Original Article

Effectiveness of Mindfulness-Based Art Therapy on Healthy Quality of Life in Women with Breast Cancer

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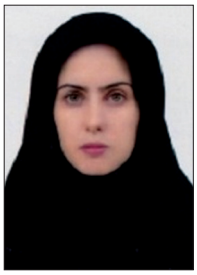

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ABSTRACT

Objective: The purpose of this study was to determine the effectiveness of mindfulness-based art therapy (MBAT) in promoting quality of life in Neyshabur women with breast cancer. **Methods:** This study was an interventional design that was conducted on 124 women with breast cancer (any stage) in Iran 2018. One hundred and fourteen women with breast cancer were paired by age and randomized to either 12-week MBAT intervention group or a wait-list-control group. One hundred and fourteen women with breast cancer completed both the pre-and post-study measurements. As compared to the control group, the MBAT group demonstrated a significant decrease in symptoms of distress and significant improvements in key aspects of the health-related quality of life (as measured by the World Health Organization Quality-of-Life - BREF questionnaire). **Results:** The MBAT interventions had a significant effect on improving quality of life behaviors ($P < 0.05$). Among the dimensions of quality of life, the highest mean score was for subpsychological (18.14 ± 2.35), and the lowest score was achieved by the subdomains of social relationships (13.54 ± 1.12). The mean (standard deviation) scores of physical health and environment were 17.19 ± 3.55 and 16.10 ± 1.87, respectively. **Conclusions:** This investigation of MBAT provides initial encouraging data that support a possible future role for the intervention as a psychosocial option for decrease in symptoms of women with breast cancer and quality of life.

Key words: Art therapy, breast cancer, mindfulness

Introduction

Breast cancer is the most frequent cancer among women, impacting over 1.5 million women each year, and causes the greatest number of cancer-related deaths among women. In 2015, 570,000 women died from breast cancer – that is approximately 15% of all cancer deaths among women.

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While breast cancer rates are higher among women in more developed regions, rates are increasing in nearly every region globally.[1]

Quality of life is important for every human being; however, this importance grows with the occurrence of disease, addiction, and close end-to-life.[2] Although the concept of quality of life is often used, it is hard to define it. It depends on the subjective understanding of health and disease, it is multidimensional, and in accordance with the definition given by the World Health Organization (WHO), it consists of physical, mental and social health, cognitive and sexual functions, working ability, and lifelong pleasure.[3]

The use of psychological therapies is very important. One of the innovations in the psychological therapies particularly treatment of cancer is the combination of eastern intellectual traditions such as mindfulness meditation to the traditional cognitive behavior therapy which is referred to as third wave of behavior therapy[4] and is used to prevent distress and depression.[5] The researchers believe that applying of observational thought style due to mechanisms hidden therein such as acceptance, increase in consciousness, desensitization, presence at moment, observation without judge, confronting and releasing in combination with the techniques of traditional cognitive behavior therapy may reduce subsequent symptoms and consequences, moreover increases the effectiveness of treatment and helps welfare of people.[6]

Mental mindfulness-based art therapy (MBAT) is one of the interventions and therapies recently proposed for cancer patients by integrating an intervention MBAT approach with a formulation of emotional support groups. Research evidence suggests the effectiveness of this method in reducing the number of disorders, irregularities, and improving the style of life of women with various types of cancer.[7] Art therapy combines the creative process and psychotherapy, facilitating self-exploration, and understanding. Using imagery, color and shape as part of this creative therapeutic process, thoughts and feelings can be expressed that would otherwise be difficult to articulate. The main difference between MBAT approach and the reduction of mental-based stress-based intervention is the awareness that it is based on the teaching of nonverbal components such as creative expression of emotions and physical emotions in patients.[8] The effectiveness of art therapy in the treatment of psychopathy disorders was proved.[9,10] It seems that a group-based mental-based art-based approach to awareness of power has greater effectiveness in the field of treatment and intervention in mental-psychiatric disorders, and this means merging the two methods before, the strength of this new method of treatment is strong. According to the results of the studies, one of the most recent unpredictable interventions in recent years in the treatment of chronic medical conditions such as cancer and chronic pain is group therapy based on mind-consciousness art therapy, which is rooted in the theory of gabazine.[11] This method is the result of the theoretical and therapeutic studies of gabazine[12,13] whose effectiveness has been confirmed by Monti *et al*.[8] in women with cancer. However, so far, no study has been done about the use of mind-focused art therapy to improve quality of life and reduce the stress of women with breast cancer. The purpose of this study was to determine the effectiveness of MBAT in promoting quality of life in women with breast cancer visiting Razavi Hospital of Mashhad city.

Methods

This study is semi-experimental which has been applied as pretest-posttest and control group. At first, women with breast cancer (any stage) with a range of ages ranging from 40 to 60 years, married, homemakers were invited through research invitations to attend this therapeutic research period. By written consent, they were randomly assigned into two groups of 50 test and control and responded to the research tools. To conduct this research, the interventional group once a week, using a protocol of 90 min, underwent a mind-focused art therapy.

