



Perception of Self-esteem and Body Image among Women with Breast Cancer of a University Hospital in Tunisia

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Authors' contributions

This work was carried out in collaboration between all authors. Author HG designed the study, performed the statistical analysis, wrote the protocol, and the first draft of the manuscript. Authors HG, SF, IA, Iheb Bougmiza, AA, Imtinene Belaid, NM and NB managed the analyses of the study. Author SF managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Background: Breast cancer is a major public health problem. It represents the first female cancer which creates physical, psychological and social disorders.

Objectives: This study aimed to describe the perception of the self-esteem and the body image of women reached by breast cancer in the hospital of Habib Bourguiba of Sfax – Tunisia during three months.

Methods: It is a cross-sectional observational study. Two measure scales of beforehand designed and validated were administered to 125 patients treated for breast cancer: a scale estimating the

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body image according to Hopwood and a scale estimating the self-esteem according to Rosenberg.

Results: 79% of the investigated women had weak self-esteem and 62% had a distress of the body image. Our study also showed that there is a statistically significant correlation between the perception of the body image and the self-esteem. The presence of history of psychiatric pathologies ($P=0,007$) and alopecia ($p=0,006$) are statistically correlated to a body image distress. Civil status ($p=0,025$) and alopecia ($p=0,014$) statistically impacted the perception of self-esteem.

Conclusion: In order to improve the quality of life of women with breast cancer, healthcare professionals should take into consideration the psychological effect of the consequences of this disease.

Keywords: Breast cancer; self-esteem; body-image; women.

1. INTRODUCTION

Breast cancer is the second most common cancer in the world and, by far the most frequent cancer among women with an estimated 1.67 million new cancer cases diagnosed in 2012 [1].

Western literature reports various incidences of breast cancer among women under 35 years old, which may reach 4% [2].

Breast cancer is also the most common cancer among women in Tunisia. The incidence of this disease is close to 30 new cases per 100 000 women per year. It is estimated that it will affect one in 27 women during their lifetime. Besides, it is often diagnosed at a late stage with an important tumor size [3].

Diagnosis and treatment of breast cancer affect women physically and also cause emotional stress. All sorts of treatments (surgery, chemotherapy, radiation therapy, hormonal therapy) could induce a change in their appearance. These changes may be in short term or long term [4].

Body image is defined commonly as a subjective picture of an individual's own physical appearance established by self observation and by noting the reactions of others [5]. However, body image also includes an attitude of satisfaction or dissatisfaction with one's body that varies according to two factors: Investment in appearance, which concerns an individual's view on the importance of his or her appearance, and self-evaluation, which relates to cultural ideals for physical appearance and beauty and the discrepancy between perceived body image and these ideals [6].

Women who are treated for breast cancer are exposed to marked changes in their physical

appearance, such as loss of part or both breasts, scars from surgery, and skin changes related to radiotherapy. Furthermore, systemic treatments with chemotherapy or hormonal therapy often lead to an increased body weight [7,8]. These changes are related intimately to physical appearance and body image.

Body image is linked closely to identity, self-esteem, attractiveness, sexual functioning, and social relationships [9].

Furthermore, the way one feels about oneself crucially affects all aspects of the life experiences. Self-esteem constitutes the key to the success or failure of a person and to understanding him/herself and others. It also reflects the ability to cope with life's challenges, to respect and defend one's own interests and requirements [10]. Psychological research has documented that body image problems are associated with poor self-esteem, social anxiety, self-consciousness, and depressive symptoms [11].

In Tunisia, although breast cancer is the first female cancer, studies on body image and self-esteem among women with breast cancer have not been published.

We aim to describe the perception of both self-esteem and image of the body among women with breast cancer at the department of Medical Oncology at Habib Bourguiba University hospital in Tunisia, and to determine the factors associated with such perceptions.

2. METHODS

2.1 Population of the Study

This observational, cross-sectional, quantitative study, was carried out at the Department of

Medical Oncology of the University Hospital Habib Bourguiba, Sfax – Tunisia.

An active search for women who had breast cancer presenting to the outpatient clinic during three months period, from February 15th to May 17th, 2016 was performed.

All outpatients' women whose breast cancer was histologically confirmed who were under treatment (chemotherapy, radiation therapy or hormonal therapy), and who agreed to participate in the study through understanding and signing the consent form, were included in our study. Women unable to respond (no-cooperating, deaf...), and women hospitalized at the department were excluded from this study.

