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Effect of cognitive-behavioral therapy and spiritual-religious intervention on improving coping responses and quality of life among women survivors of breast cancer in Tehran



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ABSTRACT

Backgrounds: The adverse effects of cancer or its treatment for several years give impact physically and psychologically. One of them is coping response and quality of life as important health issues in breast cancer survivors. Cognitive-Behavioral Therapy (CBT) and Spiritual-Religious Intervention (SRI) are known could give improvement for those problems.

Objective: This study aims to evaluate the effectiveness of (CBT) and spiritual-religious intervention in the improvement of coping responses and quality of life among women surviving breast cancer.

Methods: This was a semi-experimental study. Forty-five breast cancer survivors referred to Cancer Research Center at Shahid Beheshti University of Medical Sciences in Tehran, Iran were assigned into three groups randomly (CBT, SRI, and control group). The interventions were applied over eight sessions of cognitive-

behavioral therapy or spiritual-religious intervention based on their group. The participants were evaluated through the Quality of Life questionnaire published by European Organization for Research and Treatment of Cancer (QLQ-30C-ver3) and Billings and Moss Coping Responses Inventory (CRI). The data were analyzed by using covariance.

Results: Both interventions for CBT and SRI group show improvement in coping response and quality of life compared with control group. However, those results are not statistically significant

Conclusion: The participants' survival problems, motivational fluctuation, and inefficacy of classic intervention protocols seem effective in this result. Hence, more research to assess the effectiveness of psychological interventions such as CBT and spiritual-religious intervention in this group is recommended.

Keywords: Breast Cancer Survivors, Cognitive-Behavioral Therapy (CBT), Coping Responses, Quality of Life, Spiritual-Religious Intervention (SRI)

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INTRODUCTION

Nowadays, the number of long-term survivors of breast cancer have increased due to improvement in diagnosis and treatment.¹⁻⁵ Nevertheless, patients with breast cancer rather than breast cancer survivors have been studied psychologically despite the fact that breast cancer survivors may experience adverse effects of cancer or its treatment which can negatively affect their quality of life and coping responses.⁶⁻⁹

The coping response and quality of life,^{2,9-11} as predictors of recurrence and death in breast cancer, have to get more attention to their improvement.^{12,14,15} To promote these two variables, various psychological interventions have already been conducted, which occasionally reached in challenging results.

One of the interventions that have frequently been used in recent years is cognitive and behavioral therapy (CBT).¹⁶ There were numerous studies that concluded the efficacy of CBT, such as improving

the quality of life and coping strategies in breast cancer. Depression reduction and hope enhancement in women with brain tumors, improving the quality of life in patients with inflammatory bowel disease. Reducing distress and pain in breast cancer, improvement in depression, quality of life, and fluid adherence in hemodialysis. Improving performance and quality of life in cancer patients, as well as the improvement of menopausal symptoms after breast cancer treatment.¹⁷⁻²³

However, there were also several studies which have not supported CBT in patients with chronic diseases. Including ineffectiveness in improving the quality of life for patients with different types of cancer, improving coping, quality of life and mood in women with breast cancer, reducing depression and anxiety in stroke patients, as well as depression in patients with chronic obstructive pulmonary disease.²⁴⁻²⁷

Spiritual-Religious Therapy (SRI) has been implemented as another current intervention in

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psycho-oncology. The emergence of this approach is based on the usefulness of spiritual and religious beliefs in restructuring the meaning of life, coping skills, hope, spiritual well-being, quality of life, and decrease of depression in supportive as well as palliative care.²⁸⁻³⁹ Regarding with those benefit, more research is required to assess its effectiveness.

According to the increasing survival rates of breast cancer survivors, psychological approach by using CBT and SRI are needed to evaluate the quality of life and coping response among them.

MATERIAL AND METHODS

This study was a parallel quasi-experimental trial of pre-post-test which conducted at Cancer Research Centre (CRC), Shahid Beheshti University of Medical Sciences, Tehran, Iran in 2011. There were 123 female breast cancer survivors referred to CRC for their treatment follow-up. According to them, 15 participants were assigned to each group based on participants' mean and standard deviations.

In addition, there were 45 volunteer participants enrolled and coded by an unaware CRC employee. Patient's randomization to interventions was developed by a blind statistics MSc of CRC and assigned into three groups according to inclusion criteria.

