

## Original research

**Comparing the Efficacy of Mindfulness Training & Self-Care Training on Sexual Satisfaction in Women with Breast cancer****Moghqan Alishiri,<sup>1</sup> Biuok Tajeri,<sup>\*2</sup> Vahid Kaveh,<sup>3</sup> Hasan Ahadi<sup>4</sup>****Abstract**

**Introduction:** Sexual satisfaction is defined as a personal satisfying feeling in which a person generally has a positive and pleasant evaluation of their sexual relationship. This study aims to compare the efficacy of mindfulness training & self-care training on sexual satisfaction in women with breast cancer.

**Research Method:** The Research method employed a quasi-experimental design with a pre-test, post-test, and a two-month follow-up, including a control group. The statistical population of this research included all patients aged 30-50 with breast cancer who were referred to Firouzgar Hospital in Tehran for treatment. They were diagnosed with breast cancer. The sampling method was Convenience Sampling. Forty-five available patients were selected (fifteen in each experimental group) and were assigned randomly to either experimental group 1 (mindfulness training) or experimental group 2 (self-care training). Fifteen other patients were placed in the control group and did not receive any training. The sexual satisfaction Inventory was administered pre-test, post-test, and follow-up. The training packages were the mindfulness training package and the self-care training package. Both trainings were applied to experimental groups (ninety minutes each session) weekly, and the control group did not receive any training. The data was analyzed using the statistical test of mixed analysis of variance and SPSS software version 26.

**Findings:** Results showed that both mindfulness training & self-care training had the same effect on increasing sexual satisfaction ( $p < 0.001$ ). Three-month follow-up confirmed these results. Using mindfulness and self-care training (mindfulness) can increase sexual satisfaction in women with breast cancer.

**Conclusion:** The results emphasize the importance of the use of these interventions in sexual satisfaction and mental health of women with breast cancer and provide a new horizon in the clinical interventions of patients.

**Keywords:** Mindfulness, Self-Care, sexual Satisfaction, Women with Breast Cancer

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### **Introduction:**

Breast cancer is the third most common cancer in the world and the most common cancer in women. This disease includes about one-third of all women's cancers and is the main cause of death in women aged 40 to 70 (1). Breast cancer may be caused by several factors, such as age, gender, race, previous benign disease in the breast, previous cancer history in the person, early age, late menopause, and early pregnancy. Emotionally and psychologically, it is the most influential and important health concern among women (2). Sexual self-esteem plays an important role in people's ability to maintain a close relationship with their partner and enjoy sex with them. It is also one of the most important factors that affects women's sexual satisfaction and their sexual anxiety (3).

Sexual satisfaction is one of the variables that play a vital role in creating and maintaining a happy marital relationship. Lack of sexual satisfaction leads to the instability of the couple's relationship and marital infidelity and increases the probability of divorce. It seems that people's knowledge about issues related to sexual activity plays an important role in sexual satisfaction (4). Sexual satisfaction is defined as a personal satisfying feeling in which a person considers his and his partner's sexual needs and expectations to be fulfilled and generally has a positive and pleasant evaluation of his sexual relationship (5). The lack of correct information and insufficient education about sexual activity, followed by the inappropriateness of the communication process, false sexual beliefs, and anxiety about sexual performance, play a role in the occurrence and continuation of sexual disorders (6). Since one of the most important factors of sexual dissatisfaction is the lack of information and knowledge, increasing the knowledge and information of patients and the resulting complications is doubly important, one of the most basic components of cancer treatment, awareness, education, and recognition of patients' psychological problems. (7) and one of the topics that increases the mental health of patients is providing educational programs, and also how to provide educational programs to patients. Patient education is an important matter whose valuable and beneficial effects have been proven many times in various research. Despite the many benefits of patient education for its small cost, this important matter has been ignored or neglected in health and treatment centers. The results of Esmaili's study showed that patient education in Iran is not in a favorable condition, so that the patient education program is either not implemented or is implemented very incompletely. Appropriate self-care behaviors improve abilities, perform better daily activities, and achieve independence in the patient, and in this way, he becomes more capable in performing social functions and more hopeful for life, and ultimately enjoys a better quality of life. (8). Self-care is an effective factor in reducing the rate of re-hospitalization, treatment cost, and mortality of patients, so that self-care in patients has reduced the direct cost of 6-month treatment and increased the 5-year survival of patients by 50% (9).

