matter for them is to accept losing their breasts. The problem will not be terminated with removing one or both breasts and leaves serious mental-psychological effects [2]. Therefore, it is very important to study some strategies for reducing these negative effects in these patients and has attracted the attention of many scholars.

Patients with breast cancer often experience severe psychological distress when they are aware of cancer and throughout the course of treatment. The findings have shown that the psychological distress of these patients is correlated with the severity of the side effects of chemotherapy and radiation [3]. In many studies such as a 25-year-old study - a study of 164 women, the results of the effectiveness of counseling and psychological treatment improving life quality and increasing the effectiveness of medical treatments [4]. Past research has shown that cognitive-behavioral therapies reduce psychological distress in patients with cancer, especially in reducing depression and anxiety. These patients have been effective [5]. Faith, religious beliefs, religious instruction, rituals, and rituals are factors that can be effectively used in the treatment and prevention of mental disorders provided that their methods of

learning and their uses are known [6]. Given that the use of religious attitudes, teachings, practices, and practices in the context of cognitive-behavioral therapy approaches have the best results in the treatment of people with religious beliefs, it is clear that as a principle in any therapeutic planning, in addition, pathological assessment, and beliefs of the individual, along with demographic characteristics and other information collected in a diagnostic interview, should be considered and evaluated. The title of the client's intellectual treasury should be exploited in the treatment process [7]. Previous research has shown the efficacy of cognitive-behavioral therapy based on religious beliefs on the treatment of depression among women. One can build some variations in unconscious intelligence using mental imagery. Mental imagery can be defined as a common aspect between what we identify as memory and body. It is helpful in understanding the requirements caused by a disease. The body's controlling system can also be affected by mental imagery. This technique is accomplished via direct, positive inculcation. While the body is in a relaxed position, close your eyes and breathe calmly and deeply. Imagine your body's immune system as a trooper and the pathogenesis agents as adversaries. Therefore, you can establish a communication with your unconscious memory, and guide your body to take solid and appropriate actions [8]. Many mental agents such as stress, depression, anxiety, hopelessness, mourning, etc. have no direct influence on cancers and are not regarded as basic causes of cancers, but can contribute in affliction to it. Prolonged mental stress can negatively affect the body's defense system and cause obesity in people by taking fat and cellulose food with low vitamin. If there is an inherited cancer gene, this situation in the long-term can increase the risk of breast, stomach, colon and prostate cancers by 10 times comparing to other people. Negative mental agents can cause significant negative impacts on the body's immune system. Accordingly, considering a direct and effective association between spirit and cancer seems logical in theory [9]. Also, believing in God and divine help will increase life expectancy in patients. In his study on cancer patients undergoing chemotherapy, it has been concluded that positive imagination of recovery can enhance

the ability of patients against adverse effects of therapy [10, 11].

A number of studies have reported that diet, relaxation, psychotherapy and concept therapy have a direct association with the decrease in intrepidity and vomiting after chemotherapy, reduced mental disorder, and increased hopefulness in women with breast cancer. Some studies have argued that mental imagery and anxiety reduction have been associated with the moral promotion and less chemotherapy hardship of the patients found a clear relationship between relaxation and expansion of muscles with reduced chronic pain. Another research showed the effectiveness of relaxation procedures combined with behavioral-cognitive procedures including mental imagery on the treatment of persistent headache and other types of chronic pains. Some investigated the association between disappointment and heart failure [12]. The result of their study showed that hope has positively associated with disease duration and is a key factor in the monitoring and prevention of mental disorders. In his study, he found a direct relationship between hopelessness and depression. He reported that patients diagnosed with basic depression showed middle-level hopelessness, whilst patients with double depression indicate high-levels of hopelessness [13].

In his study, doctors reported that a 40 years old lady with breast cancer who received surgery and radiotherapy could overcome her worry and anxiety, and deal with her disease after getting familiar with visualization and mental imagery [14]. Other doctors studied the influence of mental imagery and relaxation practices on the tension and anxiety of students before undergoing an operation in the hospital as well as on patients with heart failure and breast cancer who hospitalized in the cardiology unit [15]. The result of this study showed that using these techniques led to reduced tension and anxiety in these patients. In their study on the efficacy of mental imagery practices such as inculcation tools and beliefs in improving the spiritual and mental status of patients, Erfani and Erfanian found that mental imagery leads to improved learning kinetic skills and positively impacts cerebral central kinetic programs [16].

