

Effectiveness of Cognitive-Behavioral Group Therapy on Depression, Anxiety, and Pain Coping Strategies in Women with Breast Cancer

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Abstract

Objective: The present study aimed to investigate The Efficacy of Cognitive-Behavioral Group Therapy on depression, anxiety, and Pain Coping Strategies in women with breast cancer.

Methods: The present study is a semi-experimental research with a pretest-posttest With the control group. For this purpose, 50 people Of women with breast cancer were admitted to the Medical university hospitals of Tehran method Purposive sampling was Selected Randomly in two experimental and control groups were replaced. The experimental group underwent group therapy for 10 sessions of 1.5 hours per week after fully explaining the research and expressing their consent on how to do the work. Demographic statistics, descriptive statistics (mean and standard deviation), and inferential statistics (analysis of covariance (ANCOVA)) were used to perform statistical calculations and data analysis (SPSS 25).

Results: The results showed that Cognitive-behavioral group therapy significantly reduces depression and anxiety in women with breast cancer. Also in the use field of Pain Coping Strategies Between the experimental and control groups, there is a significant difference.

Conclusion: The results showed that Cognitive-Behavioral Group Therapy reduces depression and anxiety and increases the use of Pain Coping Strategies in women with breast cancer.

Keywords: Depression, Anxiety, Pain Coping Strategies, Breast Cancer, Cognitive-Behavioral Group Therapy.

Introduction:

Breast cancer poses many challenges for women; Diagnosis, treatment, consequences, and side effects of treatment and recurrence of the disease cause psychological reactions of anxiety, depression, etc., and these reactions can be caused by dysfunction, problems with symptom control, and weakness in decision making. Poor adherence to treatment regimens and poor social interaction have devastating and negative effects on the quality of life of these patients [1]. The psychological problems of women with breast cancer are serious. Surgery and adjuvant therapy, fatigue, pain, premature menopause, age less than 65 years, and a previous history of depression make women with breast cancer more prone to depression. Depression in women with breast cancer leads to depletion of mental energy, increased stress caused by the disease and its treatments, decreased immune function, decreased quality of the physician-patient relationship, decreased libido, and failure to follow medical instructions [2]. On the other hand, in women with breast cancer, anxiety is one of the major psychological problems. Anxiety can occur in five ways in women with breast cancer. Anxiety due to cancer diagnosis [3], Anxiety associated with treatment and its consequences [4], and identity anxiety due to surgery and adjuvant therapy as a result of which patients may experience changes in their body that affect their perception of the body

and their body image and sexual desire; Finally, it is effective in their individual and social identity and playing their mother, wife and job roles [5]. Ontological anxiety refers to these women worrying about the future and death and their concern for the fate of their children and loved ones after their death [6]; Finally, these women may experience anxiety and fear of relapse [7]. In women with breast cancer, untreated anxiety can lead to problems with symptom control, poor treatment decision-making, poor adherence to treatment regimens, poor social interaction, and impaired quality of life [8]. However, surgery, chemotherapy, radiation therapy, and hormone therapy as the most common methods used to treat breast cancer have increased the survival rate of these people [9]. But these treatments in turn cause short-term and long-term side effects in these patients [10,11]. So patients with breast cancer suffer from a wide range of physical, psychological, and social signs and symptoms during the process of diagnosis and treatment of their disease [12]. Researchers believe that coping strategies affect both people's perception of pain intensity and their ability to control and tolerate pain, as well as the continuation of daily activities [13]. People with chronic pain use a variety of coping strategies, some of which are adaptive and some of which are non-adaptive [14]. Studies of patients with chronic pain have shown that while the use of active coping strategies (such as trying to perform tasks despite the pain, not paying attention to pain, and using muscle relaxation) has adaptive results, the use of passive coping strategies (Dependence or reliance on others for help in controlling pain and limiting activity is associated with more severe depression, pain, and physical disability [16, 15]. Research has been done on the effectiveness of psychological intervention methods on the psychological problems of cancer patients. Researchers have used a variety of psychological interventions to treat different types of cancer, including helping to develop strategies for coping with depression and anxiety, including relaxation exercises, mental imagery, cognitive-behavioral therapy, and cognitive-behavioral stress management has group therapy that the effectiveness of each of these treatments has been proven in some way [17,18,19]. Group therapy is one of the most effective forms of intervention in diseases, especially in women with breast cancer [20]. Research shows that psychological intervention programs, especially those offered in groups, dramatically reduce cancer-related emotional distress and provide valuable social support and increase adaptive coping skills, and cognitive group therapy leads to the development of insight in the patient, gaining new experiences in the group, communicating with others, group cohesion, facilitating emotional discharge, and increasing patients' self-confidence [21] and is prioritized over individual psychotherapy, which has limitations such as high cost, lack of adequate and trained therapists, and long-term allocation [22].