Self-care is a multidimensional structure that includes lifestyle management, increasing self-efficacy, emotional regulation, treatment of minor ailments, management of long-term chronic diseases, and care after discharge from the hospital. These patients need to follow medication orders and use a low-sodium diet, exercise Physical activity and follow preventive behaviors and monitoring one's performance in terms of symptoms and signs are another important part of self-care. Raising patients' awareness of key body signs, interpreting physical changes, taking appropriate measures, starting treatment, and receiving help in critical cases are some of the

appropriate strategies to deal with and adapt to chronic patients. Recognizing, interpreting, and implementing appropriate interventions based on clinical symptoms will be possible with frequent practice and periodic monitoring by the health team (7). By teaching self-care to the patient, the understanding and awareness of hospitalized patients increases regarding the concept of quality of health care, and as a result, they become more familiar with the value of health services. Coronary artery patients who had sufficient self-care had better control of their emotions than patients who had insufficient self-care, and the level of quality of life related to their health is higher (10, 16). Also, mindfulness training is an important approach in the treatment of these types of patients. Mindfulness is a set of techniques designed to encourage intentional and non-judgmental contact with events that occur here and now. Moment-to-moment awareness is free of judgment (11). In their research, the researchers reached the conclusion that mindfulness intervention reduces the symptoms of health anxiety and mental stress by changing psychological flexibility and conscious attention to the present (12). Also, mindfulness can be effective in reducing stress, increasing the quality of life, and improving the quality of sleep (13). Mindfulness reduces psychological distress and improves mental, physical, emotional, and spiritual well-being, and reduces physical symptoms. It can be said that the patients' repeated use of different techniques during the treatment sessions has improved their stress and their sexual satisfaction (11).

Considering the increase in the prevalence of cancer and the importance of the impact of this disease on all aspects of the lives of people with cancer and considering that in our society, the concept of self-esteem and sexual satisfaction and related factors in breast cancer patients have been less discussed and In some cases, it has not been "paid" at all. Since mindfulness training and self-care are two educational approaches, each of them explains and describes the psychological issues and problems of patients in the field of cognition, emotion, behavior, and communication in a different way. Provide unique strategies to solve them, based on the review and review of sources by the researcher, studies that compare mindfulness training and self-care, so that both approaches are done with a complete protocol have been very limited. Considering that in self-care education, the emphasis is on the cognitive dimension of education and in mindfulness education, the emotional dimension is emphasized, and no research was found to compare these two treatment approaches in this field, and since cancer surgery makes the sexual satisfaction of these patients negative and the satisfaction Gender is very important in their recovery and quality of life, to reveal the more precise effectiveness of these treatment approaches, as well as the difference in the theoretical approach of both types of intervention and to compare the effectiveness of each of these two approaches the present study aims to compare The effectiveness of mindfulness and self-care training on sexual satisfaction of women with breast cancer done.

### **Research Method:**

The present study was a quasi-experimental type of pre-test-post-test with a control group with follow-up. The statistical population of this research included all breast cancer patients aged 30-50 years who were diagnosed with breast cancer and referred to Firouzgar Hospital in Tehran in 1400 for treatment. The research sample was available and included 45 people (15 people for each group, that is, 15 people in the experimental group 1, 15 people in the experimental group

2, and 15 people in the control group). The criteria for entering the present study include: 1- not using psychoactive drugs, narcotics and psychological treatments during the study, 2- being over 30 years old, 3- not suffering from acute or chronic mental disorders (based on the interview of the hospital psychologist and patient's file) and 4-Expressing consent for the participation of the subjects and exclusion criteria for the experimental group including: 1-Not attending the experimental and intervention sessions for more than two sessions, 2-Reluctance to continue attending the experimental and intervention sessions and 3- Suffering from a severe psychiatric disorder (with the clinical interview of the researcher and referring to the patient's file) that requires immediate treatment.