In his study, Jaffary evaluated the association between hope level and self-esteem in patients with kidney transplants admitted in the kidney department of Imam Reza hospital, Mashhad [17]. They found that higher self-esteem and promoting the religious beliefs resulted in higher hope level in kidney transplant receiver patients. Shehni Yeilagh and Akbarian studied the effectiveness of consultation on the reduction of hopelessness and depression in leukemic youth who was admitted to the hospital affiliated to the medical school of Shahid Chamran University in Ahvaz [18]. They found a significant difference in the level of hopelessness and depression after consultation between experimental and control groups. In his study on patients with breast cancer, Koing reported that breast cancer patients with religious beliefs were less anxious and worried about death, properly behaved toward their family members, partners and as well toward the disease [19, 20]. Few other scientist assessed the influence of two types of relaxation exercises on the reduction of the tension and anxiety levels in breast cancer patients. They argued that patients received relaxation training were less angry and did more effort to remove cancer and reach a disease-free life (21). Given the above-mentioned evidence, this study aimed to assess the efficacy of mental imagery and relaxation training on hopefulness and anxiety of breast cancer women in Ahvaz city, Iran.

## METHOD

The present study was performed using a quasi-experimental method with pre-test, post-test, experimental and control groups. Among patients with breast cancer undergoing post-operative chemotherapy to remove malignant but non-malignant cell masses at Ahvaz oil company hospital, a sample of 72 volunteers was selected by the voluntary sampling method. Then, considering variables in the study such as no mental illness before cancer, no use of psychiatric drugs, age between 20 and 65 years, remaining at least 20 sessions of radiation therapy, were matched in terms of socio-economic status and other criterions considered in the study, 30 people were selected for the final. Subjects were randomly assigned to two groups of 15

experimental and control groups. The instruments used in this study were:

### Quality of Life Questionnaire for Cancer Patients

A self-report questionnaire with 30 items was designed to study the life quality in patients with cancer. This questionnaire assessed life quality with 9 multi-item scales including 5 physical, emotional, role-playing, cognitive and social scales; 3 scales of fatigue, pain, nausea and vomiting; and 1 general health and life quality scale). 28 questions scored on a 4-degree scale (not at all quantitative, high, very high) and scored 2 questions on a 7-degree scale, very bad to excellent). In addition, the reliability coefficients in most domains were above 0.07 and convergent validity coefficients were appropriate. Comparison of test results patients suffering from different stages of the disease also showed that a person's score on the quality of life was positively correlated with their level of activity and inversely correlated with symptoms and severity of illness.

### Cattell's Anxiety Rating Scale(CAQ)

Contains 40 items that measure anxiety. Each question has three answers, and the subject selects a question that is consistent with his or her situation. The sum of the scores for the first 20 questions indicates anxiety and the second 20 questions for anxiety expressing general anxiety. This scale was standardized in 2007 by the Associate Attorney in the student population. This test has been repeatedly performed and its validity and reliability have been confirmed. In this study, the values of Cronbach's alpha were between 0.84 and 0.88 for all the questionnaires. To specify its validity, the depression questionnaire was correlated with the anxiety questionnaire with a validity coefficient of ( $r=0.78$ ,  $p \leq 0.000$ ). In order to recognize religious-based therapy, in addition to methods of cognitive therapy aimed at changing the patient's false beliefs and turning negative automatic thoughts into logical thoughts, he helped the patient to strengthen his or her spiritual beliefs and religious beliefs during therapy sessions.

## THE INTERVENTION

The world of existence, the existence of the absolute power of God and the divine mercy, pay attention and focus. Also, "trusting in God" and believing in divine help will increase the hope of the living. In psychotherapy sessions, it is reinforced by the belief that every effort and suffering that occurs in life is not in vain, but in combination with divine reflection and rewards at different levels of life. By developing such a mindset, the patient gets rid of the feeling of absurdity and confusion. Also, this treatment approach focused on the Holy Qur'anic verses and hadiths and their effect on treatment. Some patients, who had anxiety and panic attacks in addition to depression, always thought that they might lose their balance at any moment and may experience fainting and sudden death. In the religious approach, the belief that the universe is in order and without the will of the Creator does not fall from the tree, and the patients' belief that the Creator of Being is the greatest keeper of the individual is reinforced. On the other hand, in the method of muscle relaxation to control anxiety, the

patient is helped to attain inner peace and to dominate the phenomena of the world around him, by positively observing and focusing on the enormous divine power that exists in every human being potentially present. This method was implemented step by step with homework assignments. After the pre-test phase for the experimental group, religious-based cognitive therapy was administered by the therapist for 12 sessions, each session of 45 to 120 minutes in the specialized counseling and psychological services clinic. These sessions included cognitive psychotherapy with religious approach, prayer and direct communication with the source of existence were used individually and in communal rituals.

