

**THE EXPERIENCE OF ANXIETY AND
DEPRESSION AND THEIR SEQUELAE IN
BREAST CANCER PATIENTS: EFFECTS OF
DISEASE AND TREATMENT ON PATIENT SELF-
ESTEEM, BODY IMAGE, AND THE
PREVALENCE OF HOPELESSNESS AND
SUICIDAL IDEATION**

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May 2021.

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LIST OF ACRONYMS USED THROUGHOUT THE TEXT

AM	augmentation mammoplasty
BCT	breast conservation therapy
BDI	Beck Depression Inventory
BIS	Body Image Scale
CBT	Cognitive behaviour therapy
CBSM	Cognitive behavioural stress management
HPA	Hypothalamic Pituitary Adrenal
MS	motivational salience
PTSD	post-traumatic stress disorder
QOL	quality of life
SI	suicidal ideation
SES	self-evaluative salience
SNS	sympathetic nervous system
SSCL	Stress Symptom Checklist
WLE	wide local excision

ABSTRACT

Breast cancer continues to be one of the most commonly diagnosed cancers worldwide. Research suggests that the psychological needs of these patients are frequently unobserved and untreated as healthcare professionals may be insufficiently familiar with the prevalence of comorbid psychological features such as anxiety and depression and how these influence the experience of other psychological phenomena. The aim of this research was to examine the psychological effects of disease and treatment in women diagnosed with breast cancer and determine if these effects differed from those experienced by women with other cancers. While psychological distress in the form of depression and anxiety is well-documented in the literature, there is less specific reference to how these affect and mediate other concerns patients may experience during diagnosis and adjuvant treatment, namely the insult to body image and self-esteem through surgery and other treatment modalities and how these effects cumulatively inform the patient's experience of hopelessness and possibly, suicidal ideation (SI). The aim was to identify if these forms of distress correlate, and to what degree, with a view to highlighting for oncology healthcare professionals the need to identify and treat those patients who are psychologically at risk.

The samples of women with breast cancer (n=80) and other forms of cancer (n=80) was drawn from a population of outpatients receiving treatment at three private oncology clinics in the Durban, South Africa area. Convenience sampling was used and a battery of four questionnaires was completed by patients in addition to collection of relevant demographic data.

The results suggest similarities and differences between the two groups. Whilst the two groups did not exhibit notable differences in overall levels of depression and self-esteem, there were significant differences in the experience of body image, with the breast group experiencing greater body image dysphoria. Likewise, in relation to stress, although both groups demonstrated elevated levels of stress in comparison to norms, the breast group evinced higher scores on psychological and behavioural responses to stress.

These results suggest that breast cancer patients experience distress differently to patients with other forms of cancer, which may indicate areas for future research.

CHAPTER ONE

1. Introduction

1.1 *The context of the research:*

Breast cancer is the most common malignancies affecting women and accounts for about 24.2% of cancers worldwide. Overall, there were an estimated 8 600 000 new diagnoses of breast cancer in 2018, and despite growing numbers of survivors, breast cancer ranks the fifth leading cause of death from malignancy in the world [1]. In South Africa it is the second most commonly diagnosed cancer in female patients after cervical cancer [2]. It is an area of growing psychosocial research because despite improvements in oncological screening and treatment modalities, a diagnosis of breast cancer elicits higher levels of distress in women than any other disease, irrespective of prognosis [3;4]. Increasing numbers of women are surviving the disease and its treatment for longer intervals and the psychological effects of the disease experience carry long-term impact on the functioning of these patients [5;6;7]. Its prevalence, the range of ages of the women it affects and the significance of the breast as an organ in terms of its influence on body image and self-esteem all impact on the psychological experience of patients [8].

Whilst there is disparity in the literature regarding the prevalence and nature of psychological distress in this patient population, it is widely acknowledged that the diagnosis, treatment and sequelae of breast cancer constitute major stressors [5;6]. Distress includes a range of psychological and physiological reactions such as anxiety, depression, difficulties with relationships and intimacy, deficits in quality of life (QOL), which include body image concerns, fear, guilt and sadness [3]. These reactions extend along a continuum from normal feelings of vulnerability to distress that is disabling, such as major depressive disorder, and is shown to be common in these patients. This distress may stem from both physiological and psychological stressors; physiologically, patients face morbidity associated with surgical, chemotherapeutic and radiotherapeutic treatments and pain, whereas in psychological terms, deficits in autonomy, alterations in physical appearance and feelings of loss of control may lead to depression and anxiety [9].

Research demonstrates that psychological distress may appear early in the diagnostic process, at the time of diagnosis and during the initial treatment period and contributes to increased rates of co-morbidities and mortality, reduction of the patient's quality of life and may also negatively influence compliance with oncological treatment with associated hospitalization and poorer

prognosis [7;10;11]. As such, the importance of gaining further understanding of the patient's psychological status and addressing distress cannot be overemphasized.

The focus of this research is the examination of the nature and degree of distress with specific reference to the prevalence of anxiety and depression as comorbid features of breast cancer and the effect these features in turn exert on body image and self-esteem in patients. The secondary effect these factors exert on the experience of hopelessness and suicidal ideation (SI) is also explored.

1.2 Review of the literature:

1.2.1 Depression

Much of the literature suggests that depression is a significant, potentially fatal complication of cancer with prevalence rates ranging from 20% - 50%. In addition to its effects on QOL, it is known that depression may influence the patient's acceptance of cancer treatment [12]. These findings include a spectrum of depressive disorders which frequently remain underdiagnosed and undertreated despite their prevalence and the degree to which they affect cancer patients, possibly because sadness and symptoms of depressed affect are commonly considered to be expected reactions to the disease and its treatment [13]. Studies suggest depression also negatively affects immune status, cognitive functioning, experience of pain, and surgical mortality [4].

Cytotoxic therapy is associated with significant psychological effects of which depressive symptoms are the most common [14;15]. Other risk factors for the development of depression in cancer patients include younger age at diagnosis, lack of social support, a history of negative experience related to the disease, recurrence or advanced disease, physical decline, tumor location, poorly controlled pain and previous psychiatric disorders, particularly a history of depression or suicide attempts [13].

1.2.2 Anxiety

Anxiety may be present either alone or in combination with depression. Anxiety is defined as a response to perceived threat which has been shown to be common among patients with cancer and fluctuates at critical junctures over the disease trajectory [16]. It is known that the diagnosis, the course of treatment and the end of treatment are periods of high anxiety and decreased QOL in breast cancer patients. However, patients may experience anxiety at any phase of the cancer continuum and is reported by 80% of patients after breast cancer surgery and 73% of women who complete adjuvant therapy. Studies show that anxiety may be exacerbated by chemotherapy due to treatment- induced changes in body image, restricted social interaction and poor support from family members and significant others. There is evidence to suggest that anxiety is

elevated in patients receiving chemotherapy in comparison to those receiving radiotherapy. However, there is some disparity in the literature regarding peak anxiety, with some studies suggesting levels before the first infusion are highest, while other findings show that it is the completion of the first cycle of chemotherapy that elicits higher levels of anxiety [17;18;19].

Although the prevalence of anxiety among breast cancer patients varies markedly between studies, there is some consensus regarding the most prevalent types of anxiety for women, which is fear of recurrence or disease progression. Whilst these fears are experienced by all patients to varying degrees, they can escalate to clinical levels which manifest as preoccupation, intrusive thoughts, impaired functioning, excessive distress or maladaptive coping strategies and difficulties making plans for the future [3].

Risk factors for anxiety and depression in female breast cancer patients include a past history of anxiety or depressive disorder, younger age at the time of diagnosis (< 50 years of age), lower levels of social support, somatic symptoms, current active onco-therapy, specific drug therapies and body image dysphoria [3].

1.2.3 Body image and self-esteem

Although body image and self-esteem have been widely researched, there is less in the literature regarding the correlation between psychological distress, body image and self-esteem. Both the disease and treatment modalities may result in significant changes in body image which lead to dissatisfaction and psychological distress in patients with breast cancer. It is suggested that where self-esteem is threatened by a negative event, such as a cancer diagnosis, patients may develop increased levels of anxiety [7].

It is well documented that the female breast has symbolic and functional significance [20]. It has long been synonymous with femininity and much focus has been given to the aesthetics of the organ [21]. Statistics suggest that within the past decade the popularity of cosmetic augmentation mammoplasty (AM) has risen markedly, which can be partly attributed to current social ideals of femininity which require women to conform to an increasingly narrow form of normative body; today's ideal of feminine beauty is defined by, inter alia, a large-breasted figure [22]. Studies indicate that women seeking cosmetic AM commonly experience some degree of body image dissatisfaction [23]. Women interested in AM tend to report greater investment in their appearance and greater distress regarding their appearance in a variety of situations [24]. A positive significance has been found between AM and self-esteem [25].

Thus, given the documented importance to women of appearance in general and of breasts in particular, it can be understood that women with breast cancer tend to be more dissatisfied with their body image compared to those without breast cancer, which effect becomes greater following mastectomy and during chemotherapy. Research suggests that these changes may reflect as perceived loss of femininity, diminished perceived attractiveness, reluctance to look at the naked self and reduced libido. While the loss of the breast

may be the primary source of body image dissatisfaction, other disease and treatment effects may be equally significant. Weight gain or loss from chemotherapy, therapy-induced early menopause and alopecia all contribute to body image distress [3].

A specific concern for women with breast cancer is lymphoedema. The symptoms and controllability of lymphoedema, the perceived ability to self-regulate depressed affect, and body image disruption were all correlated with depression, anxiety and stress scores [7].

Age was a significant moderator of the correlation between body image disturbance and depression and anxiety. Some research suggests that older women with greater body image disturbance were found to experience higher levels of distress [26]. However, other studies show that younger breast cancer survivors tend to have higher rates of anxiety and depression, experiencing a decrease in their health-related QOL, weight gain, a decline in their physical fitness, infertility and early onset menopause [7].

The correlation between body image and self-esteem has been extensively researched and studies suggest that body image is closely related to self-esteem [27]. Patients who place invest greater significance in their appearance in terms of defining their self-esteem are more at risk of poor adjustment resulting from cancer therapy-related body image changes [28]. Where other factors, (eg professional occupation), are more definitive of self-esteem, the effects of disease are less impactful.

Studies have identified several additional factors which moderate the impact of breast cancer and its treatment on self-esteem in patients which relate to the patient's age, stage of disease and treatment modality. Conversely, one study found that neither the level of education, marital status nor type of breast surgery were found to correlate with self-esteem [29]. However, other research suggests that the type of surgery significantly affected post-operative self-esteem [30].

1.2.4 Hopelessness and suicidal ideation (SI)

Recent studies have examined the relationship between breast cancer experience and the incidence of hopelessness and suicidal ideation (SI).

SI refers to thoughts of suicide-related behavior, from transient or recurrent thoughts of death to rumination and planning to kill oneself [31]. Suicide is associated with psychological distress and, in some cases, with physical disease. There is an elevated risk of suicidal behaviors in breast cancer patients and studies suggest that SI ranges from 10%-40% [7;32;33]. A recent Chinese study suggests that depression and anxiety were two most notable contributing factors to SI. Whilst depression has been identified as the most significant factor for suicidal behaviour in the general population, the presence of anxiety in these findings may be

explained by the high level of psychological stress associated with cancer diagnoses or treatment in these patients [31].

Previous studies in the general population have linked hopelessness and SI, with a stronger correlation between hopelessness and SI than depression and SI [34;35;36]. These studies suggest that the comorbidity of depression and cancer give rise to stressors which impair cognitive systems, which in turn lead to increased rates of depression, suicidal ideation, and suicide. Cognitive decline has been shown to be associated with SI.

Impaired self-esteem among cancer patients has been associated higher levels of depression, anxiety, greater feelings of hopelessness and SI [37]. General risk factors for SI in cancer patients include advanced disease, history of psychiatric problems, a family history of suicide, a personal history of suicide attempts, depression or substance abuse, recent bereavement and having little or no social support [33;38;39;40]. Moreover, some studies indicate that there is an increased risk of suicide in women undergoing AM [41]. Some researchers found that the risk of suicide is three times higher after breast implant surgery and this risk increases with time [42].

1.3 Conclusion:

The literature suggests that although the prevalence of psychological distress within the female breast cancer population is acknowledged, there is some disparity regarding the nature and degree of this distress. Different studies have highlighted contrasting psychological effects of disease and treatment.

The significance of this research is based on the increasing numbers of breast cancer survivors and the notable effects of the disease experience on their continued QOL. A therapeutic paradox exists whereby although these patients may survive the disease, the psychological burden may not be resolved, sometimes for long periods thereafter. As such, it becomes imperative for oncology healthcare professionals to more widely recognize and identify the presence of distress in this patient population in order to effect more holistic treatment and not to allow the physical crisis to eclipse the equally essential psychological wellbeing of patients.

1.4 Study objectives:

The study proposes to determine the nature and degree of psychological distress in women undergoing treatment for breast cancer, with particular respect to the relatively less-researched areas of body image and self-esteem and the effect of the diagnosis and treatment on the patient's sense of hopelessness and consequent possible suicidal ideation.

Objective One

To identify the presence of anxiety and depression within a breast cancer population in order to better inform strategies for intervention and further research.

Objective Two

To measure the presence and degree of body image disturbance in such patients and assess how this relates to their levels of self-esteem.

Objective Three

To measure the presence and degree of hopelessness in such patients and assess to what degree this may inform any possible suicidal ideation (SI).

Objective Four

To compare the results of these respective measures of breast patients to those measures of women diagnosed with and undergoing active treatment for other types of cancer in order to discover whether the experience of that disease differs from that of the breast cancer experience and so to optimize therapeutic interventions.

1.5 Hypotheses to be tested:

Hypothesis One

The psychological distress experienced by female patients with breast cancer, differs in nature or symptomatology and degree or intensity, when compared to female patients with other types of cancer.

Hypothesis Two

The psychological distress experienced by both patients with breast and by patients with other types of cancer will vary in nature/symptomatology and degree/intensity on the basis of levels of body image and self-esteem, which further effect their experience of hopelessness and SI.

1.6 Study design:

The study was conducted as an observational clinical study. Patients fitting the inclusion criteria were selected and asked to answer 4 brief questionnaires. 80 breast cancer patients and 80 patients with other cancers (inter alia bowel, ovary, lung, cervix) were identified according to the following inclusion criteria:

Female breast patients and female patients with cancer in other sites, post-surgery (mastectomy, wide local excision [WLE] or other), receiving adjuvant treatment (chemo- or radiotherapy), between ages 30 and 70 and English speaking. Those patients identified as fitting these criteria were informed of the nature of the study and invited to participate.

The participating patients were drawn from the outpatient populations at the Durban Oncology Centre, the Westridge Medical Centre and from Rainbow Oncology in Durban.

The study used four measuring instruments, in the form of questionnaires.

- The Beck Depression Inventory [43]: This is a 21-item multiple-choice self-report inventory which measures severity of depression. Several items in the scale specify levels of hopelessness and SI.
- Rosenberg Self-Esteem Scale [44]: This scale gauges state self-esteem and is a 10-item Likert-type scale.
- Stress Symptom Checklist [45]: This is a dichotomous-scaled, 87-item checklist relating to the general symptoms and signs of unhealthy stress.
- Body Image Scale [46]: The BIS as a 10-item questionnaire for assessing body image changes in cancer patients.

1.7 Statistical analysis:

The statistical analyses were conducted by a biostatistician from the Faculty of Health Sciences of the University of Kwa-Zulu Natal. The data was analysed using non-parametric measures as the frequency of the scores were not normally distributed. The two-sample Wilcoxon rank-sum (Mann Whitney) test was used to compare the two groups on all the measures.

1.8 Results:

The results of the study indicate that breast cancer patients do experience their psychological distress in differing terms to patients with cancer in other organs. The hypotheses were confirmed and through the aim of the study, to identify and highlight these differences, it is hoped that these observations will create an awareness amongst oncology healthcare professionals of the nature and prevalence of distress within this patient population.

1.9 Chapter outline:

The body of this work will be presented as follows:

Chapter One will comprise the introduction.

Chapter Two reviews the literature regarding psychological distress in breast cancer patients, in the context of providing an overview of the prevalence of breast cancer in South Africa and the current state of psycho-oncological research in South Africa. The factors hypothesized to relate to distress, namely body image and self-esteem in addition to hopelessness and SI, are discussed.

Chapter Three will examine the literature relating specifically to how psychological distress in breast cancer is associated with body image and its relationship to self-esteem in patients.

Chapter Four will discuss the findings of this research with respect to the experiences of breast cancer patients in terms of body image and the psychological and behavioural manifestations of stress.

Chapter Five will review the literature regarding stress, hopelessness and SI.

Chapter Six will discuss the results of this study with reference to the nature of the stress experienced by breast cancer patients and the correlation of this stress to hopelessness and suicidal ideation.

Chapter Seven comprises the conclusions of this study.

CHAPTER TWO

Article 1

Citation:

van Oers H, Schlebusch L. The experience of anxiety and depression and its sequelae in breast cancer patients: a review of effects of disease and treatment on patient self-esteem, body image, and the prevalence of hopelessness and suicidal ideation. *Global Journal of Breast Cancer Research*. 2016;4:1-5

Abstract:

Breast cancer is one of the most commonly diagnosed cancers worldwide. In South Africa statistics show an increase in the number of new breast cancer diagnoses, particularly amongst the younger, Black urban demographic group. Research has indicated that the psychological needs of breast cancer patients are often inadequately identified as the physical crisis of the disease takes precedence. Health care professionals may be insufficiently informed regarding the prevalence of comorbid psychological conditions such as anxiety and depression and how these may feature in further disturbances in body image and self-esteem, sometimes leading to hopelessness and suicidal ideation. Consequently, not all breast cancer patients experiencing psychological distress during the treatment period or even after adjuvant treatment is completed are referred for psychological intervention, which may result in a marked deterioration of their quality of life. This may also affect patients' compliance with oncological treatment which could result in a negative impact on their continued wellbeing and survival. The aim of the present review is to make health care professionals more aware of the current status quo of psycho-oncology issues in general and in South Africa in particular, and to enhance the mental health care of breast cancer patients.

Keywords: Cancer, anxiety, body image, depression, self-esteem, suicidal ideation.

The Experience of Anxiety and Depression and its Sequelae in Breast Cancer Patients: A Review of Effects of Disease and Treatment on Patient Self-Esteem, Body Image, and the Prevalence of Hopelessness and Suicidal Ideation

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Abstract: Breast cancer is one of the most commonly diagnosed cancers worldwide. In South Africa statistics show an increase in the number of new breast cancer diagnoses, particularly amongst the younger, Black urban demographic group. Research has indicated that the psychological needs of breast cancer patients are often inadequately identified as the physical crisis of the disease takes precedence. Health care professionals may be insufficiently informed regarding the prevalence of comorbid psychological conditions such as anxiety and depression and how these may feature in further disturbances in body image and self-esteem, sometimes leading to hopelessness and suicidal ideation. Consequently, not all breast cancer patients experiencing psychological distress during the treatment period or even after adjuvant treatment is completed are referred for psychological intervention, which may result in a marked deterioration of their quality of life. This may also affect patients' compliance with oncological treatment which could result in a negative impact on their continued wellbeing and survival. The aim of the present review is to make health care professionals more aware of the current status quo of psycho-oncology issues in general and in South Africa in particular, and to enhance the mental health care of breast cancer patients.

Keywords: Cancer, anxiety, body image, depression, self-esteem, suicidal ideation.

