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Body image and the psychological and behavioural indices of distress in female breast cancer patients

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ABSTRACT

Psychological distress associated with body image disorders in patients with breast cancer is well described in the literature. Given the known insults to body image caused by both disease and oncological treatment, body image distress is commonplace within this patient population. Stress is also a frequent sequela of a diagnosis of and treatment for cancer and may manifest various forms. This study undertook to investigate the nature of stress and body image distress within a cohort of 80 female breast cancer patients drawn from three outpatient cancer treatment facilities in the Durban, South Africa region and to examine its correlation with psychological and behavioural indices reported by these patients as compared to a group of 80 female patients undergoing treatment for other types of cancer. The results indicated that although there were no significant differences between the two groups in terms of depressive symptomatology and measures of self-esteem, where scores largely fell within normal ranges, the breast cancer patients experienced higher levels of body image dissatisfaction as compared to the other group and that stress tended to be expressed in psychological and behavioural indices as opposed to physiological expression.

Keywords: behavior, body image, breast cancer, stress, psychological symptoms

1. INTRODUCTION

Breast cancer is the second most common type of cancer worldwide, and statistics suggest that over 89% of patients diagnosed with breast cancer are surviving at least a 5 year interval

after diagnosis [1]. The physical and psychological difficulties that survivors face arise due to both disease and treatment, and body image and stress feature prominently as facets of the psychological distress experienced by patients. Both of these aspects can significantly impair the patient's quality of life.

Body image concerns may be attributed to loss or disfigurement of the breast from surgery, late effects of radiotherapy and/or adverse effects of systemic treatment, such as alopecia and loss of eyebrows and eyelashes. These collective factors can have an impact on overall quality of life and in particular, body image perceptions of patients [1, 2].

Some studies suggest that the patient's mental health status plays an essential role in oncological treatment and that distress, in addition to adversely influencing the patient's quality of life may also compromise compliance with oncology treatment [3]. Moreover, distress has been associated with prolonged hospitalisation and may negatively affect prognosis [4].

As such, with the earlier diagnoses and new treatment protocols which have rendered a disease once considered incurable to one more regarded as curable in many cases or as a chronic condition, it becomes imperative to gain further insight into the patient's psychological reactions to such a diagnosis and to raise the awareness and understanding of oncology health care professionals regarding these patients' psychological experiences [5].

2. BODY IMAGE IN BREAST CANCER PATIENTS

Body image is a multidimensional construct that has been referred to as the individual's picture of her own body which she has formed in her mind, with associated characteristics such as the expression of emotions, identification, beauty, and social aspects. Hopwood et al. [6] identified three areas which characterize of the complexity of the concept of body image in women who have been treated for breast cancer. These include the affective (the feeling of femininity, the feeling of being attractive), behavioral (avoiding others because of concerns with appearance), and cognitive (satisfaction with appearance or with results of surgery). Other studies have defined body image after breast cancer as the characteristics of the individual's mental image of her body, her attitude regarding her appearance and her state of health in addition to sexual functioning [7]. A further study posits a theoretical framework which is specific to body image in women with breast cancer undergoing reconstruction and includes the dimensions of perception, cognition, behavior, and emotion, as related to body functioning post-diagnosis and treatment for breast cancer [8]. Women with better conceptualization of their body image have been found to cope better with cancer [7]. The concept of a negative body image disturbance encompasses a wide spectrum of psychological factors including general body dissatisfaction, negative emotions regarding body image, overinvestment in appearance, and poorer quality of life [9]. Negative body image among breast cancer survivors may be characterized by dissatisfaction with appearance, the perception of loss of femininity and body integrity, a reluctance to look at one's naked body, feelings of being less sexually attractive, self-consciousness about appearance, and dissatisfaction with surgical results [10]. Negative body image perception has been shown to adversely affect both the physical and psychological functioning of breast cancer patients and has been linked to greater overall psychological distress in these patients [11]. Lower self-esteem, higher social anxiety, greater fears of social evaluation and a tendency to engage more in behavioural avoidance are linked to poorer body image which also correlates with greater depression [12, 13].

A further component of body image which may have relevance for cancer patients is appearance investment, which refers to the value or importance placed on appearance and physical attributes and the belief that the individual's self-worth is contingent on their appearance [14, 15]. A poorer body image is often found in individuals who are more invested in their appearance [16]. A high personal investment in one's body image can be a source of self-worth. However, patients who place greater significance on their appearance to define their self-esteem are likely to be more vulnerable to poor adjustment resulting from body image changes [17]. Women in general, tend to focus on body image-related evaluation and investment and a diagnosis of breast cancer may further intensify this predisposition [11].

