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Body Image and Quality of Life in Female Patients with Breast Cancer and Healthy Women

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ABSTRACT

Background & aim: The aim of this study was to evaluate and compare the relationship between body image and quality of life in female patients with breast cancer and healthy women.

Methods: In the current descriptive, causal, comparative, cross-sectional study, 50 women with breast cancer, referring to the radiotherapy and oncology clinic of Imam Reza Hospital (Mashhad, Iran) and 50 healthy women, referring to the same clinic, were selected via available sampling. Informed consent forms were obtained from the subjects. A demographic questionnaire, Multidimensional Body-Self Relations Questionnaire (consisting of 46 items), and short-form health survey (SF-36) were used as the study tools. For data analysis, Pearson's correlation test and t-test were performed to determine the differences between the two groups. Data were analyzed, using SPSS version 16.

Results: The results showed a statistically significant difference between female patients with cancer and healthy women in terms of quality of life ($t=-4.1$, $P<0.001$). Moreover, a significant direct relation was found between body image (and its components) and quality of life (and its components).

Conclusion: The current findings suggest a significant difference between healthy and cancer-stricken women in terms of quality of life and body image. Also, higher scores of body image in cancer patients were associated with higher quality of life.

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Introduction

Cancer is considered as one of the most important medical issues in today's world. Breast cancer is the most common cancer among women, worldwide and is the second most fatal cancer, accompanied by emotional and psychological consequences (1).

According to a report by World Health Organization, more than 1.2 million people are annually diagnosed with breast cancer (2). According to the reports by the U.S. National Cancer Institute, one out of every eight women will develop breast cancer during their lifetime (3). Given that breast cancer affects women at the age of peak efficiency, attention to this condition is of particular importance in medical circles.

Apart from physical changes, cancer also influences women's quality of life and body image (4). In fact, women with breast cancer believe that breast removal is the excision of a body organ, which symbolizes their sexuality, femininity, and motherhood (5).

Apparent changes in women's body image are accompanied by negative psychological consequences (6). A person's mental image of oneself is implicitly manifested in one's value responses and Since a person's perception of his/her body has a great impact on his/her character and behavior, a negative body image leads to negative psychological effects, which inevitably affect one's mood and interpersonal relationships (7).

Body image includes conscious and non-conscious ideas and feelings about one's body; in other words, it is a concept composed of personal feelings about body size, sex, and body function and ability to attain certain goals (8).

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Although body image is of great importance among both men and women, it has a special place among women, considering the current social standards which place significant emphasis on women's beauty.

Many studies have revealed women's considerable dissatisfaction with their body size and shape (9, 10). Therefore, women are highly exposed to the risk factors for body image distress (11, 12). Previous research has shown that a negative body image has devastating impacts on public health and one's self-esteem, activity level, and social participation; moreover, it may ultimately lead to depression and social isolation (13).

The body image that people have of themselves even affects their behaviors (14). Removal of one or both breasts is often associated with changes in mental image, reduced sexual attraction, anxiety, depression, feelings of hopelessness, feeling of being dismembered, guilt, fear of recurrence, rejection, and eventually suicidal tendencies (5).

Ghorbanian and Abdollahzade in their study showed that 100% of women with breast cancer, who had undergone mastectomy, were reported to have a negative image of their bodies (15). However, in this regard, Naghipour et al. (16) in a causal, comparative study showed no significant difference between the general population and breast cancer patients (undergoing mastectomy and breast surgery) in terms of body image.

In this regard, some researchers noted the importance of quality of life in patients with breast cancer and studied this factor as an important component in such patients. Four variables including family background, socioeconomic status, and physical and mental status can both dependently and independently affect the quality of life (17). One's perception of quality of life can also affect each of these mentioned variables (18).

Cancer causes many mental stressors that can significantly affect quality of life and almost every aspect of one's life (18, 19). Researchers with an objective approach have considered different factors related to life standards including physical health, personal status (e.g., financial level and life status), social communication, and occupational status (20).