INTRODUCTION

Breast cancer warrants more intensive psychological study due to its high incidence, its course, its undefined prognosis, the range of ages of women it affects and the importance the breast as an organ has on psychological distress, body image and self-esteem [1].

With over one and a half million new cases diagnosed per year worldwide, breast cancer is the foremost cancer diagnosis amongst women [2]. The incidence in sub-Saharan Africa has been reported as second only to cervical cancer [3].

Psychological distress, in the form of anxiety and depression, is common in cancer patients who face multiple physiological and social stressors. These may include tumour burden, treatment morbidity and pain together with feelings of loss of control, increased dependency, altered physical appearance and identity [4]. Psychological distress, whether anxiety, depression or other psychological effects, not only influences the patient's quality of life but can also compromise compliance with oncology treatment, is associated with prolonged hospitalisation and may have a negative

effect on prognosis [2,5]. Depression and anxiety can occur at varying stages throughout the disease trajectory from diagnosis, beginning or end of treatment, disease progression, survival or through palliative care.

The patient's mental health status thus plays a vital role in oncological treatment. Early diagnosis and new treatment protocols rendering a disease once considered incurable, to one now viewed as curable in many instances or as a chronic condition, make understanding the psychological reactions to a diagnosis of cancer increasingly important [6]. For some patients, the diagnosis of cancer can be extremely stressful and viewed as a life crisis where the psychological response can be described as "death images" because it conjures up a spectre of primordial suffering [7]. This can act as a suicide precipitator, suggesting an underlying psychological disorder such as anxiety [6,8]. However, such psychological disorders in oncology patients are often under- or untreated due to time constraints or the fact that oncologists do not adequately address psychological issues. Oncologists often fail to ask patients about their psychological state, sometimes because of scepticism or lack of knowledge about appropriate intervention should psychiatric anomalies be detected. Physicians are poor at recognizing patients with psychiatric difficulties and at appropriate referral for psychological treatment [9].

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Some patients may contribute towards under treatment by failing to volunteer information about their psychological distress or minimising symptoms, wrongly accepting it as an inevitable reaction to their medical condition [5,9].

A clearer insight into clinically significant depression and anxiety in patients undergoing breast cancer treatment and recognizing potential risk factors for psychological distress through judicious attention to the relevant symptoms, would inform better identification of those patients requiring psychological intervention.

Psycho-oncology, pioneered in the United States, has grown rapidly internationally but less so in Africa, although the discipline is gaining recognition in South Africa [6]. It addresses the psychological concerns of both patients and their families to the disease, its treatment and the psychological, social and behavioural factors that influence cancer risk and survival. It also covers the needs of oncology health care professionals.

CANCER PREVALENCE IN SOUTH AFRICA

The National Cancer Registry Network [10] statistics indicate that one in seven South African women will develop cancer during their lifetimes.

Research [11] has shown that there is a comparatively low prevalence of breast cancer in the rural Black African population (in the order of 5/100 000) but points to a rise in figures for women in urban areas. From 1994 to 1999, in Durban, the incidence was found to be 15.1/100 000 women. These researchers concluded that in addition to decreasing levels of physical activity, several factors protective of carcinogenesis including late menarche, early parity, grand multiparity and prolonged periods of lactation were declining in the urban Black population.

The 12-month and lifetime prevalence rates for major depression in relation to the general population are 6.6% and 16.5%, where the prevalence rate within the cancer population is 0-38%. Similarly, the 12-month prevalence rate for anxiety is 8%, whereas the rate for cancer patients is approximately 10-30% [4]. A 2005 study found that in a sample of early-stage breast cancer patients, 33% were diagnosed with depression and anxiety at diagnosis, 15% at one-year follow-up and 45% at recurrence [12].

SOUTH AFRICAN PSYCHO-ONCOLOGY RESEARCH

In South Africa, much research is taking place with regard to medical oncology. However, psycho-oncological research is not as broad. A recent Southern African psycho-oncology study explored psychological morbidity in a population of Namibian, Oshwambo-speaking, breast- and cervical cancer patients and South African, Sesotho-speaking, breast- and cervical cancer patients, and found elevated levels of hopelessness/helplessness subsequent to the diagnosis of the disease [13]. Another recent study conducted amongst Indian breast cancer patients in South Africa identified the presence of psychological distress and depressive symptomatology in the patients studied [3]. This study found that both older and younger patients had elevated stress but that younger patients had more depressive symptomatology and that in younger Indian South African patients, changes in their cognitive and physical functioning, their personal and interpersonal roles and in their physical appearance led to a disruption of their social relationships and perceived body image. Further, a South African study involving a cross-cultural analysis of White and Black African breast cancer patients, loneliness and depression emerged as significant variables [14].

ANXIETY AND THE BREAST CANCER PATIENT

Anxiety may be defined as a distressing subjective experience in response to a perceived threat [15]. It is a dynamic response common among cancer patients which fluctuates at various points along the disease trajectory [16]. A diagnosis of cancer is potentially life-threatening and many patients become anxious [17]. Anxiety is a prominent symptom in cancer patients; it emerges as a physiological response to danger and can be seen as part of the somatic disease [18]. The reported prevalence of symptoms in breast cancer patients differs between studies, but anxiety regarded as being at pathological levels is more common in these patients than in individuals without disease [19-21].

Anxiety typically includes several symptoms, both psychological and physiological [22]. These include elevated levels of autonomic activity, such as palpitation. Anxious behaviours, including restlessness and repeatedly seeking reassurance also feature. There may be changes in thinking patterns such as

poor concentration and physically, the patient may present with muscle tension and/or fatigue. Anxiety occurs along a continuum, ranging from mild to severe, that at the extreme end can be deemed psychopathological, where it presents as the stress-related anxiety disorders which are described in the literature [23].

Anxiety following a cancer diagnosis is not necessarily pathological, may not be problematic and may be adaptive. In certain instances, however, it may become maladaptive or morbid. The ICD 10 and DSM V diagnostic classifications [24] require a core group of anxiety symptoms to be present in order to identify pathological anxiety. Abnormality here refers to symptoms that:

- are not proportionate to the level of threat,
- persist or deteriorate in the absence of treatment
- impede the patient's ability to function normally [17].

These criteria are difficult to apply to cancer patients. It is difficult to gauge if the level of anxiety is excessive in relation to the threat presented by the disease, as cancer is always associated with a level of threat. The level of anxiety must be judged according to the proximity of the threat; the degree of threat will vary throughout the history of the disease, as will the levels of normal anxiety.

The duration of the symptoms, which is usually a diagnostic factor in distinguishing abnormal anxiety, is difficult in its application in the oncological context as the natural history of anxiety in this setting is uncertain. Anxiety can be situational and may fluctuate rendering the onset of an episode hard to define [19]. Unpleasant symptoms and disruption in functioning are also features of the disease; intrusive anxious thoughts relating to recurrence, death and disability can occur, rendering it difficult for the patient to concentrate, make decisions, sleep and function socially. Concomitant behaviours, such as repetitive health-checking and reassurance-seeking for unrelated somatic symptoms can be disruptive for the individual.

Specific to the context of cancer and its treatment is the difficulty of making a diagnosis of anxiety in the presence of the confounding similarity of the symptomatology specific to oncotherapy. The clinician is presented with not only symptoms such as fearfulness, restlessness and a lack of concentration, but some associated somatic features, such as tremor,

tachycardia and shortness of breath which may be resultant from the disease or treatment and which make a definitive diagnosis more difficult [18].

Some physiological processes can contribute to anxiety in cancer patients. Pain, nausea and dyspnoea all correlate with heightened levels of anxiety. Metabolic complications such as hypercalcaemia or hypoglycaemia and changes in brain structure can cause anxiety states as can the use of certain drugs including corticosteroids and corticosteroid withdrawal, interferon and morphine.

DEPRESSION AND THE BREAST CANCER PATIENT

Depression is often a psychiatric feature of cancer and is one of the syndromes most widely studied. Studies of depression are complicated by symptoms occurring on a wide spectrum, ranging from feelings of unhappiness to depressive disorder. Change in mood is frequently difficult to assess in cancer patients facing continued threats to their health, undergoing cancer treatments, in pain or fatigued [25].

Cancer patients remain susceptible to depression at every stage of the disease, from diagnosis, through treatment and palliative care and even during remission [26]. Depression is often underestimated in cancer patients; several studies suggest that depression is highest at diagnosis of cancer, but subclinical depression is often undetected and inadequately studied during survivorship. The reason for this may be that many of the depressive symptoms including weight loss, fatigue, poor appetite, psychomotor retardation, apathy, poor concentration and sleep disturbances, closely mirror the physiological effects of cancer and treatment [27]. The evaluation of depression in patients should rather focus on the presence of feelings such as dysphoria, anhedonia, helplessness/hopelessness, worthlessness, disproportionate guilt and suicidal ideation as this can distinguish between depression and cancer-related symptoms [26].

A significant theme in depressed breast cancer patients appears to be fear of recurrence and metastatic disease, compounded by the negative effects of chemotherapy, including infertility, sexual dysfunction, menopause-related health problems and cardiovascular disease, which all correlate with depression. Tamoxifen, an anti-oestrogen for the treatment and prophylaxis of hormone-dependent breast cancer has also been associated with

depression [28]. Additionally, depression has been frequently associated with fatigue and pain [29].

Further risk factors for depression are advanced disease, physical disability, previous diagnosis of depression, uncontrolled pain, inadequate social support, recent significant loss and diminished self-esteem [26].

THE SIGNIFICANCE OF RECOGNIZING PSYCHOLOGICAL DISTRESS IN BREAST CANCER

Many subsequent studies have confirmed the prevalence of the above conditions in the breast cancer population [2,12,30-32]. Several studies note that anxiety is the most common form of psychological distress seen in breast cancer patients [33,34].

Amongst other negative effects, psychological distress may impair the patient's level of functioning at a critical time in their healthcare when important decisions must be made. Also, attenuated anxiety may have immunosuppressive effects that compromise the patient's recovery [35].

Given the increasing incidence of cancer diagnoses, rising breast cancer survival intervals resulting from earlier diagnoses and advances in cancer treatments, and the documented negative consequences of psychological distress on the quality of life of these survivors, it becomes ever more important to raise the awareness and understanding of oncology health care professionals regarding breast cancer patients' psychological experiences and improve the rates of diagnosis and treatment [12].

In South Africa, despite the fact that the number of Black breast cancer patients has increased, the available literature relating to the psychological experiences of South African breast cancer patients reveals that little research has been carried out on this patient group. Very little is documented about Black patients' experiences of their disease and treatment and the manner in which their experience may differentially affect their psychological state throughout the treatment period.

EFFECTS ON SELF-ESTEEM AND BODY IMAGE

Breast cancer has been singled out for psychological research due to its major effect on body image [1]. Body image is significant to breast cancer patients, and is related to depression, especially in those who are sexually active [36]. Body image is a multidimensional mental construct described as a

cognitive picture of one's body, subject to continuous re-evaluation in terms of cognitive, behavioural, affective and evaluative elements. The cognitive refers to the accuracy with which the individual estimates body dimension, either in its entirety or in a specific part, through interpreting external information such as reflection in a mirror. The affective body image refers to the individual's emotional responses to thoughts about the body. The behavioural component refers to the individual's actions relative to their evaluation of their body. The evaluative element of body image may be defined as individuals' assessment of their bodies [37]. In general, from a psychosocial viewpoint, several factors, namely cognitive, emotional, sexual, cosmetic and social, interact with physical elements in mediating women's body image over her lifetime.

Self-esteem has been defined as the judgments the individual makes regarding their own worth and the feelings associated with these judgments [38]. Self-esteem develops from infancy and appears to be relatively stable over the lifespan. A 2003 study suggests seven bases of self-worth: academic, outward appearance, social approval, competitiveness, family support, religious belief and virtue [39]. The nature of self-esteem differs between individuals depending on which source this esteem is based; for those whose self-esteem is based on their appearance, any detraction from their perceived body image will result in a concomitant deterioration in their levels of self-esteem [1].

Much research documents how pervasive body concerns are among women from Western cultures, and the literature links self-esteem to women's body image concerns, particularly body dissatisfaction. Similarly, in relation to positive body image, high self-esteem has been shown to predict a decrease in depressive symptomatology over time and women with higher self-esteem tend to evaluate their bodies more positively [38]. There is evidence that the severity of body dysmorphic disorder is negatively correlated with self-esteem. Thus, the research describes a link between self-esteem and women's body concerns; specifically that self-esteem is both a predictor and an outcome of body concerns [40].

The diagnosis of breast cancer and subsequent treatment may have significant effects on body image in terms of stage of disease, surgery type, lymphoedema, alopecia, iatrogenic early menopause and age at diagnosis [41]. Breast cancer treatment typically involves several interventions which alone,

and more so in combination, produce numerous side-effects. Surgical excision, mastectomy or wide local excision (WLE), is the standard treatment modality breast cancer patients. Surgery may cause significant difficulties for patients, including psychological distress, as well as, in terms of body image-specific side-effects, partial- or complete removal of either one or both breasts, which may result in asymmetry of breasts, significant scarring, loss of sensation in breast tissue, possible changes in limb mobility and lymphedema [42]. These conditions may lead to detrimental changes in the patient's perceived body image in the postsurgical period [43]. Chemotherapy may include unpleasant side-effects such as alopecia, weight change, and symptoms of early-onset menopause. Radiotherapy presents the patient with the burden of skin reactions, discolouration and fatigue. Hormone blockade therapy has significant side-effects, physiologically and psychologically.

Levels of depression have been shown to be significantly correlated with body image dissatisfaction, and women with higher levels of depression tend to exhibit cognitive distortions concerning body image and more cancer-related distress relating to body image [41,44-48]. Studies have also shown that depression is an important predictor of body image issues in breast cancer patients with elevated levels of depression corresponding to reduced body image self-acceptance [49]. Research demonstrates that elevated levels of

psychological comorbidity, particularly anxiety, are found more frequently in breast cancer patients with lower body image scores [50].

Whilst there is little information regarding the body image concerns of breast cancer patients in the South African setting, particularly relating to the Black population, one study showed that there were differences in the experiences of Black and White patients. It was found that Black patients experienced greater levels of somatisation, or tendency to experience psychological distress in the form of bodily symptoms and to seek medical help for these symptoms. The study also found higher levels of depression and body image dysphoria amongst the Black patients who, in addition, appeared to utilise less adaptive adjustment styles in terms of their disease. However, the groups were more similar in terms of levels of anxiety [51].

FACTORS AFFECTING BODY IMAGE

The stage and extent of disease usually dictates the extent of the surgery required, the necessity for lymph node excision, the development and severity of possible lymphoedema and whether or not adjuvant chemotherapeutic intervention is required with consequent implications for iatrogenic early menopause. It is also significant in informing the perception of risk of death. Studies have indicated that women with advanced disease tend to exhibit more

Table 1: Factors Affecting Body Image

Surgery	The type of surgery affects perceptions of the breast. Mastectomy patients have been found to have significantly poorer body image than breast conservation therapy (BCT) patients. Women choosing BCT appear to be more focused on their appearance when compared to women who opt for mastectomy [41]. A 2007 study found that women who undergo mastectomy without reconstruction report higher levels of psychological distress and body image dissatisfaction than patients with reconstruction [52].
Lymphoedema	It is sometimes necessary to remove axillary nodes during surgery, which may result in impaired lymphatic drainage and consequent swelling, pain, fibrosis and possibly disability in the affected arm. These sequelae significantly impact the physical and psychological elements of body image, and may diminish body image perception to a greater degree than breast surgery itself since they are outwardly visible [41].
Alopecia	A self-limiting side-effect of chemotherapy, the experience of hair loss may significantly negatively affect body image, in particular to younger women.
Iatrogenic premature menopause	Chemotherapy induces ovarian failure and consequently, symptoms of menopause, including weight changes, which further effect body image.
Age	Age affects body image issues in patients with breast cancer. Studies have found that women aged 50 years or younger who have undergone mastectomy have a poorer body image, although further studies show that older women remain vulnerable to body image issues after breast surgery [43].
Cognitive	Body image is judged through the integration of the visible outcome of breast surgery, with the individual and cultural context of the surgery and the threat to survival. Feelings of helplessness/hopelessness are strongly correlated with both depression and susceptibility to impaired body image [41].
Emotional	The inner perception of body image can be moderated by anxiety and positive or negative emotions with depression and anxiety leading to decreased body image perception [43].
Social	Social adjustment tends to be influenced by the cultural context in terms of its meaning and aesthetics.

dissatisfaction with body image than women with early-stage disease. The prevalence of psychological distress was comparably high in both groups, however the causes differed [41]. See Table 1.

THE BREAST CANCER PATIENT AND SUICIDE

Cancer is a somatic disease which is frequently associated with increased risk of suicide [6]. There is an extensive body of literature which documents the psychological problems that breast cancer patients face. Although psychopathology is common, some of the more prevalent co-morbid features are depression and anxiety, with some studies reporting that between 62.5% and 85% of cancer patients meet the diagnostic criteria for severe depression and an anxiety disorder [6,8]. Research in 2010 found that the risk of psychiatric distress in cancer patients was nearly double that of the general population [21].

Research has shown that the incidence of suicidal behaviour is higher in some cancer patients than in the general population [26,53-56]. Although the relative risk of suicide is twice that of the general population, a small number of patients complete suicide [26]. Other evidence points to the prevalence of suicidal ideation, i.e. suicidal thoughts, in cancer patient populations being similar to the general population [57].

South African research has found that some cancer patients hold suicidal behaviour as an option to retain a sense of self-control [6]. In this regard a 2012 study noted differences in the risk patterns of suicide and accidental death in cancer patients [58]. Suicidal risk appears to reach a peak within the first few months after diagnosis and may remain high for several months thereafter, with older adults having the highest suicide rate [53,54]. This must be distinguished from

passive thoughts of wishing to die which may occur, particularly in the face of advanced disease, and may serve as a mechanism of control over fears of an uncertain future and suffering [54]. Significant predictors of suicide risk in cancer patients include a previous diagnosis of psychiatric disorder, particularly depression, recent bereavement, poorly controlled pain, advanced disease and few social supports. Patients with advanced disease are at highest risk as they are more likely to have compounding complications such as pain, poorly controlled symptoms and depression [26,54]. See Table 2.

SUGGESTIONS FOR FURTHER RESEARCH

As has been noted, despite the plethora of literature documenting the psychological experiences of breast cancer patients on a global scale, there exists a paucity of research on the experiences of Black South African women, who constitute the largest female group of the South African population. The studies that are available are somewhat dated and it is difficult to ascertain if these findings are relevant at the present when much progress and change have been effected in the clinical management of oncology patients. With difficulties in diagnostics, the identification and treatment of psychologically distressed patients cannot be effective. There is much scope for further research within this population of breast cancer patients with the aim of improving the treatment and survival rates of all breast cancer patients in South Africa.