Inclusion criteria were:

1. 30 years and older
2. completion of the active treatment period including surgery, chemotherapy, and radiotherapy.
3. Clinical stage I, II, or III
4. at least 8-classes literacy
5. no metastatic lesion at least 8-months after diagnosis
6. no history of psycho-spiritual education in the last year
7. no history of other chronic diseases. All of the participants signed informed consent and responded to the instruments.

Then, both test groups received eight sessions of either CBT or spiritual-religious group interventions, while the control group did not receive any psychological treatment until the test groups were fully treated and the post-test data were collected.

In order to assess coping response, we used Coping Response Inventory (CRI) questionnaire which has developed by Billings and Moss in 1981 where include 32 questions. There were five subscales regarding with questionnaire such as problem-solving based, cognitive evaluation-based, emotional, somaticized-based, and social support-based coping. The test has been estimated in a study in Iran around 0.79 for reliability.⁴⁰

Finally, quality of life among breast cancer survivors could be assessed by using Questionnaire (QLQ-C30- ver3). Which were developed by Aronson in 1987 and European Organization for Research and Treatment of Cancer QLQ-30C-V3 incorporates thirty questions and five functional scales, three symptom scales, six single-item scales, and a global health and quality-of-life scale. This questionnaire was translated and validated in Persian by Montazeri et al. in 1999.⁴¹⁻⁴³

Cognitive-Behavioral Therapy:

Our CBT was based on several cognitive behavioral protocols.^{44,45} The first session included an introduction of CBT and group diaphragmatic breathing practices. In the second session, behavioral techniques for the control of cancer-related complications and relaxation were taught. The third and fourth sessions focused on assertiveness, stress management, and problem-solving, respectively. The fifth session addressed identification of negative automatic thoughts, and the sixth was about correcting negative beliefs. The goals of the seventh and eighth sessions were modifying negative thoughts and revising last contents, respectively. After each session, the participants had homework.

Summary of spiritual-religious intervention:

Scientific resources designed the structure of this intervention and modified for Iranian Muslim participants by an expert psychologist clergyman.^{46,47} The first session was specified to familiarity with spiritual-religious intervention and practicing meditation in the group. In the second session, Zekr (holy words repetition) and its relationship with mental peace were discussed. The third session was focused on Doa (prayer). During this session, the participants were asked to read a short prayer. The fourth session was allocated to Tavakkol (trust in God). In this session, the women became familiar with steps of Tavakkol and its' effect on mental peace. In the fifth session, Sabr (patience), its types and its relationship with mental peace was discussed. During the sixth and seventh sessions, AFV (forgiveness of self and others) was discussed. In the eighth session, the last sessions were reviewed. In every session, the participants were asked to share their relative experiences with the group and complete relative assignments between sessions.

For analysis of descriptive data, mean and standard deviation were used. Covariance analysis was used to evaluate the effectiveness of CBT and spiritual-religious intervention. Covariance analysis is known as a suitable analysis method for

interventional pre- and post-test studies because it can remove the effect of the pre-test.

RESULTS

According to the demographic characteristics, this study shows there were no significant differences ($P > 0.05$) between each group in demographic data, except for education who has significant differences ($P < 0.05$) as shown in Table 1.

This study is also showing that the pre-test and post-test for coping responses as well as the quality of life between experimental and control group have a different score (Table 2). Among them, the mean SD for pre-test and post-test of coping response were slightly higher in the CBT group compared with others. However, the mean SD for pre-test and post-test of the quality of life

were slightly higher in the SRI group compare with others.

The covariance analysis of quality of life and coping responses were shown in Table 3. According to the result, the case group mean scores increased in post-test rather than in the control group, but after excluding the pre-test test effect there was no significant difference ($P < 0.05$). The F value in quality of life for between groups were 2.23 (with degrees of freedom 2 and 41), these value indicating not significant result ($P < 0.16$). In addition, in the coping responses group, the degrees of freedom were 2 and 41 as well as the F value around 4.21, those result also indicating not significant ($P < 0.19$). In other words, interventions to improve the quality of life and coping responses in experimental groups were effective but were not statistically significant.