The performed research on women with cancer showed that women, who were newly diagnosed with breast cancer, obtained lower scores on quality of life, compared to women without breast cancer (21). In a study by Hassanpour and Azari (22), performed on 200 cancer patients, quality of life was undesirable in 34% of the studied patients and desirable in 66%.

It seems that poor body image in patients with mastectomy can affect their quality of life. Despite the importance of identifying psychological problems and mitigating these problems, very few studies have been conducted in this regard. Several studies have focused on each of these variables and most of them have examined the relationship between these variables and other health components (6, 21, 23, 24, 25). Also, limited research has compared these variables among female patients with breast cancer and healthy women.

The aim of this study was to evaluate the differences and the relationship between body image and quality of life in women with breast cancer and healthy female subjects.

Materials and Methods

In this causal, comparative, cross-sectional study, the population consisted of female patients with breast cancer (n=50) and healthy women (n=50), selected via convenience sampling in Mashhad, Iran. The researchers visited the oncology clinic of Imam Reza Hospital, and due to the limited number of individuals willing to cooperate, 50 female patients with breast cancer and 50 healthy women, who had referred to the clinic, were selected as the study sample.

The inclusion criteria were as follows: 1) being married; 2) non-menopause; 3) non-pregnancy; 4) complete unilateral mastectomy; and 5) non-chemotherapy patients.

After receiving permission from the university authorities, the researcher referred to the oncology clinic of Imam Reza Hospital. After providing a commitment to the clinic, the study samples were selected. The objectives of the study were explained to the participants, and the questionnaires were distributed among them. They were asked to carefully read the questions and select the answers which best suit their features.

Demographic characteristics including age, gender, and education level were collected using a questionnaire.

For the assessment of body image, Multidimensional Body-Self Relations Questionnaire was utilized. This questionnaire consists of 46 items including a number of statements regarding individuals' thinking methods, feelings, and behaviors, and was revised (26) by Kash. The subjects answered the questions, based on a 5-point Likert scale (strongly disagree= 1 to strongly agree=5). Questions number 6, 11, 12, 15, 17, 21, 22, 23, 26, 28, 29, 31, and 32 were reverse-scored.

After reversing the score of these items, the score of each subject in 6 subscales was calculated, based on the sum of items related to each subscale. This subscale included appearance evaluation, appearance orientation, fitness evaluation, fitness orientation, mental or subjective weight, and body part satisfaction. In the Farsi version of this scale, Cronbach's alpha coefficients for each subscale were reported as 0.88, 0.85, 0.83, 0.79, 0.91, and 0.94 in a sample of 217 students, respectively; these values indicate the internal consistency of the questionnaire.

Correlation coefficients between the scores of 67 cases at two points in time (with a two-week interval) were as follows: 0.78 for appearance evaluation, 0.75 for appearance orientation, 0.71 for fitness evaluation, 0.69 for fitness orientation, 0.84 for subjective weight, and 0.89 for body part satisfaction; these values indicate the high reliability of this scale (27). Moreover, the validity of this questionnaire has been confirmed in foreign studies and its reliability in a sample of women with cancer varied from 0.62 to 0.85 (28).

In a study performed by Kash in 1994, cited by Asar Kashani et al. (29), internal consistencies of appearance evaluation and body part satisfaction were 88% and 77%, respectively. Also, the validities of appearance evaluation and body part satisfaction were 81% and 86%, respectively; it should be mentioned that validity was evaluated twice.

The subjects' quality of life was evaluated by Short-Form Health Survey Questionnaire (SF-36). This self-report questionnaire, which is mainly used to assess one's quality of life and health status, was first designed by Weir and Shrion (30). This questionnaire contains 36 statements and 8 domains including physical function, social function, physical role functioning, emotional role functioning, mental health, vitality, body pain, and general health. The sum of subscale scores indicates the total score of one's quality of life.

