

# The Relationship between Anxiety and Self-Esteem in Women Suffering from Breast Cancer

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ABSTRACT

**Background:** Breast cancer is the most common cancer in women worldwide that has great impact on their lives. Women with breast cancer are at increased risk for anxiety and low self-esteem. **Objective:** The purpose of this study was to explore the relationship between anxiety and self-esteem in women suffering from breast cancer. **Materials and Methods:** In this descriptive correlational study, all 261 women diagnosed with nonmetastatic breast cancer referred to cancer care clinics in winter 2016 were assessed. Data were gathered using demographic information inventory, Spielberger's State-Trait Anxiety Inventory and Rosenberg's Self-Esteem Scale, and were analyzed using SPSS statistical software (version 22). Descriptive statistics, the *t*-test, ANOVA, the Pearson correlation and the Spearman's correlation were also used. **Results:** The mean  $\pm$  standard deviation (SD) age of participants in the study was  $48.33 \pm 10.837$  years. The mean score of state and trait anxiety was  $46.29 \pm 11.745$  and  $46.61 \pm 10.936$ , respectively. The mean  $\pm$  SD score of self-esteem was  $18.38 \pm 5.08$ . The study results show an indirect correlation between anxiety and self-esteem in women suffering from breast cancer ( $r = -0.690$ ). **Conclusions:** According to the considerable influences of anxiety and self-esteem on other aspects of physical, psychological, and social health, it is suggested that health-care professionals pay more attention to the self-esteem and psychological state of women diagnosed with breast cancer besides other medical treatments. Screening strategies for detecting psychiatric disorders in breast cancer patients and planning of effective interventions to promote self-esteem and reduce anxiety and its consequences are recommended.

**KEYWORDS:** Anxiety, breast cancer, Iran, self-esteem, women

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## INTRODUCTION

Breast cancer is the most common cancer in women worldwide and constitutes 25.2% of all cancers.<sup>[1]</sup> According to the American Cancer Society report, it is estimated that about 1 in 8 US women (about 12%) will develop invasive breast cancer over the course of her lifetime.<sup>[2]</sup> In Iran, breast cancer constitutes 21.4% of total reported cases of cancers,<sup>[3]</sup> and according to published statistics in country report of Cancer Cases Registry by the Ministry of Health and Medical Education in 2008, breast cancer is the second common cancer in the total population of Iran and is the most common cancer among Iranian women.<sup>[4]</sup>

Advancement of science, timely diagnosis, and several therapeutic procedures have increased the survival rate of sufferers from breast cancer, according to the American Cancer Society reports (2016). The average 5-year survival rate for people with breast cancer is 89%.<sup>[5]</sup> Long-term survival of the breast cancer exposes patients to many psychological disorders, so that it

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requires more supports after the diagnosis, during and after treatment.<sup>[6]</sup>

Breast cancer diagnosis and treatment process, such as surgery, or adjuvant therapies, are known as a traumatic and emotionally stressful event in the lives of women and may lead to psychological reactions such as denial, deprivation, anger, or intense fear to their treatment and disease process, and many others experience mental disorders and psychiatric morbidities, especially anxiety and depressive disorders.<sup>[7]</sup> In various studies, the prevalence of anxiety disorders in breast cancer patients is expressed as 1%–49%. The prevalence of anxiety in breast cancer patients is varied and different due to differences in measurement times, anxiety measurement scales, and women's demographic and cultural differences.

Lueboonthavatchai in his study expressed the prevalence of anxiety disorder and anxiety symptoms to be 16.0% and 19.0%, respectively.<sup>[8,9]</sup>

Anxiety is considered a problem when symptoms interfere with a person's ability to sleep or otherwise function. Excessive and uncontrolled anxiety in one's life could cause severe stress and may lead to lower quality of life.<sup>[10]</sup> Anxiety in cancer patients causes more intense signs, longer recovery from cancer, unwanted outcomes, and decreased quality of patients' life and their caregivers. Anxiety is usually accompanied by uncertainty and sense of disability, leading to a decrease in self-esteem. Alacacioglu *et al.* in their study found that anxiety is more prevalent in women diagnosed with breast cancer than other women.<sup>[11]</sup>