The importance the patient places on her breasts has a significant impact on her body image and the loss of a breast through mastectomy may have complex meanings which bring about conflicting emotions. Therefore, the degree of the psychological reaction to the loss of a breast is closely correlated with the emotional importance of and the meaning that the patient attaches to her breasts [18]. Studies show that the disfigurement or loss of a breast is inherently linked to a woman's identity and sense of self with an estimated one-third of breast cancer survivors expressing distress which can be related directly to disturbed body image even after successful cancer treatment [11].

Research suggests that body image issues are probably not the chief source of concern in the diagnostic stage of the disease, when most women are more focused on their disease and the crisis of whether they will survive. However, body image concerns tend to surface later when patients try to deal with the changes in their appearance over time [19].

Studies further suggest that age is a factor in body image distress in breast cancer populations [1]. Although, in general, body image has been shown to remain stable throughout the lifespan, younger women with breast cancer experience greater levels of emotional distress and poorer body image, when compared to older patients. Furthermore, younger women with poor body image have been found to experience increased distress when faced with breast cancer surgery, while older women and younger women with better body image tend to regard breast cancer surgery with less emotional distress [20].

3. STRESS AND BREAST CANCER

For the purposes of this research, stress is defined as a multifaceted construct that may be theoretically described as the individual's response to external demands or, more subjectively, as the response to the individual's appraisal of those demands, depending on that individual's coping abilities [21].

This includes physiological responses as well as cognitive processes that are behavioural and psychological in nature that aim to manage the stressor, or to allow the individual to tolerate the demands created by the situation [22, 23]. Thus the reaction of the body, mind and behaviour to internal or external pressures associated with change is involved, and reflects an interactional correlation between change, demands, stressors or events, and the ability or lack of ability to deal with them [22]. The association between stress and oncological treatment is well described in the literature [24]. Factors that lead to elevated stress levels in cancer patients may include, inter alia, the diagnosis itself, the disruption caused by the disease, the experience of undergoing adjuvant therapy and the concomitant side-effects, the instance of increased dependency and the fear of pain and suffering [5, 25, 26]. In terms of the general signs and symptoms of

unhealthy stress, research suggests that these can be interpreted in terms of several different categories of stress, including physical reactions, psychological reactions and behavioural reactions [22].

The disease itself causes physical stress reactions where, for instance, fatigue, pain and shortness of breath may cause severe distress. Moreover, oncological treatment may also cause physiological stress where demand is placed on the body through invasive and painful treatment interventions. Psychological stress appears to be rooted in the awareness of having a potentially life-threatening disease and living with the consequences of both disease and treatment. Cancer patients may experience symptoms of cancer-related stress such as intrusive thoughts, feelings of fear of the disease, anxiety and avoidant thoughts and behaviours, all of which are associated with poorer quality of life [27]. In terms of behavioural manifestations of stress, studies have identified changes in appetite, emotive sensitivity and excessive irritability as some prevalent responses to the experience of diagnosis and treatment for breast cancer [23].

4. MATERIALS AND METHODS

4. 1. Participants

Convenience sampling was used to conduct the research among female breast cancer patients (n = 80) and female patients receiving active treatment for other types of cancer, inter alia ovary, cervix, lung, and colon (n = 80). These participants were all patients of three outpatient oncology treatment facilities within the Durban, South Africa area. All were receiving chemotherapy or a combination of chemo-and radiotherapy at these centres. Some had undergone surgery. To be eligible, participants had to be female, aged between 30 and 70 years and have had no prior disease or comorbid conditions. The researcher approached patients receiving chemotherapy with an invitation to take part in the study relating to their psychological experiences during their treatment. All participants gave both their written and oral consent prior to completing the test protocol.

4. 2. Materials

Study participants identified as meeting the inclusion criteria completed a demographic questionnaire and a series of 4 questionnaires including

- The Beck Depression Inventory (Beck et al, 1961), (BDI): This is a widely-used, 21-item multiple-choice self-report rating inventory which measures the characteristic attitudes and the severity of symptoms of depression. Of relevance to the present study, these include, inter alia, self-dissatisfaction, social withdrawal, pessimism and irritability, thoughts of guilt or feelings of being punished, in addition to physical symptoms such as fatigue, weight loss, and loss of libido. It is used in the evaluation of depression in normal and psychiatric populations. Several items in the scale indicate levels of hopelessness and suicidal ideation. Individual scale items are scored on a 4-point continuum (0 = least, 3 = most), with a total score range of 0–63. Higher scores indicate more severe depression. Two subscales include a cognitive-affective and a somatic-performance subscale.
- Rosenberg Self-Esteem Scale (Rosenberg, 1965): This scale measures global self-esteem and is a 10-item Likert-type scale. It is widely used in social science research. It uses a scale of 0–30 where a score less than 15 may indicate a problematic low self-esteem. Five items

are positively worded statements and five are negatively worded. The scale measures global self-worth or self-acceptance by measuring both positive and negative feelings about the self and is considered a reliable and valid quantitative tool for self-esteem assessment.