Due to the importance of coping strategies in breast cancer patients, in the present study, we first tried to teach patients more adaptive coping strategies by modifying cognitive assessments and preventing patients from being biased towards inefficient and risky coping strategies. Therefore, by identifying the negative factors affecting the quality of life of breast cancer patients (such as depression, anxiety, and dysfunctional pain coping strategies) it is possible to control and reduce the effect of destructive factors on quality through psychological or psychological-medical interventions. Thus the quality of life of these women improves. The background of research conducted in Iran confirms that research on women with breast cancer in Iran has paid less attention to the effectiveness of cognitive-behavioral group therapies, and if an interventional study has been conducted in this field, the effect of treatment on one of the variables or studies was non-interventional. Therefore, considering the prevalence of this disease in the country, the present study can help us to better understand the anxiety, stress, and coping strategies of women with breast cancer. The findings of the present study can be useful for health professionals, clinical and health psychologists, counselors, and therapists who use psychological interventions on physical patients, especially patients with breast cancer. This study aimed to evaluate the effectiveness

of cognitive-behavioral group therapy on depression, anxiety, and coping strategies in women with breast cancer.

Methods:

The present study is a quasi-experimental research with a pretest-posttest design with a control group. The statistical population of the present study consists of all women with breast cancer referred to the hospitals of Tehran University of Medical Sciences from April to June 2022. The sample of the present study was selected using a non-probabilistic (purposive) sampling method, so that among breast cancer patients who were referred to the hospitals of the Tehran University of Medical Sciences during the first quarter of 2022.

Criteria for entering the research included:

- 1- Having at least a literacy
2. At least one year has passed since the onset of the disease
- 3- Being in stages 1 to 3 of the disease.

Exclusion criteria included:

- 1- History of using psychiatric medicine
- Simultaneous infection with another chronic disease
- 3- Participating in psychiatric intervention simultaneously with conducting research
4. Existence of obvious metastases in distant parts of the body
- 5- Obvious history of mental illness.

Based on the random sampling method, 50 subjects were selected as the control and experimental groups. The experimental group underwent group therapy for 10 sessions of 1.5 hours per week after fully explaining the research and expressing their consent on how to do the work.

Demographic statistics, descriptive statistics (mean and standard deviation), and inferential statistics (analysis of covariance (ANCOVA)) were used to perform statistical calculations and data analysis (SPSS 25). To observe the presumption of equality of variances and covariance matrix of the two groups in the pre-test of dimensions of depression, anxiety, and coping strategies, the Leven test was used.

The results of this test showed that the null hypothesis for the equal variance of the two groups in the pre-test dimensions of depression, anxiety, and coping strategies is confirmed. In the analysis of variances of the two groups in the post-test, due to the homogeneity of the variances of the groups in the pre-test, these effects will be an independent variable (cognitive-behavioral group therapy) that plays a role in the possible difference in scores between the two groups.

Research tools:

Beck Depression Inventory: This is a 21-part questionnaire that assesses defined signs of depression including sadness, guilt, loss of interest, social withdrawal, and suicidal ideation [23]. Each group of questions consists of 4 options. All questions will be graded on a Likert scale (3-0) and the individual's total score will be in the range of 0-63 by summing all the questions. The standardization of this questionnaire was performed for the first time in Iran by Jalili and Okhovat (1984; quoted by Kazemi). The reliability of this questionnaire through the internal consistency coefficient in terms of Cronbach's alpha is 0.84 and the correlation obtained from the classification method based on even and odd questions is reported to be 0.70 [24].

Beck Anxiety Inventory: This questionnaire consists of 21 questions and each question has four answers (3-0) which is a state of increasing intensity. The range of scores is from 0-63 [25]. This questionnaire focuses more on the physiological aspects of anxiety. Three of its

items are related to anxious moods, and the other three items are related to specific fears and other questions that measure the automatic signs of hyperactivity and motor anxiety.