The method of conducting the research was that after selecting the sample, the experimental groups were first informed about the intervention, and they were asked to be actively present in all the sessions, then the questionnaire was given to the participants as a pre-test. And the people of the control group were also asked to answer the questionnaire. The intervention sessions started in the clinic. For group implementation of oral awareness and self-care training, a 45-minute explanatory session was held separately for the members of the experimental groups before the beginning of the treatment sessions, and the general principles, rules, and goals of the poll were discussed in general. After the pre-test, the therapy sessions were implemented within two months. After the completion of the intervention sessions, the questionnaire was given to the people again, and the people of the control group were contacted and invited to return to the center within the next week to answer the questionnaire. Finally, two months after the implementation of the post-test, in order to carry out the follow-up phase, all the above items were implemented again. In order to analyze the data and to compare the results of the three experimental and control groups while respecting the research assumptions, mixed analysis of variance and Bonferroni test were used through SPSS software version 26. The research tools were:

Larson's sexual satisfaction questionnaire: a pre-made standard questionnaire called ISS that Larson used to measure the sexual satisfaction of couples in his research. In the aforementioned research, the scientific validity of the ISS questionnaire was confirmed by Harrison and Hudson, and its scientific reliability was also confirmed by retesting in the same research. This questionnaire had 25 questions, in which 5 options were included in the answer of each question: never, rarely, sometimes, most of the time, and always, and according to the option, each question is given a score of 1 to 5, as in questions 1, 2, 3, 10, 12, 13, 16, 17, 19, 21, 22, 23 option never got a score of 1, rarely 2, sometimes 3, most of the time 4, always got a score of 5, while in the rest of the questions, the always option He had received score 1, most of the time score 2, and sometimes 3, rarely 4, and never 5. In this questionnaire, a score less than 50 indicates no sexual satisfaction, between 51 and 75 indicates low sexual satisfaction, between 76 and 100 indicates moderate sexual satisfaction, and more than 101 indicates high sexual satisfaction. In this questionnaire, the retest method was used to determine the stability and reliability of the instrument. The reliability of the questionnaire was measured using statistical tests, and according to the degree of correlation of 98%, its reliability has been confirmed. In Iran, Bahrami et al. (2015) evaluated the reliability of this questionnaire in infertile couples as more than 0.70, and the face validity and content validity of this questionnaire as well (14). In this research, the Cronbach's alpha of the questionnaire was equal to 0.80.

**Table 1.** Summary of mindfulness training sessions (15)

session	Educational content
1	Introduction, getting to know cancer, breast cancer management, emotional side effects, body scan meditation
2	Obstacles (such as restlessness and mind wandering) and solutions of the mindfulness program and sitting meditation
3	seeing and hearing exercises, breathing space exercises
4	sitting meditation with attention to breathing, four-dimensional sitting meditation
5	The second series of movements of the conscious mind of the body
6	Practice familiarization with the title "Creation, thought, separate views."
7	Four-dimensional meditation and awareness of the relation to consciousness in the moment
8	Four-dimensional meditation and review of all implemented techniques, and summation of the treatment period

**Table 2.** Summary of self-care training sessions (16)

session	Educational content
1	A brief explanation about the goals of the intervention and the benefits of self-care that were on the agenda of the intervention. Talking about their previous visits to medical centers, the reasons, and their treatment. Communicating professionally with teenagers.
2	Describing the program and testing the self-care model
3	Providing the necessary information related to the sexual satisfaction of patients, through sessions using educational tools and reviewing information by asking questions to the participants.
4	Applying motivational techniques such as answering questions and reflective listening, reflecting and confirming desirable and attainable behaviors, summarizing and providing feedback, negotiating realistic and achievable goals, and separating educational materials and behavioral skills presented.
5	Teaching the necessary behavioral skills for the implementation of treatment recommendations through sessions with the use of educational tools and reviewing the skills provided by asking questions to the participants.
6	Asking several questions to measure what has been learned, answering the vague and desired points of the subjects, thanking and requesting to participate in the next meeting, and completing the assigned task.
7	Review of the presented materials, evaluation of subjects, thanks, and appreciation