- Stress Symptom Checklist (Schlebusch, 2004), (SSCL): This is a dichotomous-scaled, 87-item checklist of the general symptoms and signs of unhealthy stress. It measures the intensity or severity of stress as reflected by an individual's reactions on 3 dimensions: physical, psychological and behavioural. The SSCL is a useful clinical measure of stress.
- Body Image Scale (Hopwood, 2001), (BIS): The BIS is a 10-item measure developed to briefly and comprehensively assess 3 dimensions of body image in cancer patients: affective (feelings of, for example, self-consciousness), behavioural (difficulty at looking at one's body naked) and cognitive (satisfaction with appearance) and has been designed to use with any cancer or the treatment thereof. It uses a 4-point response scale and the final score is the sum of the 10 items, ranging from 0-30, where low scores represent few symptoms and less body image distress and higher scores correspond to increasing symptoms and more body image concerns.

Brief demographic questionnaire: a demographic questionnaire constructed by the researcher consisting of questions about the participant's age, marital status, parity and medical and treatment history.

5. RESULTS

5. 1. Data analysis

As the frequency of the scores were not normally distributed, the data was analysed using non-parametric methods. The two-sample Wilcoxon rank-sum (Mann Whitney) test was used in comparing the two groups on all the measures applied.

The results of the BDI indicate that there were no significant differences between the two groups ($p = 0.3$) in terms of levels of depression. These results suggest that the majority of patients in both groups fell within the minimal to mild depression ranges and only one patient in each group reported severe distress. Similarly, with respect to the Rosenberg Self-esteem Scale, no notable differences were found ($p = 0.2$) with the majority of patients in each group scoring within the low average range.

Table 1. Results of the Body Image Scale.

	Other		Breast		p value
	mean	sd	Mean	sd	
1) Have you been feeling self-conscious about your appearance?	1.06	1.08	1.45	1.04	0.01
2) Have you felt less physically attractive as a result of your disease or treatment?	0.63	0.99	1.21	0.99	<0.001

3) Have you been dissatisfied with your appearance when dressed?	0.85	0.98	0.88	0.93	0.71
4) Have you been feeling less feminine as a result of your disease or treatment?	0.51	0.91	0.84	0.96	0.01
5) Did you find it difficult to look at yourself naked?	0.66	1.02	0.74	0.99	0.44
6) Have you been feeling less sexually attractive as a result of your disease or treatment?	0.69	1.00	1.25	1.01	0.001
7) Did you avoid people because of the way you felt about your appearance?	0.40	0.77	0.69	0.85	0.01
8) Have you been feeling the treatment has left your body less whole?	0.75	0.96	0.93	0.91	0.11
9) Have you felt dissatisfied with your body?	0.75	0.95	1.08	0.99	0.02
10) Have you been dissatisfied with the appearance of your scar?	0.54	0.91	0.74	0.94	0.08

In terms of body image, as measured by the BIS, significant differences were found between the sample of breast cancer patients and those with other sites of disease (Table 1). The greatest differences were found on test items relating to perceptions of physical attractiveness ($p = <0.001$) and sexual attractiveness ($p = 0.001$) resulting from disease and treatment, where more breast patients reported greater feelings of being less physically attractive and less sexually attractive as a direct result of their disease and treatment. Only 27.5% of the breast group reported feeling no feelings of impaired attractiveness as compared to 65% of the other group who felt no impairment. 12.5% of the breast group reported high levels of feeling less physically attractive, whereas 8.8% of the other group felt that they felt very much more negative regarding their physical attractiveness. In terms of feeling less sexually attractive 60% of the other group reported experiencing no such feeling, whereas only 25% of the breast group felt no less sexually attractive.

Differences ($p = 0.01$) were also found on items relating to feelings of being more self-conscious about physical appearance, with 38% of the other group reporting no self-consciousness as compared to the breast group of whom 18.8% experienced no self-consciousness. 22.5% of this group experienced very much self-consciousness where only 16.3% of the other reported the same. Feeling less feminine as a result of disease and treatment also yielded higher results for the breast group of whom 46.3% reported no feelings of impairment where 71.3% of the other group reported the same. In terms of avoiding other people because of feelings about their appearance, 73.8% of the other group did not avoid others as a result of

their feelings about their appearance whereas only 52.5% of the breast group reported avoiding other people. Further differences ($p = 0.02$) were found on the item relating to the patient's dissatisfaction with her body with the breast group reporting significantly greater dissatisfaction.