Beck and Clark (1988; quoted by Kazemi) reported the internal consistency of this scale as 0.93 and its retest reliability as 0.75. The reliability of this test in Iran has been reported by Cronbach's alpha method ($n = 34$) equal to 0.78. Also, in evaluating the validity of this test by applying the experimental method of differential validity between the two groups of anxiety and normal, T has been reported at a level of less than 0.001 equal to 12.3 [24].

Coping Strategies Questionnaire (Rosenstail and Keefe): Coping Strategies Questionnaire 42 assesses pain coping strategies. These strategies are classified into 6 cognitive strategies (turning attention, reinterpreting pain, talking to oneself, ignoring pain, creating disaster, and praying for hope) and one behavioral strategy (increasing behavioral activity). Each of the seven coping strategies consists of six phrases; The subject is asked to read each phrase carefully and to use a 7-point scale (zero to six) to determine to what extent he or she has used each of these strategies when faced with pain (zero = none, 3 = sometimes, and 6 = always). In addition to these 7 cognitive-behavioral strategies, the questionnaire has two subscales that measure the ability to control and the ability to reduce pain using the strategies used. The scores of the 6 terms are added together and a combined score is obtained for each coping strategy, which can vary from zero to 36. Higher scores on each coping strategy indicate greater use of that strategy in the face of chronic pain. In general, researchers prefer to use only a one-factor score when statistically analyzing a study instead of using multiple scores from different subscales. There are several benefits to doing this, including increasing the interpretability of results when there is a high correlation between subscales, obtaining more reliable results when having relatively small samples, and reducing the likelihood. Pointed out the first type of error [26]. In this study, only the factor score was used. This questionnaire has been standardized for the first time in patients with chronic low back pain [27]. After that, its validity and reliability have been confirmed in various studies. For example, Asghari Moghadam and Golak [28]. The validity characteristics of this questionnaire in the Iranian population have been studied and the reliability coefficient of its subscales has been reported between 0.74 to 0.83. Also, the results of their studies confirmed the standard validity and predictive validity of this questionnaire.

Process and content of cognitive-behavioral group therapy sessions:

After determining the research sample and identifying the experimental and control groups, in the pre-test stage, the Depression, Anxiety, and Coping Strategies Scale were performed on both groups. Then the experimental group underwent cognitive-behavioral therapy (the control group did not receive cognitive-behavioral therapy). Cognitive-behavioral group therapy was performed in 10 sessions of 90 minutes (sessions were held for 10 weeks and one session was held regularly every week).

The content of each session was:

Session 1: Familiarization of group members with the group leader and with each other, the introduction of the treatment plan, and setting contracts.

Session 2: Defining and explaining the concept of depression and its causative factors in breast cancer.

Session 3: Defining and explaining the concept of anxiety and its causative factors in breast cancer.

Session 4: Defining and explaining the concept of coping strategies.

Session 5: Expressing the physical and psychological consequences of anxiety and stress for breast cancer patients.

Session 6: Asking patients to express their anxiety and stress during breast cancer and to share their experiences.

Session 7: Explaining Negative Spontaneous Thoughts Related to Anxiety and Stress During Breast Cancer for Patients Based on the EBC Alice Model.

Session 8: Asking patients to express their negative spontaneous thoughts during breast cancer experience for each other in the group and training to recognize negative spontaneous thoughts.

Session 9: Training was given on the substitution of logical thoughts, the difference between logical and irrational self-talk, effective coping, types of problem-oriented and emotion-oriented coping, and ineffective coping.

Session 10: Educate patients about ways to deal with negative spontaneous thoughts, possible responses to these thoughts, and how to replace these thoughts with positive thoughts.

Results

The subjects had a mean age of 48.37 and 48.87 in the experimental and control groups, respectively. The subjects of the experimental and control groups were 67% and 75% married, 33% and 42%, respectively, had a university education and the rest had a diploma and less than a diploma.

Table 1: Mean and standard deviation of scores of experimental and control groups in the studied variables

Variable	level	Group	Mean	Standard deviation
Depression	pre-test	experimental	26	5.54
		Control	28.08	3.77
	post-test	experimental	19.50	4.40
		Control	29.92	4.52
Anxiety	pre-test	experimental	27.58	4.42
		Control	27	4.49
	post-test	experimental	19.66	3.89
		Control	28.17	5.41
Pain Coping	pre-test	experimental	19.92	4.12
		Control	16.42	3.34
	post-test	experimental	31.76	5.72
		Control	16.03	4.21

The mean and standard deviation of the scores of depression, anxiety, and coping with pain in the control and experimental groups in the pre-test and post-test are presented in Table 1.

