

The Effectiveness of Group Positive Behavioral Therapy and Group Cognitive Behavioral Therapy on Depression in Women with Breast Cancer in Tehran

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Abstract

Background: Breast cancer is the most common cancer among women and depression is the most common mental disorder after the diagnosis of breast cancer among women.

Objectives: The aim of this study was to compare the effectiveness of group positive behavioral therapy and group cognitive behavioral therapy and control group on depression in women with breast cancer in Tehran.

Methods: It is an experimental study. The sample size was 15 people considered for each control group and positive behavioral group and cognitive behavioral group. 45 people were selected through convenient sampling and then randomly selected to be assigned to each group. The Beck Depression questionnaire was used for data collection and data were entered into SPSS 24 software for analysis. Mean and standard deviation was used to report descriptive information. Chi-square, paired t-test, and analysis of variance were used for analytical information.

Results: Most of the patients were in the age group of 33-40 years (57%) and 75% of the participants had Associate and Bachelor's degrees and 76% of them had Moderate economic status. Compared to the depression score before the intervention, depression in the cognitive behavioral therapy group decreased by 35.66 units and in the positive behavioral therapy group decreased by 38.53 units, but in the control group, there was no significant change. In the positive behavioral therapy group, the rate of change was more in comparison to the cognitive behavioral therapy group.

Conclusions: The results of the present study showed that group positive behavioral therapy and group cognitive behavioral therapy are effective in reducing depression but positive behavioral therapy was more effective than cognitive behavioral therapy.

Keywords: positive behavioral therapy, Cognitive behavioral therapy, Depression, Cancer, Breast.

Introduction

Breast cancer is the most common cancer among women and the second leading cause of cancer mortality among them (1). Recognizing cancer as a crisis in a person's life upsets their life balance. Due to the important role of breast cancer in women's lives, their reactions to this disease include depression, fear, and anxiety (2). Depression is the most common mental disorder after the diagnosis of breast cancer among women. According to a study carried out by Kisan et al. on women with breast cancer at the University Of Melbourne Institute Of Psychology, the prevalence of major depression was 10%, minor depression was 27% and Anxiety was 9% (3).

According to the World Health Organization, all cancer patients need appropriate palliative and psychosocial care in accordance with their culture. Interventions and supportive care for women with breast cancer are performed in order to reduce the social and psychological impact of cancer and enhance their lives quality and it should be considered an essential part of their treatment (4). In addition to medication, there are other methods for treating depression, including group positive behavioral therapy and group cognitive behavioral therapy, which some studies have found useful (5).

The word cognition means thought or perception. Cognition therapy is based on a simple theory that says instead of external events, it is the thoughts and attitudes of the individual that shape his or her spirit. A person can improve his mental state by recognizing his perceptual errors and replacing them with new ideas. Cognitive therapy can increase the preventive aspect of treatment by changing defective patterns of thinking and training attention control skills (6). Positive psychology is the study of positive emotions, positive personality traits, and the structures that promote these traits (7). A study aimed at the effectiveness of positive psychotherapy in reducing depression and increasing the satisfaction of depressed women showed that this type of psychotherapy was effective in reducing depression and increasing marital satisfaction of depressed women and confirmed the stability of this psychotherapy in the follow-up phase (8).

Another study that examined the effect of positive psychotherapy on the symptoms of depression in cancer patients also showed that positive behavioral treatment was effective in reducing depression and increasing capabilities and even enhancing the meaningful, enjoyable life of people with cancer (9).

Breast cancer is the most common cancer among women and about one million new cancer patients are diagnosed every year. The high prevalence of depression among these patients, in addition to the pain and suffering of the disease, imposes high financial costs on the health system. Various studies have mainly examined the effect of positive group behavioral therapy and cognitive group behavioral therapy on depression alone. But there is no comprehensive study comparing the two methods.

1. Objectives

This study aimed to compare the effectiveness of group positive behavioral therapy and group cognitive behavioral therapy on depression in women with breast cancer in Tehran.

2. Methods

The present study is an experimental study (multi-group pre-test post-test design). In this study, the researcher compared the effectiveness of group positive behavioral therapy and group cognitive behavioral therapy in women with breast cancer. The statistical population of this study includes all female patients with breast cancer referred to Milad Hospital in 2021.

