Effect of Acceptance and Commitment Group Therapy on Quality of Life and Resilience of Women With Breast Cancer

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ABSTRACT

Background: Breast cancer diagnosis always causes a great deal of stress and results in significant changes in the patient's routine life, which—apart from physical injuries—can lead to loss of social functioning and increased risk of mental disorders. Psychological resilience may be a protective factor in dealing with stressful clinical situations. The present study aimed at investigating the effect of acceptance and commitment group therapy on the quality of life and resilience of women with breast cancer.

Methods: This study had a quasi-experimental, pre-post intervention design with a control group. Twenty women with breast cancer (stages I or II) were randomly assigned to an intervention or a control group. The intervention consisted of eight weekly sessions of acceptance and commitment group therapy. Follow-up evaluations were carried out two months after the intervention. The Quality of Life Questionnaire-Core 30 (QLQ-C30), Quality of Life Questionnaire-Breast Cancer (QLQ-BR23), and the Connor-Davidson Resilience Scale (CD-RISC) were used in this study.

Results: Sixteen patients completed the study. Compared with the control group, significant improvements were observed in the total and subscale scores on QLQ-C30 (partial η2 = 0.40), QLQ-BR23 (partial η2 = 0.73), and CD-RISC scores (partial η2 = 0.94) and (P < 0.01) in the intervention group.

Conclusion: Acceptance and commitment program appears to be an effective therapeutic intervention for improving quality of life and resilience of breast cancer patients. Therefore, we suggest that this intervention be provided along with medical treatments to improve quality of life and resilience of breast cancer patients.

Introduction

Breast cancer is a heterogeneous condition where prognosis and survival are affected by multiple factors.[1] The incidence rate of breast cancer has increased in Iran recently, making it the most common cancer among women.[2] The diagnosis and treatment of breast cancer could be followed by a lot of psychological problems, which could lead to more severe symptoms, slower recovery, and poorer health outcomes.[3] For example, it has been shown that cancer diagnosis and treatments are associated with concurrent psychological symptoms such as depression,[4] anxiety,[5] and psychosocial sequel of pain including fear,[6] insomnia,[7] or agitation.[8] Besides, these patients experience difficulties in marital satisfaction and communication with family and also in their relationships with their spouse and children. Therefore, because of perceived social, cognitive, and emotional problems, breast cancer patients tend

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to have a poor quality of life.[9] Quality of life is an important consideration when providing care to cancer patients.[10] It has been demonstrated that decreased health-related quality of life caused by chemotherapy side-effects may predispose patients to early discontinuation of treatment,[11] while studies on breast cancer survivors have shown that a good quality of life may benefit breast cancer patients.[12] Quality of life is a broad, multidimensional concept reflecting patients' perceptions of both positive and negative aspects of their life with regard to physical health, psychological state, level of independence, social relationships, personal beliefs and their relationships to salient features of their environment.[13] The concept has attracted the attention of researchers, and there is a growing consensus that it should be one of the main components of medical practice and research.[14]

In addition, the contribution of resilience to the compliance of patients with breast cancer is highlighted by a number of studies.[15] Resilience is an individual's ability to adaptively respond to hardship, stress, and adversity and has been defined as the capacity to "bounce back" from negative events without succumbing to despair.[16] A study on survivors of breast, stomach, and lung cancers showed that resilience was associated with better quality of life and lower levels of depression. Another study examining fatigue in cancer patients undergoing radiation therapy showed that resilience was an important psychological predictor of quality of life and coping.[17]

Acceptance and commitment therapy (ACT), which the American Psychological Association acknowledges as a modality of treatment for some psychiatric conditions,[18] emphasizes acceptance and mindfulness and focuses on strategies to induce behavior change guided by the patient's personal values to improve functioning and coping with persistent symptoms.[19] The treatment approach in ACT is to encourage patients to acknowledge and accept mental experiences to increase their ability to work with problems that cannot be solved. ACT interventions involve addressing six core psychopathological processes including acceptance, cognitive defusion, self as a context, values, being present, and committed action.[20] A recent review has identified studies using ACT in the contexts of lung, breast, blood, and bladder cancers.[21] It is expected that ACT has the potential to become a particularly well-suited approach to treating people with breast cancer as it offers a model of healthy adaptation to difficult circumstances. This is the first study to use ACT to improve quality of life and resilience in people with breast cancer. If ACT proves effective in this trial, it could be recomme-nded to be integrated into treatment plans for breast cancer patients.