8	A brief explanation about the goals of implementing the intervention and the benefits of self-care were on the agenda of the intervention. Talking with patients about their previous visits to medical centers, the reasons, and their treatment. Communicating professionally with teenagers.
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**Findings:**

The average age of the participants in this research sample is 43, and its standard deviation is 11.07. The range of age changes was from 30 to 40 years. There were 17 people, equivalent to 37% of diploma and sub-diploma level participants, 19 people, equivalent to 42% bachelor's degree, 6 people, equivalent to 13% master's degree, and 3 people, equivalent to 6% of the subjects were at the doctoral level. The results of the Shapiro-Wilk test showed that for the variable of sexual satisfaction in all three groups, which is greater than 0.05, the data of the groups are normal and parametric tests can be used. According to Levin's test, the F value was equal to 0.585, the variances of the three groups were equal and consistent. Therefore, the assumption of homogeneity of variances was fulfilled for this variable. Also, in the test of the homogeneity of the regression slopes, the F value equal to 1.302 was obtained, and because the significant level of interaction between the three groups was greater than  $p < 0.01$ , the assumption of the homogeneity of the regression slopes was confirmed. After the investigation, because the normality of the distribution and the assumptions of homogeneity of variance and the assumption of equality of error variances and homogeneity of linear slopes were not questioned, the researcher is allowed to use analysis of variance.

**Table 4.** The results of a mixed analysis of variance to investigate the effect of group and measurement time on sexual satisfaction scores

Changes Source	SS	DF	MS	F	Significance	Eta	Power
<b>group</b>	۶۲۳۶/۰۲	2	۲۶۵۲/۱۶	۱۳/۵۲	0.001	۰/۳۷	۰/۷۴
<b>error</b>	۱۹۲۷۵/۷۲	42	۳۷۲۸/۰۳				
<b>Within subjects</b>							
<b>Time</b>	۵۸۳۹/۷۳	2	۲۹۱۷/۷۲	۴۳/۲۴	0.001	۰/۴۸	1
<b>Time and group</b>	۱۵۲۸۳/۷۲	4	۳۲۷۱/۰۳	۲۹/۰۳	0.001	۰/۳۶	1
<b>error</b>	۴۰۲۶/۸۳	39	۷۵/۱۶	۱۳/۵۲	0.001		

In order to investigate the effect of group factor and time factor on sexual satisfaction scores, a mixed analysis of variance test was implemented. In this regard, both mindfulness training and self-care training have a significant effect on increasing sexual satisfaction scores in the post-test. Therefore, according to the findings of the above table, the effect of two methods of mindfulness training and self-care training on sexual satisfaction scores in the post-test is significant ( $F(2, 42) = 16.53, P < 0.001$ ). Also, the effect of the time factor on sexual satisfaction scores in the follow-up phase was significant ( $F(2, 39) = 24.44, P < 0.001$ ). Therefore, it can be concluded that there is a difference between the sexual



satisfaction scores in the three stages of pre-test, post-test, and follow-up, regardless of the group. Also, the interaction effect between group and time was significant ( $32.55, F(2, 39) = 32.55, P < 0.001$ ). Therefore, it can be concluded that the effect of the group is different according to the different measurement time levels. Was.