The results of this study also confirm the findings of previous research in that age was found to be a factor in body image distress. Patients younger than 50 years of age (55.6%) reported greater body image distress than did those over 50 (44.4%), suggesting that being over the age of 50 is a protective factor for body image satisfaction.

Table 2. Results of the Stress Symptom Checklist.

SSCL categories	Other		Breast		Total	p value
	n	%	n	%		
Physical						
<5	24	30.0	18	22.5	42	0.48
5-9	19	23.8	16	20.0	35	
10-14	3	3.8	12	15.0	15	
15-19	17	21.3	19	23.8	36	
20-24	10	12.5	8	10.0	18	
25-32	7	8.8	7	8.8	14	
total	80	100%	80	100%		
Psychological						
<5	42	52.5	26	32.5	68	0.055
5-9	7	8.8	13	16.3	20	
10-14	7	8.8	9	11.3	16	
15-19	5	6.3	7	8.8	12	
20-24	2	2.5	7	8.8	9	
25-30	8	10.0	7	8.8	15	
31-34	3	3.8	4	5.0	7	

35-39	1	1.3	5	6.3	6	
40-46	5	6.3	2	2.5	7	
total	80	100%	80	100%		
Behavioural						
<5	30	37.5	12	15.0	42	0.002
5-9	15	18.8	16	20.0	31	
10-14	9	11.3	15	18.8	24	
15-19	7	8.8	5	6.3	12	
20-24	4	5.0	6	7.5	10	
25-30	2	2.5	4	5.0	6	
31-34	2	2.5	4	5.0	6	
35-39	1	1.3	2	2.5	3	
40-45	5	6.3	5	6.3	10	
45-49	3	3.8	6	7.5	9	
50-64	2	2.5	5	6.3	7	
total	80	100%	80	100%		

In terms of stress as measured by the SSCL, (Table 2) there were no significant differences between the two groups in terms of their physical reactions to stress ($p = 0.48$) but differences emerged with respect to the psychological and behavioural indices of the stress they were experiencing. Most in both groups expressed a moderate degree of stress in physiological terms. With regards to the psychological responses reported, differences between the two groups were found ($p = 0.055$). Most significant differences were found on the items pertaining to feelings of self-dislike ($p = 0.021$), where 13.8% of the breast group reported greater feelings of disliking themselves as compared to 8.8% of the other group, low self-esteem or low opinion of oneself ($p = 0.04$), where 73.8% of the other patients reported no feelings of low self-esteem as compared to only 56.3% of the breast group who experienced no feeling of poor self-esteem or opinion of themselves. Items pertaining to feeling tense or keyed up yielded a notable difference ($p = 0.007$), with more of the breast patient group (23.8%) reporting high feelings of tension as against 16.3% of the other group.

In terms of the behavioural reactions to stress, further significant differences emerged ($p = 0.002$). Of the 42 items in the behavioural reactions subtest, 14 responses yielded marked disparities. The breast group results indicated a higher incidence of responses on items concerning poor concentration ($p = 0.001$), feelings of moodiness and irritability ($p = 0.001$), emotional outbursts ($p = 0.002$) and restlessness ($p = 0.003$).

The breast group also yielded higher scores on items relating to memory loss/forgetfulness ($p = 0.04$), difficulty in decision making ($p = 0.03$), procrastination ($p = 0.048$), disinterest in other people ($p = 0.02$) and a lack of interest in life ($p = 0.01$). These results indicate that more of the breast group experience severe and levels of stress in terms of their behavioural symptoms than those of the other group.

6. DISCUSSION

The main aim of the present study was to gain a more thorough insight in to the nature of the stress and the body image distress experienced by breast cancer patients following diagnosis and during adjuvant treatment. The hypothesis was that breast cancer patients would experience greater body image dysphoria than patients with other types of cancer and that the ways they exhibited the stress they underwent would also differ.

In terms of body image, more of the breast cancer group reported higher levels of body image dysphoria on all the test items. Most significantly, more respondents reported much higher perceptions of being less physically attractive and less sexually attractive owing to their disease and the treatment. They reported higher levels of self-consciousness, feeling less feminine avoiding others because of their appearance and being dissatisfied with their body.

