



Evaluating the Effectiveness of Cognitive-Behavioral Therapy on Disease Perception, Body Image and Fear of Cancer Recurrence in Women with Breast Cancer

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Abstract

Background: One of the treatment methods that can improve the psychological symptoms of people with cancer is cognitive-behavioral therapy (CBT).

Objectives: The main purpose of this study is to evaluate the effectiveness of CBT on disease perception, body image and fear of cancer recurrence in women with breast cancer.

Methods: The present study was an applied and quantitative research. In terms of method, this research was completely experimental and had a pre-test-post-test design with an experimental group and a control group, which was followed up for six months. The statistical population of the present study included all women with breast cancer referred to the oncology department of Omid Hospital in Isfahan. Thirty people were selected by simple random method and were assigned to the experimental group (15 people) and the control group (15 people). For data analysis, mixed variance analysis with repeated measurements was used by SPSS-ver. 22 software. Research tools included Broadbent Illness Perception, Multidimensional Body-Self Relations and Fear of Cancer Recurrence Inventory questionnaires.

Results: The results of the study based on the statistical test of covariance analysis showed that CBT was significant on disease perception, body image and fear of disease recurrence in women with breast cancer ($P < 0.05$).

Conclusions: Based on the results of the present study, it can be concluded that cognitive-behavioral therapy can be useful in the management of breast cancer in women. Therefore, it is suggested that this treatment method be used intermittently for the management of breast cancer by the patients themselves.

Keywords: Breast Cancer, Disease Management, Cognitive-Behavioral Treatment Method, Disease Perception, Body Image, Fear of Cancer Recurrence

1. Background

Cancer is one of the serious problems of the healthcare system in Iran and the world. It is the second cause of death in developed countries and the third cause of death in Iran (1). The consequences and complications of chronic diseases, including cancer, remain in the patient's body for a long time. Having this disease affects person's ability to function normally and is the main reason for the death and disability of cancer patients. In addition, the development of physical disability is one of the most obvious features of this disease (2). Cancer may cause many problems, including unemployment, low quality of life, cognitive impairment, and psychological problems, especially depres-

sion and anxiety in cancer patients (3-5). Generally, in the normal state, the cells of the body are destroyed after performing their duty for the respective organ. The command of this programmed cell death (apoptosis) is issued by the nucleus of the cell, which is actually the origin of life (6). Cancer cells do not disappear after certain period and grow without specific purpose. The collection of this cell mass, their symptoms and complications are called cancer disease (7).

The most important problems of cancer patients include fatigue, sleep, stress, depression, anxiety and pain, which are tried to reduce the aforementioned problems. The diagnosis of cancer in the mind of the patient and his family leads to the formation of many implicit meanings,

such as body deformity, financial and social losses, dependence on others, and ultimately the disintegration of the family structure (8-10).

Cognitive-behavioral therapy (CBT) is a form of psychotherapy that helps breast cancer patients learn how to identify and change disruptive or disruptive thought patterns that negatively affect their behavior and emotions. CBT focuses on changing thoughts that can lead to emotional problems, depression and anxiety. These negative thoughts automatically have destructive effect on the mood of the audience. Through CBT, these thoughts are identified and then challenged and eventually replaced with more objective and realistic thoughts (11, 12).

Cognitive-behavioral therapy is effective for patients' emotional problems and is a combination of cognitive and behavioral approaches that help patients to identify and change their distorted patterns and dysfunctional behavior; in such a way that he can make favorable changes in his life (13). Therefore, in this treatment, it is emphasized to provide an opportunity for new adaptive learning and to make changes in the space outside the clinical field. One of the most important goals of CBT is to strengthen the patient's motivation, teach coping skills, create changes in dependencies, strengthen the control of painful emotions, improve interpersonal functioning, and strengthen social skills (14).

2. Objectives

The main aim of this study was to evaluate the effectiveness of cognitive-behavioral therapy (CBT) on disease perception, body image and fear of cancer recurrence in women with breast cancer.