## RESULTS

Table 1 presents the values of mean and standard deviation (SD), minimum (Min) and maximum (Max) scores, and the number of subjects in this study.

**Tab. 1.** Mean, SD, Min and Max scores of hope and life quality in experimental and control groups in pre- and post-test

Variables	Stage	Group	Mean	Standard deviation	Lowest	Maximum
<b>Anxiety</b>	Pre-test	Experimental	49.21	8.64	40	60
		control	48.75	11.18	36	53
	Post test	Experimental	31.66	7.84	20	48
		control	51.27	3.12	38	56
<b>Quality of Life</b>	Pre-test	Experimental	44.51	6.78	31	48
		control	41.47	7.12	33	45
	Post test	Experimental	85.12	13.21	36	86
		control	42.91	12.17	29	61

MANOVA and ANCOVA were used for data analysis. Table 2 shows the multivariate

analysis of anxiety and life quality in the control and experimental groups.

**Tab.2.** The results of the MANOVA analysis of the difference in anxiety and life quality scores between the control and experimental groups

Test	Value	Df of hypothesis	Df of Error	F ratio	Significance level
Pillai's Trace	0.82	2	28	68.68	0.0001
Wilks' Lambda	0.097	2	28	68.68	0.0001
Hotelling's Trace	15.34	2	28	68.68	0.0001
Roy's Largest Root	15.34	2	28	68.68	0.0001

As indicated in Table 2, there is a statistically significant difference in the mean values between the control and experimental groups (at least in one of the dependent variables of anxiety and life

quality). Table 3 depicts the results of the MANOVA test for differences in the mean values between pre-test and follow up scores.

**Tab. 3.** MANOVA results on the difference in anxiety and life quality variables between the pre- and post-test scores

Variables	Total SS	DF	Average SS	F ratio	Significance level
Anxiety	207.34	1	207.34	135.41	0.0001
Quality of life	2619.6	1	2619.6	451.35	0.0001

As indicated in table 3, the difference in anxiety scores of breast cancer women is significant between control and experimental groups ( $p=0.0001$  and  $f=135.41$ ). Also, a significant difference was found in the life quality of the two groups ( $p=0.0001$  and  $f=451.35$ ). In other words, mental imagery relaxation training

significantly decreased the anxiety and life quality in the experimental group in comparison with the control group.

Table 4 shows the MANOVA test results of the difference in the pre-and post-test scores of anxiety and life quality variables between the control and experimental groups.

**Tab. 4.** MANOVA results of the difference in the pre- and post-test scores of anxiety and life quality variables between the control and experimental groups after follow up

Test	Value	Df of hypothesis	Df of Error	F ratio	Significance level
Pillai's Trace	0.96	2	28	143.95	0.0001
Wilks' Lambda	0.065	2	28	143.95	0.0001
Hotelling's Trace	13.29	2	28	143.95	0.0001
Roy's Largest Root	13.29	2	28	143.95	0.0001

As shown in Table 4, the difference in the mean values is significant between the experimental and control groups (there is at

least a significant difference in one of the dependent variables of anxiety and life

quality). Table 5 depicts the results of the MANOVA test for differences in the mean values between follow up and pre-test scores. As indicated in table 5, the difference

in anxiety scores of breast cancer women is significant between the control and experimental groups ( $p=0.0001$  and  $f=121.59$ ). Also, a significant difference was found between the life quality scores of the

two groups ( $p=0.0001$  and  $f=338.76$ ) in the follow-up period. In other words, mental imagery relaxation training significantly decreased the anxiety and life quality in the experimental group in comparison with the control group after a follow-up period.