CONCLUSION

Much of the recent research quoted in this review has described the experience of psychological distress in breast cancer patients, although studies differ as to the exact nature of the distress. The most prevalent

Table 2: Factors Affecting Suicide Risk

Depression	Depression is a factor in 50% of suicides with approximately 25% of all cancer patients experiencing severe depressive symptoms, including major depression.
Fear	The diagnosis of cancer can result in a psychological response of fear as this disease is frequently associated with images of primordial suffering and death. Fear associated with cancer is a frequent precipitator of suicide, which may suggest undiagnosed underlying depression or anxiety. Common fears include pain, uncertain prognoses, abandonment and loneliness, disability and dependency, and in terms of body image, the fear of surgery and disfigurement. In the terminal stages of disease the threat of death becomes imminent which may propel some patients to try and avoid suffering by choosing to end their own life as a way to maintain some sense of self-control [53].
Helplessness/hopelessness	A sense of helplessness in the face of disease is significant in suicide vulnerability. Helplessness/hopelessness and loss of control may be induced by symptoms of disease or treatment as well as the need by some patients to control all aspects of living or dying. It is not always the fear of dying that presents the suicide risk in cancer patients but the perception and management of the disease and its sequelae. The sense of being alone in facing the disease and its hardships may create a sense of isolation and abandonment that may develop into hopelessness [6]. Even in individuals who do not feel the need to control their situation, the risk of suicide increases with losses in mobility, loss of control of bodily functions, amputation, sensory loss and difficulties with eating or swallowing and may be exacerbated by feelings of loss of control due to the sedative effects of analgesia [54].

sequelae of diagnosis, anxiety and depression, are well documented, however the relationship between these and the patient's experience of constructs such as self-esteem and body image warrants further scrutiny.

The improvement in oncology treatment and survival rates make the task of finding ways to improve the quality of life of breast cancer patients during treatment and beyond even more clinically significant. Given the now documented effects on the psychological well-being of patients living with and surviving after this disease and the growing number of patients who are diagnosed in South Africa, a better understanding of all aspects of psychological distress and its sequelae is needed in order to identify patients at risk and ways of intervening to manage their distress before it results in suicidal thoughts or actions. All oncology health care practitioners as well as primary care physicians are in a position to greatly contribute to ongoing patient care; to this end, further psycho-oncology research should be aimed at better informing these practitioners regarding the various psychological and psychosocial experiences of breast cancer patients.

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SYNOPSIS 1

Chapter 2: The experience of anxiety and depression and its sequelae in breast cancer patients: a review of effects of disease and treatment on patient self-esteem, body image, and the prevalence of hopelessness and suicidal ideation. Published in: *Global Journal of Breast Cancer Research*. 2016;4:1-5

Chapter 2 outlined the difficulties related to the mental health of cancer patients, specifically the identification of and referral to psychological treatment, of oncology patients who experience distress in general and the status of psycho-oncology in South Africa. A key issue facing psycho-oncology is the increase in the number of cancer diagnoses worldwide, the longer survival intervals of these patients allowed by improved diagnostic techniques and treatment protocols and the imperative to not only increase patients' quantity of life but to ensure optimum quality of life as well. Several key comorbid symptoms associated with breast cancer in particular were highlighted. Among these are anxiety, depression, effects on self-esteem and body image and lastly suicide, which were broadly discussed.

The importance of recognizing and understanding the wide-ranging psychological sequelae associated with breast cancer diagnosis was emphasized, given that psychological distress is known to not only have a negative effect on the patient's quality of life, but further, evidence suggests that it may compromise the patient's compliance with treatment and thereby ultimately affect prognosis.

Chapter 3: Psychological considerations of body image and self-esteem as correlates of augmentation mammoplasty and breast cancer in women. Published in: *World Scientific News*. 2019;132:52-64

Chapter 3 elaborates on the findings in the literature regarding body image and self-esteem, in particular, as features of the psychological distress breast cancer patients face. Body image, the relation of the breast to societal ideals of the body and the significant impact of the loss or change in the appearance of the breast, in addition to effects on other parts of the body such as alopecia and lymphedema, is reviewed. Body image emerges as an important factor in psychological distress, particularly for women who place great importance on their appearance as a measure of their self-esteem. It has an association with stress and increased risk of suicide which may be under-recognised by oncology healthcare professionals and the article hopes to raise the awareness of these clinicians and carers to the wide ramifications of breast cancer as a disease with significant psychological repercussions.

CHAPTER THREE

Article 2

Citation:

Schlebusch L, van Oers H. Psychological considerations of body image and self-esteem as correlates of augmentation mammoplasty and breast cancer in women. *World Scientific News*.2019;132:52-64

Abstract:

Female breasts have been admired for a variety of reasons throughout the ages. This can influence a preoccupation with breast size. As a result, augmentation mammoplasty (AM) has become a sought-after elective cosmetic procedure, especially in western culture. Research has confirmed the psychological benefits of AM, but it has also shown that some women with a self-perceived inadequate breast size who request AM can present with psychological problems. Likewise, authorities agree that the diagnosis of breast cancer which remains one of the most frequently diagnosed cancers among women worldwide, can have an adverse effect on women psychologically, and that the number of patients who live with the psychological sequelae of both the disease and its treatment continue to rise. Several factors relate to psychological distress in women coping with these issues. In particular, self-esteem and body image-related problems faced by women can add a burden to their psychological well-being. This article reviews some of these issues and psychological treatment options to enhance women's adjustment in this regard.

Keywords: Body image, breast cancer, augmentation mammoplasty, self-esteem, stress



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Psychological Considerations of Body Image and Self-esteem as Correlates of Augmentation Mammoplasty and Breast Cancer in Women

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ABSTRACT

Female breasts have been admired for a variety of reasons throughout the ages. This can influence a preoccupation with breast size. As a result, augmentation mammoplasty (AM) has become a sought-after elective cosmetic procedure, especially in western culture. Research has confirmed the psychological benefits of AM, but it has also shown that some women with a self-perceived inadequate breast size who request AM can present with psychological problems. Likewise, authorities agree that the diagnosis of breast cancer which remains one of the most frequently diagnosed cancers among women worldwide, can have an adverse effect on women psychologically, and that the number of patients who live with the psychological sequelae of both the disease and its treatment continue to rise. Several factors relate to psychological distress in women coping with these issues. In particular, self-esteem and body image-related problems faced by women can add a burden to their psychological well-being. This article reviews some of these issues and psychological treatment options to enhance women's adjustment in this regard.

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1. INTRODUCTION

Female breasts have been admired for a variety of reasons, including their erotic beauty and functional purpose throughout the ages as regularly depicted in art, sculpture, literature, poetry, the fashion industry and the advertising media. In some cultures, they are often considered the ultimate mark of femininity and provide virtually limitless commercial opportunities to promote a variety of products [1]. In honoring the female body, this can influence a preoccupation with breast size. As a result, augmentation mammoplasty (AM) has become a sought-after elective cosmetic procedure, especially in western culture where the sexualized view and predominantly erotic meaning of the female breast have been emphasized. Research has confirmed the psychological benefits of AM [2], but it has also shown that some women with a self-perceived inadequate breast size who request AM can present with psychological problems, including suicidality [3] which can be associated with age-related issues and/or differential psychopathology. Likewise, authorities agree that the diagnosis of breast cancer, which remains one of the most frequently diagnosed cancers among women worldwide [4] can have an adverse effect on women psychologically, and that the number of patients who live with the psychological sequelae of both the disease and its treatment continue to rise [5, 6].

Several factors relate to psychological distress in women coping with these issues. In contrast with those who request AM, women with breast cancer confront the additional challenges of having to face a potentially life-threatening illness, painful and sometimes disfiguring treatments involving choices in mastectomy, lumpectomy, breast reconstruction and significant changes in physical ability and life adjustments [7]. Given this, in both AM and breast cancer, different modalities of treatment have the potential to change physical appearance and affect psychological responses in various ways [2, 6-9]. In particular, self-esteem and body image-related problems faced by women can further impair their psychological well-being, since they often tend to be concerned with their appearance [10, 11]. Additionally, related pre-morbid concerns can further contribute to psychological distress in women treated for breast cancer or those seeking AM [2, 7]. Given the above, this article reviews some of these issues and psychological treatment options to enhance women's adjustment in this regard.

2. BODY IMAGE

Body image is a multidimensional, subjective and dynamic construct that refers to the perceptions, thoughts, behaviours and feelings a woman has of her body and its functioning [12]. Body image is not simply a reflection of the biological endowment of the individual or the feedback the person receives from significant others, but forms part of how the body is experienced and evaluated by the person herself. This evaluation depends, amongst others, on an interplay between personal factors (including self-esteem), interpersonal factors (including family, peers, and the media), biological factors (such as genetic traits and pathologies), and cultural factors (such as sociocultural values and norms).

The perceptual component of body image refers primarily to body size estimation which can be further subdivided into the sensory components of self-perception (visual system responses) and the non-sensory elements or the cognitive and affective responses to visual information. An attitudinal dimension of body image is composed of evaluative, affective, and

cognitive subcomponents. The behavioural aspects of body image include the individual's actions which are intended to monitor the state of her body [13].

Cash [14] proposes a model which distinguishes body image evaluation from body image investment. This model specifically differentiates between historical factors, or past experiences which shape attitudes of body image and proximal factors and refers to current life events. Both AM and breast cancer and its treatment may be regarded as critical proximal events that may bring about re-evaluations of one's physical appearance, body image and psychological adjustment.

3. BODY IMAGE INVESTMENT

Body image or appearance investment refers to the degree to which individuals value their appearance and believe that their self-worth is contingent on their appearance [15]. The construct relates to the psychological significance or value that people attribute to their body image evaluations and to the consequences of those evaluations to their self-definition and adaptive functioning [16, 17]. Body image dissatisfaction is often found in individuals who are greatly invested in their appearances [2, 18, 19]. Body image investment can be classified into four attitudinal components: body satisfaction, feelings (e.g. affect, emotions, anxiety, stress and discomfort), cognition (e.g. thoughts, social comparisons, investment in appearance and internalization of beauty ideals), and behaviour (e.g. avoidance and body-checking).

Additionally, appearance investment represents the psychological importance of appearance in an individual's life including the centrality of appearance to one's sense of self. According to Cash [20] there are two varying forms of appearance investment, namely self-evaluative and motivational. Self-evaluative investment or self-evaluative salience (SES) refers to the extent to which individuals define or measure themselves by their physical appearance and which they consider essential in their daily living. Motivational investment or motivational salience (MS) relates to the importance of having and/or maintaining an attractive appearance. It reflects the degree to which individuals engage in behaviours in order to manage their appearance. Importantly, SES can be more dysfunctional than MS [20]. While the first is more predictive of negative body image and a vulnerability factor leading to poor adjustment, the second is thought to be relatively benign and a protective factor which helps women cope with changes in their appearance [21, 22]. Individuals with high SES tend to overemphasize the importance of their physical appearance when assessing their personal and social worth. High SES is linked to greater levels of dysfunctional and maladaptive behavior than high MS.

Carver et al. [23] sub-divided the construct of appearance investment into the sub-components of concern about appearance or the extent to which patients are concerned regarding their appearance and their reliance on it as a source of self-esteem and concern about body integrity which, in turn relates to the sense of body wholeness and its effective functionality. They found that women who were more invested in their appearance reported greater distress before surgery and in the following year, but had a more consistent perception of attractiveness. Those women who were more invested in body integrity reported increased disruption in social activities but not necessarily greater distress. The study suggests that appearance investment may not be just a vulnerability factor for poor adjustment, but also a protective factor that may buffer the negative effects on patient's perceptions of attractiveness.

Patients who place greater significance on their appearance to define their self-esteem, may be more vulnerable to poor adjustment resulting from body image changes [24].

4. SELF-ESTEEM

While body image relates to physical appearance, self-esteem comprises an emotional component. Self-esteem has been defined as the overall affective evaluation that an individual makes of herself in terms of her worth, value, importance or capabilities. The construct includes an individual's subjective appraisal of herself as intrinsically either positive or negative to some degree [25]. Research confirms that perceptions of physical appearance and self-esteem appear to be inextricably related [26]. Individuals' perception of their body greatly influences self-esteem and studies by suggest that of all the personal attributes that have bearing on the development of body image, self-esteem may be the most pivotal [27, 28]. Particular aspects of body image such as perceived physical attractiveness have been found to be positively correlated with self-esteem [29]. A high personal investment in one's body image may be a significant source of self-worth [11] and differences between perceived and idealized body image predict lower self-esteem [30]. Body image can be closely related to self-esteem and the correlation between them has been well-researched [10, 31]. Physical appearance has consistently been found to be predictor of self-esteem at any age [32]. Although body image-related difficulties often originate when pre-occupation with physical appearance is common during the crucial adolescent developmental phase they can also occur in later life following, amongst others, childbirth, breast-feeding and the natural ageing process. In the absence of a disease like breast cancer, women can experience a deep sense of psychological loss where the associated symbolic, psychological and other variables and consequent requests for AM can also be influenced by cultural factors and according to the ideals of different countries societies [1, 2, 33, 34]. In this respect, body image dysphoria, loneliness, subjective well-being and depression can be important variables related to the patient's cultural group and marital/partner status. According to research women who request AM usually have high expectations of the surgical outcome, and both patients and their partners are generally satisfied with the appearance of their breasts post-operatively as well as with the psychological benefits including an improvement in psychosexual functioning, anxiety and depression [2, 33].

5. BODY IMAGE, SELF-ESTEEM AND BREAST CANCER

A large amount of research on body image in the oncology setting has been conducted with breast cancer patients [35]. Breast cancer treatment may result in changes in several aspects of the patient's body, not only in the size, symmetry and skin texture of the breasts themselves but even in women whose breasts remain intact, in other areas affected by treatment modalities, such as lymphedema, treatment-induced alopecia, weight fluctuation and induced menopause [36, 37]. Not only appearance but psychological functioning may be adversely affected [35], especially when body image may become an aspect of the long-term psychological side-effects of the disease [38-40]. These findings suggest that body image concerns affect significant numbers of breast cancer patients with issues persisting into long-term survivorship. This effect becomes significant in patients whose body image is centred

around their femininity [37]. When facing body image changes after breast cancer, those women who place greater importance on their physical appearance as reflecting their self-identity would be at greater risk of poor adjustment. Appearance investment, then, appears to moderate the association between body image difficulties and psychological distress in breast cancer patients [41]. Research has demonstrated that women with breast cancer tend to be more dissatisfied with their body image in relation to those women without breast cancer, which effect becomes greater following mastectomy and during chemotherapy. Among those patients who were dissatisfied with their body image, self-esteem was found to be adversely affected [37]. Cancer-related appearance changes are expected to result in negative reactions if the patient has high body image investment and there is a disparity with her idealized body image [42]. This suggests a strong correlation between these aspects of physical attractiveness and femininity and the patient's concept of her body image or self-esteem [43].

Much research has been focused on the body image effects of mastectomy versus breast conservation therapy (BCT) with studies reporting greater psychological distress and disruptions in body image following more invasive breast surgery [41, 44-46]. One study showed that 100% of women with breast cancer, who had undergone mastectomy, were reported to have a negative image of their bodies [47]. Similarly, Sebastian et al., [43] found that mastectomized women had poorer body image and lower self-esteem when compared to those who had undergone a BCT. Although a diagnosis of breast cancer can impact negatively on all patients, those undergoing BCT or mastectomy with later reconstruction reported greater body image satisfaction and less impact on their self-esteem than those women undergoing mastectomy only [48]. This observation is contingent on cosmetic outcome [41].

The loss of a breast is inherently associated with a woman's identity and sense of self with an estimated one-third of breast cancer survivors expressing distress that is directly related to disturbed body image after successful cancer treatment [11]. One recent study showed that body confidence was reduced post-surgery in mastectomy patients but that some women created new body ideals around their changed appearance. These patients rejected mainstream norms and adopted an attitude of pride regarding their operative scars [49].

Studies have demonstrated that younger patients experience greater distress regarding body image following mastectomy [41, 46]. It has been found that predictors for increased body image disturbance included the joint effect of being younger, inactive occupational status, and post-adjuvant therapy side effects. The same study concluded that dissatisfaction with social support predicted lower self-esteem [50]. Another study concluded that further factors such as type of surgery, time elapsed after treatment, the patient's level of anxiety, the nature of adjuvant chemotherapy, the experience of partner support, and a satisfying relationship are important factors for body image in breast cancer survivors [51].

6. STRESS AND COPING

In terms of cancer, five common adjustment styles have been identified, where adjustment refers to the patient's ongoing attempt to effectively optimise the capacity to manage or alleviate the physiological, psychological, behavioural and social consequences of the experience and process of cancer [52, 53]. The adjustment stages are: a fighting spirit (where the diagnosis is seen as a challenge); avoidance or denial (where denial is accompanied by behaviour which minimises the impact of the disease); fatalism (the patient has an attitude of passive acceptance);

helplessness and hopelessness (the patient is completely overwhelmed by the threat of cancer); and anxious preoccupation (the predominant behaviour style is one of compulsive searching for reassurance). Given this, a positive approach indicates a behaviour pattern which serves as an adaptive function for the patient and several studies have demonstrated a link between a lack of 'fighting spirit' or a helplessness/hopelessness adjustment style to poorer outcome of coping with the disease [54;55]. In terms of cognitive behavioural theory, the patient's perception of lack of control over stressors may generate negative self-statements since perception is related to a person's beliefs, attitudes, feelings and thoughts [56, 57]. Because of this, perceptual distortions can cause unnecessary stress and psychopathology [57]. Research also suggests that the occurrence of stressful life events, may increase psychological symptomatology prior to request for AM and response to cancer [58-60]. Some have even argued that stress may play a role in the initiation of some cancers [61], although other researchers have suggested that stress impacts mostly on the promotion of and coping with cancer, not its initiation [62, 63]. Different elevated stress levels within these categories in both request for AM and breast cancer patients have been reported [58]. For example, in terms of the general signs and symptoms of unhealthy stress, studies suggest [57, 64] that these can be interpreted in terms of different categories of stress, and the researcher provides cut-off scores for each category, including physical reactions, psychological reactions and behavioural reactions [58, 64].

In a study designed to compare the relationships of multiple variables between two groups of women at different developmental stages of the life-cycle who were on treatment for breast cancer, both groups demonstrated elevated stress levels across the physical, psychological and behavioural stress dimensions. A greater percentage of women from the younger sample experienced moderately higher levels of 'psychological' stress than the old patients, which may be related to their higher levels of depressive symptomatology [58]. Consistent with the findings in this study researchers on breast cancer and other types of cancer cited in the psycho-oncology literature show that younger patients tend to experience more distress, anxiety and depression than older patients, who generally demonstrate better psychosocial adjustment [65-69], although women with breast cancer have to contend with different issues and stressors at different stages of this life-cycle and many younger women with breast cancer seem to experience more disruption to developmental tasks than older women [58].

7. SUICIDE RISKS

Both AM and cancer can also be associated with elevated suicide risk, but the association is complicated and research data tend to vary [3, 70, 71]. Knowledge about the prevalence of suicidal behaviour in these patients in developing countries is limited, but an increased risk of suicide in some patients have been demonstrated despite research limitations that skew data on actual suicidal behaviour [71, 72]. Although more recent studies have provided substantially improved data on both the prevalence of suicide risks and the factors that influence such risks, existing caveats remain. Regarding AM, body dysmorphic disorder (a pre-occupation with slight or imagined defects in appearance) and request for cosmetic surgery has been considered as a contra-indication to such surgery [3]. Most people with body dysmorphic disorders have impaired psychosocial functioning because of concerns with their appearance [73]. Following AM, although most women are satisfied with the post-operative results and improvement in body image, other areas of psychosocial functioning and quality of life seems less clear [3]. In

cancer, generally, suicide risk variables that have been considered include gender differences, family influences, ethnicity, stage of disease, prognosis, cultural influences and subtypes of cancer [71]). A South African study on cancer patients found that many cancer patients hold suicidal behaviour as an option to retain some sense of control and that passive suicidal behaviour sometimes occurs in the form of “accidental” suicidal acts or noncompliance with treatment as a variation of subintentioned suicidal behavior [74]. As in the case of other life-threatening diseases such as HIV/AIDS [56, 74, 75], suicide risk is not always because of the fear of death itself, but often of how the disease and its sequelae are perceived and managed. If a patient is left without appropriate cultural or psychosocial support (or if this is the patient’s perception), a sense of abandonment may lead to the development of hopelessness and possible suicidal behaviour [71]. It is important to note that social attitudes and cultural beliefs can have a significant effect on how patients perceive themselves and their future, especially where body-image and self-esteem form a significant part of the consequences and subsequent psychological problems [2, 71, 74]. Despite these research findings, women who request AM and breast cancer patients who might be suicidal are not always referred for appropriate psychological and/or psychiatric assessment and/or treatment.