Table 2: Results of multivariate analysis of covariance of the two groups

Tests	the amount of	F	Significance
Pillai's Trace	0.56	7.21	0.01
Wilks Lambda	0.44	7.21	0.01
Hotelling's Trace	1.27	7.21	0.01
Roy's Largest Root	1.27	7.21	0.01

The results of Table 2 show that by controlling the pre-test, the significance levels of all tests differ between women with breast cancer in the experimental and control groups, at least in terms of one of the dimensions of depression, anxiety, and coping strategies. (0.56) and indicates that 56% of individual differences in post-test scores of dimensions of depression, anxiety, and coping strategies are related to the effect of the cognitive-behavioral therapy group and there is no possibility of the second type of error (0.94).

Table 3: One-way covariance results of mean post-test scores of the two groups with pre-test control

The dependent variables	Source of effect	Total squares	Df	Mean squares	Statistics F	Significance
Depression	pre-test	56.40	1	56.40	3.10	0.09
	group	537.79	1	537.79	29.60	0.001
Anxiety	pre-test	95.71	1	95.71	5.09	0.03
	group	468.42	1	468.42	29.95	0.001
Pain Coping	pre-test	41.86	1	41.86	3.47	0.07
	group	551.13	1	551.13	45.53	0.001

The information in Table 3 shows that cognitive-behavioral group therapy has significantly reduced depression in the experimental group due to the mean of depression in the experimental group (19.50) compared to the average depression in the control group (F=60.29 and P <0.001) and 58% of individual differences in depression scores are related to the effect of cognitive-behavioral group therapy. On the other hand, cognitive-behavioral group therapy due to the mean anxiety of the experimental group (19.50) compared to the mean anxiety of the control group (28.08), caused a significant reduction in anxiety in the experimental group (F=29.95 and P <0.001) and 54% of individual differences in anxiety scores are related to the effect of cognitive-behavioral group therapy. Also, cognitive-behavioral group therapy due to the mean of coping strategies in the experimental group (31.76) compared to the mean of coping strategies in the control group (16.03) has caused a significant increase in coping strategies in the experimental group (F=45.53 and P <0.001) and 68% of individual differences in scores of coping strategies are related to the effect of cognitive-behavioral group therapy.

Discussion

Breast cancer is the most common type of cancer among women and a common, malignant, and progressive disease that affects aspects of the individual, family, and social life [29]. According to the World Health Organization, all cancer patients need appropriate palliative care, and psychological and social care according to their culture [30]. The use of psychosocial interventions seems to be a useful intervention for cancer patients because cancer has psychological dimensions and products. The findings of the present study showed that cognitive-behavioral group therapy can achieve this goal and the results confirm that this method of psychological treatment significantly reduces depression, anxiety, and dysfunctional coping strategies for women with breast cancer. Depression, anxiety, and pain management scores were lower in subjects who received cognitive and behavioral therapy than in those who did not. This indicates the effectiveness of cognitive and behavioral group therapy in reducing these disorders.

These results are in line with the findings of Lukas et al. [1]; Park SY, Lim [3]; Goodarzi et al. [4]; Khodai et al. [21], Pedram et al. [22], Bijari et al. [31]; Kahrazei et al. [30]; HassaniKhiabani, Babapourkheirodin, and Alipour [32]; Bahmani et al. [20]; Aghebat, Mohammadi and Esmaeil Pour [33]; Sajadihezaveh, Salehi, and Moshfeghi [34]; Karamoozian et al. [35]; Tatrow and Montgomery [36]; Eun- young and Chang [37]; Rossman, [38]; Evans and Connis [39] and Edelman, Bell and Kidman [40] found in their research that cognitive-behavioral therapies, especially cognitive-behavioral group therapy, lead to a significant reduction in depression, anxiety, and ineffective coping strategies and increase the use of effective strategies.

Therefore, psychological interventions play an important role in the treatment of cancer patients [41]. The results of Bahmani et al. [20] showed that both methods of education-based cognitive therapy intervention and the Hassinger cognitive therapy group have been effective in reducing depression caused by breast cancer. In another study, cognitive-behavioral group therapy sessions had a positive effect on reducing anxiety and depression in cancer [19].