In order to study and compare the groups, the test power was considered at least 80% with error probability of 0.05. For each group, 14 people were selected. Calculating as the percent of attrition rate group, 15 people was determined for both therapy groups and control group. 45 people were selected through convenient sampling and after that select 45-person convenient sampling, Patients were randomly selected for assigned in each group.

To conduct this research, after obtaining the code of ethics (IR.IAU.DAMGHAN.REC.1400.004) in the first half of 2021, the theoretical informed consent of patients was obtained. Demographic characteristics of participants (including age, level of education and economic status) were collected and a depression questionnaire was completed for all participants. After that, group sessions were held weekly in Mana Psychology Clinic and finally the participants completed the depression questionnaire again.

Participants did not receive or pay any money for participating in the study, and all sessions were held weekly over a two-month eight-session period (one session per week for each experimental group). Sessions were held on Fridays in two hours in the morning for group one and in the afternoon for group two. At the end of the interventive treatment period, another session was held one week after the end of the course to perform the post-test. This study did not have a follow-up period.

In the present study, for cognitive behavioral therapy, a group therapy designed by Leahy in 1995 was used (10). For positive behavioral therapy, a group therapy developed by Parks and Seligman in 2007 was used (11).

Inclusion criteria included passing at least one month of chemotherapy, age range of 25-50 years, having at least a diploma degree, depression above the baseline of 16 based on the Beck depression questioner, being married, and agreeing to participate in the study. Exclusion criteria included a history of psychiatric and psychological interventions during the past year, use of psychiatric drugs, being

single, having a physical illness such as diabetes, epilepsy, kidney problems, and having at least two absent sessions.

Beck Depression Inventory was used to collect data in this study. The questionnaire for each group was completed before the intervention and at the end of the intervention. Then the data were collected and analyzed by SPSS statistical software.

The Beck Depression Inventory consists of 21 sets of questions. First compiled in 1961 by Aaron Beck et al., Backward, Mendelsohn, Mark, and Arbat. The validity and reliability Original version of this questionnaire were examined and confirmed in 1971, 1979, 1985, and 1986, respectively.

Reliability and validity of Beck Depression Inventory in Iran:

In a study conducted by Rahimi on 2260 Bachelor's students and Master's students of Shiraz University, the Beck Depression Inventory showed high internal validity ($\alpha = 0.87$) and acceptable reliability over time ($r = 0.73$). Simultaneous implementation of this test with a 28-item general health questionnaire and a 21-item Anxiety and Stress Depression Scale showed that this test has an acceptable concurrent validity (12).

In the present study, SPSS 24 software use was d to analyze, and mean and standard deviation were used to report descriptive information. Paired t-test, analysis of variance, and Chi-square were used to report analytical information

3. Results

Most people in all three groups were in the age group of 33-40 years (57%) and 75% of them had associate and bachelor's degrees and 76% of them had Moderate economic status. According to the Chi-square test, there were no significant differences between the three groups of positive behavioral therapy, cognitive behavioral therapy, and control in terms of age, education, and economic status ($P > .05$).

Table 1: Demographic information of study participants by age groups, education and economic status

Variable		Control		Positive behavioral		Cognitive behavioral	
		Frequency	percentage	Frequency	percentage	Frequency	percentage
age distribution	25-32	3	20.10	2	13.30	4	26/70
	33-40	8	53.30	9	60.10	8	53/3
	41-48	2	13.30	2	13.30	2	13.30
	49-55	2	13.30	2	13.30	1	6/7

Education	Diploma and less	2	13.30	1	6.70	2	13.30
	Post-diploma and bachelor's degree	10	66.70	12	80/00	11	73/4
	Higher than a bachelor's degree	3	20	2	13.30	2	13.30
Economic status	Weak	1	6.70	2	13.30	1	6.70
	medium	12	80	11	73.40	11	73.30
	Excellent	2	13.30	2	13.30	3	20

Table 2 shows the mean scores of depression before intervention in three groups of positive behavioral therapy and cognitive behavioral therapy and control.

	Cognitive behavioral		Positive behavioral		control	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Depression	49/8	4/14	50/53	4/40	50/66	3/84

In table 2, the mean and standard deviation of depression in three groups in the pre-test phase are expressed. According to a one-way analysis of variance (ANOVA), there was no significant difference in the mean score of depression before the intervention between the three groups (P-Value = 0.827).