However, despite providing valuable preliminary data, these studies either had a small sample or failed to report cancer stages. Therefore, this study was conducted to examine these hypotheses:

A: Acceptance and commitment group therapy affects the quality of life of women with breast cancer.

B: Acceptance and commitment group therapy affects the resilience of women with breast cancer.

Methods

A quasi-experimental study with a pre-post intervention design and a 2-month follow-up was carried out from March 2016 to December 2016. Breast cancer patients from the Oncology Department of the Cancer Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran, were recruited for this study. Participation in the study was offered to all breast cancer patients who came for follow-up in the oncology wards in March and April 2016. The planned sample size was N = 20. In general, it is believed that the size of groups is set by the goals and priorities of groups, and it is recommended that the participants in each group be limited to 6 to 8 people because of paying attention to the needs of individual members.[22] Then, 20 patients were randomly assigned to either the intervention or control group. All participants were Iranian women treated for breast cancer, and we used the following inclusion criteria: (1) having histologically confirmed primary breast cancer (stages I or II) (2) being aged 18 and above; (3) being literate and fluent in the Persian language; (4) having no history of mental disorder or psychiatric problem; (5) having no cognitive deficits; (6) being cooperative with treatments; and (7) having completed the initial surgical and oncological treatment at least 2 months before the inclusion. Participants were excluded from the study if (1) they had serious physical problems that would preclude them from following the intervention, (2) they missed more than two sessions of therapy, and (3) they participated in concurrent psychological treatment, studies or rehabilitation (i.e. relaxation, mindfulness, psycho-education, or ACT). Finally, 4 participants were excluded during the examination because they declined to participate or started to use psychiatric drugs.

The study received the approval of the local ethics committee. Each participant gave written informed consent for participation. The privacy of participants was protected, and also the confidentiality of records and personal accounts was maintained. It was also suggested to the control group that, after completing the research, they can attend another acceptance and commitment group therapy held by the researcher.

The Iranian versions of the Quality of Life Questionnaire-Core 30 (QLQ-C30) and Quality of Life Questionnaire-Breast Cancer (QLQ-BR23) were used to measure the quality of life in this study.

The QLQ-C30 is the core module that examines

the total quality of life in the course of cancer disease. The questionnaire contains 30 questions comprising a global health scale, 5 functional scales (physical, emotional, cognitive, social, and role-playing), 3 symptom scales (fatigue, nausea and vomiting, and pain), and a number of individual items (dyspnea, loss of appetite, insomnia, constipation, diarrhea, and financial difficulties).[23] In the functional scales, higher scores represent a better level of functioning, while, in the case of symptom scales/items, higher scores mark a higher level of symptomatology or problems.[24] The QLQ-BR23 is a 23-item breast cancer–specific questionnaire about the common side effects of therapy, body image, sexuality, and the outlook for the future, which cannot be used alone but has to be administered along with QLQ-C30.[25] The QLQ-BR23 is scored in a similar fashion to the QLQ-C30. Both of the questionnaires have been translated into Persian and validated by Montazeri *et al.* Cronbach's alpha coefficient for multi-item scales (to test the reliability of QLQ-C30) ranged from 0.48 to 0.95 at baseline and from 0.52 to 0.98 at follow-up administration of the questionnaire.[25] The alpha coefficient of the Persian version of the QLQ-BR23 was 0.65 to 0.95 in the initial interview and 0.72 to 0.92 at the time of follow-up (two months).[26]