Bamshad et al. In their study of a group of women with cancer said that patients with a general level of mental health than the general population and in terms of indicators of depression, interpersonal sensitivity, anxiety, and psychosis have the problem serious and require psychological care. Researchers believe that the physical health of cancer patients is affected by their mental development and the promotion of their mental health is based on the prevention and treatment of emotional stress [42].

According to Thorne, cognitive therapy is one of the most effective approaches for patients with chronic pain; This treatment can reduce the anger, anxiety, fear, and depression of this group of patients. The results of his study also showed that this approach is more effective as a group and more economically viable. Individuals in treatment groups will learn many things from the feedback they receive from each other [43]. Kissane conducted a study entitled Existential Cognitive Group Therapy in Breast Cancer Patients; which Showed that this treatment can reduce patients' grief, increase their problem-solving power and also create cognitive strategies in them [44]. Examining coping styles by considering personality traits helps physicians to treat people with cancer so that timely treatment of the disease will increase adaptation to patients' pain [45].

Explaining the results, we can point to factors such as the use of cognitive and behavioral methods such as relaxation and mental imagery that were used in this study, which is effective in emotional disorders such as anxiety, and depression in previous studies. [37,38]. Another factor in teaching the vertical arrow method, which is considered a challenging technique and method of changing beliefs, is effectively used to reduce anxiety and depression. Apart from these components, the effectiveness and usefulness of group therapy compared to individual therapy should not be ignored.

Group therapy helps patients learn more effective social skills and realize that others have problems like them. Therefore, perhaps one of the reasons for the effectiveness of this intervention has been that in this method, patients sit in a circle and face-to-face with each other, emphasizing the expression of emotions and trying to accept them, as well as the concepts of group solidarity, confidentiality, feedback, and Mutual support is fully respected. Therefore, the effects of group therapy can be referred to as Yalom.

Yalom [46] believes that groups have characteristics that can not be easily linked to other psychological interventions. He also believes that groups provide members with the opportunity to meet people who are worse off in some areas and better than others in other areas, or who will get to know people and learn stories that show patience. , Effort and success. All this provides a unique opportunity for people to get a more realistic picture of their situation through direct interaction with each other, to be more hopeful by seeing the progress of others, and at the same time, a feeling of unique misery, the injustice of fate or loneliness reduce your being and being alone. In addition, complex emotional interactions in the group provide an opportunity to model successful behaviors and also allow individuals to help others realize their worth, usefulness, and uniqueness and experience a better feeling [46].

Therefore, according to the opinion of the World Health Organization, all cancer patients need appropriate palliative and psychosocial care according to their culture [47]. On the other hand, today the positive effect of psychological interventions in the healing process of chronic physical diseases has been confirmed [48] and with the increasing development of the field of health psychology, psychologists have taken a more active role in the process of

treating these diseases [49,50, 51] and according to Taylor [52], interventions and supportive care for women with breast cancer are performed to reduce the psychosocial impact of cancer and increase their quality of life and should be considered as an essential part of their treatment.

The present study has several limitations: First, the Depression, Anxiety, and Pain Management Scale is a semiotic scale that merely measures the symptoms of depression, anxiety, and coping strategies, and therefore cannot be considered a diagnostic tool equivalent to the DSM-5 diagnostic criteria. On the other hand, group therapy, despite all the benefits mentioned in this study, also has the disadvantage that it does not focus on specific aspects of the psychological problems of individuals, and perhaps some women with breast cancer during the process of therapy are inhibited and they do not accept group therapy. The lack of a follow-up stage due to time constraints is another limitation of the research. The results of this study should be interpreted with caution, although efforts were made to control variables and conditions as much as possible. It is suggested that in future research, more accurate diagnostic scales based on semiotics and diagnostic criteria be used to measure depression, anxiety, and pain management strategies. As a practical suggestion, it is recommended in specialized cancer treatment centers provide psychological services in particular; Allocate group therapy and this form of study on other types of cancer patients.

Conclusion:

The use of cognitive therapy behavior in oncology centers can be considered as a complementary treatment to medical therapies, which, while improving the relationship between medical staff and patients, for health intervention specialists (clinical psychologists and counselors) who deal with patients. Working on breast cancer is beneficial. The results of this study showed that group interventions based on the cognitive-behavioral approach can be used successfully to reduce psychological helplessness in women with breast cancer.

Conflict of interest: The authors declare no conflict of interest.

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