**Tab. 5.** MANOVA results for the difference between the follow-up and pre-test scores of the variables of anxiety and life quality

Variables	Total SS	DF	Average SS	F ratio	Significance level
Anxiety	196.13	1	1959.85	121.59	0.0001
Quality of life	2474.43	1	1862.5	338.76	0.0001

## DISCUSSION

The results of this research showed that positive mental imagery of recovery and cognitive behavior therapy based on religious believes was efficient in improving life quality and decreasing anxiety within the experimental group in comparison with pretest and the control group. This study was in line with the results of other studies conducted in this field [22-25]. In a study investigating the relationship between uncertainty and anxiety in patients suffering from cancer pain and patients who did not have this pain, it was found that the level of anxiety and worry of patients suffering from cancer pain, compared to the control group patients were lower. It has also been shown that the more common the pain is, the higher the level of anxiety and hopelessness [26]. As can be seen from the above study, the results showed that cancer affects the quality of life and anxiety. Cancer patients have an effect, and this itself reveals the need for psychological interventions. In another study, the effect of cognitive-behavioral training on anxiety and reduction of psychological symptoms in cancer patients was investigated. The results revealed that their anxiety decreased significantly after the end of the treatment sessions and after the 3-month follow-up period, but their life quality increased [27].

Their results suggest the efficacy of this treatment and relieve depression in people

with breast cancer [28]. Other studies have investigated the effectiveness of cognitive-behavioral interventions on improving the psychological validity of people with breast cancer. In this study, the effects of surgical, chemotherapy and radiation therapy on self-esteem and life quality of breast cancer patients were investigated. In this study, the effect of cognitive-behavioral interventions on these two cognitive characteristics was investigated. The results showed that positive mental imagery of recovery and cognitive behavior therapy based on religious believes had a positive influence on the life quality and overall mental status of patients [29]. These results are in line with the findings of this study and indicate the impact of cognitive-behavioral therapies on the life quality and overall mental status of the individual. In a study, it has been investigated that the effectiveness of cognitive-behavioral therapy on depression, life quality, lack of physical activity and recreation, interpersonal problems, and sleep problems in cancer patients. Interpersonal problems, lack of sleep, and physical activity were significantly reduced and their quality of life increased [30]. This finding suggests the effectiveness of cognitive-behavioral therapy on reducing depression and increasing the life quality in cancer patients. In another study, 128 women with stage 1 to 3 breast cancer and 4 to 8 weeks after surgery were included. Subsequently, they were categorized into 2 experimental groups. The

experimental group received 10 days of cognitive-behavioral stress control training and the control group received one-day psychological training (CBSM). Both groups underwent blood tests in the afternoon, and the same group underwent a 6 and 12-month follow-up to test for cortisol cytokine levels. The results of this study showed that women who received cognitive stress training had higher psychological health, lower levels of anxiety and lower cortisol levels, higher and higher cytokine levels than the control group. These results were also consistent after 12 months of follow-up [31-33]. Greer et al Study the effectiveness of cognitive-behavioral therapy on reducing anxiety and improving life quality in cancer patients. Their findings showed the efficacy of this treatment on reducing anxiety and improving life quality in cancerous patients [34, 35]. The results of this study also indicated the effectiveness of cognitive-behavioral therapy on anxiety and life quality in breast cancer patients. This is in line with the results of previous studies and the present study. In 2011, Ho and colleagues examined the relationship between positive coping strategies, hopefulness, and optimism in the recovery of patients suffering from cancer. They found that hopefulness and optimism were significantly related to post-illness recovery. The results also showed that healthy two-person relationships are crucial for hope and continued high levels of recovery after illness [36, 37]. It has been also showed that cognitive-behavioral psychotherapy combined with a religious approach significantly reduced depression and increased immune system function compared to Beck's cognitive therapy [38]. These results remained consistent even at a one-year follow-up [38-40]. This finding indicates that cognitive-behavioral neurodevelopmental therapy combined with a religious approach is better than mere cognitive therapy. A descriptive study investigated the relationship between attachment, hope, and spiritual attitudes in survivors of breast cancer in African, American, and European women. In this study, descriptive statistical analysis showed a positive relationship between attachment, spiritual attitudes with improvement or longer life span of people with cancer. These researches, in general, show the effectiveness of spiritual perspectives on the improvement and

hopefulness of patients with cancer, which is in line with the results of our study.

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