Also, considering the eta square of 0.33, it can be concluded that 0.33 of the total changes were caused by the experimental procedure. So, education affects sexual satisfaction. Further, in order to investigate the interaction between the group and the measurement time on the sexual satisfaction scores by keeping the time factor constant, the average sexual satisfaction of the groups in each of the measurement stages was compared using Bonferroni's follow-up test. As can be seen in the above table, the difference between the averages of both experimental groups is negative and significant compared to the control group, so regarding the hypotheses related to the effectiveness of these two trainings in increasing the sexual satisfaction of women with breast cancer, the null hypothesis is rejected and the alternative hypothesis The researcher is confirmed. This means that both experimental approaches (mindfulness training and self-care training) have been effective in increasing the sexual satisfaction of women with breast cancer. In comparing the effectiveness of the two experimental groups to each other, the difference in the averages is significant at the 99% confidence level, so the hypothesis of the difference in the effectiveness of the two educational methods to each other is also confirmed.

Considering the positive average differences and the fact that the average of the mindfulness training group was higher than the self-care training group, therefore, among the methods of mindfulness training and self-care training, the mindfulness training method was more effective in increasing the sexual satisfaction of women with breast cancer.

### **Discussion and Conclusion:**

The current study was conducted to compare the effectiveness of mindfulness and self-care training on sexual satisfaction in women with breast cancer, and the results showed that with both methods of training, compared to the control group, the sexual satisfaction scores of the participants increased and the mind training method Awareness was more effective in increasing the sexual satisfaction of patients. Also, a similar finding that showed the effectiveness of these two types of training with regard to the interaction of the two factors of group and time was rarely found in Iran. (5) Aktash et al. (2023), Carney et al. (2022), Park et al. (2021) and Esfandiari et al. (2019) 18, 19 and 20) are aligned. Satisfaction with married life is created, strengthened, and stabilized in the process of living together. Although in some couples, this process suffers from damage from the very beginning, which sometimes causes serious problems or delays in its stabilization. One of the determining components in the process of life satisfaction for couples is satisfaction with sexual relations, which is even mentioned as one of the main signs of life satisfaction for couples (5). One of the most important influencing factors in people's satisfaction with sexual relations is their physical and sexual attraction for each other; So, the more the couple's physical and sexual attraction for each other, the more satisfied they will be with sexual relations. This satisfaction from sexual relations, along with other influential psychological and emotional components, naturally leads to life satisfaction for people. Cancer disease has many consequences

on patients that can affect the quality of their sexual relations. The quality of sexual relations is influenced by sexual performance and sexual satisfaction. Sexual dysfunction occurs in sufferers in the form of weakening of sexual function and decreased sexual satisfaction. Therefore, the sexual satisfaction of people has a psychological background and is influenced by sexual performance and has an impact on it (3).

Patients who have better feelings about marital relationships have stronger beliefs in their ability to cope with the disease and cure it. Although some studies have suggested its role in the adjustment of breast cancer patients, it has generally been shown that those who place a greater value on their appearance are more vulnerable to adjustment when their appearance changes as a result of cancer treatment. Slow (19) Examining the sexual performance of Iranian women with breast cancer shows that they have sexual dysfunction and face problems such as decreased sexual satisfaction and increased sexual pain, which can lead to a decrease in their quality of life. Considering the impact of breast cancer and its treatments on the self-concept and sexual satisfaction of these survivors, supporting and listening to each of these women to acknowledge their fears about facing their different bodies is beneficial to their mental health, and it helps to reduce their sadness (4).

General health has different components in different people. The most important of these matters is physical, mental, and social health. It is known that the physical health of women with breast cancer is damaged due to this disease. In explaining the significant difference in sexual satisfaction between women with cancer and normal women, it should be stated that women who get breast cancer also suffer physical injuries. Especially in women with breast cancer who drain their breasts, these injuries are more severe, because these people lose a part of their body, which is also considered a sexual organ. This causes them to gradually become sensitive to the loss of their organs. This syndrome of paying attention to body deficiency distorts their sexual satisfaction, which ultimately leads to the difference between the sexual satisfaction of these people and normal people. Self-care training can improve people's cognitive ability, as well as deal with problematic emotional conditions, and sexual satisfaction can be effective (16). By providing training to face these problems, it is possible to strengthen the patient's coping power and prevent the progression or recurrence of their problems. Today, psychological interventions in cancer patients are known as an essential part of a comprehensive cancer rehabilitation program and are based on different approaches. With self-care training, patients are provided with an opportunity to become aware of feelings and behaviors that they were not aware of before. This person gains a new insight into their current situation and becomes more aware of their feelings and actions, which in turn is part of the treatment. In this process, by creating hope and expectation of recovery as an important part of education, coping skills are improved, and finally, behavioral changes in the individual become possible, and a ground for improvement is provided by adjusting his responses (10).