3. Methods

3.1. Study Design and Implementation Method

This research was an applied study in terms of the type of objective and a quantitative research in terms of the type of data. In terms of methodology, this research was completely experimental and had a pre-test-post-test design, which had an experimental group and a control group, which was followed up during a period of six months in the post-test phase. The statistical population of the present study included all women with breast cancer referred to the oncology department of Omid Hospital, Isfahan, Iran. Thirty people were selected by simple random method and were assigned to the experimental group (15 people) and the control group (15 people). One of these groups was randomly exposed to the independent variable (cognitive-behavioral therapy intervention) as the

experimental group, and the other group was randomly placed in the control group that did not receive any intervention.

The criteria for entering the study included having cancer in the selected women, age range 20-40 years, at least a diploma education, not having acute psychiatric diseases, not participating in another training course or program at the same time, having full consent and declaring informed and voluntary readiness to participate in research. The criteria for withdrawal from the study included absence of more than two sessions in treatment sessions and no recurrence of the disease during treatment sessions.

After giving the necessary explanations about the research steps to the participants, each member of the experimental group underwent the desired interventional treatment (CBT) during eight 90-minute sessions. The sessions were held weekly for two months in the same hospital ward. There was no therapeutic intervention on the control group, and the experimental and control groups were forbidden to meet each other and talk about the content of the treatment with each other. Immediately after the end of the sessions, finally, both groups passed the post-test phase.

After six months of the post-test, in order to evaluate the durability of the treatment, the experimental group was re-evaluated to determine the effect of the therapeutic intervention in the follow-up phase. Then the results obtained from the evaluation of the groups were compared with each other.

3.2. Data Collection Tools

Research tools included Broadbent Illness Perception Questionnaire (BIPQ), Multidimensional Body-Self Relations Questionnaire (MBSRQ) and Fear of Cancer Recurrence Inventory Questionnaire (FCRIQ).

BIPQ is a 9-item questionnaire designed to assess emotional and cognitive perception of illness. The questions measure consequences, duration, personal control, treatment control, nature, worry, knowledge of the disease, emotional response and cause of the disease, respectively. The range of scores for the first 8 questions is from 1 to 10. Question 9 is an open answer and questions the three main causes of the disease. They reported the concurrent validity of the scale with the revised disease perception questionnaire in a sample of patients with asthma, diabetes and kidney patients, showing the correlation of sub-scales from 0.32 to 0.63. Also, the correlation of the scores of the sub-scales of the mentioned scale with the specific self-efficacy of asthma patients was obtained from 0.47 to 0.53. Cronbach's alpha for this questionnaire is 0.80 and the retest reliability coefficient after 6 weeks for different questions is reported from 0.42 to 0.75 (15). In addition,

Bazzazian and Besharat reported the self-reliability of this questionnaire as 0.73 using Cronbach's alpha (16).

MBSRQ was used to evaluate the body image of the individual. It is a self-assessment scale with 46 questions and 5 options. The subscales of this questionnaire were: (1) assessment of appearance; (2) tendency towards appearance; (3) assessment of fit; (4) tendency to fit; (5) preoccupation with excess weight; (6) satisfaction with body areas. The scoring method is done on a 5-point Likert scale (from 1 for completely disagree to 5 for completely agree). The overall scores of this scale are in the range of 46-230. In the study of Smith and Davenport, they investigated the reliability and validity of this questionnaire in Spain. The results of that study showed that MBSRQ has acceptable reliability (0.73 to 0.90) and validity (17). Argyrides and Keli also examined the Greek version of this questionnaire and confirmed its validity. The reliability of the questionnaire components was obtained between 0.76 and 0.86 with the internal registration method and between 0.75 and 0.93 with the test-retest method (18). In the study of Shemshadi et al. for the MBSRQ questionnaire, the content validity ratio of each question and component was between 0.81 and 0.89. Also, the content validity index of the questionnaire was 0.84, which indicates the acceptable content validity of the Persian version of MBSRQ. In addition, in the aforementioned study, the reliability of the questionnaire was evaluated by the method of determining the Cronbach's alpha coefficient, which was estimated as 0.98 (19).