2.2 Conduct of the Study and Collection of Data

The questionnaire was distributed and patients responded by themselves. The investigator interfered only at the request of the respondent to explain some of the questions. Every woman contacted was briefly made aware of the objectives of the study while insisting on the anonymity and confidentiality of data.

Three instruments were used for the data collection. The first, constructed by the researchers of this study, considered the demographic and clinical data of the women included in our study. The second, the Rosenberg Scale [12] was applied to evaluate the self-esteem. This is a self-administered scale and consists of ten questions with the following response options: strongly agree, agree, disagree and strongly disagree. Furthermore, in order to calculate the total score, we add the values assigned to each item according to the Likert scale. Given that the various items are not formulated in the same direction, the calculation of the score will be the sum of the values of the items 1, 3, 4, 7 and 10 and the inverted values of items 2, 5, 6, 8 and 9. The total score varies from 10 to 40. For the classification of self-esteem, all the items are summed, which provides a single value for the scale. According to the total, perception of self-esteem can be rated as very high (score greater than 39 points), high (score between 34 and 39 points), average (score between 31 and 34 points), low (score between 25 and 31 points), and very low (scores below 25 points). The greater the overall score, the higher the self-esteem.

Subsequently, the Body Image Scale (BIS) is a 10-item, self-rating scale that was developed to ascertain changes in the body image of cancer patients [13]. Five BIS items concerned general body image issues: feeling self-conscious, dissatisfied when dressed, difficulty looking at yourself naked, avoid others because of appearance, and dissatisfied with body. The other 5 BIS items concerned body image in relation to the cancer experience: less physically attractive, less feminine, less sexually attractive, body less whole, and dissatisfied with scar. The answer to each item is done according to a 4-point Likert scale respectively as follows: 0, not at all; 1, a little; 2, quite a bit; and 3, very much. Higher scores represent poorer body image. The total score varies from 10 to 40. As well if the score varies between 25 and 40, we talk about poorer body image score. On the other hand if the score is below 25, we talk about better body image score.

For the needs of the study, a translation of both scales was done by two sworn interpreters. One has ensured the translation of the French version to the Arabic version and the other from the Arabic version to the French version. The audit of the concordance of the items has been carried out by a group of experts represented by a gynaecologist, a psychologist, a psychiatrist, an oncologist and an epidemiologist. Internal consistencies were $\alpha = 0.94$ for BIS and $\alpha = 0.92$ for the self-esteem scale, reflecting a good internal consistency of the two measurement instruments.

2.3 Statistical Analysis

The statistical analysis was performed using the software "Microsoft Excel 2016" and the Software Program Statistical Package for the Social Sciences (SPSS) version 23. It included a calculation of simple and relative frequencies (percentages) for each of the qualitative variables, and a calculation of the averages and of the medians and standard deviations for quantitative variables. In order to test statistically crosses made between certain variables, we used the test of χ^2 and the t test of Student for the comparison of the averages.

The perceptions of the image of the body and the self-esteem were expressed through the calculation of overall scores.

Univariate analyses were performed to compare women with better body image score versus

those with a poorer body image score according to the different socio-demographic and clinical variables, and to compare women having self-esteem more than average versus those with a low self-esteem. The level of significance was set at $P < 0.05$. Finally, the correlation of "Pearson" has been used to study the relationship between the perception of the image of the body and that of the self-esteem.

3. RESULTS

3.1 Sociodemographic Characteristics (Table 1)

In total, 125 women have been included. The mean age was 49.56 ± 10.59 years, which varied from 26 to 71 years. The majority (62.4%) were in the age group 35-55 years. 67% of the women were married. A primary level education was found in 52.8% of cases. Our patients were housewives in 67.2% of cases. 46% of participants had an average socio-economic level. Almost half of the women (57%) were of urban origin.

3.2 Medical History (Table 1)

The history of breastfeeding has been found in 66% of patients. The family history of breast cancer has been noted in 55 patients, which was in 53% of cases among first-degree relatives (aunt, cousin...). A history of psychiatric pathologies was noted in 12% of the women, among which, the depression was present in 80% of cases.

3.3 Clinical Characteristics (Table 2)

Mean time to first consultation was 56.37 ± 49.03 months. 96% of the patients had undergone surgery. Most of the women underwent unilateral radical surgery (90%). For the 30% of women who underwent a conservative treatment, the aspect of the remaining breast was not satisfactory in 72% of cases. 99.2% of the women underwent adjuvant chemotherapy, 72.8% received radiation therapy, and 49.6% hormonal therapy. Most frequent adverse effects of chemotherapy were alopecia in 46.8% of cases and nausea and/or vomiting in 48.4% of cases.