The items were scored using a Likert scale, ranging from 1 to 6; higher scores indicated higher quality of life. Validity and reliability of SF-36 have been confirmed in Iranian population, and internal consistency coefficients of its 7 subscales range from 77% to 95% (65% in the domain of vitality) (31). Moreover, the reliability of this questionnaire has been evaluated, and Cronbach's alpha ranged between 0.51 and 0.77; moreover, the validity of the questionnaire was confirmed (32).

For data analysis, descriptive statistical indices including frequency, percentage, mean, and standard deviation were used. To evaluate our hypothesis, Pearson's correlation and independent t-test were performed to determine the differences between the two groups. Data were analyzed, using SPSS version 16.

Results

In this section, descriptive indicators of the studied variables are discussed. At first, patients' demographic characteristics and descriptive indicators of the studied variables are analyzed. According to the obtained results, the mean age of patients with breast cancer was 32.0 yrs (SD=0.5), and the mean age of healthy subjects was 33.7 yrs (SD=4.2). Also, the majority of the subjects in both groups had secondary level education ($P>0.05$, $\chi^2=2.04$). Among cancer patients, 70% were housewives and 30% were employees. Also, among healthy subjects, 60% were housewives and 40% were employees ($P>0.05$, $X^2=1.09$).

As the assessment of body image and its components in the two groups indicated, subjective weight had the lowest mean (mean= 4.34, SD=0.74) among the other components of body image. On the other hand, the mean score of body image in patients with breast cancer was 109.9 (SD=±19.0), which was lower than that reported in healthy subjects (mean=120.2, SD=±19.8).

Table 1. Mean and standard deviation of body image and its components in female patients with breast cancer and healthy women

Indicators	N	Mean±SD	T	P-value
Total body image				
Women with breast cancer	50	109.94±19.01	2.64	0.010
Normal women	50	120.20±19.82		
Appearance evaluation				
Women with breast cancer	50	19.84±4.11	1.92	0.057
Normal women	50	21.48± 4.41		
Appearance orientation				
Women with breast cancer	50	22.12±4.93	1.85	0 .067
Normal women	50	24.02±5.31		
Fitness evaluation				
Women with breast cancer	50	6.10±1.59	3.59	0.001
Normal women	50	7.30±1.74		
Fitness orientation				
Women with breast cancer	50	31.88±4.84	2.34	0.021
Normal women	50	34.32±5.57		
Subjective weight				
Women with breast cancer	50	4.34±0.74	7.11	0.001
Normal women	50	5.34±0.66		
Body part satisfaction				
Women with breast cancer	50	25.66± 3.42	2.94	0.004
Normal women	50	27.74±3.62		

As the descriptive evaluation of quality of life in the two groups indicated, the mean score of quality of life was 11.2±73.3 in cancer patients and 10.3±82.4 in healthy subjects; in all components, the mean scores of cancer patients were lower than those reported in healthy subjects.

There was a significant difference between patients with breast cancer and normal subjects in terms of body image and its components, with the exception of appearance evaluation (P=0.05, t=1.9) and appearance orientation (P=0.06, t=1.8). The P-values of other components are as follows: total body image (P=0.01, t=2.6), fitness evaluation (P=0.001, t=3.5), fitness orientation (P=0.02, t=2.3), subjective weight (P=0.001, t=7.11), and body part satisfaction (P=0.004, t=2.9) (Table 1).

The results showed a significant difference between the groups in terms of total quality of life (P<0.001, t=4.1) and its components including physical function (P=0.01, t=2.0), social function (P=0.001, t=6.4), physical role functioning (P=0.001, t=8.7), emotional role functioning (P=0.01, t=2.4), psychological health (P=0.01, t=8.6), vitality (P=0.001, t=3.8), body pain (P=0.001, t=5.2), and general health (P=0.001, t=6.8) (Table 2).