Table 3: Kolmogorov-Smirnov test for determining the normal distribution of scores

Group		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	Degrees of freedom	Significance level	Statistic	Degrees of freedom	Significance level
Depression	Cognitive behavioral	.175	15	.200*	.945	15	.449
	Positive behavioral	.167	15	.200*	.930	15	.270

	Control	.251	15	.12	.856	15	.21
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According to the results of the above table and considering that the significant level of test error for the confidence level of 0.95 is more than 0.05, it can be said that the null hypothesis is confirmed and it shows that the distribution of research variables is assumed to be normal. Therefore, parametric tests can be used to analyze the hypotheses.

Table 4 compares the effectiveness of cognitive behavioral therapy and positive behavioral therapy in depression among women with breast cancer before and after the intervention in each group using a pairwise test (intragroup comparison).

Table 4: Comparing the effectiveness of cognitive behavioral therapy and positive behavioral therapy in depression among women with breast cancer

Groups	Pre-test		Post-test		diff	Significance level
	Mean	Standard deviation	Mean	Standard deviation		
Cognitive behavioral	49/80	4/143	14.13	2.72	35.66	0/001
Positive behavioral	50/53	4/405	12/00	3/89	38.53	0/001
Control	50/66	3/848	50/06	4/97	.60	0/700

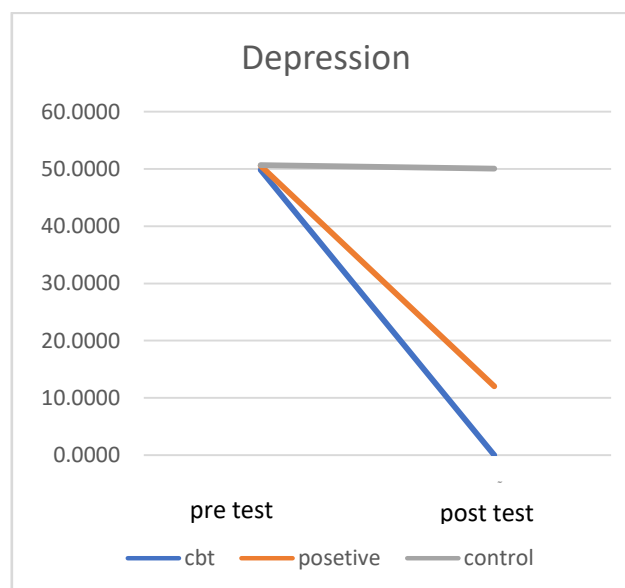


Figure 1: Comparison of pre-test and post-test groups in terms of depression variable

As shown in Table 4 and Figure 1, depression in cognitive behavioral groups changed by 35.66 units and in the positive behavioral group changed by 38.53 units, but the control group did not change significantly. In addition, the positive behavioral group has more changes than the cognitive behavioral group.

One-way analysis of variance was used to evaluate the difference between the mean score of depression after the intervention between the three groups. The results of the Levin test showed that the assumption of normality is valid for the depression variable (p -value = 0.168).

The results showed that changes in the mean score of depression of the three groups during the study were different and P -value was <0.001 . Further results based on the LSD post hoc test showed that changes in both cognitive-behavioral and positive behavioral groups were not significant (P -Value = 0.092) but cognitive behavioral group change was significant with the control group (P -Value <0.001) and positive behavioral group change was also significant with the control group (P -Value <0.001).

Table 5: The results of the post hoc test for depression variable after intervention in the three experimental and control groups

Dependent Variable				Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Depression	LSD	Cognitive behavioral	Positive behavioral	2.86667	1.66062	.092	-.4846	6.2179
			Control	-35.06667*	1.66062	.000	-38.4179	-31.7154
		Positive behavioral	Cognitive behavioral	-2.86667	1.66062	.092	-6.2179	.4846
			Control	-37.93333*	1.66062	.000	-41.2846	-34.5821
		Control	Cognitive behavioral	35.06667*	1.66062	.000	31.7154	38.4179
			Positive behavioral	37.93333*	1.66062	.000	34.5821	41.2846

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dunkan	Cognitive behavioral	Positive behavioral		2.86667	1.39909	.144	-.6980	6.4313
		Control		-35.06667*	1.83994	.000	-39.7630	-30.3704
	Positive behavioral	Cognitive behavioral		-2.86667	1.39909	.144	-6.4313	.6980
		Control		-37.93333*	1.71177	.000	-42.3458	-33.5209
	Control	Cognitive behavioral		35.06667*	1.83994	.000	30.3704	39.7630
		Positive behavioral		37.93333*	1.71177	.000	33.5209	42.3458

The results of table 5 show that the mean of depression in the cognitive behavioral and positive behavioral groups was significant during the study but it was not significant in the control group, which shows that both cognitive behavioral and positive behavioral groups had therapeutic effects on depression.