Table 1. Sociodemographic and medical history characterization of our study group

Characteristics		Number (n)	Frequency (%)
Sociodemographic			
Age group (in years) (n=125)	< 35 years	12	9.6
	35 – 55 years	78	62.4
	> 55 years	35	24
Marital status (n=125)	Married	84	67
	Divorced	11	9
	Single	16	13
	Widow	14	11
Level of education (n=125)	University	7	5.6
	Secondary	36	28.8
	Primary	66	52.8
	Never educated	16	12.8
Socioeconomic level (n=125)	Low	49	39
	Moderate	58	46
	High	18	15
Geographical origin (n=125)	Rural	54	43
	Urban	71	57
Medical history			
Breastfeeding (n=125)	Yes	82	66
	No	43	34
Family history of breast cancer (n=55; 44%)	First degree relatives	66	53
	Other relatives	59	47
Psychiatric pathologies (n=15; 12%)	Depression	12	80
	Hallucination	2	13
	Acute stress	1	7

3.4 Perception of the Body Image (Table 3)

The average score for body image perception was 28.33 ± 8.52 . 62% had poor body image (score between 25 and 40). More than the 1/3 of the patients has responded "very much" on the item 7 "Did you avoid people because of the way you felt about your appearance?" "And on the item 10 "Have you been dissatisfied with the appearance of your scar(s)?".

3.5 Perception of the Self-esteem (Table 4)

The average score for self-esteem perception was of 23.59 ± 8.19 . 78.4% of the women had low self-esteem (score < 31). 61% of the patients responded "strongly disagree" on the item 7 "I feel that I'm a person of worth, at least on an equal plane with others". 44% responded "disagree" for the item 3 "I feel that I have a number of good qualities".

3.6 Factors Influencing the Perception of the Body Image (Table 5)

3.6.1 Comparison between poorer and better body image according to sociodemographic and medical history characteristics

The groups with poorer and better body image did not differ significantly on demographic variables. In fact, although in terms of relative frequencies, it seems that poorer body image is more frequent among single women aged less than 55 years old, having secondary or university level of schooling and those of urban origin, the difference was not statistically significant.

Concerning medical history variables, a greater proportion of women who had a poorer body image had history of psychiatric pathologies (18.2% versus 2.1% among better body image). This difference was statistically significant ($p=0.007$). However, no significant difference has been revealed on family histories of breast cancer and on the history of breastfeeding.

3.6.2 Comparison between poorer and better body image according to clinical characteristics

A greater proportion of women who had a better body image had a longer mean time to first consultation (66.15 ± 47.65 months versus 50.27 ± 49.20 months among those with poorer body image) without indicating statistically significant difference between the two groups ($p=0.077$).

We have not noticed a statistically significant difference between the two groups according to the type of surgical treatment ($p=0,871$).

In addition, the non satisfaction about the appearance of the remaining breast in case of conservative surgery was observed in 55.6% of the women with better body image versus 81% of the other group. However, this difference was not significant ($p=0.159$). Furthermore, while the exposure to the hormonal therapy has no effect on the perception of the image of the body, we have found that poorer body image was significantly more frequent in women treated by radiotherapy compared to those who have not been exposed to this type of treatment. The comparison according to exposure to chemotherapy was not possible because only 1 patient did not receive chemotherapy.

Table 2. Clinical characterization of women with breast cancer

Variables			Number (n)	Frequency (%)
Type of treatment (n=125)	Chemotherapy	Yes	124	99.2
		No	1	0.8
	Radiotherapy	Yes	91	72.8
		No	34	27.2
	Hormonal therapy	Yes	62	49.6
		No	63	50.4
Surgery	Yes	120	96	
	No	5	4	
Type of surgery (n=120)	Conservative		36	30
	Mastectomy		84	70
Side of mastectomy (n=84)	Unilateral		75	90
	Bilateral		9	10

Table 3. Response frequency for individual items of the body image scale

Item	Not at all (%)	A little (%)	Quite a bite (%)	Very much (%)
1. Have you been feeling self-conscious about your appearance	9.2	24.8	26.4	37.6
2. Have you felt less physically attractive as a result of your disease or treatment?	10.4	32	24	33.6
3. Have you been dissatisfied with your appearance when dressed?	16	26.4	20.8	36.8
4. Have you been feeling less feminine as a result of your disease or treatment?	19.2	23.2	24.8	32.8
5. Did you find it difficult to look at yourself naked?	20	24.8	19.2	36
6. Have you been feeling less sexually attractive as a result of your disease or treatment?	8.8	32	27.2	32
7. Did you avoid people because of the way you felt about your appearance?	14.4	24	23.2	38.4
8. Have you been feeling the treatment has left your body less whole?	8.8	31.2	24	36
9. Have you been dissatisfied with your body?	12	23.2	32	32.8
10. Have you been dissatisfied with the appearance of your scar(s)?	9.4	20.8	29.6	40

Our study showed a significant difference between the two groups according to the existence of the alopecia as an adverse effect of chemotherapy ($p = 0.006$). In fact, the frequency of the alopecia is statistically higher among women with poorer body image (56.6%) than among those with better body image (31.3%).