In this study, the results showed a direct significant relationship between body image and quality of life (and its components) in normal women. According to the results, there was a significant correlation between quality of life and body image (P<0.01, r=0.9), appearance evaluation (P<0.01, r=0.8), appearance orientation (P<0.01, r=0.8), fitness evaluation (P<0.01, r=0.8), fitness orientation (P<0.01, r=0.8), subjective weight (P<0.01, r=0.8), and body satisfaction (P<0.01, r=0.8) (Table 3).

According to the results, there was a significant correlation between quality of life and total body image (P<0.01, r=0.9), appearance evaluation (P<0.01, r=0.8), appearance orientation (P<0.01, r=0.8), fitness evaluation (P<0.01, r=0.8), fitness orientation (P<0.01, r=0.8), subjective weight (P<0.01, r=0.8), and body part satisfaction (P<0.01, r=0.8) (Table 4).

Table 2. Mean and standard deviation of quality of life and its components in female patients with breast cancer and healthy women

Indicators	N	Mean ± SD	t	P-value
Total quality of life				
Women with breast cancer	50	73.38±11.29	4.17	0.001
Normal women	50	82.42±10.39		
Physical function				
Women with breast cancer	50	14.36±3.07	2.03	0.045
Normal women	50	15.64±3.24		
Social function				
Women with breast cancer	50	6.16±0.84	6.44	0.001
Normal women	50	7.14±0.67		
Physical role functioning				
Women with breast cancer	50	4.36±0.63	8.75	0.001
Normal women	50	5.34±0.48		
Emotional role functioning				
Women with breast cancer	50	26.40±4.03	2.46	0.016
Normal women	50	28.50±4.50		
Psychological health				
Women with breast cancer	50	3.32±0.62	8.61	0.001
Normal women	50	4.24±0.43		
Vitality				
Women with breast cancer	50	8.76± 1.36	3.88	0.001
Normal women	50	9.78±1.27		
Body pain				
Women with breast cancer	50	4.72±0.88	5.22	0.001
Normal women	50	5.54±0.67		
General health				
Women with breast cancer	50	5.30±0.73	6.89	0.001
Normal women	50	6.24±0.62		

All correlations were significant at 0.01

Table 3. Correlation between body image and quality of life in healthy women

Variables	Total quality of life	Physical function	Social function	Physical role functioning	Emotional role functioning	Psychological health	Vitality	Body pain	General health
Body image	0.907	0.942	0.859	0.728	0.769	0.641	0.812	0.668	0.736
Appearance evaluation	0.838	0.910	0.830	0.690	0.710	0.605	0.746	0.588	0.650
Appearance orientation	0.843	0.896	0.820	0.678	0.738	0.587	0.742	0.599	0.655
Fitness evaluation	0.895	0.925	0.870	0.811	0.755	0.741	0.821	0.626	0.719
Fitness orientation	0.869	0.901	0.782	0.668	0.779	0.580	0.785	0.648	0.712
Subjective weight	0.874	0.753	0.849	0.829	0.771	0.756	0.778	0.744	0.940
Body satisfaction	0.862	0.866	0.789	0.639	0.785	0.753	0.779	0.683	0.720

All correlations were significant at 0.01.

Table 4. Correlation between body image and quality of life in women with breast cancer

Variables	Total quality of life	Physical function	Social function	Physical role functioning	Emotional role functioning	Psychological health	Vitality	Body pain	General health
Body image	0.950	0.972	0.934	0.821	0.910	0.705	0.829	0.727	0.762
Appearance evaluative	0.906	0.940	0.944	0.840	0.848	0.715	0.775	0.662	0.704
Appearance orientation	0.890	0.933	0.914	0.818	0.819	0.701	0.769	0.688	0.687
Fitness evaluative	0.914	0.935	0.930	0.916	0.816	0.812	0.828	0.702	0.739
Fitness orientation	0.964	0.972	0.905	0.782	0.960	0.664	0.842	0.723	0.783
Subjective weight	0.889	0.855	0.822	0.732	0.864	0.642	0.784	0.706	0.927
Body Satisfaction	0.921	0.927	0.840	0.680	0.926	0.589	0.816	0.744	0.737