Illness, treatments, and complications lead to impaired body image and cause changes in self-esteem, and these issues are very obvious in chronic diseases, such as cancer due to its long term treatment and unpredictable prognosis.<sup>[12]</sup> Lowered self-esteem is considered to be a common consequence of cancer, because cancer or its treatments lead to alteration in patients' bodily experience and roles, discrepancy in self-concept, disrupted personal relationships, sexual dysfunction, and depression. Hence, low self-esteem in cancer patients is a predictable and important issue that may even lead to mental health issues such as depression, anxiety, fear, violence, impaired communications, and decreased engagement in self-care programs. Body image and self-esteem are the main factors in cancer patient's life. Self-esteem has a significant influence on human emotions and behaviors. It plays an important role in the process of experiencing and coping with disease and its treatment.<sup>[13,14]</sup>

Studies that have examined self-esteem as a predictor found that high self-esteem is related to low levels of depressive symptoms and high levels of welfare.<sup>[15]</sup> Researches that are dedicated to the study of self-esteem effects revealed that damaged self-esteem makes it impossible for people to deal with unwilling difficult situation occurring in their daily life; also, it has been found to correlate with many clinical symptoms and disorders.<sup>[16]</sup>

In addition, most people experience grief reactions such as periods of anger, fear, and depression when breast cancer is diagnosed. Supporting patients in this period has strategic importance. For those people who remain at this stage and cannot reach the acceptance of disability or illness, special assistance should be taken into account.<sup>[17]</sup>

In conducted investigations, it found few studies assessed anxiety and self-esteem in cancer women simultaneously; there are limited studies in this topic in Iran. According to the role of women in society and the impact of anxiety and self-esteem disturbance on the quality of life and mental health of the people, family, and society, researchers were driven to design and implement a study with the aim of review and assess anxiety and self-esteem status in women diagnosed with breast cancer and determine the relationship between these two variables.

## MATERIALS AND METHODS

### Ethical considerations

The research was approved by the Ethics Committee of Shiraz University of Medical Sciences; participants in this study voluntarily participated and signed consent was obtained from them.

### Study design

This research is a descriptive correlational study. Research community includes all women with nonmetastatic breast cancer referred to cancer care clinics affiliated to Shiraz University of Medical Sciences in the winter of 2016. Inclusion criteria included ability to read and write, definitive diagnosis of nonmetastatic breast cancer, and willingness to participate in the study and exclusion criteria included history of mental illness and use of psychiatric drugs and other chronic illnesses except breast cancer. Hence, 261 patients were eligible for the study and completed the anxiety and self-esteem questionnaire.

### Measures

To collect the research data demographic information questionnaire, the Spielberger State-Trait Anxiety Inventory (STAI) and Rosenberg's Self-Esteem Scale (RSES) were used.

The demographic questionnaire obtained information about age, marital status, education, employment, history of mastectomy surgery, and history of psychiatric illness or chronic physical illness.

To assess anxiety, Spielberger’s STAI was used. The STAI is a self-report assessment instrument which includes separate measures of state and trait anxiety, each scale consisting of twenty items. The state anxiety scale evaluates how people feel “right now, at this moment,” and the trait anxiety scale assesses how people “generally and usually” feel. Each item is rated on a four-point intensity scale, with the score 4 indicating a high amount of anxiety. The scores of each one of the two state and trait anxiety scales can be put at a range between 20 and 80. The total score of STAI ranges from 40 to 160.<sup>[18]</sup> The STAI is reported to be reliable and valid and has been used extensively in research and clinical practice.<sup>[19,20]</sup>

To investigate self-esteem, RSES was used. RSES is a ten-item scale that measures global self-esteem by measuring both positive and negative feelings about the self. Subjects respond the items based on a 4-point Likert scale (from strongly agree to strongly disagree) ranging from 0 to 3. The RSES ranges from 0 to 30, with 30 indicating the highest score possible. The validity and reliability coefficients of this scale have been reported by Rosenberg as 0.82 and 0.77, respectively.<sup>[21]</sup> Schmitt *et al.* (2005) also examined the RSES in 53 nations and found that this test has a high validity and reliability.<sup>[22]</sup>

In Iran, Alizadeh *et al.* reported its reliability and validity coefficients as 0.73 and 0.74, respectively.<sup>[23]</sup>

**Statistics and data analysis**

Data were analyzed using the IBM SPSS Statistics for Windows, version 22 (IBM Corp., Armonk, N.Y., USA). Descriptive statistics (means, standard deviations [SD], and frequencies) were used to describe the demographics. One-way ANOVA, *t*-test, and Spearman’s and Pearson’s correlation were used to analyze the data. *P* < 0.05 was considered statistically significant.

**RESULTS**

The range of participants’ age was 28–76 years and the mean age was 48.33 ± 10.837 years, 7/7% of participants were single, 78.2% were married, 11.5% were widows, and 2.7% were divorced.