3.7 Factors Influencing the Perception of Self-esteem (Table 6)

3.7.1 Comparison between low and more than the average self-esteem according to sociodemographic and medical history characteristics

Among the socio-demographic characteristics studied, the univariate analysis shows significant difference only for the civil status. In fact, it is clear that the presence of the partner was significantly higher among women with a medium or high self-esteem (85.2%) than among those with a low self-esteem (62.2%) ($p=0.025$).

No significant difference was found between women with a low self-esteem and the other group according to the presence of the history of psychiatric pathologies, family history of breast cancer and a history of breast feeding.

3.7.2 Comparison between Low and More than the average self-esteem according to clinical characteristics

According to the average time elapsed since the discovery of the disease, the comparison of the perception of the self-esteem has shown a higher time among women with a self-esteem more than average (average duration= 70.04±47.43 months) than among those with a low self-esteem (average duration = 52.60±49.04 months) without having indicated statistically significant difference between the two groups ($p= 0.102$).

We have not noticed a statistically significant difference between women with a self-esteem more than average and women having a low self-esteem depending on the type of surgical treatment indicated ($p=0.668$).

In addition, the non satisfaction to the appearance of the breast remaining in case of conservative surgery was observed in 55.6% women with a self-esteem more than average against 77.8% of those with a low self-esteem without being statistically significant ($p=0.226$).

In addition, exposure to the endocrine therapy and to radiotherapy had no effect on the perception of the self-esteem.

Table 4. Response frequency for individual items of the self-esteem scale

Item	Strongly agree (%)	Agree (%)	Disagree (%)	Strongly disagree (%)
1. On the whole, I am satisfied with myself.	20.8	21.6	36.8	20.8
2. At times I think I am no good at all.	19.2	24.8	29.6	26.4
3. I feel that I have a number of good qualities.	18.4	20	44	17.6
4. I am able to do things as well as most other people.	19.2	19.2	36	25.6
5. I feel I do not have much to be proud of.	17.6	20	33.6	28.8
6. I certainly feel useless at times.	17.6	29.6	28.8	24
7. I feel that I'm a person of worth, at least on an equal plane with others.	0	0	39.2	60.8
8. I wish I could have more respect for myself.	15.2	25.6	32.8	26.4
9. All in all, I am inclined to feel that I am a failure.	18.4	18.4	37.6	25.6
10. I take a positive attitude toward myself.	20.8	22.4	33.6	23.2

Table 5. Evaluation of the body image according to sociodemographic, medical history and clinical characteristics

Characteristics	Better body image (n=48) (%)	Poorer body image (n=77) (%)	P
Sociodemographic			
Age group			
< 35 years	3 (6.3)	9 (11.7)	
35 – 55 years	28 (58.3)	50 (64.9)	NS
> 55 years	17 (35.4)	18 (23.4)	
Marital status			
With partner	37 (77.1)	47 (61)	NS
Without partner	11 (22.9)	30 (39)	
Level of education			
University+ Secondary	14 (29.2)	29 (37.7)	
Never educated +Primary	34 (70.8)	48 (62.3)	NS
Socioeconomic level			
Low	26 (54.2)	50 (64.9)	
Moderate+ High	22 (45.8)	27 (35.1)	NS
Geographical origin			
Rural	22 (45.8)	32 (41.6)	
Urban	26 (54.2)	45 (58.4)	NS
Medical history			
Family history of breast cancer			
Yes	23 (47.9)	32 (41.6)	
No	25 (52.1)	45 (58.4)	NS
Psychiatric Pathologies			
Yes	1 (2.1)	14 (18.2)	
No	47 (97.9)	63 (81.8)	0.007
Breastfeeding			
Yes	34 (70.8)	48 (62.3)	
No	14 (29.2)	29 (37.7)	NS
Clinical data			
Endocrine treatment			
Yes	26 (54.2)	36 (46.8)	
No	22 (45.8)	41 (53.2)	NS
Radiotherapy			
Yes	40 (83.3)	51 (66.2)	
No	8 (16.7)	26 (33.8)	0.037
	Better body image (n=48)	Poorer body image (n=72)	P
Mastectomy	34 (70.8)	50 (69.4)	NS
Conservative treatment	14 (29.2)	22 (30.6)	