Discussion

In this study, the difference and relationship between body image and quality of life were evaluated in women with breast cancer and healthy subjects. A significant difference was observed between female patients with breast cancer and healthy women in terms of body image and its components; however, the differences were insignificant in terms of appearance evaluation and appearance orientation. Also, the results showed that the mean values were significantly higher among normal women, compared to female patients with breast cancer.

However, a study by Naghipour et al. (16) showed no significant difference between normal women and women with breast cancer (undergoing mastectomy or breast surgery) in terms of body image; this finding is inconsistent with the results of the present study. However, in studies by Rouske et al. (32), Mavin et al. (28), Kude et al. (33), Brenburg et al. (2008) (34), and Heravi et al. (35), body image scores were lower among women with breast cancer, compared to normal women; these findings are consistent with the current results.

In this study, evaluation of quality of life and its components in women with breast cancer and its comparison with healthy women showed a significant difference in quality of life and its components between breast cancer patients and normal women; the mean values were significantly higher in normal women, compared to women with breast cancer.

In consistence with our findings, Naghipour et al. (16), Var et al. (36), Roskeh et al. (32), Fasihi et al. (37), Brnberg et al. (2008) (34), and Heravi Karimi et al. (35) showed a significant difference between normal women and female patients with breast cancer in terms of quality of life; in fact, the obtained mean values were lower in women with breast cancer. However, Rymans and colleagues (38) showed that pain was frequently reported among women with breast cancer. According to this study, pain influenced all dimensions of quality of life including physical, psychological, social, and religious domains.

Many of the patients stated that the treatment process was more painful than the disease itself and that the process affects their general health and quality of life. As many studies have demonstrated, significant changes occur in many aspects of quality of life in breast cancer patients including physical, psychological (39, 40), social, emotional, and spiritual aspects (41).

According to the present study, cancer has negative effects on quality of life and its dimensions (42). For instance, in a study by Aria Mohammadi et al. (43), the effect of stress management training on hope and quality of life was evaluated in women with breast cancer. The obtained results indicated the positive impact of such trainings on the improvement of quality of life. In fact, given the high prevalence of breast cancer among women and its great impact on their quality of life, applying such practices seems essential.

Consistence with the abovementioned study, Taghadosi and Fahimifar (44) evaluated the quality of life of cancer patients and reported that the use of interventional methods can be effective in improving the quality of life of such patients; this point should be considered by other researchers. Evaluation of the relationship between body image and quality of life in normal women showed a significant and direct

relationship between body image (and its components) and quality of life in healthy women.

No previous research has been conducted in this regard on healthy subjects. Also, the relationship between body image and quality of life in women with breast cancer was evaluated and the results showed that body image and its components have a direct and significant relationship with quality of life and its components in women with breast cancer.

Safaei and colleagues (45) in their study demonstrated that body image is associated with quality of life in breast cancer patients, which is consistent with the results of the present study. In a study by Mary and Evans (46), there was a direct and significant relationship between body image and quality of life, which was consistent with the results of the present study.

Limitations of this study are not excluded from other studies in terms of methodology limitations (sampling, data collection, access to community members, etc.). One of the limitations of the present study is that the results can be only generalized to those referring to the oncology clinic of Imam Reza Hospital. Lack of using random sampling and low sample size are other limitations of this study.

Conclusion

Given the direct relationship between body image and quality of life in patients with mastectomy and healthy subjects, use of interventional methods is required to improve quality of life, and as a result improve body image in these patients and healthy subjects. Also, further cross-sectional, longitudinal studies are required on a larger scale in other cities. Moreover, a comparison should be made with the results of the present study.

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Conflicts of interest

Authors declared no conflicts of interest.

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