Among 261 patients, mastectomy surgery was performed for 147 persons and 112 of them had not had any history of mastectomy surgery. Other features are shown in Table 1.

The mean score of state anxiety was 46.29 ± 11.745; the mean score of trait anxiety was 46.61 ± 10.936. The mean ± SD score of self-esteem was 18.38 ± 5.08. Table 2 shows the anxiety and self-esteem status of women suffering from breast cancer who were studied. The mean scores of self-esteem and anxiety are shown in Table 3.

The results of Pearson’s correlation coefficient showed a significant relationship between anxiety and self-esteem, and in other words, low self-esteem is associated with increased anxiety in breast cancer women (*r* = -0/69, *P* < 0.0001).

Spearman’s test results showed a significant relationship between education level and self-esteem in this group of women (*r* = 0/193, *P* = 0.002).

However, no statistical relationship was seen between education level and anxiety score (*r* = -0.067, *P* = 0.282).

**Table 1: Demographic characteristics of women suffering from breast cancer participated in the study (n=261)**

Demographic variable	n (%)
Marital status	
Single	20 (7.7)
Married	204 (78.2)
Widow	30 (11.5)
Divorced	7 (6.1)
Job status	
Student	2 (0.8)
Staff/worker	30 (11.5)
Homemaker	212 (81.2)
Retired	16 (6.1)
Literacy	
Middle school	134 (51.3)
Diploma degree	87 (33.3)
Associate’s degree	6 (2.3)
Bachelor’s degree	29 (11.1)
Master’s degree	2 (0.8)
History of mastectomy surgery	
Yes	147 (56.3)
No	112 (42.9)
Missing data	2 (0.8)

**Table 2: Frequency distribution of the level of anxiety and self-esteem of women under study**

Variable	Severity	n (%)
Anxiety	Mild	80 (30.7)
	Moderate	153 (58.6)
	Severe	28 (10.7)
Self-esteem	Low	53 (20.3)
	Average	184 (70.5)
	Strong	24 (9.2)

Furthermore, the results of ANOVA test showed that there was no relationship between marital and employment status of selected women and self-esteem and anxiety. To compare anxiety and self-esteem in the two groups of women who had undergone a mastectomy surgery and women without a history of mastectomy surgery, independent *t*-test was used. The results of the test showed no significant difference in the mean score of overall anxiety and state and trait anxiety of women in the two groups. While significant difference between the mean scores of self-esteem was seen in women with a history of mastectomy in comparison with women without a history of mastectomy surgery, in other words, self-esteem level was higher and stronger in women in the mastectomy group. Test results are shown in Table 4.

**Discussion**

The results of the present study indicated that all women with nonmetastatic breast cancer participated in the study have some degrees of anxiety and 69.3% of them suffered from moderate-to-severe anxiety. Diagnosis of breast cancer can be devastating and can trigger several adverse reactions for the majority of women. Many women can develop symptoms of psychological distress such as sadness, anxiety, anger, death anxiety, social isolation, and sexuality concerns when breast cancer is diagnosed.

Studies have shown that the prevalence of psychological distress among breast cancer patients is high and

anxiety and depression are the most common psychiatric disorders in this group of patients. In most of the conducted studies, anxiety intensity has been reported moderate or severe in patients with breast cancer.<sup>[24-27]</sup>

Moreover, cancer patients may experience anxiety in different situations such as when being screened for a cancer, waiting for the results of tests, receiving a cancer diagnosis, being treated for cancer, or worrying that cancer will recur. According to the conducted studies, it is observed that even after treatment of breast cancer, most women (17.9%–33.3%) have anxiety symptoms.<sup>[28,29]</sup> Burgess *et al.* also stated that more than 50% of women with breast cancer have anxiety, depression, or both in the first 5 years after diagnosis.<sup>[30]</sup>

Furthermore, in the present study, most of the women (58.6%) had moderate anxiety; this is consistent with the findings of Alacacioglu *et al.*, Malekian *et al.*, Musarezaie *et al.*, and Alavi and Manaei.<sup>[11,24,31,32]</sup>

Some degrees of anxiety are common among patients with breast cancer and most patients feel anxiety at the initial time of diagnosis of cancer. Usually, a sense of unknown threat is the main course of anxiety. Lazarus and Averill stated that this feeling may be due to lack of awareness to the event. When disease progresses, patients may experience anxiety. Admission in the hospital, waiting for treatment, anticipation for diagnostic test results, cancer recurrence probability, treatment side effects, and changes in the appearance as well as performance are all charged as creating factors of anxiety in these patients.<sup>[33]</sup> Anxiety may increase pain, affect sleep, and cause irritability, muscle tension, headaches, nausea, and vomiting. Even mild anxiety can affect the quality of life for cancer patients and their families and may need to be treated.<sup>[34]</sup>