NS: No significant difference

Table 6. Evaluation of the self-esteem according to sociodemographic, medical history and clinical characteristics

Characteristics		More than the average self-esteem (n=27) (%)	Low self-esteem (n=98) (%)	P
Sociodemographic				
Age group	< 35 years	3 (11.1)	9 (9.2)	NS
	35 – 55 years	13 (48.2)	65 (66.3)	
	> 55 years	11 (40.7)	24 (24.5)	
Marital status	With partner	23 (85.2)	61 (62.2)	0.025
	Without partner	4 (14.8)	37 (37.8)	
Level of education	University+ Secondary	23 (85.2)	61 (62.2)	NS
	Never educated +Primary	4 (14.8)	37 (37.8)	
Socioeconomic level	Low	23 (85.2)	61 (62.2)	NS
	Moderate+ High	4 (14.8)	37 (37.8)	
Geographical origin	Rural	23 (85.2)	61 (62.2)	NS
	Urban	4 (14.8)	37 (37.8)	
Medical history				
Family history of breast cancer	Yes	12 (44.4)	43 (43.9)	NS
	No	15 (55.6)	55 (56.1)	
Psychiatric Pathologies	Yes	0 (0)	15 (15.3)	NS
	No	27 (100)	83 (84.7)	
Breastfeeding	Yes	19 (70.4)	63 (64.3)	NS
	No	8 (29.6)	35 (35.7)	
Clinical data				
Endocrine treatment	Yes	14 (51.9)	48 (49)	NS
	No	13 (48.1)	50 (51)	
Radiotherapy	Yes	19 (70.4)	72 (73.5)	NS
	No	8 (29.6)	26 (26.5)	
		More than the average self-esteem (n=27)	Low self-esteem (n=93)	P
Mastectomy		18 (66.7)	66 (71)	NS
Conservative treatment		9 (33.3)	27 (29)	

NS: No significant difference

Our study showed a significant difference between the two groups according to the existence of the alopecia as an adverse effect of chemotherapy ($p = 0.014$). In fact, the frequency of the Alopecia is statistically higher among women with a low self-esteem (52.6%) than among those with self-esteem more than average (25.9%).

3.8 Pearson's Correlation between the Perception of Self –esteem and Body Image

Our study showed that there is a statistically significant correlation between the perception of the image of the body and that of the self-esteem. Thus the higher the score of body image, the lower the score of the perception of the self-esteem (Pearson's correlation coefficient = -0.444 , $p < 10^{-3}$).

4. DISCUSSION

4.1 Perception of the Body Image

Schilder defines the image of the body as "the way our body appears to us" [14].

Patients with breast cancer present an alteration of the body image that is expressed in several dimensions: Social relations, physical well-being and self-esteem [15].

A poorer body image score was noticed in 62% of women. This proportion was lower in the study of Dahl et al. [16]. In fact seventy-six breast cancer survivors (31%) had poorer body image in 2004, and sixty-seven (27%) in 2007. Among those 76 survivors who had a poorer body image in 2004, 52 survivors (68%) also had a poorer body image in 2007, whereas 24 survivors (32%)

had changed to a better body image. Among the 172 BCSs who had a better body image in 2004, 15 survivors (9%) had changed to a poorer body image in 2007, whereas 157 survivors (91%) retained a better body image over time.

In our study, no significant difference was found between poorer and better body image according to sociodemographic characteristics.

Marques et al. [17] found, as in our study, no significant association between image of the body and age ($p=0.20$). However, in 2001, Hopwood et al. [13] noticed that young women had a better body image. Bredart et al. [18] have also highlighted more important concerns of the body image among young patients.

Besides, concerning the civil status, Francisco et al. [19] affirmed that single women were more distressed by their body image ($p=0.03$). The marital status had no impact on the body image in our survey.

In our study, a greater proportion of women who had a poorer body image had a history of psychiatric pathologies (18.2% versus 2.1% among better body image). This difference was statistically significant ($p=0.007$). In Hannoun's study [20], a quarter of the women treated for breast cancer took a treatment for anxiety, depression or both. These disorders destabilize the psychic homeostasis of women and therefore disrupt the image they had of their bodies. Moreover, according to Dahl et al. [16], poorer body image was associated with poorer self-rated health, chronic fatigue and mental distress, and poorer generic and disease-related quality of life in univariate analyses. Most of these variables also significantly predicted poorer body image 3 years later.