Ethical approval

The study was conducted in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of Neyshabur University of Medical Sciences. Informed written consent was obtained from all participants prior to their enrollment in this study.

Instruments

WHO Quality-of-Life (WHOQOL)-BREF questionnaire is directed toward attaining positive outcomes and result in a positive health experience throughout the life span. Examples of these behaviors are physical health, psychological, social relationships, and environment.

This questionnaire comprised 24 items. Physical health (7 items), psychological (6 items), social relationships (3 items), and environment (8 items). The reliability of the questionnaire was 0.97. Cronbach's alpha coefficient was calculated as 0.94, and its validity has already been confirmed.

Intervention

Participants were assigned to either the MBAT group or the control group. The educational needs of the groups were determined. Each group met for 90 min once weekly, for 12 weeks and 12 sessions. One month was set aside for completion of the survey (pre-intervention and post-intervention). The curriculum focused art therapy in Monti *et al*.[14]

The group art therapy component of the intervention focused on nonverbal activities (i.e., the making of directed and spontaneous art productions) that were interwoven with the verbal processes within the group. Specific art tasks were directed to explore present moment experience and learning related to the experiential and cognitive elements of the mindfulness-based curriculum.

Therapy sessions, as follows: First session: introduction to art making. "Draw a complete picture of yourself" self-picture assessment (SPA) task. Second session: mindful exploration of art materials (colored pencil, marker, pastel, watercolor crayon, and paint). Awareness of sensory stimulus and response. Body scan meditation, attitudinal foundations of mindfulness. Anchoring attention with the breath. Session 3: exploring the mind-body relationship: pre–post assessment of mind/body relationship before and after gentle yoga. Fourth session: creative problem-solving/imaging self-care. Transforming mental, emotional and physical pain; introducing self-care imagery into the picture. Session five: exploring meditation practice experience: art productions, using collage element, serve as the basis for increasing skills with mindfulness practice in the realm of thoughts and feelings. Session six: stressful and pleasant event pictures as introduction to the physiology of stress including stressful communication/non-reactive communication skills. Session seven: Open studio: free-art making. Session eight: Guided imagery to a place of healing. Session nine: drawing a complete and healthy picture of yourself based on this visualization of health; care of mind consciousness, focusing on your complete and healthy image. Session ten: SPA task. Sessions eleven and twelve: Group discussion and sharing of member experiences and summaries on the content of all sessions.

Statistical analysis

After collecting data, the questionnaires were encoded, and data entered into the computer, and the analysis was carried out using SPSS version 22 software (IBM SPSS Statistics for Windows, Armonk, NY: IBM Corp. Released 2013), Spearman's correlation coefficient tests, and linear regression analysis. Descriptive statistics including mean and deviation frequency were used to describe demographic information of research samples. Independent samples *t*-test, Mann–Whitney U-test, and Chi-square test were used for the homogeneous test. The correlation coefficient of Pearson and Spearman and linear regression were used to determine the correlation between TPB variables and to determine the predictive power TPB variables, respectively. The level of significance of $P< 0.05$ was considered for all tests.

Table 1: Mean age, age of cancer in mindfulness-based art therapy, and control groups before intervention

Variables	Mean±SD		Independent-samples *t*-test
	MBAT	Control	
Age (years)	55.75±3.53	55.35±3.35	$t=-0.352$ $P=0.802$ df=104
Age of cancer (years)	52.15±1.56	52.18±1.47	$t=-0.04$ $P=0.784$ df=104

MBAT: Mindfulness-based art therapy, SD: Standard deviation

Results

The age group was 55.75 ± 3.53 in the MBAT group and 55.35 ± 3.35 in the control group [Table 1]. The majority of MBAT and control group has university (69.5%) and high school (29.5%) degree, respectively, and the education level of husband in MBAT and control group has been high school degree (50.0%) and university degree (40.0%), respectively. The job of majority of research units in both groups was homemakers (75.0%). The husband's job in MBAT and control group was freelance (62.5%). The income of the majority of research units (95.0%) was enough. The majority of research units (75.3%), regarding housing status, had their personal home. In the present study, the hypothesis of naturalness in dimensions of the quality of life score in both the MBAT and control groups was investigated by the independent-samples *t*-test, and the results indicated that this hypothesis was established. Based on the results, both hypotheses were validated.

Table 2 shows that the average rates of physical health, psychological, social relationships, environment in MBAT group were increased significantly ($P < 0.05$); these changes were not significant in the control group [Table 2].

Discussion

Consistent with the first primary aim of the study, participants who received the 12 weeks' MBAT intervention demonstrated statistically significantly greater decreases in symptoms of distress as compared to participants in the wait-list-control, as measured by the WHOQOL-BREF stress management subscales. In addition, others subscales were significantly improved in the intervention group.

The MBAT intervention group demonstrated statistically significant improvement of the WHOQOL-BREF scores and subscales. Significance was not demonstrated for the physical composite summary scale, although it was for the mental composite summary scale. High statistical significance was demonstrated on the physical health, psychological, social relationships, and environment.

Overall, the results of the study provide preliminary support for the hypotheses that the MBAT intervention can help decrease distress levels and improve quality of life.