The current study results showed that there is no significant correlation between participants’ anxiety and demographic variables such as age, history of mastectomy, marital status, and their employment; these findings are consistent with the findings of Musarezaie *et al.* According to their study with the purpose of assessing depression and anxiety status of women suffering from breast cancer in Isfahan, there was no significant relationship between anxiety with level of education, marital status, and their employment in women with breast cancer.<sup>[32]</sup> Jadoon *et al.* in a cross-sectional study on 150 cancer patients and 268 noncancer persons showed that the prevalence of anxiety and depression in cancer patients is more than noncancer people. They also observed that there was no significant statistical relation between sex, age, marital status, employment, income, physical activity, and tumor

**Table 3: Mean anxiety and self-esteem scores of women suffering from breast cancer (n=261)**

Variable	Minimum score	Maximum score	Mean±SD
State-anxiety	23	77	46.29±11.745
Trait-anxiety	21	76	46.61±10.936
Total anxiety	49	153	92.90±21.143
Self-esteem	3	30	18.38±5.088

SD: Standard deviation

**Table 4: A comparison between mean scores of self-esteem and anxiety in women with and without a history of mastectomy surgery**

Variable	Group	n	Mean±SD	P*	t
Total anxiety	A	147	91.33±20.801	1.387	0.371
	B	112	95.02±21.679		
State anxiety	A	147	45.47±11.218	0.188	1.321
	B	112	47.42±12.459		
Trait anxiety	A	147	45.86±11.43	0.208	1.260
	B	112	47.60±10.727		
Self-esteem	A	147	19.18±4.937	0.002	-3.081
	B	112	17.25±5.091		

\*P<0.05 is significant. Leven test. A: Women with a history of mastectomy, B: Women without a history of mastectomy, SD: Standard deviation

location with anxiety and depression. Furthermore, gastrointestinal tract, breast, and chest malignancies are more related with severe anxiety and depression.<sup>[35]</sup> Many studies of cancer patients have not reported a significant relationship between age and mental disorders.<sup>[36,37]</sup> However, Morasso *et al.* found that increasing age was associated with psychiatric morbidity in breast cancer patients, and this finding is different from the results of the present study and other previous studies. The results of their study on 184 patients in 1994–1996 indicated that there was a significant relationship between age, menopause, and previous history of mood disorders with anxiety and depression. On the other hand, increase in age predicts increase of mental disorders.<sup>[8]</sup>

In this study, no significant relationship was found between self-esteem and some demographic characteristics such as age, marital status, and employment, but a significant relationship observed between education level and self-esteem ( $r = 0/3$ ). This means people with higher education level have a stronger self-esteem. Studies have shown that education can lead to greater awareness, change in beliefs, values, and insight into the disease, thus improving self-esteem. These are in consistent with the findings of Seyed Fatemi *et al.* (2012),<sup>[38]</sup> but not with Nosek *et al.* (2003)<sup>[39]</sup> and Masoudi *et al.* (2009)<sup>[40]</sup> which did not find a significant relationship between self-esteem and education.<sup>[38,39]</sup> Studies have shown that in some cases educated people are more sensitive on their illness, disabilities, and self-limitations than others, and this issue causes negative impacts on their self-esteem.<sup>[38]</sup>

The results of this study showed that most women suffering from breast cancer (70%) have average self-esteem and only 9% of them have strong self-esteem that is consistent with many studies, for example, Noghani *et al.* in their study on 101 patients suffering from types of cancer showed that most of cancer patients of both genders had average self-esteem and only 13.7% of women and 16% of men had strong self-esteem and there was no significant differences in self-esteem of women and men with cancer. Similarly, other studies reported average level of self-esteem in different populations, including patients with multiple sclerosis, thalassemia major and spinal cord injuries.<sup>[38,41-43]</sup> Because lowered self-esteem can affect patients' life in a negative way, it is necessary to enhance their self-esteem. Strong self-esteem is one of the most valuable resources that the patient can rely on it to resist against physical damages and psychological problems.<sup>[40,44]</sup>