Fear of Cancer Recurrence Inventory Questionnaire is a self-report instrument that examines the fear of cancer recurrence in the past month, this questionnaire consists of 42 questions that are scored on a Likert scale from 0 to 4, and the option "I believe that I am cured and that my disease will not return" is scored conversely. Finally, clinically meaningful information about the nature of fear of cancer recurrence is obtained for seven subscales including measures, intensity, agitation, dysfunction, insight, assurance, and coping. The scores of each subscale are added together to reach a total score, and higher scores indicate greater fear of cancer recurrence. Based on the results of the study of Bateni et al., Persian version of FCRIQ was acceptable for breast cancer patients, the content validity index (CVI) was equal to 0.8. In addition, this tool had good test-retest reliability (ICC = 0.96) and good internal consistency (Cronbach's α = 0.86) (20).

3.3. Statistical Analysis

Finally, after obtaining the raw results, the mixed variance analysis plan with repeated measurements was used by SPSS-ver.25 software at the significance level (α = 0.05) to analyze the obtained data.

4. Results

The results of the study showed that the frequency of evaluated patients based on the level of education of bachelor, master and doctor was equal to 56.6%, 30% and 13.4%, respectively. In addition, the frequency of patients with the age range of 20 - 25, 26 - 30, 31 - 35 and 36 - 40 years was 23.3%, 30%, 13.3% and 33.4%, respectively. Descriptive indicators of dependent variables studied, including disease perception, body image, and disease recurrence based on questionnaires completed by patients, were shown in Table 1. In addition, the results of analysis of variance of the effectiveness of cognitive-behavioral therapy on the three aforementioned dependent variables in women with breast cancer were presented in Table 2. The results of the study based on analysis of covariance (ANCOVA) showed that the effectiveness of CBT on all three dependent variables in women with breast cancer was significant (P < 0.05).

5. Discussion

The main aim of this study was to study the effectiveness of cognitive-behavioral therapy (CBT) on disease perception, body image and fear of cancer recurrence in women with breast cancer. The results of the study showed that CBT was significant on all three dependent variables in women with breast cancer. The results of the present study were consistent with the results of previous similar studies. Amini-Khoo evaluated the effectiveness of narrative therapy and cognitive-behavioral therapy on body image and self-esteem in 30 women with breast cancer. The results of the aforementioned study showed that narrative therapy and cognitive-behavioral therapy are effective in improving body image and self-esteem of women with breast cancer. In addition, based on the results of the aforementioned study, cognitive-behavioral therapy was more effective on patients' body image compared to narrative therapy, while narrative therapy was more effective on patients' self-esteem than CBT (21). The results of the study by Rahbarian et al. showed that the CBT method has a significant effect on the self-concept and body image of women with burns and changes the perception and knowledge of the injured person (22). Ashayri et al. reported that the CBT method had significant effect on the pain experience of breast cancer patients (23).

Targeted and timely CBT can improve outcomes in people with chronic physical illnesses (11). Psychological and medical outcomes are influenced by patients' beliefs about the symptoms, causes, effects and consequences, duration, control or treatment of their diseases (12). Attacking maladaptive thoughts and behaviors plays a key role in

Table 1. Descriptive Indices of the Studied Variables Based on Questionnaires

Independent Variable	Study Step	Dependent Variable	Groups	Number	Mean	Standard Deviation	Standard Error
Cognitive-behavioral	Pre-test	Disease perception	Test	15	45.4	9.9	2.6
			Control	15	43.6	8.0	2.1
	Post-test	Disease perception	Test	15	61.3	8.2	2.1
			Control	15	50.3	6.2	1.6
	Pre-test	Body image	Test	15	137.7	6.5	1.7
			Control	15	125.0	7.7	2.0
	Post-test	Body image	Test	15	168.7	7.3	1.9
			Control	15	128.0	7.2	1.8
	Pre-test	Cancer recurrence	Test	15	93.6	10.8	2.8
			Control	15	82.9	8.4	2.2
	Post-test	Cancer recurrence	Test	15	123.7	15.8	4.1
			Control	15	89.7	7.4	1.9