As in our study, Marques et al. [17] found no significant association between the perception of the body image and the time elapsed since the discovery of the disease. Bredart et al. [18] have noted a poorer body image beyond 6 months after surgery by comparison to the first six months following this intervention. However, Hopwood et al. [13] have found higher scores on the scale of body image at the end of the first six months after the date of the first surgical intervention.

The survey made by Shover et al. [21], on a large group of women, confirmed that quality of life was minimally affected when a partial

mastectomy or immediate breast reconstruction was performed. The great majority of women were well adjusted psychologically, rated their sexual attractiveness positively, had happy marital relationships, and were satisfied with their sex lives. Concerning all of these dimensions, less than 20% of women reported significant distress.

In addition to the systemic treatment, surgical treatment affects the image of the body. Vanlerenberghe et al. [22] affirmed that mastectomy, when it is indicated, is experienced as a mutilation and an alteration of the female identity and the body image. Of all time, breast has always been a symbol of femininity. In daily life, the absence of the breast and the dissymmetry are very binding: fear of losing the prosthesis, fear to be surprised nude in the bathroom, etc. The nudity may be difficult to assume and become particularly stressful. Two types of pain can occur after breast surgery: phantom breast pain and post mastectomy pain syndrome [23].

Marques et al. [17], have found a better body image score among women who underwent radical surgery than among women who had conservative one. This confirms that the evaluation of the body image allows differentiating groups of surgery characterized by appearance changes. However, Shover et al. [21] reported that conservative treatment can cause more distress of the body image than a radical treatment ($p<0.001$). In fact, 88% of patients who had a conservative treatment were not satisfied with the appearance of their breast. According to Shover, women who had partial mastectomy and those who underwent breast reconstruction were similar on dimensions of psychosocial adjustment and body image, suggesting that the choice of the treatment should be based on medical factors but also on aesthetic outlook [21].

In the study of Dahl et al. [16], a significantly greater proportion of women who underwent breast reconstruction were among the breast cancer survivors with the poorer body image. 58% of breast cancer survivors who were treated with both modified radical mastectomy and manually planned radiotherapy had a better body image.

Vanlerenberghe et al. [22] have found that radiotherapy alters the perception of the image of the body. The skin is infiltrated, loses its

flexibility, and the breast is painful forbidding any contact, patients often complains of burning sensations.

More common adverse events of hormonal therapy are weight gain (progestin), hot flushes (oestrogen inhibitors, aromatase inhibitors), vaginal dryness and atrophy, bone pain and arthralgia (aromatase inhibitors). This treatment alters the image of the body and the quality of life of some patients [22]. However, in our study the association endocrine therapy and the perception of the image of the body were not significant.

In addition, in our study we found a correlation between the perception of the image of the body and alopecia caused by chemotherapy ($p=0.006$) which is consistent with the result found in the study of Shover ($p<0.001$) [21].

4.2 Perception of the Self-esteem

Our patients had a low self-esteem in 78.4% of cases with a mean score of 23.59 ± 8.19 . In the study of Shover et al. [21] 29% of women had a low self-esteem.

According to Gomes et al. [24], the minimum score obtained was 19 points and the maximum 40, with a mean of 30.32 ± 4.58 . Only one woman (2.7%) presented low self-esteem, 16 women (43.2%) had average self-esteem and 20 women (54.1%) high self-esteem.

In our series, being married significantly affects the perception of the self-esteem ($p = 0.025$). Similarly Gomes et al. [24] have shown that 11 of the 20 women with high self-esteem score had stable unions (It should be noted that those married or living with a steady partner were considered to be in a stable union). The presence of the partner has been shown to be significant in fighting the disease and facilitated her family and social reintegration [25].

According to Gomes et al. [24] there is a significant relationship between age and self-esteem. The prevalence of high self-esteem can be explained by the mean age of the respondents (56.11 years), as self-esteem tends to increase with age [26]. This has also been found by Johansson et al. [27], they reported that being a single female, aged between 26 and 63 years and still working despite the disease, foster a strong self-esteem.

In our study, no correlation between the perception of the self-esteem and the level of education was noted. However, Gomes et al. [24], have shown a positive correlation between educated women and a high self-esteem ($p<0.05$). It is assumed that the higher the level of education, the greater the access to information and, consequently, the greater the understanding of the situation. Women start to value the fact that they are survivors of breast cancer and attach less value to their body image. They feel more peaceful, secure and confident, which reflect positively in their self-esteem [24].