These results confirm the findings of other research which suggests that body image disturbances are prevalent and are an important issue of survivorship after a breast cancer diagnosis and treatment and are often associated with a variety of other distressing psychological, physical, and behavioural concerns including problems related to perceived physical attractiveness, sexuality and related distress for this problem [1, 30].

The changed body not only represents the physical sign of cancer, it also represents the social presence and representation of cancer [31]. Society regards the breast as the symbol of femininity and the meaning of the breast is intertwined with women's sexual identity and their subjective perceptions of how they appear. To illustrate this, the increase in requests for augmentation mammoplasty (AM) have rendered it a highly popular elective cosmetic procedure, especially in western culture, where the role of the female breast in sexual attractiveness has been emphasized [32]. In general, the disease, treatment and adjuvant therapies, such as chemotherapy and radiation, negatively affect body image and women's acceptance of their changed body image after treatment [33]. The literature suggests that a majority of women feel less attractive and less feminine and this tendency towards low body image, attractiveness, and femininity is positively correlated with elevated levels of depression and negatively with quality of life [34].

The results of this study parallel these assertions in that the most notable differences between the two groups arose in the areas of perceived physical and sexual attractiveness, with the breast sample reporting greater self-consciousness, impaired feelings of femininity, the desire to avoid others because of their appearance and general dissatisfaction with their bodies post disease and treatment. There were no significant differences between the groups in terms

of their satisfaction with their appearance when dressed, their experiencing difficulty with seeing themselves naked and feeling that their body is less whole. This leads to the conclusion that there may possibly be more emphasis on the patient's consciousness of how her external appearance is perceived by others as opposed to feelings of personal body dysphoria.

The results of the SSCL suggest that the patients did not express their stress through physical symptoms but rather through psychological and behavioural paths. In terms of the psychological experiences reported, significant differences emerged between the two groups on the items relating to feelings of self-dislike, low self-esteem and feelings of tension or being keyed up. However, this was not borne out by the results of the Rosenberg Self-esteem Scale results, where there were no notable differences between the groups, with the breast group reporting only marginally lower self-esteem and both groups scored within the average range.

A number of differences between the two groups emerged relating to the behavioural symptoms of stress reported. The breast group reported a higher incidence of behavioural symptoms on all items but poor concentration, irritability, emotional outbursts and restlessness emerged as sources of the greatest differences between the groups. Forgetfulness, difficulty with decision making lack of interest in life and in other people and fearfulness also emerged as sources of notable differences between the two groups with the breast group reporting higher scores on all these items.

These results suggest that more breast cancer patients experience greater levels of stress than do female patients with other forms of cancer and that this stress manifests in differing ways. Although there appear to be no significant differences in terms of physiological symptoms of stress between these two groups, the experiences diverge on psychological and behavioural criteria.

The paucity of differences in terms of physical symptomatology found between these two groups may be due to the fact that oncology treatments, in the form of chemotherapy and/or radiotherapy, affect all patients similarly, or possibly that any physiological symptoms the patients undergo may be ascribed by them as reactions to treatment, rather than as expressions of stress and thus not marked as such on the test. However, in psychological and behavioural terms, the results clearly define a differential experience of the disease and treatment with a greater numbers of breast patients reporting more symptoms occurring more frequently and thus indicating more severe levels of stress.

7. CONCLUSIONS

This study set out to identify differences in the experiences of breast cancer patients and patients with disease in other sites. As suggested by the existing literature in this area, it was posited that due to the meaning of the breast, patients diagnosed with disease and treated for breast cancer would undergo differing experiences in terms of body image and disease- and treatment-related stress. The results supported earlier findings that breast cancer patients do experience greater levels of body image distress following their diagnosis and subsequent treatment. The findings also suggest that this distress is due not only to the patient's subjective perception of feeling less feminine and more dissatisfied with their body, but notably, also to how these patients feel that others perceive their appearance. They tend to experience higher levels of self-consciousness and a greater need to avoid others because of their feelings about their appearance. These patients also experience stress differentially, with more breast patients

reporting higher levels of psychological symptoms of stress such as self-dislike and feelings of tension in addition to more behavioural symptoms of stress.

These findings confirm that body image is a complex post-treatment concern for breast cancer patients and that these patients are at greater risk of body image distress and differential manifestations of stress than are patients with other forms of cancer. The implications of these findings suggest that healthcare professionals, particularly those who specialize in oncology, should be mindful of the vulnerability of this patient population to these sequelae to diagnosis and treatment and that further studies into the experiences of breast cancer patients are warranted in order to better identify those patients at risk for distress and refer them for supportive therapy.

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