The findings of this study indicated that there is a significant difference between the mean scores of

self-esteem seen in women with a history of mastectomy in comparison with women without a history of mastectomy surgery. In other words, self-esteem level is higher and stronger in women in the mastectomy group. This finding is not consistent with some studies. For example, Sadeghi Somee *et al.* found that self-esteem in two groups of breast cancer women with a history of mastectomy and without a history of mastectomy was not different statistically. They observed that the type of surgery has not effected on self-esteem in breast cancer patients. Furthermore, in a study of Polenz *et al.* (2010), there was no differences in self-esteem between the two surgical groups.<sup>[45]</sup> Markopoulos *et al.* with comparison of self-esteem and sexual function of three groups of breast cancer women indicated that although diagnosis of breast cancer had a negative impact on the psychology of all patients, those undergoing breast-conserving surgery or mastectomy with delayed reconstruction were more satisfied and reported a lower impact on their self-esteem and sexual life versus those who only had mastectomy. In other words, the type of surgery has a significant role in patient's postoperative, self-esteem, and sexual life.<sup>[46]</sup> Reaby *et al.* after comparison of three groups of women (the groups included women who had mastectomies and wore external breast prostheses, women who had mastectomies and underwent breast reconstruction, and a control group of women who had not experienced mastectomy), nonmastectomy, and women undergoing breast reconstruction operation observed that self-esteem and body image in mastectomy is higher than nonmastectomy women. They expressed that the research findings challenged a common assumption that mastectomy automatically results in psychiatric morbidity caused by an altered body image and suggested that health professionals should not make assumptions about how a woman will psychologically respond to mastectomy.<sup>[47]</sup>

Comparing the present findings with those of earlier studies reveals that social and cultural differences between the participants and their different attitudes can explain the discrepancy of the results in terms of the self-esteem status among women with and without a history of mastectomy. By the way, women who had removed breasts by mastectomy surgery think that cancer and cancerous cells completely removed with breast tissue, so they feel better and more recovered than other patients and have more insight into cancer treatments. These may reduce fear of recurrence and severity of disease and consequently increase their self-esteem compared to those patients who had not experienced mastectomy.

One of the important findings of the present study is a significant relationship between anxiety and self-esteem

of breast cancer women; this finding is consistent with the results of previous researches in this field, for example, Lotfikashani *et al.* in their study showed that social support and self-esteem are associated with anxiety and depression in cancer patients.<sup>[48]</sup> Enache in his study in Romania showed that anxiety can lead to low self-esteem in women suffering from breast cancer undergoing mastectomy surgery and finally low self-esteem causes social isolation. His study represents an inverse relationship between level of self-esteem and level of anxiety.<sup>[49]</sup> According to the results of studies, low and damaged self-esteem makes it impossible for people to tolerate and solve difficult problems and situations occurring in daily life, so it causes a lot of loss for their mental and physical dimensions of health. And also, low self-esteem is associated with anxiety, somatic complaints, and mental and physical problems, while strong self-esteem makes a barrier against anxiety. Many cross-sectional studies have reported that self-esteem is inversely correlated with anxiety.<sup>[50]</sup> According to the findings, changes in physical, mental health, and body image of women made by cancer, treatments, and their side effects lead to increase in anxiety and finally decrease their self-esteem level that requires more attention from health professionals.

The present study has some limitations. One of the limitations is that anxiety and self-esteem have not been assessed in healthy women. Finally, we were not able to compare anxiety and self-esteem in breast cancer women with healthy women; it is recommended to address these issues in future researches.

## CONCLUSIONS

The results of the present study indicated that all women suffering from nonmetastatic breast cancer participated in the study had some degrees of anxiety, and most of them had moderate anxiety and average-to-low self-esteem. Furthermore, indirect relationship was seen between anxiety and self-esteem in this group of patients. Changes in appearance, performance, marital relationship, and social interactions resulting from breast cancer and its treatments are known as destructive factors on self-esteem. Low self-esteem has been linked to social isolation. Improving self-esteem may lead to better coping with the disease. The more positive the self-esteem, the lower the probability of occurrence of mental disorders such as anxiety over the course of the disease and during treatment.

Furthermore, in many of sources, it is proved that anxiety effects negatively on the physical, mental, and social well-being. Thus, addressing the psychological and mental aspects of breast cancer patients along with

physical therapy is important. It is necessary for health officials to pay more attention to this issue. Screening strategies for detecting psychiatric disorders in breast cancer patients are recommended.

Psychiatric nurses can help evaluate breast cancer women's mental health and identify the factors affecting their mental health. Nurses can play an important role in the development and improvement of mental and emotional health of these patients by planning and implementing appropriate psychoeducational interventions.

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## Conflicts of interest

There are no conflicts of interest.

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