Table 2: The comparison among the average of studied variables in group of mindfulness-based art therapy and control, before and after intervention (Mean±SD)

Variables	Groups						Test independent-samples *t*-test
	MBAT			Control			
	Before	After	*P*	Before	After	*P*	
Physical health	14.25±2.92	17.19±3.55	0.001	11.47±3.19	11.72±3.08	0.09	*P*=0.002 *t*=3.10
Psychological	15.32±5.92	18.14±2.35	0.002	21.70±6.46	21.80±15.98	0.62	*P*=0.012 *t*=2.17
Social relationships	12.02±11.77	13.54±1.12	0.002	19.12±9.35	18.97±8.84	0.93	*P*=0.024 *t*=2.06
Environment	14.05±2.42	16.10±1.87	0.009	13.15±2.44	14.17±2.17	0.26	*P*=0.013 *t*=2.03

MBAT: Mindfulness-based art therapy

Results of this study are consistent with those of other mindfulness studies of groups and cancer patients,[15] although we note that this is the first randomized, controlled mindfulness-based study reporting significant outcomes for women with breast cancer In addition, the results indicate a possible advantage over standard support, when comparing WHOQOL-BREF results of a recent study by Helgeson *et al*.[16] Clearly, further testing is required to assess whether the synergy of the proven techniques incorporated in the MBAT protocol provides an advantage for women with breast cancer over any one of these techniques alone.

It is noteworthy that two of the three endpoints we chose for the study did not demonstrate the greatest therapeutic effect as compared to other measured endpoints. For example, changes in the stress management subscale of the WHOQOL-BREF were significant. Certainly, the most sensitive indicator of change on the WHOQOL-BREF for this study group was the GSI, which is considered to be the best single indicator of current level of emotional distress.[17] Likewise, we predicted that style of life improvements would best be reflected in the physical composite summary scale of the WHOQOL-BREF.

The results revealed statistically significant improvements on four of eight WHOQOL-BREF subscales and to a lesser degree on the mental composite summary scale. Statistical significance was not demonstrated on the physical composite summary score as hypothesized. However, there were improvements, ≥5 points, on three of the four subscales of the prostate cancer subscale, which is indicative of clinically or socially relevant change. One possible explanation is that symptoms that comprise the physical composite score, such as bodily pain and physical functioning, were not significantly moderated by the intervention. This would be surprising for the pain aspect, given that relaxation is part of the intervention. Other possible explanations are that the study period was not sufficient for newly acquired skills to affect those variables or that the receipt of active treatment (radiation, chemotherapy, etc.) for their cancer diagnosis by the majority of participants inhibited a response. It was not surprising that the mental health subscale was highly significant, since, like the WHOQOL-BREF, it is an indicator of psychological distress.

The high statistical significance on the general health subscale of the WHOQOL-BREF, an indicator of perception of wellness or illness, may reflect the intervention is success at helping women with breast cancer focus on a life perspective. In the MBAT intervention, participants receive support to develop tools for observing and assessing their experiences. MBAT is intended to facilitate a sense of control in participants through knowledge that they have the choice to hold their illness experience as is or alter their relationship to particular aspects and events.

In the MBAT model, this goal is accomplished by learning self-awareness through directed observation (mindfulness practices) and creative expression of internal thoughts and emotions (art therapy) and by enhancing self-acceptance through verbal and nonverbal bonding and social support (group therapy).

The high statistical significance on the vitality subscale of the WHOQOL-BREF was of interest given that there was also a significant improvement on the sleep items embedded in the "additional items" dimension of the WHOQOL-BREF. Together, these data strongly suggest that women in the experimental intervention felt more rested, and perhaps, less fatigued. This is noteworthy because fatigue is a well-documented problem among women with breast cancer,[18] and it negatively affects style of life by limiting participation in activities of daily living.[19] Other parameters of fatigue might be explored in future studies. There were several limitations to the study. First, this was a pilot study that had an inactive control group (wait list). Since MBAT is a multimodal intervention, the control group for the next level of investigation should be an active component of the MBAT intervention, such as a support group without the other components. This also would control for contact time with study personnel.

The postintervention WHOQOL-BREF data are encouraging, but not sufficient to predict long-term effects of the intervention. The results of the study cannot be generalized to all women with breast cancer. In summary, this randomized, controlled investigation of MBAT provides encouraging initial data regarding the intervention is potential for reducing symptoms of distress and improving key aspects of style of life in women with breast cancer. Currently, there are few randomized, controlled, clinical trials on standardized alternatives to the usual supportive-expressive women with breast cancer group model. Although there are some study limitations, the results provide support for further investigation of this novel intervention.

Conclusion

According to the findings of this research and similar studies, it is suggested to the prenatal healthcare providers that along with the use of strategies for promoting physical health, the mental esthetic program should be considered as one of the undesirable beneficial interactions with the aim of increasing the mental health of this women are benefited; therefore, knowledge-based art therapy is effective as a new method, which improve the quality of life women with breast cancer. Therefore, widespread use of this method in such populations is suggested.

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Conflicts of interest

There are no conflicts of interest.

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