8. PSYCHOLOGICAL INTERVENTIONS

The value of psychotherapy to assist some patients to incorporate their AM into an extended or ‘altered’ body image has been emphasized if there are unresolved psychological problems postoperatively. Accordingly, it is important not only to evaluate any post-operative physical outcome of the appearance of the breasts, but also to take into account the psychological outcome as well as potential psychological factors that might contra-indicate any benefits, given the patients’ and sometimes their partners’ expectations of AM. Likewise, research literature demonstrates that breast cancer patients can experience a complexity of psychological and socio-cultural dysfunctions due to the trauma of the diagnosis and the need for mastectomy and/or breast reconstruction surgery. In these patients, psychological assessment can in itself also be therapeutic and through psychotherapy negotiated self-help coping strategies can be effective within a cognitive behavioural paradigm [2]. Many studies demonstrate that Cognitive Behavioural Therapy (CBT)-based interventions can promote a positive body image in these patients. CBT is a goal-oriented, time-limited psychotherapeutic approach by trained mental health professionals that modifies dysfunctional thoughts, perceptions, emotions and behaviours through techniques such as goal-setting, cognitive restructuring, systematic desensitization, and skills training. Improvements in body appreciation, weight and shape concern, acceptance of age-related appearance changes, self-esteem and body satisfaction with relationships have all been found to follow a CBT approach [35, 76, 77]. Providing insight into the loneliness experience in patients with body image problems from diverse cultures can enable healthcare workers to assist them to improve their psychological health status through the identification of coping strategies to reduce negativity. However, experiential processes should not be conceived as separate events but as holistic [78]. In this regard, according to Schlebusch [57], perception, cognition, emotion and behaviour form a cascade that can be used to facilitate an understanding of the processes through which perceptual shifts and the modification of dysfunctional thought patterns can occur. This further underscores the appreciation of mind-body unity in patients to make the necessary perceptual

changes in order to modify dysfunctional thought patterns related to poor body-image and self-esteem. This approach allows for patient education to incorporate cognitive behavioural techniques as powerful tools to modify their adjustment styles and increasing their coping skills. Through more accurate perceptual insight and adjusting negative thought patterns, patients can learn to cope more effectively and ultimately improve their overall quality of life. Psychological intervention can be usefully based on a biopsychosocial approach and identification of attitudes, beliefs and psychological characteristics of patients, particularly in terms of a mind-body interface and self-esteem as a progressive interaction where perceptions may affect coping. With more perceptual insight and the adjustment of negative thought patterns into functional cognitions, patients can cope more effectively and ultimately enhance their quality of life and sense of subjective well-being. Conversely, failure to make adequate perceptual adjustments may result in further cognitive distortions, and eventually psychological problems. Furthermore, since the symbolic nature of female breasts plays a major role in a woman's feelings of femininity, attractiveness, body-image and self-esteem in respect of private and public self-consciousness, positive perceptions of physical appearance can enhance the person's quality of life and coping mechanism through assistance with appropriate clothing behaviour [18].

9. CONCLUSIONS

It is generally accepted that psychological distress and in particular, body image difficulties are commonly associated with breast cancer and its treatment and request for AM. The nature of these problems and their relationship to self-esteem are well established.

Body image is a complex, multi-factorial construct that forms an important aspect of women's lives and studies indicate that most women are concerned with their appearance. Given the deficits, both physical and psychological, that may be associated with the consequences of a diagnosis of breast cancer and subsequently its treatment, it becomes clear that patients and survivors, particularly those who are more invested in their appearance and whose self-esteem is based on this appearance, will be at risk for greater psychological distress.

As ever more women request AM and are diagnosed with breast cancer, particularly greater numbers of younger women, and as more patients survive for longer intervals due to improved oncotherapeutic techniques, it becomes incumbent upon health care professionals to be more cognizant of the distress their patients may be facing and to refer them for appropriate psychological treatment interventions.

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SYNOPSIS 2

Links Article 2 with Article 3:

Chapter 3: Psychological considerations of body image and self-esteem as correlates of augmentation mammoplasty and breast cancer in women. *World Scientific News*.2019;132:52-64

Chapter 3 covered body image as a significant factor of the psychological distress experienced by breast cancer patients with both disease and treatment regimens having notable effects physiologically and psychologically. The research reviewed confirmed that women with breast cancer tend to report greater dissatisfaction with their body image when compared to the general population, with surgery and chemotherapy side-effects further magnifying this perception.

The chapter also covered the nature of stress and coping within this patient population, with patients who view the disease as a challenge being better able to cope than those who exhibit a helpless/hopeless adjustment style. Poorer coping is sometimes related to suicidal ideation and the chapter also discussed the prevalence of suicidal behaviour and the increased risk for suicide. It is known that for many patients, suicide represents a form of control over a situation that is threatening and that even passive suicidal behaviours, such as noncompliance with treatment, have a significant negative impact on the patient's prognosis. As such, the importance of clinicians' recognition of the symptoms of distress is clear and patients at risk must of necessity be referred for psychotherapeutic intervention and support. CBT was discussed as a useful therapeutic framework within which to treat breast cancer patients experiencing distress.

Chapter 4: Body image disorders and indicators of psychological distress in female patients with breast cancer. *Journal of Mind and Medical Sciences*. 2020;7(2):179-187

Chapter 4 reports the findings of this research study with respect to body image dysphoria and the differential means of expression of stress reported by patients with breast cancer when compared to those patients with cancer in other sites. The results confirm findings in the wider literature that patients with breast cancer do report significantly higher levels of dissatisfaction with their body image as a result of the disease and treatment. These patients also express their stress in different ways to other cancer patients in that they tend to exhibit more psychological and behavioural indices of stress than do other patients.

CHAPTER FOUR

Article 3

Citation:

Van Oers H, Schlebusch L. Body image disorders and indicators of psychological distress in female patients with breast cancer. *J Mind Med Sci.* 2020; 7(2): 179-187. DOI: 10.22543/7674.72.P179187

Abstract:

It is acknowledged that breast cancer patients are vulnerable to elevated stress, related to receiving the diagnosis, unfamiliar and invasive treatment and coping with the side-effects of treatment, which may find various forms of expression. Another common feature of this patient population is body image dysphoria. Both the disease and treatment lead to impairments in both physical appearance and general functioning. This study aimed to explore the differential manifestations of stress and the nature of body image dysphoria within a sample of female breast cancer patients (n=80), compared to female patients with other sites of disease (n=80) in order to examine differences in the experiences of distress in these groups. Patients completed 4 questionnaires relating to psychological distress and body image dysphoria. The results show the breast patients reported significantly higher levels of body image dysphoria and reflected differential indicators of stress, namely more psychological and behavioural expression, as compared to the other group.

Keywords: Body image, breast cancer, distress, stress, psychotherapy

Indicators of psychological distress and body image disorders in female patients with breast cancer

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ABSTRACT



Breast cancer patients are vulnerable to elevated stress related to receiving the diagnosis, unfamiliar and invasive treatment, and coping with the side-effects of treatment, which may find various forms of expression. Another common feature of this patient population is body image dysphoria. Both the disease and treatment lead to impairments in physical appearance and general bodily functioning. This study aimed to explore the differential manifestations of stress and the nature of body image dysphoria within a sample of female breast cancer patients (n=80), compared to female patients with other sites of disease (n=80) in order to examine differences in the experiences of distress in these groups. Patients completed 4 questionnaires relating to psychological distress and body image dysphoria. The results showed the breast patients reported significantly higher levels of body image dysphoria and reflected differential indicators of stress, namely more psychological and behavioral expression, as compared to the other group.

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Introduction

Breast cancer is the most frequent cancer in women and is the second most common cancer in general. More than 2 million new diagnoses worldwide were reported in 2018 [1]. While rates of breast cancer have been higher among women in developed regions of the world, rates are rising nearly everywhere [2]. Cancer survival has improved since the mid-1970s largely due to improvements in detection practices and the increased use of adjuvant systemic therapies, inter alia newer cytotoxic drugs, adjuvant hormonal therapy and biologics, in addition to regional radiotherapy [3,4]. Due to these advances, a growing number of cancer patients will become long-term survivors, living with the physiological and psychological effects of their disease and treatment [5].

A cancer diagnosis is an important source of psychological distress and is followed by an extended interval of treatment which in itself is also experienced as stressful [6]. Studies indicate that women with breast cancer are among the most distressed of the subgroups of cancer diagnoses and report distress related to fear of

disease progression and recurrence. This distress may manifest as depressed mood, stress, and elevated anxiety relating to prognosis, disability, and death [7].

Previous studies suggest that psychological disorders negatively affect treatment, cancer progression, and outcomes, and thus exert a significant effect on morbidity and mortality [8,9]. As such, the importance of the patient's psychological well-being cannot be overstated. A key goal in breast cancer therapy is to improve the support of the growing numbers of women diagnosed with the disease to facilitate adjustment into survivorship in the long-term [5].

Breast cancer research has historically concentrated on both the physical and mental health sequelae of cancer and its treatment, but commonly health care providers tend to focus chiefly on patients' physical symptoms, and place less emphasis on mental health [5]. Stress and the well documented insults to body image faced by patients are common features of the psychological distress which these patients experience, which negatively impacts the patient's ability to adjust after cancer and into survivorship [10].

This research follows on and expands on a previous study [11], and goes on to explore the aetiology of

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psychological distress in these patients in more detail. Further facets of body image disturbances and the complexity of body image responses to breast disease are examined and useful therapeutic interventions are discussed.

Cancer-specific stress disorders in breast patients

In the context of this study, stress is defined generally as a multidimensional construct referring to an individual's response to external conditions and more subjectively, as the response to the appraisal of these demands, which is mediated by one's coping skills [12].

The human stress response may be conceptualized as both physiologically- and psychologically- based. In terms of physiology, both acute and chronic stress following a life event such as the diagnosis of cancer have implications for the disruption of various neurotransmitters and neurohormones. Neurotransmitters impact both the physical and psychological functioning of the individual experiencing stress. In psychological terms, problems with the cognitive processing of a stressor may precipitate a stress response. Both perception and cognitive appraisal are critical in this functioning, and information from the pre-frontal cortex and frontal lobes (the decision making and higher cognitive function centres of the brain) mediates emotional, psychological, and behavioural outcomes. The physiological and psychological pathways interrelate closely, resulting in a stress cascade that involves both the endocrine and autonomic nervous systems, thereby incorporating a hormonal element. Interactions between neurotransmitters, stress hormones, and negative effect of these on the immune system resulting from chronic/enduring stress, can alter the balance between neurotransmitters [13].

With respect to cancer patients, both of these stress pathways are pertinent. Somatic disease in itself may cause physical stress reactions where pain or other symptoms may give rise to severe distress. Furthermore, oncological treatments frequently generate physiological stress through excessive demand on the body by way of painful and often invasive onco-therapeutic interventions. Psychological stress appears to stem from the individual's understanding that the diagnosis implies a life-threatening disease and having to live with its consequences. The symptoms of cancer-specific stress include, inter alia, intrusive thoughts, marked negative emotions towards cancer diagnoses, and treatments together with avoidant cognitions and behaviours. These symptoms of stress are all associated with deficits in quality of life (QOL) and correlated with poorer clinical outcomes, while in animal models of cancer there is evidence that stress may decrease the effectiveness of treatment or increase resistance to chemotherapeutic agents [6,14].

Stress is considered a major precipitating psychological issue for cancer patients from diagnosis through treatment

and prognosis, and even long after treatment has been completed. It is a significant comorbidity as it is associated with the growth and progression of disease and is closely related to further psychological comorbidities such as anxiety and depression [15]. Indeed, research indicates that it is the chronicity of negative affect such as anxiety, depressed mood, and/or hopelessness that appears to correlate more strongly with outcomes than is true of stressful events, suggesting that it is the prolonged arousal of negative affective pathways that furnishes the strongest association with disease progression through its effect on, inter alia, tumour growth, angiogenesis and metastasis [14,16]. Studies suggest that these stress-induced neurobiological changes lead to significant impairment of the immune system and prolonged anxious behavior changes [14]. Mood disturbances, including depression and anxiety, correlate highly with stress and, as such, mood disturbance has been commonly used as an indicator of stress [6].

Some research indicates that while initial stress following a diagnosis of cancer tends to decrease over time, a notable proportion of patients continue to experience elevated levels of stress, sometimes for years after successful completion of oncological treatment. In some cases, patients may even go on to develop posttraumatic stress disorder (PTSD) resulting from the cancer diagnosis, indicating varying responses to the same stressor of cancer diagnosis [6].

Body image disorders in breast cancer patients

Body image is widely acknowledged to be a critical psychosocial issue for breast cancer patients and studies show that the better the patient's body image, the better is the capacity to cope with cancer [17]. The construct of body image is multidimensional and encompasses feelings, perceptions, thoughts, and behaviors associated with the whole body and how it functions [8]. It has been described as a subjective picture the individual forms in her mind regarding her own body, based on her observations of herself and by judging what others think, based on their reactions, with associated features such as emotional expression, imitation, identification, ideals of beauty, and social factors [17,19].

According to the Cash [20] cognitive-behavioural model of body image, inherent in the concept of body image is the notion of satisfaction or dissatisfaction with one's body that is modified by two factors, appearance investment and self-evaluation. Appearance investment refers to the individual's own view of the significance of appearance and physical attributes, where self-evaluation refers to the contextual cultural ideals of beauty in physical appearance, the degree to which the individual is satisfied with her appearance, and whether there is dissonance between the subjective perception of her physical characteristics and the ideal characteristics. Since research

suggests that the breast forms part of a woman's identity and femininity and that women are socialized to perceive that their personal value is bound up with their outward appearance [21], it is clear that change or loss of a breast will have a notable impact on the patient's sense of her body and its attractiveness.

Studies suggest that body image is closely correlated with both psychological and physical symptoms including identity, self-esteem, perceptions of attractiveness, and social interactions. Thus, body image disorders are associated with poorer self-esteem, increased social anxiety, greater self-consciousness, and depressive symptoms and, furthermore, they are significantly related to anxiety, fatigue, and fear of recurrence [17]. As such, there exists a significant correlation between psychological distress and poor body image [19].

Breast cancer therapy commonly results in adverse effects with visible and nonvisible physiological impacts (10). Patients receiving treatment for breast cancer are exposed to significant changes in their appearance, such as the loss or disfigurement of the breast, surgical scarring, radiotherapy related skin changes and weight gain resulting from systemic treatments. These changes are closely bound to appearance and body image [19]. Upwards of 50% of breast cancer survivors experience body image-related concerns regarding both their body appearance and function. Adjusting to these physiological changes is challenging because treatment is demanding, both physically and emotionally, and is associated with increased psychopathology including anxiety and depression. Research suggests that one in every three breast cancer patients experiences chronic body-related distress, such as fear of or shame regarding their altered bodies, which disrupts attempts to resume normal life after cancer [10].

In terms of age, younger women have been found to be particularly at risk for psychological distress during and after treatment since these women often have more aggressive breast cancers and tend to attach greater importance to their breasts in terms of their femininity and sexuality [17]. Stage of treatment is an additional factor in the development of body image disorders with some studies suggesting that oncological treatment significantly affects body image and the patient's quality of life immediately post-surgery and adjuvant treatment whereas other research suggests that body image concerns only emerge at a later time [22,23].

Materials and Methods

Participants

Convenience sampling was used to select participants for this study. 80 female breast cancer patients and 80 female patients receiving treatment for other types of

cancer, (ovary, cervix, lung, and colon) were canvassed to participate. All were patients at three oncology outpatient treatment facilities within the Durban, Kwa-Zulu Natal, South Africa area, receiving adjuvant chemotherapy or a combination of chemo-and radiotherapy. Some had previously undergone surgery. In order to meet the inclusion criteria, participants had to be between the ages of 30 and 70 years with no history of disease or other comorbid conditions. The identified patients were approached by the researcher and invited to take part in the study of their psychological experiences during treatment. The participants all provided written and oral consent before taking part.

Materials

Participants meeting the inclusion criteria were given a demographic questionnaire and a series of 4 questionnaires to complete.

- Brief demographic questionnaire: a brief demographic questionnaire detailing the participant's age, marital status, and medical history.

- The Beck Depression Inventory (BDI) [24]: This is a widely-used, 21-item multiple-choice inventory measuring attitudes and severity of depressive symptomatology. Pertinent to the present study are items relating to irritability, pessimism, feelings of guilt or being punished, self-dissatisfaction, and social withdrawal, in addition to physiological symptoms such as tiredness, weight loss, and loss of libido. This inventory evaluates depression in normal and psychiatric populations. Several items indicate the presence of hopelessness and suicidal ideation. Items are scored on a 4-point continuum, with the total score range being 0–63. High scores point to more severe level of depression.

- The Rosenberg Self-Esteem Scale [25]: This widely-used scale measures global self-esteem using a 10-item Likert-type scale. It comprises a scale of 0–30, with a score of less than 15 indicative of low self-esteem. Of the 10 items, five are positively worded statements and five are negatively worded. This scale measures global self-worth by means of measuring both positive and negative perceptions of the self. It is considered reliable and valid for the assessment of self-esteem

- The Stress Symptom Checklist (SSCL) [26]: This is an 87-item checklist relating to symptoms of unhealthy stress. The intensity or severity of stress is measured as reported by the patient's reactions across 3 dimensions: physical (18 items), psychological (27 items), and behavioural (42 items). Each dimension is separately scored with a score of three or more indicative of elevated stress. High scores signify high levels of stress. The maximum score is 87. The checklist allows for further interpretation, with scores of 8 and below indicative of low stress, mild stress ranging from

9 to 15, moderate stress from 16 to 30, and the severe stress from 31 to 45. Profound stress is reflected in scores of 46 and above. Moreover, the SSCL offers an indication as to whether the respondent reflects stress reactions which are mainly physical or psychological and/or behavioural in nature. This scale is a useful clinical measure of stress.

•Body Image Scale (BIS) [18]: The BIS is a 10-item, patient-reported outcome scale designed to briefly but comprehensively rate 3 dimensions of body image, for use exclusively with cancer patients: the affective (pertaining to feelings such as self-consciousness), behavioural (for example difficulties with looking at oneself naked) and cognitive (level of satisfaction with appearance). There is a 4-point response scale, the final score being the sum of all 10 items, with a range of 0-30. Low scores signify fewer symptoms and lower levels of body image distress while higher scores are associated with more symptoms and greater body image dysphoria.

Results

Data were analyzed using non-parametric tests as the frequency of the scores was not normally distributed. The Mann Whitney (two-sample Wilcoxon rank-sum test) was used to compare differences between the breast and other groups on the measures administered.

The BDI results suggest that no notable differences exist between the breast and other group in terms of levels of depression ($p=0.3$) and the measures of the majority of patients fell within the minimal/mild range. Similarly, the Rosenberg Self-esteem Scale showed no significant differences between the breast and other group ($p=0.2$) indicating that both groups reported similar measures of self-esteem, with the majority of all the patients scores falling within the low average range.