Table 1 Demographic characteristics of the participant among CBT, SRI, and control group

Variable	CBT group	SRI group	Control group	Significant level (P-v)
Age	45.15 ± 5.79(SD)	46.8 ± 6.46 (SD)	48.15 ± 7.6 (SD)	0.8
Duration of diagnosis (month)	23.47 ± 4.23 (SD)	20.1 ± 3.79 (SD)	27.3 ± 5.01 (SD)	0.1
Clinical Stage of Disease (%)	I	10 (66.6%)	6 (40%)	0.7
	II	3 (20%)	3 (20%)	
	III	2 (13.4%)	6 (40%)	
Marital Status (%)	Single	3 (20%)	2 (13.4%)	0.1
	Married	12 (80%)	13 (86.6%)	
Education (%)	<diploma	1 (6.6%)	0	0.01
	diploma	9 (60%)	6 (40%)	
	>diploma	5 (33.4%)	9 (60%)	

Table 2 Mean and standard deviation of quality of life and coping response based on the pre-test and post-test among groups

Group	CBT group		SRI group		Control group	
	Mean	SD	Mean	SD	Mean	SD
Pre-test quality of life	8.13	3.17	10.29	4.29	6.02	2.11
Post-test quality of life	10.12	4.21	14.11	4.18	6.01	2.21
Pre-test coping responses	21.18	4.6	18.6	5.2	20.16	1.3
Post-test coping responses	23.18	4.9	21.61	5.2	21.21	2.1

Table 3 Covariance analysis results of quality of life and coping responses between groups

Variables	Source of changes	Sum Squares	Degrees of freedom	Mean squares	F	P
Quality of life	Pre-test	119.34	2	23.93	5.21	0.21
	Between groups	179.86	2	189.33	2.23	0.16
Coping responses	Pre-test	371.13	2	74.91	3.89	0.31
	Between groups	162.45	2	97.53	4.21	0.19

DISCUSSION

In this study, the efficacy of cognitive-behavioral therapy (CBT) and spiritual-religious intervention (SRI) were found to be not significant for the improvement of the quality of life as well as coping responses in women who has survived breast cancer. This finding is consistent with the results of other studies. A study conducted by McKiernan et al. in 2010 with their cognitive behavior therapy group for Irish breast cancer patients did not support the impact of this intervention to improve their coping response, quality of life, or mood.²⁵ In addition, Korstjens et al. (2008), and May et al. (2009) in two similar studies showed that by adding cognitive behavioral group training to group physical self-management training in cancer survivors also does not significantly impact the quality of life of patients.^{24,48} Moreover, studies conducted by Lincoln and Flannagham (2003) as well as Coventry and Gellatly (2008) also found similar results regarding with the effectiveness of cognitive behavioral therapy in reducing depression in stroke patients, as well as reducing depression and anxiety in chronic obstructive pulmonary disease patients.^{26,27}

Despite many studies have confirmed the effectiveness of CBT and SRI, it is unreasonable to see that these interventions aren't successful in all cases, especially in breast cancer survivors which include a complex and heterogeneous group regarding physical, mental, social, and spiritual aspects.^{17,23,28-39} Some of those problems after breast cancer treatment remained, such as fatigue, pain, psychological distress, lymphedema, cardiovascular problems, swelling, sleep problems, bone-muscle problems, menopausal symptoms, deficiency in memory, learning, and data processing. Vision deficiency, and fear of recurrence could decrease their physical and mental readiness and decrease their motivation.^{7,48-50} As a result, the effectiveness of the intervention in women survivors would be diminished.

Moreover, some mental health professionals believe that some psychological techniques such as classic cognitive-behavioral therapy, which involves cognitive restructuring in individuals, are not efficient for cancer patients and survivors who are faced with real life-threatening issues. Therefore, these patients require some changes and innovations to their therapies.⁵¹ Collecting more data about interventions such as spiritual-religious intervention to identify the most appropriate strategies for each of the groups of cancer patients has also been recommended.^{2,52}

The present study was semi-experimental. Regarding with that, it had some limitations in controlling some confounding variables such as the physical, mental, economic, and socio-cultural status of participants. Therefore, some caution should be considered in generalizing the findings. In the end, it should be noted that because our study did not show any significant effectiveness of CBT and spiritual-religious intervention, we could not follow the results, while three months and six months follow-up was considered before.

CONCLUSION

Both interventions for CBT and SRI are showing improvement in coping response and quality of life compared with the control group. However, those results are not statistically significant. In addition, according to the increasing prevalence of breast cancer survivors, more studies which assess the effectiveness of psychological interventions such as CBT and spiritual-religious interventions in this population are needed. It will help to identify the best interventional methods to alleviate breast cancer survivors' sufferings and promote their mental strength.

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