In the case of self-care, education can be very effective in reducing the stress and depression of patients and providing them with more favorable living conditions in terms of well-being. To maintain and improve health, correcting and improving lifestyle is essential. Improving health and ensuring people's health is one of the important pillars of society's progress. The community health system, which used to focus on disease treatment, now focuses on prevention and ensuring health



through improving self-care and eliminating factors that have a negative impact on human health. The use of positive behavioral patterns in life is effective in improving individual sexual health. A person is responsible for choosing lifestyle behavior patterns and maintaining their health, and with this action, they try to maintain and improve their health and prevent diseases. Humans are born healthy except in special cases. When a person has the necessary knowledge in the field of various diseases and how to prevent and properly treat them, they will take care of themselves more against diseases and behaviors that endanger their health. Self-care means empowering people to maintain health and perform self-care activities. In other words, it includes doing the correct behaviors in life. In such a way that a person is careful not to get sick, and in case of getting sick, he can prevent the complications of the disease by taking timely and correct measures, so that he can recover faster. Self-care is often referred to as the activities before contracting the disease, but in many cases, it can be effective in reducing the complications of the disease, reducing treatment costs, and faster recovery. There is a mutual and direct relationship between the health or illness of the physical and mental dimensions of a person; the illness of each causes another disorder. Maintaining health requires continuous education and learning (7). In the field of chronic diseases, due to the restiveness and the length of the period of maintenance and treatment of patients, up-to-date and appropriate training should be continued. As seen in the results of this study, appropriate and timely education of lifestyle and self-care was able to help patients in the direction of sexual satisfaction, and the desired goal was achieved.

In the process of breast cancer, the general attention and treatments have been focused on the physical recovery of these patients. Physical diseases also cause psychological damage. As after the treatment or control of the physical aspect of the disease, its psychological damage maintains its effects for a long time; Therefore, it is necessary for the planners of treatment centers for this disease to pay enough attention to the psychological problems of these patients and to help the psychological treatment of these people by employing experts in this field. Also, teaching mindfulness by creating kindness towards oneself (in contrast to self-judgment) causes people to treat their bodies with kindness instead of judging them. Mindfulness of one's emotions helps people see their bodies in a more balanced way without exaggerated perceptions. It helps people to see a bigger picture with a more open view. Mindfulness requires accepting the fact that suffering, failure, and inadequacy are part of the human condition and that all human beings, including the individual himself, deserve kindness and compassion. This issue shows the warmth and acceptance of aspects of oneself, one's life that can even be unpleasant. Therefore, having a wise mind causes emotional flexibility and, as a new response to suffering and discomfort, it helped the participants in the experimental group to understand themselves, along with accepting limitations, and had a positive effect on their sexual satisfaction (20).

Also, regarding mindfulness, it should be kept in mind that it moderates negative emotions and helps to change people by creating care, new attention to oneself, and suggesting compassionate internal processes. In the discussion of illness, the way people see themselves under threat has a profound effect on their well-being and sense of self (11). In fact, in this disease, self-criticism is very common, and in self-criticism, people constantly attack themselves and embarrass themselves. At the same time, people are oblivious to the extent of the effect of self-criticism,

while self-criticism increases pain and intensity. It becomes distressing. Therefore, by creating acceptance, self-kindness, and psychological healing in breast cancer sufferers, this training reduces distress, pain, and shame about appearance changes. These changes can help to improve the quality of life, and due to the role of education in reducing perceived stress and eliminating self-criticism, the effect will be more evident in the physical and mental areas. In other words, it helps people to have a greater sense of belonging and security and to distance themselves from their critical and judgmental mind by learning mindfulness and being in the present moment, which leads to sexual satisfaction and a better quality of life (6).