In terms of stress, according to the SSCL results, no notable differences emerged between the groups on measures of physiological reactions, however other differences were apparent (Table 1).

Table 1. Results of SSCL: Psychological and behavioural responses.

Stress response		Breast		Other	Total	p-value
Psychological	n	%	n	%		
<5	26	32.5	42	52.5	68	0.055
5-9	13	16.3	7	8.8	20	
10-14	9	11.3	7	8.8	16	
15-19	7	8.8	5	6.3	12	
20-24	7	8.8	2	2.5	9	
25-30	7	8.8	8	10.0	15	
31-34	4	5.0	3	3.8	7	
35-39	5	6.3	1	1.3	6	
40-46	2	2.5	5	6.3	7	
Total	80	100	80	100		
Behavioural						
<5	12	15.0	30	37.5	42	0.002
5-9	16	20.0	15	18.8	31	
10-14	15	8.8	9	11.3	24	
15-19	5	6.3	7	8.8	12	
20-24	6	7.5	4	5.0	10	
25-30	4	5.0	2	2.5	6	
31-34	4	5.0	2	2.5	6	
35-39	2	2.5	1	1.3	3	
40-45	5	6.3	5	6.3	10	
46-49	6	7.5	3	3.8	9	
50-64	5	6.3	2	2.5	7	
Total	80	100	80	100		

Although no notable differences emerged between the two groups along physiological responses to stress, significant differences in psychological ($p=0.055$) and behavioural ($p=0.002$) manifestations of stress were found. In terms of the psychological responses, the most notable differences emerged on items related to feelings of tension or being "keyed up" ($p=0.007$), low self-esteem ($p=0.04$), and self-dislike ($p=0.021$), with the breast group reflecting higher scores on these measures. Moreover, behavioural responses yielded significant differences, in particular on items relating to irritability ($p=0.001$), restlessness

($p=0.003$), experiencing emotional outbursts frequently ($p=0.002$), and difficulties with concentration ($p=0.001$), with the breast cancer group again experiencing these reactions more frequently. In sum, this suggests that patients with breast cancer experience more severe psychological and behavioural stress symptoms than do patients with other sites of disease.

The results of the BIS also showed significant differences between the breast and other group on several items, with the breast group reflecting higher levels of body image dissatisfaction on all items (Table 2).

Table 2. Results of the Body Image Scale

BIS item	response	breast		other		total	p-value
		n	%	n	%		
1. Have you been feeling self-conscious about your appearance?	Not at all	15	18.8	31	38.8	46	0.01
	A little	32	40.0	26	32.5	58	
	Quite a bit	15	18.8	10	12.5	25	
	Very much	18	22.5	13	16.3	31	
2. Have you felt less physically attractive as a result of your disease or treatment?	Not at all	22	27.5	52	65.0	74	<0.001
	A little	29	36.3	13	16.3	42	
	Quite a bit	19	23.8	8	10.0	27	
	Very much	10	12.5	7	8.8	17	
3. Have you been dissatisfied with your appearance when dressed?	Not at all	33	41.0	39	48.8	72	0.71
	A little	31	38.8	20	25.0	51	
	Quite a bit	9	11.3	15	18.8	24	
	Very much	7	8.8	6	7.5	13	
4. Have you been feeling less feminine as a result of your disease or treatment?	Not at all	37	46.3	57	71.3	94	0.01
	A little	26	32.5	10	12.5	36	
	Quite a bit	10	12.5	8	10.0	18	
	Very much	7	8.8	5	6.3	12	
5. Did you find it difficult to look at yourself naked?	Not at all	44	55.0	50	62.5	94	0.44
	A little	21	26.3	16	20.0	37	
	Quite a bit	7	8.8	5	6.3	12	
	Very much	8	10.0	9	11.3	17	
6. Have you been feeling less sexually attractive as a result of your disease or treatment?	Not at all	20	25.0	48	60.0	68	0.001
	A little	33	41.3	17	21.3	50	
	Quite a bit	14	17.5	7	8.8	21	
	Very much	13	16.3	8	10.0	21	
7. Did you avoid people because of the way you felt about your appearance?	Not at all	42	52.5	59	73.8	101	0.01
	A little	24	30	13	16.3	37	
	Quite a bit	11	13.8	5	6.3	16	
	Very much	3	3.8	3	3.8	6	
8. Have you been feeling the treatment has left your body less whole?	Not at all	29	36.3	43	53.8	72	0.11
	A little	35	43.8	20	25.0	55	
	Quite a bit	9	11.3	11	13.8	20	
	Very much	7	8.8	6	7.5	13	
9. Have you felt dissatisfied with your body?	Not at all	27	33.8	42	52.5	69	0.02
	A little	29	36.3	22	27.5	51	
	Quite a bit	15	18.8	10	12.5	25	
	Very much	9	11.3	6	7.5	15	
10. Have you been dissatisfied with the appearance of your scar?	Not at all	42	52.5	54	67.5	96	0.08
	A little	23	28.8	15	18.8	38	
	Quite a bit	9	11.3	5	6.3	14	
	Very much	6	7.5	6	7.5	12	

The most significant differences between the breast and other groups emerge with respect to feelings of sexual attractiveness ($p=0.001$) and physical attractiveness ($p<0.001$) as a result of the disease and treatment, with the breast cancer group reporting significantly less satisfaction with physical and sexual attractiveness. 52 respondents from the other group reported no problems with feeling physically unattractive whilst only 22 patients from the breast group had no difficulties with perceptions of physical unattractiveness. With regard to feelings of being sexually unattractive, 10% of the other group noted extreme feelings of unattractiveness while 16.3% of the breast group experienced marked feelings of sexual unattractiveness attributed to the disease and treatment. Further differences were found in terms of dissatisfaction with one's body ($p=0.02$), social avoidance resulting from body dissatisfaction ($p=0.01$) and feeling less feminine ($p=0.01$) as a result of disease and treatment. On all these measures, the breast group scored consistently higher results.

These findings correspond with the results of other studies which have suggested that breast cancer and its treatment engender higher levels of body image dysphoria in patients than does disease in other sites.

Discussions

The principal goal of this study was the examination of the psychological distress experienced by female breast cancer patients and the identification of the differences in psychological experience which these patients undergo, with particular reference to expression of stress and issues of body image. Since the literature widely shows that breast patients experience elevated levels of stress and more severe body image dysphoria when compared to patients with other forms of disease, this study set out to determine the accuracy of these findings.

In terms of stress, the results of the SSCL indicate that breast cancer patients expressed their levels of stress post-diagnosis more through psychological and behavioural responses than did the other group. Reactions such as tension, low opinion of the self, and self-dislike emerged as significant differences between the responses of the two groups with the breast patients reporting experiencing these more intensely. Similarly, in terms of behavioural manifestations of stress, the breast group reported more severe symptoms of irritability, restlessness, emotional outbursts, and impaired ability to concentrate, symptoms which are well described in the literature as being associated with stress in breast patients [27]. Further, features such as fearfulness, apathy, social isolation, and difficulty with remembering and decision-making were more marked in the breast group, confirming the results of previous studies [28].

These results underscore that patients in the breast group experienced stress more intensely and severely than did patients in the general group, and through differential means, suggesting that the experience of distress for these patients differs in nature and severity to that of other patients.

The findings here also confirm that breast patients experience greater body image distress as reported on all the items of the BIS, with significantly higher measures of dysphoria in terms of physical and sexual attractiveness, loss of feelings of femininity, and elevated levels of self-consciousness, which yielded the most notable differences between the two groups. Interestingly, while 22.5% of the breast respondents reported intense feelings of self-consciousness about their appearance, approximately half of that number viz. 10.0% reported difficulties with looking at themselves naked. Similarly, while 16.3% of the breast group reported marked feelings of sexual unattractiveness resulting from the disease and treatment, only 8.8% reported notable negative effects on feelings of femininity. Some studies have suggested that while self-consciousness appears to be linked to a woman's identity, her naked appearance is very closely associated with her perception of her body. Moreover, the concept of femininity is overarching and thus broader than sexual attractiveness [29].

Research suggests that women are generally more dissatisfied with the appearance of their bodies than are men [30], and this tendency is exacerbated by the diagnosis and treatment associated with oncology. Previous studies have identified impairments in sexual attractiveness and sexual intimacy as a critical issue for women in terms of body image during their treatment, particularly those who have undergone mastectomy and that self-consciousness and dissatisfaction with their bodies have emerged as impacting significantly on patients' body image perceptions [23]. A recent study has demonstrated further body image issues, such as discomfort about self-image, loss of confidence in body functioning, and avoiding intimacy or exposing the physical self, as critical in these patients. The same study found that grief expressions relating to loss of function or of the perceived prior attractive self were prevalent. In addition, the patients feared being regarded as vain for articulating their body image concerns, feeling they should feel gratitude for their survival instead [31].

Therapeutic interventions

Optimal treatment of breast cancer-specific distress is supportive and problem-focused [32]. Education, control of physical symptoms, and maintenance of effective and inter-disciplinary communication constitute critical factors.

Studies suggest that various interventions may improve patients' coping with distress, improve their affect, and reduce the negative effects of disease or treatment, thereby improving their quality of life. Five types of intervention were found to be effective, especially when used jointly: education regarding the disease, behavioral training, for example relaxation or yoga, cognitive-behavioral therapy (CBT) including training in coping skills, stress management skills, and support in professionally led or group contexts [33].

Supportive-expressive therapy is focused on current life issues, challenges to optimal coping, and the facilitation of expression of emotions. CBT is aimed at helping patients to identify negative or irrational thoughts they may have regarding themselves and their disease, to examine how these thoughts lead to dysfunctional behaviors and then guides the patient as to how to assimilate more reasonable thoughts and more adaptive behaviors [34]. CBT has been shown to positively affect many psychological outcomes, particularly depression, anxiety, and mood disorders [35]. CBT may include coaching in relaxation techniques to alleviate stress, psychoeducation, cognitive restructuring, and graduated exposure to feared or unwanted thoughts and both CBT and supportive expressive therapy have been shown to be effective in reducing symptoms of psychological distress in cancer patients [36,37]. A significant improvement in QOL measures was observed in women receiving CBT on an individual level [35]. A recent study found that an exposure-based cognitive-behavioral body image intervention was successful in bringing about positive changes in body image disturbance, with noted improvements in related symptoms such as depression and self-esteem [38].

Highlights

- ✓ Breast cancer patients experience psychological distress differently as compared to patients with other sites of disease.
- ✓ Specific body image disturbances and elevated stress are prominent sequelae of breast cancer.
- ✓ The prevalence and severity of these comorbid symptoms warrant closer observation of patients to facilitate identification those at risk of distress.

Conclusions

This study was aimed at the examination of the differential nature of psychological distress as experienced by breast cancer patients in particular. It is broadly acknowledged that breast cancer is a disease which connotes unique comorbidities owing to the significance of the breast as a sexual organ. These findings confirm previous data in that, with respect to specifically body

image issues and stress, the patients were found to experience elevated levels of distress as compared to patients with cancers in other sites. The breast patient is more vulnerable to feelings of impaired femininity, a diminished perception of her sexual attractiveness, and a tendency towards social avoidance resulting from increased feelings of self-consciousness. Similarly, with respect to the experience of stress, the breast patient undergoes higher levels of psychological and behavioural symptomatology, including tension, irritability and restlessness.

These results indicate that both body image and stress remain significant issues for the rising numbers of patients undergoing adjuvant treatment for breast cancer. The goal of oncology is not to merely extend survival intervals but also to optimize the patient's quality of life. While the literature suggests that mental health issues are often under-diagnosed and undertreated in oncology patients, it is now clearly critical that healthcare professionals, particularly those working in the field of oncology, become more aware of the singular psychological issues facing breast cancer patients in order to maximize their ability to deliver quality care.

Conflict of interest disclosure

There are no known conflicts of interest in the publication of this article. The manuscript was read and approved by all authors.

Compliance with ethical standards

Any aspect of the work covered in this manuscript has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript. Informed consent was obtained from all individual adult participants included in the study.

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SYNOPSIS 3

Links Article 3 to Article 4

Body image disorders and indicators of psychological distress in female patients with breast cancer. *J Mind Med Sci.* 2020; 7(2): 179-187.

Chapter 4 reported the results of this study with respect to breast cancer patients' experience of body image and the manner in which they express their elevated levels of stress, which differ to those reported by patients with other forms of cancer. The breast cancer patients experienced significantly higher levels of body image dysphoria and reported different means of expressing the stress they were experiencing.

In terms of their body image experiences, the breast patients reported notably decreased feelings of attractiveness, both physical and sexual, a greater tendency towards social avoidance because of their perception of their attractiveness and feelings of diminished femininity, which results confirm findings of previous studies into body image changes in breast cancer patients.

With regard to their experiences of stress, whilst there were no differences between the two groups in terms of their physiological responses to stress, the breast group reflected significantly more psychological and behavioural indices of stress. They were more likely to feel higher levels of tension and self-dislike and lower self-esteem. Behaviourally, they were significantly more irritable, had difficulties in concentrating and making decisions, and experienced more frequent emotional outbursts.

Chapter 5. Stress and suicidal ideation in breast cancer patients. Published in: *Scholar Journal of Cancer Science and Cell Biology.* 2018; 1:004

Chapter 5 goes on to review the literature which explores the link between stress and SI in breast cancer patients. Factors such as the diagnosis, the adjuvant treatment and its side-effects and fear of pain and suffering emerge significant precipitators of elevated levels of stress in this patient population. There is evidence to suggest that levels of stress in breast patients, may in some instances, be sufficiently high to warrant diagnoses of PTSD as these diagnoses are more prevalent in breast patients than in patients with other forms of cancer. The pathophysiology of stress in cancer and the association of elevated stress with suicidality is discussed, with attenuated stress, hopelessness and anxiety being additional risk factors for SI.

CHAPTER FIVE

Article 4

Citation:

van Oers HM, Schlebusch L. Stress and suicidal ideation in breast cancer patients. *Scholar J Cancer Sci and Cell Biol.* 2018;11:004

Abstract

Breast cancer continues to be the most common cancer affecting women. Growing numbers of women are surviving the disease due to increasingly effective treatments; however, both the diagnosis and the treatment can constitute a series of stressors for the patient and it is widely accepted that psychological distress is common in this population. Psychological sequelae include depression, anxiety, stress, a sense of loss of control, and sometimes to the point of developing a Post-traumatic Stress Disorder (PTSD). Inordinate stress has been shown to be significantly correlated with suicidal ideation (SI) and some patients may experience SI as a means of feeling they have some control over their circumstances in the face of the stress of adjusting to their cancer diagnosis and treatment. With the rising numbers of newly diagnosed breast cancer patients, especially in developing countries, it is incumbent on oncology healthcare professionals to be able to identify patients at risk and to refer them timeously for psychotherapeutic intervention.

Keywords: breast cancer, stress, suicidal ideation, Cognitive Behaviour Therapy, psycho-oncology.

Stress and Suicidal Ideation in Breast Cancer Patients

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Abstract

Breast cancer continues to be the most common cancer affecting women. Growing numbers of women are surviving the disease due to increasingly effective treatments; however, both the diagnosis and the treatment can constitute a series of stressors for the patient and it is widely accepted that psychological distress is common in this population. Psychological sequelae include depression, anxiety, stress, a sense of loss of control, and sometimes to the point of developing a Post-traumatic Stress Disorder (PTSD). Inordinate stress has been shown to be significantly correlated with suicidal ideation (SI) and some patients may experience SI as a means of feeling they have some control over their circumstances in the face of the stress of adjusting to their cancer diagnosis and treatment. With the rising numbers of newly diagnosed breast cancer patients, especially in developing countries, it is incumbent on oncology healthcare professionals to be able to identify patients at risk and to refer them timeously for psychotherapeutic intervention.

Keywords: Breast cancer, Stress, Suicidal ideation, Cognitive Behaviour Therapy, Psycho-oncology.

Introduction

Patients diagnosed with potentially life-threatening diseases such as cancer often experience distressing emotional reactions which can lead to thoughts of suicide and research demonstrates that cancer is one of the somatic diseases most commonly associated with elevated suicide risk [1-3]. Suicide risk can occur in these patients because the disease can constitute a life crisis resulting in a gamut of psychological problems [4-6]. The associated risk of suicide is 2- to

4-fold higher and the standardized mortality ratio of suicide is 1-11 times higher compared to the general population [7]. The psychological distress experienced by cancer patients at the time of diagnosis and during adjuvant treatment is well documented in the literature and may be related to several associated comorbidities, such as pain, surgery-related anxiety, financial issues, and side effects from treatment. Suicide risk for breast cancer patients in particular, has been reported to be 1.35 to

1.37 times higher than that of the general population [8].

Breast cancer is a leading cancer among the female population worldwide, as well as in the majority of countries in Africa, according to data from 26 African countries for the year 2012 [9]. The disease is the most frequent cause of cancer death in less developed regions, causing one in five deaths in African women which demonstrates a shift from the previous decade where cervical cancer was the most common cause of cancer death [10]. Breast tumors tend to be diagnosed at a decade or two younger and present at more advanced stages compared to developed countries. The incidence of breast cancer increases with age, and people in Africa are living longer due to better control of human immunodeficiency virus (HIV) and other infectious diseases which implies that there will be significantly greater numbers of patients with suicidal ideation diagnosed with diseases such as breast cancers and HIV-positive persons [11] in the future. For example, one in four South Africans develop cancer and one in two is likely to know someone that has cancer [2,4].

Stress and cancer

Somatic disease appears to play a key role in suicidal risk due to heightened vulnerability to physical and psychological stressors. Thus, patients with a chronic and potentially devastating illness, such as cancer, may be particularly at risk for suicide [12]. Factors that lead to elevated stress levels in cancer patients include, inter alia, the diagnosis itself, the disruption caused by the disease, undergoing adjuvant therapy and the concomitant side-effects, increased dependency and the fear of pain and suffering [2,13,14]. The levels of stress may vary between patients, however there is evidence to suggest that cancer patients may experience stress levels such that

the patient may be diagnosed with PTSD [15]. Recent studies have demonstrated that the prevalence of PTSD diagnoses in breast cancer is higher than that in colorectal, head and neck, and prostate cancers but lower than that in brain, gynecological, and hematological cancers [16]. Even with symptoms insufficient to warrant a diagnosis of full-blown PTSD, patients with higher numbers of subsyndromal PTSD have been found to experience SI [17].

An important aspect of understanding the stress response is that a distinction needs to be made between physiologically-based and psychologically-based stress [18]. Neuropsychological mechanisms can be precipitated by both chronic and acute stress following a life event such as the diagnosis of cancer that have implications for disturbances in various neurotransmitters and neurohormones, which are critical co-morbid aetiological considerations in suicidal behaviour. Given this, the final pathways of the human stress response can be conceptualised as following two routes: a physiological and a psychological one where the cognitive model forms the bedrock of the psychological pathway which posits that difficulty in cognitively processing a particular stressor can trigger a stress response as, for example, seen in PTSD which is a trauma/stressor-related disorder. Perception and cognitive appraisal are important in this process, and input from the pre-frontal cortex and frontal lobes (the decision making and higher cognitive centres of the brain) moderates psychological, emotional and behavioural sequelae. The physiological pathway that involves many neurotransmitter systems is concomitantly implicated and the noradrenergic and endogenous opiate systems, as well as the hypothalamic-pituitary-adrenal axis, become hyperactive in individuals with inordinate stress

levels. Neurotransmitters are involved in both the stressed patient's physical and psychological functioning. The physiological and psychological pathways, therefore, interact closely, producing a stress cascade that simultaneously involves the endocrine and autonomic nervous systems, thus incorporating a hormonal dimension. Interactions between neurotransmitters, stress hormones and the immune system resulting from chronic/enduring stress can change the balance between various neurotransmitters. Activated hormonal responses include the corticotropin-releasing factor, the adrenocorticotrophic hormone, adrenalin (epinephrine), noradrenalin (norepinephrine), the corticosteroids (aldosterone) and glucocorticoids (cortisol).