4. Discussion

The aim of this study was to compare the effectiveness of group positive behavioral therapy and group cognitive behavioral therapy in women with breast cancer. The results of the present study showed that depression was reduced in two experimental groups of cognitive behavioral and positive behavioral but there was no significant change in the control group. Moreover, the positive behavioral group had more changes than the cognitive-behavioral group. This finding is consistent with the results of other studies (13,14).

Noushari et al. showed that both group positive behavioral intervention and group cognitive behavioral intervention were effective in promoting well-being and its components and the control group did not show any significant change in the evaluation process (13). However, the effect of the intervention based on positive behavioral psychology on social, psychological, and general well-being was greater than the other interventions (14). Overall, integrated emotional competency training has been more

effective on emotional well-being. The results of NasiriTakami et al.'s study showed that positive behavioral therapy and cognitive behavioral therapy had a significant effect on psychological well-being. However, the effectiveness of positive behavioral therapy in increasing well-being was greater than cognitive behavioral therapy. There was also a significant difference between the intervention and control groups in the study of two treatment approaches to depression (14).

The important point in using this method is that the group method has many advantages that lead to facilitating and accelerating the treatment process. Among other things, many patients with depression have a sense of uniqueness about their problems and thoughts. This feeling of uniqueness intensifies the social isolation of these patients and social isolation reinforces their sense of uniqueness. In order to explain the results of this study, it should be said that the depressed person's mental system consists of his negative thoughts about himself, current experience and future. Negative thoughts about oneself are: The depressed person believes that he is defective and incompetent, and because he believes that he is defective, he believes that he will never be satisfied.

The depressed person's negative thoughts about the experience include his or her interpretations of what is happening to him or her. He interprets negative barriers as insurmountable barriers, even when there are reasonable positive views about his experience. He tends to have the most negative interpretation about what has happened to him. Finally, the depressed person's negative attitude toward the future is a helpless attitude. When he thinks about the future, he believes that the negative events that are happening to him now will continue in the future due to his personal shortcomings (15). In fact, group positive behavioral therapy and group cognitive behavioral therapy affect the part of depression that results from distorting interpretations of oneself, the environment, and the future and affect one's own maladaptive beliefs.

Most recent views support this model, which emphasizes the relationship between the nature of depressive events and patients' interpretations of these events. Cognitive behavioral techniques enhance planning to achieve goals and reduce depression by challenging negative thoughts (16). The results of the present study, in addition to being useful for improving the mood and treatment process of patients, have many benefits for family counselors, therapists, and psychiatrists for accurate treatment of cancer patients. It is concluded that group positive behavioral therapy and group cognitive behavioral therapy are effective in reducing depression in cancer patients but positive behavioral therapy was more effective than cognitive behavioral therapy. . Because depression may be one of the factors influencing the failure of treatment and even an obstacle to the treatment process and cause recurrence of the disease, we conclude that the treatment of depression in patients is important. In fact, group positive behavioral therapy and group cognitive behavioral therapy affect an individual's

maladaptive beliefs and by challenging negative thoughts, cognitive behavioral techniques enhance planning to achieve goals and reduce depression.

Limitations:

1: Only women participated in this study, while if men also participated in the study, the results might change.

2: Some patients did not have informed consent to participate in the study, so the results of this study can only be generalized to those who participated in the study.

Suggestions:

1. Reducing depression is a very important factor in the process of treatment and strengthening of cancer patients. On the other hand, the effectiveness of group positive behavioral therapy and group cognitive behavioral therapy in reducing depression in breast cancer patients has been proven. It is recommended that in addition to pharmacological and clinical treatments, group therapies should also be used to improve the treatment process of patients.

2. The present study should be done on other types of cancers, especially cancers for men, because people of different genders have different personality and instinctual characteristics, and therefore, by recognizing these differences, we can take faster preventive measures in case of depression, flexibility problems, etc.

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