Mindfulness treatments are focused on more excitement, so it seems that the treatment can reverse the cycle of negative evaluation, fear of the situation, and avoidance of the situation that is common in psychological problems and lead to treatment. On the other hand, by using exercises and techniques, it seeks to improve the self-worth and self-esteem of people so that they can overcome various problems and issues, such as breast surgery, and, on the other hand, general strategies to increase mindfulness towards distress. They are used emotionally and therefore lead to the reduction of suffering related to emotional pain and the increase of psychological coping skills in dealing with emotional, chronic, or delayed pain (12). People with low sexual satisfaction describe distress as an unbearable construct and cannot manage it. They have a negative view of emotions and do not accept their existence. Therefore, they underestimate their ability to deal with them. Therefore, when a person's coping methods fail, he feels that the only way is to escape from unbearable suffering. This attempt to escape, self-loathing evaluations, and the psychological point of view, combined with the person's despair, which considers the solution of problems unlikely and far from reach, are among the factors that lead to distress (21).

It can be said that people usually respond to unpleasant experiences and painful events through avoidance efforts or extreme control. In such a situation, the mind tells us that we should control the situation better and should not have unpleasant thoughts and feelings. If this type of attitude is harsh, critical, and displeasing, it conflicts with health. Such training allows people to first change relationships with inner experiences, reduce experiential avoidance, and increase flexibility and adaptability, and then teaches people to increase action in valuable paths. Finally, the improvement that sexual satisfaction can take place in the form of learning and having mental awareness improves this (22). Mindfulness treatment deepens with practice and works in a condensed form with more practice. This situation is true for people who use continuous mindfulness exercises. That is, there is a mutual correlation between these two, so that the experience of mindfulness, due to more use, gradually exceeds the initial state and leads to influence in the daily life of a person, and as a progressive growth of awareness and an increase in the spontaneity of the experience. Mindfulness is awareness, so that its level increases without intention and involuntarily, and causes people to experience positive and continuous emotions, and finally, this causes a person to increase their range of tolerance (15).

The limitations of this research included the non-use of a random sampling method and the statistical population being limited to women with breast cancer aged 30-50 in Tehran. Finally, to increase the generalizability of the results, it is suggested that this research be carried out in other provinces and regions and communities with different cultures, and that the random sampling

method be used to control disturbing factors. It is also suggested to train psychologists and cancer specialists during a specialized workshop, so that by applying these trainings to patients, they can take a practical step to improve the sexual satisfaction of these women.

**Limitations and suggestions:** The limitations of this research included the non-use of a random sampling method and the statistical population being limited to women with breast cancer aged 30-50 in Tehran. Finally, to increase the generalizability of the results, it is suggested to carry out this research in other provinces and regions and communities with different cultures, and to use a random sampling method to control disturbing factors. It is also suggested to train psychologists and specialists in this field during a specialized workshop, so that by applying these trainings to patients, they can take a practical step to improve the sexual satisfaction of these women.

**Ethical considerations:** The researchers acted according to the ethical protocols of the Helsinki studies, and the data of the subjects remained anonymous, and after the study, all this information will remain protected. In addition, all the participants signed the informed consent form to participate in the research, and the purpose, importance, and necessity of the research were explained to all of them.

Research ethics code: IR.IAU.SRB.REC.1400.360

**Conflict of interest:** There is no conflict of interest between the authors of this study.

**Practical application of the study:** In this study, women with breast cancer had sexual problems in addition to cancer-related problems, and this issue showed a relationship with their sexual satisfaction. Also, by strengthening self-care and mindfulness skills of these women, the level of sexual satisfaction can be reduced, and marital satisfaction can be improved for them.

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