In the context of cancer both types of stress pathways are relevant. The disease itself causes physical stress reactions where, for instance, pain may cause severe distress. In addition, cancer treatments also cause physiological stress where excessive demand is placed on the body through invasive and painful treatment interventions. Psychological stress seems to be rooted in the knowledge of having a potentially life-threatening disease and living with the consequences thereof. Cancer patients may experience symptoms of cancer-related stress such as intrusive thoughts, strong negative emotions regarding cancer diagnosis and treatments and avoidant thoughts and behaviours all of which are associated with poorer quality of life and there is solid evidence that the course of cancer is affected by emotional stress [19]. This corresponds with many studies which show that a reduction in stress results in an improved quality of life [2,4,19,20].

In the South African context, stress levels in this country are particularly high due to, inter alia, factors

such as economic issues, political uncertainty, crime and social transition [21]. This results in numerous stress-related disorders and can contribute to certain such lifestyle diseases, health-risk behaviours, suicidal behaviours and difficulty coping with change [22]. Further, social attitudes and cultural beliefs about cancer can profoundly affect how patient's perceive themselves, their disease, their future and their will to live [2]. In addition to this, a diagnosis of cancer is an extremely stressful life event and is clearly associated with an increase in psychological distress. Extensive research suggests that psychological stress associated with cancer diagnosis and treatment contributes to impaired immunity [20]. Additionally the relationship between stress and cancer has been suggested in studies that patients diagnosed with cancer suffer a variety of stressors such as fear of dying, fear of invasive treatments, fatigue, additional expenses and social isolation [23].

Stress, suicidal ideation and cancer

Suicidal ideation (SI) is a broad term that refers to thoughts of engaging in any suicide-related behavior, ranging from transient and intermittent thoughts about death and more severe rumination and creation of a plan to kill oneself [24,25]. Passive suicidal ideation, or a passive desire to die, can be differentiated from active suicidal ideation (where individuals have a specific plan and intent to die) [26]. Passive suicidal ideation can be characterized as "emotionally coloured thoughts", or a wish, where the patient feels that life is not worth living or that it would be better to be dead. One third of individuals with suicidal attempts in the past had passive suicidal ideation, or had plans for committing suicide [27].

Stressful life events have been consistently identified as a reliable risk factor for suicidal behavior and research has indicated that stress is positively

associated with suicidal ideation [24,28-30]. The interpretation of findings of studies related to SI in cancer patients is confounded by the fact that patients suffering from diseases that threaten their life may be more preoccupied with thoughts of death than of suicide and it is important to distinguish between these [27].

Many cancer patients hold suicidal behavior as a means of maintaining some sense of control over their lives as they are forced to adjust to the stress of their diagnosis and treatment [5]. A plethora of studies has demonstrated that suicidal ideation is common in cancer patients and survivors [1,3,6,31]. Suicidal thoughts and impulses are some of the most challenging symptoms in patients with cancer, and may occur both during and after treatment [32]. Some disparity appears in the literature with respect to the points at which suicidal ideation is highest and the factors that precipitate such thoughts. Some research suggests that suicide risks is highest during the first year after diagnosis and that this risk decreases over time. Kim [1] found that there was a similar prevalence of suicidal ideation in both short- and long-term follow-up studies following breast cancer, but that the factors associated were markedly different between the two points of evaluation. In the short-term suicidal ideation was associated with depression and physical disability, whereas in the long-term, living alone, anxiety and advanced stage of cancer were significant factors.

A recent Chinese study found that cancer patients are at high risk for suicide [25], particularly when they are informed about the cancer diagnosis or hospitalized for cancer treatment. Further, although cancer patients' risk of suicide may decrease over time, the elevated suicide risk in patients can still persist for many years after the diagnosis and

treatment of cancer. In addition, studies also indicate that other types of non-fatal suicidal behaviors [27], i.e., desire for hastened death and suicidal thoughts and plans, are fairly common in cancer patients. Zhong [25] also found that depression and anxiety were two most significant contributing factors to SI. The researchers suggest that this finding differs from what is generally acknowledged to be the most significant contributing factor for suicidality in the general population, namely depression. This difference could be partly attributed to the high level of psychological stress due to the cancer diagnosis or treatment in these cancer patients. A 2016 study showed differences in suicide risk according to the psychological construct of level of anxiety among advanced cancer patients. That is, when the level of anxiety increases from normal (low) to mild, moderate, or higher levels, the risk of suicide also significantly increases [33].

The impact of cancer diagnosis among young patients appears to be similar to that of the elder adults, with the first year after diagnosis clearly constituting a highly stressful period. The ongoing increased risk of suicide attempt throughout the follow-up after cancer diagnosis indicates that the ensuing cancer treatment, physiological distress related to cancer and its treatments, disease recurrence and a potential lack of treatment options at the final stage have as well an important influence on the psychological well-being of the young patients [34]. There are, however, some studies that suggest that the SI in cancer patients is, in fact, lower than that of the general population [35].

Important risk factors for (SI) in cancer patients have been identified as depression, hopelessness, uncontrolled pain, and difficult interpersonal relationships [33,36]. SI in cancer patients has been associated with moderate-to-severe pain. In the

literature, the association between pain and elevated risk of SI is very complex. A survey reported that pain, especially prolonged or uncontrolled pain, was the most common reason for SI of cancer patients who considered suicide a reasonable/justifiable future option [25]. Other factors such as loss of control, deficits in physical functioning and loss of autonomy may lead to suicide vulnerability in cancer patients. It becomes evident that there is a clear overlap between factors affecting stress and factors associated with SI. Although short-term stress may be adaptive, maladaptive responses such as magnification, rumination, helplessness to pain- or non-pain-related stressors may increase cortisol secretion and elicit a sensitized physiological stress response. Ultimately, an attenuated or exaggerated stress response may perpetuate cortisol dysfunction, widespread inflammation, and pain [37].

Cognitive behavioral therapy to mitigate the effects of stress

Cognitive Behavioral Therapy (CBT) is a short-term, goal-oriented psychotherapy treatment that takes a practical approach to problem-solving. It is a directive, time-limited, structured approach which can be used to treat various mental health disorders. CBT explores the links between thoughts, emotions and behavior. The goal of therapy is to challenge patterns of thinking or behavior that are the foundation of much of the distress that patients face, and so to alleviate distress by helping patients to develop more adaptive cognitions and behaviours [38].

CBT has been shown to be effective in mitigating various psychosocial impacts on breast cancer [39]. Its cost-effectiveness has been demonstrated even in treating depressed youth [40], and it is an effective therapy for psychological symptoms of cancer

survivors and patients. Interventions that use CBT techniques to teach better stress management in combination with health behavior education may have the greatest impact on psychological adaptation. These findings suggested that CBT should be used as a psychological intervention of choice for breast cancer survivors and patients when possible [41]. A briefer Cognitive Behavioural Stress Management (CBSM) intervention, which was briefer than the norm (5 weeks vs. 9–20 weeks), had beneficial effects on adjustment for women with breast cancer and was particularly effective for those with increased global stress [42]. Adjustment to cancer ultimately encompasses, among others, ongoing attempts by patients to effectively optimize their ability to alleviate or manage the physiological, psychological, behavioural, and social consequences of their individual experience of coping with cancer [2,43].

Conclusion

The association of stress with a diagnosis of and treatment for breast cancer is well documented in the literature. There is also a clear correlation between elevated levels of physiological and psychological stress and suicidal ideation in these patients both immediately after diagnosis and sometimes well into the treatment trajectory and beyond. Whilst oncology treatments have improved over the years to the point where cancer is now considered a chronic disease, the quality of life of many patients may be compromised by factors such as stress to the point of suicidal ideation. Psychotherapeutic intervention such as CBT have been shown to be effective in the management of stress in breast cancer patients. Oncology healthcare professionals, particularly in

developing countries like South Africa where the demographics of diagnosis are shifting, should be aware of the prevalence and symptomatology of stress in order to better identify patients at risk of such distress and refer them for appropriate psychotherapeutic treatment.

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SYNOPSIS 4

Links Article 4 to Article 5

Stress and suicidal ideation in breast cancer patients. Scholar J Cancer Sci and Cell Biol. 2018; 1:004

Chapter 5 reviewed the literature examining the link between stress and SI in breast cancer patients. The diagnosis of a potentially life-threatening disease such as cancer and the side-effects of adjuvant treatment emerge as significant stressors and often elicit sufficient levels of distress to lead to SI in patients. Stress has been found to be positively correlated to SI and it is widely acknowledged that the risk of suicide is higher in cancer patients than in the general population. Both the physiological (physical stress of pain and discomfort associated with treatment) and psychological (being aware of the potentially life-threatening nature of the disease) stress responses and their relevance in the context of cancer were discussed.

Chapter 6: Breast cancer patients' experiences of psychological distress, hopelessness, and suicidal ideation. J. Nat Sci Med. 2021; DOI:10.4103/jnsm.jnsm_136_20

Chapter 6 reports on the results of this study, examining the determinants and association of psychological distress and SI in breast cancer patients and drawing a comparison with the responses of patients with different sites of disease. The results indicate that although there were no significant differences in the two groups' levels of depression, the breast group demonstrated markedly higher levels of hopelessness and a significantly higher rate of SI.

The differential manifestations of stress between the two groups was discussed with the breast patients exhibiting more frequent and more severe psychological and behavioural responses to stress than those in the other group. These responses were shown to resemble the physiological and psychological arousal symptomatic of anxiety, showing that breast cancer patients experience elevated levels of anxiety as well as higher levels of stress.

A strong correlation between hopelessness, stress and anxiety with SI is well documented in the literature and these results confirm that breast patients are at higher risk of distress and SI.

CHAPTER SIX

Article 5

Citation: van Oers H, Schlebusch L. Breast cancer patients' experiences of psychological distress, hopelessness and suicidal ideation. J Nat Sci Med.2021; DOI:10.4103/jnsm.jnsm_136_20

Abstract:

It is widely acknowledged that a diagnosis of breast cancer is a stressful life event and that patients typically undergo high levels of psychological distress. Stress, anxiety, hopelessness and suicidal ideation are common features of the distress that patients experience. Psychological distress is often underdiagnosed and undertreated within this patient population as the physical crisis takes precedence or patients underreport their mental health difficulties believing them to be an inevitable consequence of diagnosis and disease. This study undertook to examine the differences in the psychological experiences between a cohort of female breast cancer patients (n=80) and female patients with other sites of disease (n=80), with particular focus on stress, anxiety, hopelessness and suicidal ideation. The results suggest that although the levels of depression between the two groups did not show any significant differences, breast cancer patients experienced notably higher levels of hopelessness and suicidal ideation and expressed their stress through different responses, both in psychological and behavioural terms, which reactions resemble the symptomatology present in anxiety. This study hopes to highlight for healthcare professionals, specifically those in the field of oncology, the prevalence and nature of distress and the importance of identifying at risk patients to further refer them for supportive therapy.

Keywords: anxiety, breast cancer, hopelessness, suicidal ideation, stress

Breast Cancer Patients' Experiences of Psychological Distress, Hopelessness, and Suicidal Ideation

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Abstract

Background: The diagnosis and treatment of breast cancer often result in significant psychological distress. However, the manner in which distress differentially affects patients with various forms of disease is less well researched. This study sought to examine the differences in the psychological experiences of patients diagnosed with breast cancer and those diagnosed with cancer in other sites with particular focus on stress, anxiety, hopelessness, and suicidal ideation (SI). **Materials and Methods:** Convenience sampling was used to select participants comprising female patients with breast cancer ($n = 80$) and female patients with other forms of disease ($n = 80$) in Durban, South Africa. The participants were all receiving adjuvant chemotherapy and/or radiotherapy. These participants were asked to complete a questionnaire battery consisting of, *inter alia*, the Beck Depression Inventory, the Rosenberg Self-Esteem Scale, and the Stress Symptom Checklist. **Results:** The results suggest that although the levels of depression between the two groups did not show any significant differences, breast cancer patients experienced notably higher levels of hopelessness and SI. Moreover, they expressed their stress through different responses, both in psychological and behavioral terms, which resemble the symptomatology present in anxiety. **Conclusions:** Breast cancer patients experience higher levels of hopelessness and SI as compared to patients with other forms of disease and express their stress by differing means. This study highlights for those professionals in health care, specifically those involved in oncology, the prevalence and the characteristics of this distress and the importance of identifying at-risk patients to further refer them for supportive therapy.

Keywords: Anxiety, breast cancer, hopelessness, stress, suicidal ideation

INTRODUCTION

It is broadly acknowledged that a diagnosis of breast cancer constitutes a stressful life event and that patients typically undergo high levels of psychological distress. Breast cancer patients are particularly at risk for distress due to the meaning of the breast as a symbol of identity and femininity, and these patients typically experience singular psychological sequelae in terms of disease- and treatment-related distress in comparison to patients diagnosed with other types of cancer.^[1,2] Stress, anxiety, hopelessness, and suicidal ideation (SI) are common patient experiences.^[3] Psychological distress is often underdiagnosed and undertreated within this patient population as the physical crisis takes precedence or patients underreport their mental health difficulties, believing them to be an inevitable consequence of diagnosis and disease.^[4]

Contemporary psycho-oncology is focused on the psychological factors which determine the functioning of oncology patients.

It is broadly acknowledged that a cancer diagnosis is stressful and frequently traumatic for patients, often resulting in elevated levels of distress immediately after diagnosis, during treatment, and sometimes well beyond.^[5]

Cancer-related distress is a complex biopsychosocial phenomenon affecting patients, their families, and their health-care staff. Oncology health-care professionals have a pivotal role in identifying and managing cancer-related distress in these patients and their families, and there is growing realization that an interdisciplinary team approach to providing support for those patients who are at elevated risk for cancer-related distress is essential.^[6]

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For the purposes of this research, distress may be defined as a multifaceted disagreeable emotional experience encompassing psychological (cognitive, behavioral, and emotional), social, and/or spiritual components that may compromise the patient's ability to tolerate the physical symptoms of the disease and its treatment.^[5]

The prevalence of distress in oncology patients is reported to be above 50%, but despite the severity of its impact on the patient's ability to function, distress in these patients is frequently unheeded and undertreated and studies examining which psychological symptoms are more significantly correlated with levels of distress in breast cancer patients are lacking.^[5,7,8] The literature suggests that breast cancer and its treatment connote unique psychological comorbidities due to the significance of the breast as an organ symbolizing women's identity, femininity, and sexuality and that the loss or disfigurement of a breast may result in marked negative effects on the affect and levels of stress.^[9]

Distress encompasses a broad range of affect from feelings of vulnerability and sadness to depression, anxiety, hopelessness, and experiences of panic and isolation. Stress, body image dysphoria, low self-esteem, and SI may also be present.^[10] Critically, pervasive severe distress has been found to have a significant negative effect on clinical outcomes, *inter alia* reduced compliance with antineoplastic treatments, greater inflammation, disease progression, survival intervals, and quality of life.^[11] In addition, this distress may dysregulate the hypothalamic-pituitary-adrenal (HPA) axis and trigger the sympathetic nervous system, which, in turn, negatively impact the cardiovascular, immune, and endocrine systems.^[12]

Stress is positively associated with SI.^[13,14] Stressful life events, such as a cancer diagnosis, have been consistently identified as an important risk factor for suicidal behavior, and research indicates that among patients diagnosed with breast cancer, there is a significant increased risk of suicide for up to 30 years post diagnosis.^[7] Increases in early detection and advances in oncological therapies have resulted in a growing number of patients becoming long-term survivors, having to cope with the cognitive, physiological, and psychological consequences of disease.^[15] Thus, not only the physical health of these patients but also their quality of life poses a challenge for oncology health-care professionals.^[16,17]

While the psychological sequelae of breast cancer have been widely researched, there is comparatively less information relating to the experiences of these patients in developing nations. In Africa, many factors render the experience of oncological diagnoses and treatment different to those elsewhere. It is estimated that approximately 80% of African patients are diagnosed with malignancies at late stage and the health system infrastructure is more limited.^[18] Moreover, research has demonstrated that due to the multicultural nature of the African oncology setting, where cultural and health beliefs and practices may be in contrast to that of the Western medical model within which context medical training is housed,

there is a greater need for cultural competence in delivering optimal care of the patient. Culture is a vital consideration in clinical care as it shapes patients' health beliefs, values, and behaviors. A recent study underscored the importance of oncology health-care workers' attention to strategies for considering cultural and health beliefs affecting treatment and emphasized the importance of culturally competent health-care systems, including culturally competence in communication in order to minimize distress. Their recommendations include the initiation of a cultural discussion, confirming an understanding of the patient's cultural beliefs, and liaison with both family and cultural decision makers, where possible.^[19]

This article forms part of a larger study, examining the psychological experiences of a sample of South African women; expands on a previous study into the effects of disease and treatment on body image and distress,^[9] examining the further effects on stress and SI; and hopes to contribute to the body of knowledge regarding the experiences of patients treated in this context and observe if these experiences differ from those described in the existing studies.