The Connor-Davidson Resilience Scale (CD-RISC) is comprised of 25 items rated on a 5-point scale (0 to 4). The scale has a total score between 0 and 100, with higher scores corresponding to greater resilience. Reliability (0.87), validity (0.89), and factor analytic structure of the scale were evaluated, and reference scores for study samples were calculated.[27] In general, the findings indicate that the Iranian version of CD-RISC provides a reliable and valid measure of resilience and can be used in clinical trials. Cronbach's alpha coefficient is reported 0.89 and the validity of the scale is ranged from 0.41 to 0.64.[28]

The process of the study was divided into four stages: (1) Recruiting subjects, carrying out pretests, and informing the participants of what the course would give them and what was required to attend the course. Also, the participants were offered the opportunity to discuss what the expected from the program. (2) Intervention: the intervention groups received eight 2-hour sessions (one session per week) of ACT, while the control group was placed on a waiting list. The description of therapeutic intervention is mentioned below:

Session 1: Providing an opportunity for participants to become acquainted with the purposes of the intervention; using creative frustration.

Session 2: Teaching the harmful role of suppressing feelings and thoughts; practicing mindfulness skills.

Session 3: Defining the concept of acceptance and identifying values; the practice of scanning the body according to mindfulness.

Session 4: Setting values based on goals;

practicing how to solve barriers and problem; setting goals based on values; defusion exercise using the metaphor of bus passengers; classification of thoughts exercise.

Session 5: Practicing to consider the thought just as a thought; practicing defusion from verbal threats; mindfulness exercise. The assignment was designed with the aim of initiating work on the commitment and allowing barriers to be identified.

Session 6: Identifying traces in the value path and acceptance awareness training; identifying the goals along the path with values; examining useful solutions to barriers and learning daringness; examining the barriers to a valuable life.

Session 7: Learning the impact of thoughts; acknowledging that the disease (primary suffering) is unavoidable, but the meaning we give to the disease (secondary suffering) is a choice and also learning that pursuing commitment is not enough; commitment to actions and values even in the face of obstacles and exploring the barriers to satisfaction.

Session 8: Teaching primary suffering and secondary suffering by drawing a circular diagram; group satisfaction survey and teaching what one can achieve in his or her path of values.[29]

(3) Carrying out the posttest. (4) Carrying out the follow-up test after two months and data collection. Since the study design is quasi-experimental with multivariate repeated measures, multivariate analysis of variance (MANOVA) with repeated measurements was used to evaluate the assumptions. After data collection, data normality was tested using the Kolmogorov-Smirnov test, and, based on their normal distribution, parametric tests were used. SPSS software version 16 was used for data analyses. The significance level was set at 0.05.

Results

According to Mauchly's Test of Sphericity, the assumption of sphericity was violated for scores on QLQ-C30, $\chi^2(2) = 0.41$, $P < 0.05$. Therefore, the Greenhouse-Geisser correction was used in the present study. The scores on QLQ-BR23 met the sphericity assumption, $\chi^2(2) = 2.19$, $P > 0.05$; therefore, the Sphericity test was used in the present study.

Table 1. Mean Quality of Life and Resilience Scores

Statistical components	Groups Measure	ACT	Control
QLQ-C30	Pretest	39.28	47.00
	Posttest	63.98	45.08
	Follow-up	54.71	44.12
QLQ-BR23	Pretest	39.85	38.60
	Posttest	71.13	38.22
	Follow-up	61.15	39.76
Resilience	Pretest	14.25	16.44
	Posttest	72.50	29.25
	Follow-up	67.12	27.12

Table 2. Results of Repeated Measures ANOVA to Evaluate the Effect of Acceptance and Commitment Group Therapy on Quality of Life