As in our study, Gomes et al. [24], found no significant difference between low and more than the average self-esteem according to the type of treatment. The majority of the women in both groups presented high self-esteem, with the percentages being equivalent. Moreover, concerning the complementary treatments, among the seven women who underwent neoadjuvant chemotherapy, four (54.15%) presented average self-esteem and three (42.85%) high self-esteem. Among the 15 who underwent adjuvant chemotherapy, one (6.67%) presented low self-esteem, six (40%) average self esteem, and eight (53.33%) high self-esteem. Of the eighteen women who underwent radiotherapy, nine (50%) presented average self-esteem, nine (50%) high self-esteem and, finally, of the 29 who underwent endocrine therapy, 12 (41.4%) presented average self-esteem and 17 (58.6%) high self-esteem. Two patients who did not receive neither chemotherapy nor hormonal therapy had high self-esteem [24].

These findings are not in line with some studies [28,29]. In Vieira and in Tavares studies, radical surgery affected the self-esteem and body image of the patients and was cited as a source of emotional and physical distancing between woman with mastectomy and her partner [24]. It was noted that if surgery was performed on the dominant side, the self-esteem scores tended to be lower. Indeed, lymphoedema could hinder the return to normal daily activity and normal relationships [30].

In our study, women exposed to chemotherapy-induced alopecia had lower self-esteem ($p = 0.014$).

Despite knowing that chemotherapy and hormonal therapy negatively influence the quality of life of patients and their self-esteem, due to the adverse effects (decreased physical function,

role performance and body image, and increased symptoms of anxiety, fatigue, nausea, vomiting and constipation) [31], the study of Gomes et al. [24] did not encounter this result.

Also known as 'reverse mastectomy', breast reconstruction is considered the most effective method for the restoration of the psychological well-being after mastectomy. It improves the body outline, preserves or restores the personal integrity, increases optimism for a cure, and contributes to sexual identification, thus increasing the self-esteem and improving the body image [32]. However, for other women, breast reconstruction is not desired, even when it is encouraged by the doctors [33].

4.3 Pearson's Correlation between the Perception of Self –esteem and Body Image

The reliability of the body image scale is satisfactory (Cronbach alpha = 0.941). This result is in line with what was found by Brédart et al. [18] (Cronbach's alpha= 0.93) [19]. In the study of Vallieres et Vallerand, the Cronbach alpha values is equal to 0.89 for the self-esteem scale. This result was consistent with ours (0.929) reflecting a good internal consistency of the items [34].

5. CONCLUSION

The results found in our study highlighted the magnitude of the psychological pain experienced by women with breast cancer. This type of cancer requires an appropriate holistic support (biopsychosocial) to ensure a better quality of life. Despite the importance of the sufferance, and the impact of this pathology on the psychosocial life of the woman, few studies have addressed this topic. Therefore, it is important to initiate researches in this subject in order to improve the wellbeing of women with breast cancer.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Ferlay J, Soerjomataram I, Dikshit R, et al. Cancer incidence and mortality worldwide: Sources, methods and major patterns in Globocan 2012. *Int J Cancer*. 2015;136(5):E359-86.
2. Yankaskas BC. Epidemiology of breast cancer in young women. *Breast Dis*. 2005–2006;23:3–8.
3. Frikha M, Yaiche O, Elloumi F, et al. Results of a pilot study for breast cancer screening by mammography in Sfax region, Tunisia. *J Gynecol Obstet*. 2013; 42(3):252–61.
4. Anderson MS, Johnson J. Restoration of body image and self-esteem for women after cancer treatment. *Cancer Pract*. 1994;2:345–349.
5. Merriam-Webster Dictionary. Available:<http://www.merriam-webster.com/> (Accessed July 6, 2009)
6. Cash TF, Melnyk SE, Hrabosky JI. The assessment of body image investment: An extensive revision of the Appearance Schemas Inventory. *Int J Eating Dis*. 2004;35:305-316.
7. Carmichael AR. Obesity and prognosis of breast cancer. *Obesity Rev*. 2006;7:333-340.
8. Rooney M, Wald A. Interventions for the management of weight and body composition changes in women with breast cancer. *Clin J Oncol Nurs*. 2007;11:41-52.
9. Cash TF, Pruzinsky T, Eds. *Body Image: A handbook*. New York: Guilford Press; 2002.
10. Branden N. *Self-esteem: How to learn to like yourself*. São Paulo (SP): Saraiva; 2000.
11. White CA. Body image dimensions and cancer: a heuristic cognitive behavioural model. *Psycho-Oncology*. 2000;9:183-192.
12. Frédéric Fourchard A. Courtinat-Camps. Overall and physical self-esteem in adolescence. *Elsivier Masson*. 2013;61(n6):333-94.
13. Hopwood P, Fletcher I, Lee A, et al. A body image scale for use with cancer patients. *Eur J Cancer*. 2001;37:189-197.