Table 2. The Results of Analysis of Covariance (ANCOVA) of the Effectiveness of CBT on Three Dependent Variables in Women with Breast Cancer

Dependent Variables and Sources	Sum of Squares	df	Mean of Squares	F	P	Partial Eta-squared	Observed Power
Disease perception							
Pre-test	224.534	1	224.534	4.842	0.037	0.152	1
Group	808.151	1	808.151	17.426	< 0.001	0.392	0.564
Error	1252.133	27	46.375	-	-	-	-
Body image							
Pre-test	707.484	1	707.484	24.432	< 0.001	0.475	0.997
Group	4148.519	1	4148.519	143.263	< 0.001	0.841	1.000
Error	781.550	27	28.957	-	-	-	-
Cancer recurrence							
Pre-test	1587.312	1	1587.312	15.844	< 0.001	0.370	0.970
Group	3759.016	1	3759.016	37.521	< 0.001	0.582	1.000
Error	2704.955	27	100.184	-	-	-	-

cognitive-behavioral interventions, and accordingly, people's beliefs about their illnesses often affect how they cope and adapt to the illness (11-13).

Cognitive-behavioral therapy is increasingly used in psychosomatic diseases to help better control people's reactions to stressful life events, and effective coping with the stressor can affect the perception of the disease. Also, CBT leads to improvement of disease perception by changing thought processes through cognitive restructuring. Being aware of cognitive and behavioral changes during meetings and gaining the ability to control thoughts and behaviors by the individual is one of the important reasons for increasing the perception of the disease (21). On the other hand, participating in group sessions of cognitive-behavioral training causes people to experience positive

results of social relations to a large extent. Also, by participating in the meetings and using the opinions and solutions of others, the audience can find a wider perspective on the issues raised in the group, especially the disease and its perception (22, 23).

Since the breast is related to femininity and sexual attractiveness of women, breast cancer can target the femininity identity and body image of breast cancer patients (2). Physical changes lead to negative thoughts, attitudes, feelings and beliefs about patients' bodies; as it affects the sexual function, physical integrity and sexual identity of women with breast cancer (11, 21). CBT is a type of psychotherapy that helps breast cancer patients learn how to deal with destructive or disturbing thought patterns that have negative effect on their behavior and feelings, identify

and change them. CBT focuses on changing thoughts that can lead to emotional problems, depression and anxiety. These negative thoughts automatically have destructive effect on the mood. Through CBT, these thoughts are identified and then challenged and eventually replaced with more objective and realistic thoughts (11, 12).

5.1. Limitations

The limitation in access to a large number of samples was the most important limitation of the present study. On the one hand, due to the fact that the permission to conduct the research was only available to the researchers in one hospital, and on the other hand, the entry and exit criteria prevented all cancer patients from participating in the present study. Therefore, the sample size of the present study was reduced to the minimum number of patients (30 people).

5.2. Conclusions

The main aim of this study was to evaluate the effectiveness of cognitive-behavioral therapy (CBT) on disease perception, body image and fear of cancer recurrence in women with breast cancer. Based on the results of the present study, it can be concluded that the CBT method can be useful in the management of breast cancer in female patients. Therefore, it is suggested to use this treatment method frequently for breast cancer management.

Footnotes

Authors' Contribution: N.B.M., data curation, formal analysis, software, writing-original draft, writing review & editing; H.H., supervision, investigation, methodology, project administration, data curation; M.Z.B.A and R.H.P, formal analysis, methodology, data curation.

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