Measure	Statistical indicators	Sum of squares	df	Mean Square	F	Sig.	Partial Eta Squared
QLQ-C30	Tests	1046.88	1.47	712.24	9.32	0.003	0.40
	Groups	1013.38	1	1013.38	8.66	0.01	0.38
	Group*test	1727.08	1.47	1157.69	15.39	0.01	0.38
QLQ-BR23	Tests	1920.46	2	960.23	38.65	0.0001	0.86
	Groups	3407.25	1	3407.25	93.13	0.0001	0.86
	Group*test	2006.70	2	1003.35	40.39	0.0001	0.74

Examination of hypotheses

A: Acceptance and commitment group therapy is effective in improving the quality of life of women with breast cancer

Quality of life (QLQ-C30): F = 9.32, partial η^2 = 0.40 (P = 0.003). There was no difference in quality of life scores among the 3 time points in the control group (Table 1). The mean quality of life scores for the intervention group were: pretest = 39.28, posttest = 63.98, and 2-month follow-up = 54.71. The results indicate that quality of life score increased significantly during the trial. The difference between posttest and follow-up scores was not significant (P ≤ 0.01) so it could be concluded that intervention was effective, and the result was retained over time.

Quality of life (QLQ-BR23): F = 38.65, partial η^2 = 0.73 (P ≤ 0.01). The mean quality of life scores for the intervention group were: pretest = 39.85, posttest = 71.13, and 2-month follow-up = 61.15. The results indicate that quality of life score increased significantly during the trial, although the difference between posttest and follow-up scores was not significant (P ≤ 0.01). It could be concluded that intervention was effective, and the result was retained over time. No difference was observed in QLQ-BR23 scores among the 3 time points (Table 1). The assumption of sphericity was violated for the functional

and global health scales of the QLQ-C30 and the symptom scales of the QLQ-BR23; consequently, Huynh-Feldt correction was used in their analysis.

The obtained F values (155.71, 25.72, 7.34, 125.39, and 152.51) were significant for all scales (partial η2: 0.34-0.91, P < 0.01). Therefore, there were significant differences in the scores on scales of quality of life among the 3 time points and also between the intervention and control groups (P < 0.01). The mean QLQ-C30 functional scale scores for the intervention group were: pretest = 29.16, posttest = 81.38, and 2-month follow-up = 71.11; the mean scores on symptom scales were pretest = 75.34, posttest = 19.56, and 2-month follow-up = 26.60; and the mean scores on global health scale were pretest = 37.57, posttest = 67.70, and 2-month follow-up = 51.90. The mean scores on QLQ-BR23 functional scales for the intervention group were: pretest = 32.34, posttest = 60.33, and 2-month follow-up = 66.14; the mean scores on symptom scales were: pretest = 65.27, posttest = 17.22, and 2-month follow-up = 29.16; and the mean scores on quality of life scale were: pretest = 39.85, posttest = 71.13, and 2-month follow-up = 56.15. There was a significant difference between pretest and posttest quality of life scores; however, the difference between posttest and 2-month follow up values was not significant.

Table 3. Results of Repeated Measures ANOVA to Evaluate the Effect of Acceptance and Commitment Group Therapy on Quality of Life Scales

Subscale	Statistical indicators	Sum of squares	df	Mean Square	F	Sig.	Partial Eta Squared
Functional scales (QLQ-C30)	Tests	7879.74	2	3939.78	152.51	0.0001	0.91
	Groups	6422.07	1	6422.07	119.44	0.0001	0.89
	Group*test	4902.00	2	2451.00	94.88	0.0001	0.87
Symptom scales (QLQ-C30)	Tests	8070.22	1.39	5797.22	125.36	0.0001	0.90
	Groups	8516.04	1	8516.04	86.36	0.0001	0.86
	Group*test	6728.76	1.39	4833.58	104.52	0.0001	0.88
Global health scales (QLQ-30)	Tests	2637.15	2	1318.57	7.34	0.03	0.34
	Groups	2134.48	1	2134.48	13.90	0.002	0.34
	Group*test	1154.70	2	577.35	3.21	0.05	0.20
Functional scales (QLQ-BR23)	Tests	2645.69	2	1322.84	25.72	0.0001	0.64
	Groups	1628.48	1	1628.47	18.41	0.0001	0.56
	Group*test	2593.24	2	1296.62	25.21	0.0001	0.64
Symptom scales (QLQ-BR23)	Tests	1005.65	1.07	9325.65	155.71	0.0001	0.91
	Groups	1133.41	1	1333.41	3.62	0.001	0.49
	Group*test	1715.87	1.07	1592.09	26.58	0.0001	0.65