14. Schilder P. The image of the body: Studies of the constructive forces of the psyche. Paris: Gallimard; 1980.
15. Reich M. Cancer and body image: Identity, representation and symbolism. *Inf Psychiatr.* 2009;85:247-54.
16. Falk Dahl CA, Reinertsen KV, Nesvold IL, et al. A study of body image in long-term breast cancer survivors. *Cancer.* 2010; 116(15):3549-57.
17. Marques A, Cristina M, Moreira H. The portuguese version of the body image scale (BIS) – psychometric properties in a sample of breast cancer patients. *European Journal of Oncology Nursing.* 2009;1–8.
18. Brédart A, Swaine Verdier A, Dolbeault S. French adaptation of the Body Image Scale (BIS) scale assessing the perception of body image in women with breast cancer. *Psycho-Oncology.* 2007;1(1):24-30.
19. Fobair P, Stewart SL, Chang S. Body image and sexual problems in young women with breast cancer. *Psychooncology.* 2006;15(7):579-94.
20. Hannoun-Levi JM. Treatment of breast and uterine cancer: Physiological and psychological impact on sexual function. *Cancer / Radiotherapy.* 2005;9(3):175-82.
21. Schover LR, Yetman RJ, Tuason LJ, et al. Partial mastectomy and breast reconstruction. A comparison of their effects on psychosocial adjustment, body image, and sexuality. *Cancer.* 1995; 75(1):54-64.
22. Vanlerenberghe E, Sedda AL, Ait-Kaci F. The impact of gynaecological cancers on woman's sexuality and her couple. [Article in French]. *Bull Cancer.* 2015;102(5):454-62.
23. Laurent Labrèzea, Florence Dixmeriasa, Dominique Monnina, et al. A new post-mastectomy syndrome intensity monitoring score (MPPS). *Pain Assessment - Diagnosis – Treatment.* 2010;11:158-164.
24. Gomes NS, Riul S. Evaluation of the self-esteem of women who had undergone breast cancer surgery. *Text context nursing, Florianópolis.* 2013;22(2):509-16.
25. Vieira CP, Lopes MHBM, Shimo AKK. Feelings and experiences in the lives of women with breast cancer. *Rev Esc Enferm USP.* 2007;41(2):311-6.
26. Terra FS. Evaluation of anxiety, depression and self-esteem in public and private university nursing professors [thesis]. Ribeirão Preto (SP): University of São Paulo, Ribeirão Preto College of Nursing; 2010.
27. Inez J, Carina B. Social support and self-esteem in patients afflicted with cancer in the reproductive organs, including breasts. *Austral-Asian Journal of Cancer.* 2003; 2:116-123. ISSN: 0972-2556
28. Vieira CP, Queiroz MS. Social representations about female cancer: Experience and professional performance. *Psicol Soc.* 2006;18(1):63-70.
29. Tavares JSC, Trad LAB. Families of women with cancer: Challenges associated with care and coping factors. *Interface (Botucatu).* 2009;13(29):395-408.
30. Silva G, Santos MA. Stressors in breast cancer posttreatment: A qualitative approach. *Rev Latino-Am Enfermagem.* 2010;18(4):688-95.
31. Nicolussi AC, Sawada NO. Quality of life of breast cancer patients in adjuvant therapy. *Rev Gaúcha Enferm.* 2011;32(4):759-66.
32. Braganholo LP. The non-performing breast reconstructive surgery: associated factors, quality of life and self-esteem [dissertation]. Ribeirão Preto (SP): School of Nursing, University of São Paulo; 2007.
33. Henry M, Baas C, Mathelin C. Breast reconstruction after breast cancer: Reasons for refusal why do women refuse reconstructive breast surgery after mastectomy? *Gynecology and Obstetrics & Fertility.* 2010;38:217-223.
34. Evelyne F Vallieres, Robert J Vallerand. French translation and validation of Rosenberg's self-esteem scale. *Int. J. of Psychology.* 1990;25:305-16.

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