It is commonly accepted that the psychological sequelae of a diagnosis of breast cancer include depression, anxiety, stress, alteration in cognitive function, anxiety regarding recurrence, and a sense of loss of control that may, in some cases, remain for a considerable time after treatment is completed, thereby reducing patients' functionality and quality of life.^[20,21] Some researches even suggest that cancer patients frequently experience the psychological sequelae of treatment, such as stress and anxiety more acutely than the physiological side effects, such as alopecia, fatigue, and nausea.^[22]

Depression and anxiety, defined as prolonged vigilance in preparation for an actual or perceived danger may appear as both physiological and psychological arousal, have been described as the two most frequent psychiatric comorbidities found in patients with breast cancer.^[23,24] Some researches suggest that anxiety may be the most prevalent form of psychological distress observed in these patients.^[25] Other studies note that within the 1st year post diagnosis, twice as many women experience depression when compared to women in the general population.^[26] In patients diagnosed with breast cancer, the importance of body image, as well as the influence of surgery and adjuvant treatment on body image, self-image, and its effect on libido, can justify the higher frequency of anxiety and depression in this group.^[9] Some researches have shown that anxiety and depression are significantly correlated with the modality of treatment and a particularly high frequency has been observed in those patients receiving chemotherapy as a single treatment. One study found that 66.7% of patients experienced symptomatic depression, while 77.8% experienced symptomatic anxiety.^[27]

Within the South African context, recent studies show that there is a prevalence of distress and depressive symptoms among South African breast cancer patients, particularly

among those who experience higher body image stress and low levels of support.^[26]

Receiving a diagnosis of cancer and experiencing the treatment that follows can create a succession of stressors for the patient. From the initial detection of the disease to screening to staging and intervention planning, the process may be perceived as an interval of heightened stress and anxiety which confronts the patient's assumptions of being in control and her sense of invulnerability and predictability. Chemotherapy, radiotherapy, and hormone therapies and the associated side effects may be experienced as unknown and thus extremely stressful.^[15] A recent study found that 80% of patients reported stress and anxiety in the early stage of treatment.^[22] Stress, defined theoretically as the individual's response to the appraisal of demands, contingent on their coping skills,^[29] often triggers the development of depression and anxiety, and cancer may be one of the single-most stressful events the individual may undergo.^[27]

Maladaptive emotional or behavioral responses to a known psychosocial stressor fall under the term of adjustment disorder (DSM-5)^[30] and refer to patients who experience difficulties adjusting after a stressful event at levels disproportionate to the intensity or severity of the stressor. These symptoms are characterized by stress responses which are inconsistent with the expected social or cultural reactions to the stressor and cause significant distress and impaired daily functioning. Although adjustment disorder does state which specific criteria constitute a stressor, the diagnosis of a potentially life-threatening disease has already been shown to be a stressful event.^[31]

A study of the correlation between anxiety, stress, and fear suggests that some confusion exists in the literature, in that there is some conceptual overlap between these terms as well as a liberal use of broad definitions.^[32] For the purposes of this research, stress represents the interaction between specific types of external stimuli, termed stressors and particular stress response systems. These may be either physiological, namely the HPA axis or catecholamines, or psychological in nature, where anxiety and fear comprise a pattern of behavioral, cognitive, and physiological responses in situations of uncertainty or threat.^[33] While fear is regarded as a normal reaction to a specific threat, anxiety may be unrelated to any external stimulus and may not be linked to a defined physiological reaction. It is, therefore, clear that the potential exists for conceptual overlap and uncertainty in that, firstly, anxiety and fear may be components of the stress response, while secondly, fear and anxiety may, in their turn, constitute part of a potential stress stimulus.^[32] Anxiety disorders are frequently preceded by stressful life events, and long-term follow-up studies show that anxiety responses are a more common occurrence than is depression.^[34] In addition, it is widely acknowledged that individuals who undergo stress for extended periods are more susceptible to increased levels of anxiety and depression.^[35]

Several recent studies confirm that patients with breast cancer show elevated rates of anxiety, depression, and stress-related disorders, which were at their highest immediately after diagnosis and remained high for up to as long as 5 years.^[15] One study found that younger age at the time of diagnosis, higher histological grade, comorbidities, positive lymph node status, as well as chemotherapeutic treatment independently correlated with the risk of anxiety and depression in these patients. Chemotherapy and high-grade disease were found to confer short-term risk, while comorbidities were primarily linked to late-onset psychological events. The same study found that these patients were at a 60% higher risk of developing symptoms of anxiety, depression, and stress-related disorders within a 10-year period after diagnosis in comparison to the female population overall. Although the risk of mental disorders was found to be highest just after diagnosis, the incidence of all these mental disorders remained elevated for up to a 5-year period. It was also found that the only discernable risk for stress and related disorders in these patients was younger age at diagnosis.^[36]

Studies suggest that a higher self-esteem appears to act as a buffer against anxiety, as does social support.^[2,35]

It is widely accepted that diagnoses of cancer are associated with an increased risk of suicide.^[14,37,38] Research suggests that this risk is highest within 1 year post diagnosis, but that the association between suicide and cancer is understudied and is overlooked by clinicians who often underestimate the impact of a diagnosis of a potentially fatal disease and the protracted course of cancer therapies and recovery on patients.^[39] Suicide can be viewed as the culmination of unmanaged distress and as cancer survival rates increase, it will become critical to identify those patients who are at increased risk of suicide.^[40]

While there exists a plethora of studies which show the incidence of completed suicide among cancer patients generally and female breast cancer patients specifically, there is a paucity of research into how prevalent SI is in the breast cancer population.^[41] SI exists along a spectrum, ranging from transient and passive thinking about suicide, to active thoughts, planning, and completing suicide.^[14,42] A recent study found that SI was common among these patients and the prevalence was similar in both short-term and long-term follow-ups after diagnosis.^[43]

Hopelessness is associated with a variety of symptoms of psychological morbidity and has been found to correlate more highly with SI than with the levels of depression.^[44] Hopelessness has been defined as an emotional state in which individuals feel that they have few options to solve their problems or feel that they cannot actuate their energy in order to fulfill their goals.^[45] Hopefulness, when utilized as a coping mechanism, may be instrumental in decreasing the cancer-related stress, whereas hopelessness has been shown to increase stress and negative expectations of the future.^[46] In the context of breast cancer, hopelessness has been found by some studies to be one of the most significant psychosocial

sequelae which is positively correlated with, *inter alia*, anxiety and depression, stress, decrease in quality of life, psychological distress, and decrease in perceived well-being. Hopelessness tends to appear early in treatment, can extend for 5 years into survivorship, and has been associated with disease recurrence and death.^[47] Cancer patients often experience significant feelings of hopelessness during the adjustment process. Some researches suggest that it is the notion of breast cancer as a traumatic and fatal disease that results in feelings of hopelessness,^[46] while other studies posit that it is the uncertainty of the future after diagnosis which may cause patients to experience feelings of despair and hopelessness.^[45]

In the context of developing countries, there is a dearth of literature on suicide and cancer. However, a study conducted in South Africa found that cancer patients experienced marked depression, anxiety, stress, and hopelessness regarding their disease, feeling they would be better off dead. This study found that most patients were at high risk of suicidal behavior.^[48] We hypothesized that breast cancer patients experience higher levels of hopelessness and SI as compared to patients with other forms of disease. Therefore, this study was conducted to examine the nature of the experiences of female patients with breast cancer when compared to cancer patients with other sites of disease (cervix, lung, colon, and ovary), with particular focus on the nature of distress and the prevalence of hopelessness and SI.

MATERIALS AND METHODS

Participants

The research was conducted among a sample of patients with breast cancer ($n = 80$) and patients with other forms of cancer ($n = 80$) who were all receiving outpatient oncological treatment, chemotherapy, radiation therapy, or a combination of the two at three oncology clinics in Durban, Kwa-Zulu Natal, South Africa. Convenience sampling was used and in order to fit the inclusion criteria, patients had to be female and fall within the age range of 30–70 years with no comorbid conditions or a history of prior disease. Those patients identified as eligible were approached by the principal author (HvO) while receiving their treatment and invited to participate in the study regarding their psychological experiences during the treatment. The study was approved by our institutional review board. All participants gave written and oral consent before completing the research protocol. All procedures performed in this study were in accordance with the Declaration of Helsinki.

Questionnaires

The research participants were asked to complete a brief demographic questionnaire and a set of four psychometric scales.

These included:

- The brief demographic questionnaire: This is designed by the researcher and consists of items regarding *inter alia*, participants' age, medical history, and treatment
- The Beck Depression Inventory,^[49] (BDI): This 21-item multiple-choice self-report inventory is widely used

and measures the attitudes and severity of depressive symptoms. Particularly relevant to this study were those items relating to dissatisfaction with the self, social withdrawal, irritability, tendency toward pessimism, guilt or perceptions of punishment, in addition to physiological symptoms such as sleep disturbances, fatigue, and weight loss. Items are scored on a 4-point continuum. The total score range is 0–63, with higher scores indicating more severe levels of depression

- Rosenberg Self-Esteem Scale:^[50] This is a widely used 10-item Likert-type scale which measures global self-esteem. It employs a scale of 0–30 where a score of 15 or less may be indicative of a problematic low self-esteem. Half of the items are positively worded and the other half are negatively worded. The scale is useful in measuring global self-worth/self-acceptance by calculating both positive and negative perceptions of the self. It is considered a reliable and valid instrument for assessing self-esteem
- Stress Symptom Checklist,^[51] (SSCL): This 87-item dichotomous-scaled checklist assesses the general symptoms of unhealthy stress. The intensity or severity of stress is reflected by an individual's responses on the following three dimensions: physical, psychological, and behavioral and is useful as a clinical measure of stress. Scores of 8 and below indicate low stress, mild stress ranges from 9 to 15, moderate stress from 16 to 30, and severe stress from 31 to 45. Profound stress is reflected by scores of 46 and above
- Body Image Scale,^[52] (BIS): This is a 10-item measure developed for the brief and comprehensive assessment of three dimensions of body image specifically in cancer patients, namely, the affective (e.g., feelings of self-consciousness), the behavioral (such as difficulty at looking at oneself naked), and the cognitive (or satisfaction with general appearance). It has been designed for use with any type of cancer and its treatment. It comprises a 4-point response scale, with the final score being the sum of all the 10 items. Scores range from 0 to 30, with low scores representing few symptoms and lower body image distress and higher scores corresponding to increasing symptoms and greater body image concerns.

Statistical analysis

The data were analyzed utilizing nonparametric measures due to the frequency of the scores being not normally distributed. The two groups were compared on all measures using the two-sample Wilcoxon rank-sum (Mann-Whitney) test.

RESULTS

The results of the Rosenberg Scale indicate that no significant differences ($P = 0.2$) were found between the breast and other groups in terms of measures of self-esteem, where the majority of patients scored within the low average range.

The BIS results yielded significant differences between the groups, with the breast group yielding higher body dysphoria scores, with greater differences especially on items related to the feelings of physical ($P \leq 0.001$) and sexual ($P = 0.001$) attractiveness.

The results of the BDI showed no notable differences between the groups ($P = 0.3$) regarding the levels of depression, and the majority of patients in both groups scored within the minimal-to-mild range. However, a further analysis of items relating to hopelessness and SI indicated significant differences between the groups. The items relating to hopelessness range from not feeling discouraged about the future to feeling that the future is hopeless and that there is no chance that the situation can improve. The item relating to SI ranges from reporting no thoughts about ending one's life to desiring to kill oneself if given the chance. In terms of hopelessness, the breast group yielded significantly higher scores ($P = 0.0002$) and in terms of SI, the breast group again showed significantly higher results ($P = 0.036$) [Tables 1 and 2].

With respect to stress as measured by the SSCL, no notable differences between the groups emerged in relation to the measures of physical responses to stress ($P = 0.48$). However, differences appeared in terms of their psychological and behavioral reactions to stress. With respect to the psychological responses the patients reported, significant differences ($P = 0.055$) emerged. In particular, notable differences were found on items concerning feelings of self-dislike ($P = 0.021$), low self-esteem ($P = 0.04$), and feeling tense and "keyed up" ($P = 0.007$), with the breast group scoring higher results on each. While 77.5% of the other group reported feeling no self-dislike, only 62% of the breast group experienced no such feelings. Nearly 8.8% of the other group reported frequent experiences of disliking themselves, whereas 13.8% of the breast group experienced these feelings frequently. Similarly, frequent feelings of low self-esteem were experienced by 18.8% of the breast group, whereas 15% of the other group experienced these feelings more often. Almost 71.3% of the other group reported experiencing no feelings of tension, whereas only 47.5% of the breast group indicated the same. Of the other group, 16.3% felt tense often, whereas 23.8% of the breast group felt tension more frequently [Table 3].

In terms of the behavioral reactions to stress, the breast group showed consistently higher measures with the greatest differences between the two groups emerging on items related to poor concentration ($P = 0.001$), emotional outbursts ($P = 0.002$), irritability ($P = 0.001$), and restlessness ($P = 0.003$). Differences also emerged in relation to fearfulness ($P = 0.02$), memory loss or forgetfulness ($P = 0.04$), having difficulty in making decisions ($P = 0.03$), procrastination ($P = 0.048$), loss of interest in other people ($P = 0.02$), and a general loss of interest in life ($P = 0.01$). These results suggest that in terms of behavioral symptoms, the breast group experienced higher and more intense levels of stress than those of the other group [Table 4].

Table 1: Differences in hopelessness and suicidal ideation

			<i>n</i>	Mean	SD	<i>P</i>
Breast	bi_q2	Hopeless	80	1.21	0.99	0.0002
Other	bi_q2	Hopeless	80	0.63	0.99	
Breast	bi_q9	Suicide	80	1.08	0.99	0.036
Other	bi_q9	Suicide	80	0.75	0.95	

Table 2: Comparative rates of hopelessness and suicidal ideation

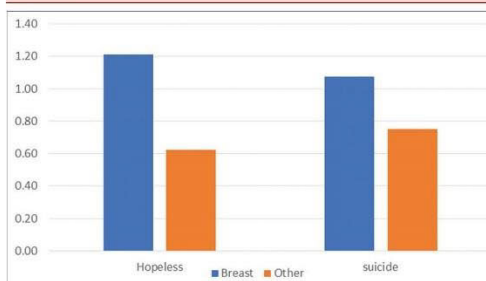


Table 3: Results of the psychological indices of the Stress Symptom Checklist

SSCL item, psychological	Response	Other, <i>n</i> (%)	Breast, <i>n</i> (%)	<i>P</i>
Feelings of disliking yourself	Not at all	62 (77.5)	50 (62.5)	0.021
	<0.5	11 (13.8)	19 (23.8)	
	0.5-0.9	7 (8.8)	11 (13.8)	
Low self-esteem/low opinion of yourself	Not at all	59 (73.8)	45 (56.3)	0.04
	<0.5	9 (11.3)	20 (25.0)	
	0.5-0.9	12 (15.0)	15 (18.8)	
Feeling tense and keyed up	Not at all	57 (71.3)	38 (47.5)	0.007
	<0.5	10 (12.5)	23 (28.8)	
	0.5-0.9	13 (16.3)	19 (23.8)	

Table 4: Results of the behavioral indices of the Stress Symptom Checklist

SSCL item, behavioral	Response	Other, <i>n</i> (%)	Breast, <i>n</i> (%)	<i>P</i>
Feeling disgruntled/moody/irritable	Not at all	60 (75.0)	39 (48.8)	0.001
	<0.5	10 (12.5)	22 (27.5)	
	0.5-0.9	10 (12.5)	19 (23.8)	
Emotional outbursts	Not at all	61 (76.3)	42 (52.5)	0.002
	<0.5	10 (12.5)	20 (25.0)	
	0.5-0.9	9 (11.3)	18 (22.5)	
Fidgeting/restlessness	Not at all	66 (82.5)	49 (61.3)	0.003
	<0.5	10 (12.5)	22 (27.5)	
	0.5-0.9	4 (5.0)	9 (11.3)	
Poor concentration	Not at all	43 (53.8)	25 (31.3)	0.001
	<0.5	21 (26.3)	22 (27.5)	
	0.5-0.9	16 (20.0)	33 (41.3)	
Fearfulness	Not at all	60 (75.0)	46 (57.5)	0.02
	<0.5	12 (15.0)	20 (25.0)	
	0.5-0.9	8 (10)	14 (17.5)	

SSCL: Stress Symptom Checklist

DISCUSSION

The primary aim of this study was to examine the nature of the distress experienced by patients with breast cancer. It was hypothesized that breast cancer patients, given the well-documented negative impact on body image and feminine identity these patients are faced with, would experience distress different in nature to that experienced by women with diseases in other sites and would manifest this distress in differing ways.

In terms of depression, although the overall measures of depression between the two groups as measured by the BDI did not yield significant differences, some notable disparities emerged when further analyzing specific items on the inventory which related to the sense of hopelessness and SI. The breast cancer group reported significantly higher levels of hopelessness than did the other group and also, significantly higher incidence of SI. The results of this study confirm the findings of previous research, which indicate that breast cancer patients commonly experience significant levels of hopelessness and SI.^[7,43,53]

Hopelessness is a defined construct, not merely a symptom of depression, and is recognized as a common risk factor for suicidal behaviors.^[42,54] Hopelessness may be described as being defined by subjective incompetence, where depression is defined by anhedonia.^[7] Originally proposed by Beck,^[55] hopelessness theory suggests that hopelessness or a negative attributional style regarding the future causes individuals to view suicide as the sole solution to unresolvable problems. This theory further suggests that, subsequent to a negative life event, several factors may add to the development of hopelessness: the identification of the event as significant, attribution of the cause of this event to fixed and global factors, the belief that the event will have negative repercussions, and the belief that the negative event implies negativity about the self.^[56] This hopelessness then results in psychological distress and is, thus, conceptualized as a significant cognitive vulnerability for suicide.^[54] Further research suggests that patients hold suicidal behavior as an option for retaining a sense of control over their lives at a time when they are forced to adjust to the stress of their disease and treatment.^[57]

The results of this study support the findings of earlier research, concluding that although there appeared to be no notable differences in the levels of depression, the breast cancer sample did exhibit elevated levels of hopelessness, and, consequently, SI as compared to the other group. This can be understood within the context of a diagnosis and treatment of breast cancer as the constituting factors which lead to the development of hopelessness according to hopelessness theory.

In the context of stress, the results suggest that although there appeared to be no notable differences between the groups with respect to their physical expression of stress, there were marked disparities in relation to their psychological and behavioral responses to stress. The SSCL items which indicated the greatest differences between the groups relate to the feelings of tension and low self-esteem, pertaining to the psychological

indices, and irritability, restlessness, emotional outbursts, and poor concentration in the context of behavioral indices. These responses also resemble the physiological and psychological arousal that is symptomatic of situational anxiety.^[58,59] The literature and documented clinical experience indicates a correlation between stress and anxiety, in that stress induces anxiety-like behavior in both humans and animals.^[60] Anxiety and stress occur along a continuum and frequently comprise similar criteria with a notable overlap in their symptoms.^[51] The conclusion is that breast cancer patients experience heightened anxiety in addition to elevated levels of stress.

Studies show that there is a strong relationship between anxiety and hopelessness and that stress is associated with hopelessness and suicidal behavior.^[61,62] The results of this study confirm these associations and show that the distress breast cancer patients experience differs markedly, both in nature and severity, to that experienced by patients with diseases in other sites.

CONCLUSIONS

This study aimed to examine psychological distress in breast cancer patients, and the results indicate that breast cancer patients' experiences differ markedly to those of patients with diseases in other sites. These patients showed significantly higher rates of hopelessness and SI than did the other group and also expressed their stress through differing means. Breast cancer patients indicated that they felt more tension, reported higher frequencies of feelings of irritability, more emotional outbursts, and more frequent restlessness and fearfulness in response to their disease and treatment. These are symptoms which can be seen to mirror those of anxiety disorders.

The results confirm the findings of the existing studies on patients from developed countries and underline that these psychological experiences are common to breast cancer patients in many contexts.

It is thus clear that patients with breast cancer are at increased risk of distress, which, as has been previously outlined earlier in this text, is associated with and puts them at further risk of compromised compliance with oncological treatment, disease progression, prolonged periods of hospitalization, and a decreased quality of life.

As the number of patients surviving breast cancer grows, it becomes increasingly important that health-care practitioners, in particular those specializing in oncology, to be aware of the psychological experiences of their patients so as to improve the identification of those patients at risk and to refer them for psychotherapeutic support.

Suggestions for future research

Further research is necessary regarding the psychological experiences of breast cancer patients, both in developed and developing countries. Studies with larger samples and utilizing differing modes of statistical analyses will yield further useful information as will research into specific sociodemographic groups. As the number of patients grows throughout the world,

further focus on the cultural aspects of health-care delivery with regard to health beliefs and practices is essential.

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Conflicts of interest

There are no conflicts of interest.

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CHAPTER SEVEN

7. Synthesis/conclusion

7.1 *Aims of this study:*

This study set out to explore the nature and degree of psychological distress in breast cancer patients with a view to broadening the awareness of oncology healthcare professionals regarding the scale and features of comorbid psychological distress in this patient population. It was hypothesized that whilst psychological distress in the form of anxiety and depression after diagnosis and during treatment is well-documented in the literature, less is described in terms of how these forms of distress affect and mediate other concerns patients experience at this time, namely the insult to body image and self-esteem through surgery and subsequent adjuvant treatment and how these effects in combination inform the patient's experience of hopelessness and possibly, suicidal ideation. The current study examined these effects within a cohort of breast cancer patients receiving adjuvant treatment at three oncology outpatient clinics within the Durban area and compared them to the responses of a cohort of female cancer patients with disease in other sites with a view to understanding the unique experience of breast cancer patients.