Table 4. Repeated Measures ANOVA to Evaluate the Effect of Acceptance and Commitment Group Therapy on Resilience of Women With Breast Cancer

Source of Changes	Sum of squares	df	Mean Square	F	Sig.	Partial Eta Squared
Tests	12192.40	1.34	9080.49	240.86	0.0001	0.94
Groups	8759.88	1	8759.88	141.50	0.0001	0.91
Group*test	5141.63	1.34	3829.32	101.57	0.0001	0.91

We concluded that the intervention was effective, and the result was preserved over time. The scores for the control group were not significantly different among the 3 time points (Table1).

B: Acceptance and commitment group therapy is effective on the resilience of women with breast cancer

According to Mauchly's Test of Sphericity $[\chi^2(2) = 16.89, P < 0.01]$ variances of differences between all the combinations of the conditions related to the resilience of the studied groups were not equal; therefore, the Huynh-Feldt correction was used.

According to the obtained F = 240.86 and partial $\eta^2 = 0.94$, P < 0.01 (Table 4), there are significant differences among pretest, posttest, and follow-up resilience scores (Table 4). The mean resilience scores for the intervention group were: pretest = 14.25, posttest = 72.50, and 2-month follow up = 67.12. A reduction in posttest and follow-up scores can be seen in the control group (Table 1).

Discussion

The current study investigated the effectiveness of acceptance and commitment group therapy in improving the quality of life and resilience of women with breast cancer. The results indicated that ACT intervention was able to significantly enhance the scores on all scales of QLQ-C30, QLQ-BR23, and CD-RISC, and the effect almost remained stable over the follow-up period.

According to Yalom and Vinograd,[30] most of the breast cancer patients are affected by pessimistic thoughts, hopelessness, despair, loneliness, and fear of death because of suppressing their feelings about their illness. Consequently, their participation in group psychotherapy sessions and dealing with their feelings can lead to a different perspective on the human's life meaning.[30] Also, all aspects of their lives are significantly influenced by the traumatic experience of "losing the breasts," which are the attributes of femininity.[31] Research has shown that reducing depression, anxiety, and other psychological complications caused by cancer and cognitive and emotional acceptance of the disease by the patient have higher effectiveness than standing against the disease.[32] The findings of this research were in agreement with previous researches which all support the efficiency of acceptance and commitment therapy to improve patients' quality of life.[32-38] It could be concluded that ACT improves quality of life by directly focusing on effective life in valuable areas.[21] ACT serves this purpose by exposing the patient to negative thoughts, emotions, and feelings in a controlled manner.[39]

Our results also showed that acceptance and commitment group therapy promotes resilience among breast cancer patients, which is Consistent with previous studies.[40-45] It could be that ACT helps people to play a more significant role in the challenges they face, regain hope, and step forward on the road to a meaningful and genuine life.[46] Also, it can increase self-efficacy and the sense of empowerment, both of which contribute to increased resilience. A feeling of competence and capability is necessary for resiliency, and it is only in this case that an individual can step out of his passive position and start dealing with the challenges and managing his or her life.[26]

A limitation of the present study was that it had only one intervention group, so the effect of ACT was not compared with other interventions. On the other hand, this is the first study in Iran that investigates the effect of acceptance and commitment group therapy on quality of life and resilience among women with breast cancer. There is a hope that the results of this research will encourage the practitioners to give more importance to psychological aspects of the disease, which can result in better and faster treatment of the disease and improvement of patients' quality of life and resilience. Future studies should look into the effectiveness of this therapy in other types of cancers, with both genders.

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