7.2 *Method:*

The study compared the psychological reactions of the sample of female breast cancer patients on these aspects of psychological distress with those of a sample of women experiencing treatment for other types of cancer. Four questionnaires relating to psychological distress, body image, self-esteem and stress were completed by each participant

7.3 *Results:*

The results showed similarities and differences between the two groups. Measures of depression and self-esteem both yielded similar results, suggesting that both groups appeared to fall within the minimal to mild ranges of depression and within the low average range of self-esteem. Furthermore,

in relation to stress, both groups appeared to express their stress similarly in terms of physical responses.

There were notable differences in the levels of hopelessness and suicidal ideation experienced by each group (Hypothesis 1). The breast cancer patients showed significantly higher on both measures, indicating an urgent need for greater awareness among oncology healthcare professionals to the increased risk of this patient population. Differences emerged on measures of body image dysphoria and the means in which these patients expressed their stress. In terms of body image, the breast cancer group showed significantly elevated levels of dysphoria, particularly in terms of their perceptions of being less sexually and physically attractive and feeling less feminine due to the disease and the treatment they had undergone. This bears out prior research into the heightened distress experienced by breast cancer patients and the disruption to their body image resulting from the disease. In terms of stress, notable differences emerged relating to how breast cancer patients express stress within the context of their psychological and behavioural responses. The breast patients showed greater levels of stress and reactions which indicate an elevated level of anxiety (Hypothesis 2).

7.4 Chapter integration

Chapter 1 served to describe the context of this research, in that breast cancer constitutes the most common form of malignancy globally and in South Africa, is the second most common cancer diagnosed in female patients after cervical cancer. As such, the psychological effects of this disease warrant close examination. This is particularly so as increasing numbers of patients survive the disease, thanks to improved diagnostic procedures and constantly evolving and more effective treatments become available. The chapter also briefly introduced and described the factors of psychological distress which are to be studied in the current research.

Chapter 2 broadly overviewed the topic, reviewing literature relating to the effects of disease and treatment on the self-esteem, body image and the degree of prevalence of hopelessness and SI in breast cancer patients, within the South African context and globally. The chapter described the constructs of depression, anxiety, body image, self-esteem and the correlation of suicidal behaviour and breast cancer and underscored the importance of patient mental well-being as integral to the process of oncological care and the quality of life of the patient.

Chapter 3 went on to review research relating to body image and the psychological correlates of breast cancer specifically. Body image was further defined and literature relating to the symbolic importance of the breast, the complexity of the construct of body image and its relation to self-esteem was examined. The importance of the breast as an integral part of women's feminine identity and source of self-esteem were discussed and parallels drawn to the growing popularity of AM as a measure of the significance of body integrity and attractiveness. The association of stress and the risk of suicidal behaviour in these patients was also reviewed. The article concluded that body image constitutes an important aspect of women's lives and that most women are concerned with their appearance. The physiological and psychological deficits associated with the consequences of a diagnosis of breast cancer and subsequently its treatment, render patients and survivors, particularly those who are highly invested in their appearance and whose self-esteem is based on this appearance, to be at greater risk for psychological distress.

Chapter 4 reported the results of this study on the body image aspect of the research and the manner in which stress affects the psychological well-being of breast cancer patients. These results confirm the findings in the wider literature that breast cancer patients experience higher levels of body image distress, as reflected on all the items of the BIS, with notably higher measures of dysphoria in terms of sexual and physical attractiveness, impaired feelings of femininity and higher levels of self-consciousness. As regards stress, the results showed that breast cancer patients expressed stress during the post-diagnostic period through both psychological and behavioural responses to a greater degree and with higher frequency than did the other group. The study found significant differences in reactions such as tension, lower opinion of the self and dislike of the self between the two groups with the breast patients experiencing these more intensely. Similarly, the breast group reported severe behavioural stress symptoms of irritability, impaired ability to concentrate, restlessness and emotional outbursts.

Chapter 5 went on to expand on stress and its link to SI and literature relating to these phenomena in breast cancer patients was reviewed. There was consensus in the research reviewed in this chapter that a somatic, potentially life-threatening disease such as cancer, constitutes a significant psychological stressor which renders patients at increased risk of SI. It is posited that suicide represents some form of control for patients who face the stress of adjustment to a threatening life event, both in the short- and long term.

Chapter 6 consolidates the review of the literature with the findings of the present study. Stress as a key feature in the development of SI is further examined and the role of hopelessness, in conjunction with stress as contributing factors to SI in breast cancer patients is established.

Hopelessness has been found to be a significant psychosocial sequela of breast cancer. This occurs particularly during the adjustment process, where the perception of cancer as traumatic and fatal, and the uncertainty of the future, often result in the emergence of hopelessness. This hopelessness has been found to frequently co-exist with both anxiety and depression. However, in this study, while the two groups did not differ markedly in terms of levels of depression, the breast group reported notably higher experiences of hopelessness, symptoms of anxiety and more frequent suicidal thoughts. The conclusion is that breast cancer patients are at higher risk for psychological distress, in the form of increased levels of stress, anxiety, hopelessness and SI than patients with other forms of cancer.

In sum, the chapters explore various factors which were hypothesized to constitute the differential experience of psychological distress in breast cancer patients as opposed to patients with other forms of cancer, and report on the findings of the current research relating to these factors. The breast has specific meaning to women and the effects of disease of this organ are seen to result in particular concerns and symptoms which are significant in terms of the care which clinicians are able to provide.

7.5 Conclusion.

Given the rising numbers of women surviving breast cancer and the impact the disease has on their quality of life on all the measures examined in this study, the importance of close attention on the part of those healthcare professionals treating them, to breast cancer patients and their particular and unique vulnerabilities, becomes evident. The literature reviewed throughout this research shows some lack of clarity and consensus regarding the nature and prevalence of psychological sequelae of a diagnosis of breast cancer, but there is broad recognition of the significant underestimation and undertreatment of the concerns and reactions which are specific to and commonly experienced by breast cancer patients (Hypothesis 1).

Commonly described psychological effects of breast cancer include depression and self-esteem. Although these specific sequelae were not found to differ significantly in this population of breast cancer patients when compared to other patients, it was found that they were much more vulnerable to psychological distress in the form of increased levels of anxiety, impaired body image and elevated levels of stress, hopelessness and SI (Hypothesis 2). This study highlighted the particular body image concerns that breast patients have, namely the perception that they are no longer physically or sexually attractive, that they are more self-conscious because of their disease

and how they perceive their attractiveness and their increased tendency to avoid social situations due to their impaired body image.

A further factor found to be significant within the breast population is the manner in which they express the elevated levels of stress they experience after diagnosis. Although there appears to be no difference in the way both groups manifest stress physically, the breast group exhibited more intense and more frequent psychological and behavioural responses to stress which also suggest that the experience of breast cancer markedly increases the patient's levels of anxiety (Hypothesis 1).

As such, it is clear that the effects of a diagnosis of breast cancer and the procedures and treatment which follow, commonly constitute a physical, psychological and social crisis for the patient, often to the point of suicidal thinking and thus a resolution that is biopsychosocial in nature is requisite. It has been noted that historically, medical intervention has been focused on the physical crisis and that psychological sequelae are often regarded as a normal consequence of the process and are not immediately addressed. It is hoped that this study will underscore for practitioners in the field of oncology the prevalence and nature of psychological distress and the need to identify and extend the scope of oncological treatment to incorporate supportive therapy in order to improve not only the physical health and survival intervals of these patients but their quality of life as a whole.

7.6 Limitations of this research:

This research was limited by its scope in that the samples were relatively small. Studies with larger samples will yield more reliable results and smaller margins of error. Further, aspects such as demography, including the cultural and the social context of the patients and the experience of prior disease were not included within the parameters of this study but may prove important.

7.7 Recommendations for future research:

This research identified some areas which contribute to the psychological distress experienced by women receiving a diagnosis and undergoing treatment for breast cancer. The literature suggests that there are many other factors which add to the patient's psychological burden.

It has been discussed that the meaning of the breast is culturally determined and thus it is probable that women in different cultures will experience and express their distress in alternative ways.

Given that the number of diagnoses of breast cancer is increasing in developing countries is increasing, much more research is still needed in order to fully explore the breast cancer experience for women in greater breadth.

In addition, the current novel coronavirus pandemic, COVID-19, poses a further threat to patients with predisposing conditions and who are immunocompromised, as are patients receiving oncotherapeutic treatment, who are already struggling to cope with the stress of their disease. To add to the physical risks, the social implications of self-isolation and social distancing and the necessary lifestyle changes associated with avoiding contracting the virus will place patients under greater stress as they adjust to an additional threat to their well-being. Research into how this affects women with breast cancer and how to provide an optimal psycho-oncological therapeutic framework for them will be valuable.

This further research will allow for a growth in the body of knowledge regarding the co-morbidities associated with breast disease which will promote even greater excellence of care of this vulnerable patient population by the oncology healthcare professionals who treat them.

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APPENDICES

Appendix A.....Biographical questionnaire

Appendix B.....Information sheet

Appendix C.....Beck Depression Inventory (Beck et al., 1961)

Appendix D.....Body Image Scale (Hopwood et al., 2001)

Appendix E.....Rosenberg Self-esteem Scale (Rosenberg, 1965)

Appendix F.....Stress Symptom Checklist (Schlebusch, 2004)

APPENDIX A
BIOGRAPHICAL QUESTIONNAIRE

Biographical Questionnaire

(Strictly confidential)

Biographical details:

Name:

(this will not be disclosed for research purposes) **Age:**

Home Language:

Ethnic group:

Marital Status:

Children:

Educational Qualifications Employment:

Monthly income:

Medical Details:

Diagnosis:

Date of Diagnosis:

Current treatment:

APPENDIX B
INFORMATION SHEET

Information Sheet

1 March 2015

Dear patients

My name is Helena van Oers, I am the Counselling Psychologist at Durban Oncology Centre.

You are being invited to consider participating in a study that involves research into the nature of psychological distress experienced by women diagnosed and treated for breast and other sites cancer. This includes feelings of depression or anxiety, body image or self-esteem problems and experiences of hopelessness and possibly, despair. The aim and purpose of this research is to identify how patients feel after a diagnosis and during treatment for cancer. The study is expected to enroll 240 patients, on one hand 120 of those being treated for breast cancer and on the other 120 patients being treated for other cancers. It will involve completing 4 questionnaires. The duration of your participation, if you choose to enroll in the study, is expected to be approximately 45 minutes to complete all 5 questionnaires.

Please note that your participation is entirely voluntary and is in no way related to your treatment. You are free to decline to participate, or to opt out of completing the questionnaires at any stage even once you have started. Your responses will be kept completely confidential and will not be available for anyone other than myself to see. Should you at any stage feel uncomfortable or distressed by any of the questions, please feel free to tell me and I will assist you as needed. There will be no payment attached to anything related to your participation.

I hope that the study will help all oncology health care professionals to better identify patients who are at risk for psychological distress. This would allow for better treatment of any patients who are undergoing such difficulties and may sometimes feel awkward about

broaching these topics with their oncology staff. It is also aimed at helping the oncology health care professionals to be more aware of how patients feel.

This study has been ethically reviewed and approved by the UKZN Biomedical research Ethics Committee (approval number_____).

In the event of any problems or concerns/questions you may contact the researcher as follows: mobile 084 469 0035 or email: fransvo@dtinc.co.za or the UKZN Biomedical Research Ethics Committee, contact details as follows:

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APPENDIX C
BECK DEPRESSION INVENTORY

(Beck, Ward, Mendelson et al, 1961)

Beck's Depression Inventory

This depression inventory can be self-scored. The scoring scale is at the end of the questionnaire.

1.
 - 0 I do not feel sad.
 - 1 I feel sad
 - 2 I am sad all the time and I can't snap out of it.
 - 3 I am so sad and unhappy that I can't stand it.
2.
 - 0 I am not particularly discouraged about the future.
 - 1 I feel discouraged about the future.
 - 2 I feel I have nothing to look forward to.
 - 3 I feel the future is hopeless and that things cannot improve.
3.
 - 0 I do not feel like a failure.
 - 1 I feel I have failed more than the average person.
 - 2 As I look back on my life, all I can see is a lot of failures.
 - 3 I feel I am a complete failure as a person.
4.
 - 0 I get as much satisfaction out of things as I used to.
 - 1 I don't enjoy things the way I used to.
 - 2 I don't get real satisfaction out of anything anymore.
 - 3 I am dissatisfied or bored with everything.
5.
 - 0 I don't feel particularly guilty
 - 1 I feel guilty a good part of the time.
 - 2 I feel quite guilty most of the time.
 - 3 I feel guilty all of the time.
6.
 - 0 I don't feel I am being punished.
 - 1 I feel I may be punished.
 - 2 I expect to be punished.
 - 3 I feel I am being punished.
7.
 - 0 I don't feel disappointed in myself.
 - 1 I am disappointed in myself.
 - 2 I am disgusted with myself.
 - 3 I hate myself.
8.
 - 0 I don't feel I am any worse than anybody else.
 - 1 I am critical of myself for my weaknesses or mistakes.
 - 2 I blame myself all the time for my faults.
 - 3 I blame myself for everything bad that happens.

9. 0 I don't have any thoughts of killing myself.
 1 I have thoughts of killing myself, but I would not carry them out.
 2 I would like to kill myself.
 3 I would kill myself if I had the chance.
10. 0 I don't cry any more than usual.
 1 I cry more now than I used to.
 2 I cry all the time now.
 I used to be able to cry, but now I can't cry even though I want to.
11. 0 I am no more irritated by things than I ever was.
 1 I am slightly more irritated now than usual.
 2 I am quite annoyed or irritated a good deal of the time.
 3 I feel irritated all the time.
12. 0 I have not lost interest in other people.
 1 I am less interested in other people than I used to be.
 2 I have lost most of my interest in other people.
 3 I have lost all of my interest in other people.
13. 0 I make decisions about as well as I ever could.
 1 I put off making decisions more than I used to.
 2 I have greater difficulty in making decisions more than I used to.
 3 I can't make decisions at all anymore.
14. 0 I don't feel that I look any worse than I used to.
 1 I am worried that I am looking old or unattractive.
 2 I feel there are permanent changes in my appearance that make me look unattractive
 3 I believe that I look ugly.
15. 0 I can work about as well as before.
 1 It takes an extra effort to get started at doing something.
 2 I have to push myself very hard to do anything.
 3 I can't do any work at all.
16. 0 I can sleep as well as usual.
 1 I don't sleep as well as I used to.
 2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
 3 I wake up several hours earlier than I used to and cannot get back to sleep.
17. 0 I don't get more tired than usual.
 1 I get tired more easily than I used to.
 2 I get tired from doing almost anything.
 3 I am too tired to do anything.

18. 0 My appetite is no worse than usual.
 1 My appetite is not as good as it used to be.
 2 My appetite is much worse now.
 3 I have no appetite at all anymore.
19. 0 I haven't lost much weight, if any, lately.
 1 I have lost more than five pounds.
 2 I have lost more than ten pounds.
 3 I have lost more than fifteen pounds.
20. 0 I am no more worried about my health than usual.
 1 I am worried about physical problems like aches, pains, upset stomach, or constipation.
 2 I am very worried about physical problems and it's hard to think of much else.
 3 I am so worried about my physical problems that I cannot think of anything else.
21. 0 I have not noticed any recent change in my interest in sex.
 1 I am less interested in sex than I used to be.
 2 I have almost no interest in sex.
 3 I have lost interest in sex completely.

INTERPRETING THE BECK DEPRESSION INVENTORY

Now that you have completed the questionnaire, add up the score for each of the twenty-one questions by counting the number to the right of each question you marked. The highest possible total for the whole test would be sixty-three. This would mean you circled number three on all twenty-one questions. Since the lowest possible score for each question is zero, the lowest possible score for the test would be zero. This would mean you circles zero on each question. You can evaluate your depression according to the Table below.

Total Score	Levels of Depression
1-10	These ups and downs are considered normal
11-16	Mild mood disturbance
17-20	Borderline clinical depression
21-30	Moderate depression
31-40	Severe depression
over 40	Extreme depression

APPENDIX D

BODY IMAGE SCALE

(Hopwood, Fletcher, Lee et al,2001)

Body Image Scale

In this questionnaire you will be asked how you feel about your appearance and any changes that may have resulted from disease or treatment. Please read each item carefully and place a tick on the line alongside the reply which comes closest to how you have been feeling about yourself during the past week.

Name: _____

Date: _____

Item	Not at all	A little	Quite a bit	Very much
1. Have you been feeling self-conscious about your appearance?				
2. Have you felt less physically attractive as a result of your disease or treatment?				
3. Have you been dissatisfied with your appearance when dressed?				
4. Have you been feeling less feminine as a result of your disease or treatment?				
5. Did you find it difficult to look at yourself naked?				
6. Have you been feeling less sexually attractive as a result of your disease or treatment?				
7. Did you avoid people because of the way you felt about your appearance?				
8. Have you been feeling the treatment has left your body less whole?				
9. Have you felt dissatisfied with your body?				
10. Have you been dissatisfied with the appearance of your scar?				Not applicable

Hopwood et al., 2001

APPENDIX E

ROSENBERG SELF-ESTEEM SCALE

(Rosenberg, 1965)

Rosenberg's Self-Esteem Scale

STATEMENT		Strongly Agree	Agree	Disagree	Strongly Disagree
1.	I feel that I am a person of worth, at least on an equal plane with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	I feel that I have a number of good qualities..	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	All in all, I am inclined to feel that I am a failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	I am able to do things as well as most other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	I feel I do not have much to be proud of.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	I take a positive attitude toward myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	On the whole, I am satisfied with myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	I wish I could have more respect for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	I certainly feel useless at times.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	At times I think I am no good at all.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Your score on the Rosenberg self-esteem scale is: .

Scores are calculated as follows:

- For items 1, 2, 4, 6, and 7:

Strongly agree = 3

Agree = 2

Disagree = 1

Strongly disagree = 0

- *For items 3, 5, 8, 9, and 10 (which are reversed in valence):*

Strongly agree = 0

Agree = 1

Disagree = 2

Strongly disagree = 3

The scale ranges from 0-30. Scores between 15 and 25 are within normal range; scores below 15 suggest low self-esteem.

APPENDIX F

STRESS SYMPTOM CHECKLIST

(Schlebusch, 2004)

STRESS SYMPTOM CHECKLIST (SSCL)

Make a √ if you experience the symptoms *often* (at least once a week or more) and an X if you experience it *sometimes* (less than weekly but at least monthly). Do you experience:

	PHYSICAL REACTIONS	
UNUSUAL TIREDNESS	HIGH BLOOD PRESSURE	UNEXPLAINED NAUSEA
APATHY/LACK OF ENTHUSIASM	SEXUAL PROBLEMS	FREQUENT INDIGESTION
BREATHLESSNESS FOR NO REASON	UNEXPLAINED HEADACHES/PAIN	ERRATIC BOWEL FUNCTION
FEELINGS THAT YOUR APPEARANCE HAS ALTERED FOR THE WORSE	FEELING FAINT OR UNUSUALLY WEAK FOR NO REASON	EXCESSIVE PERSPIRATION FOR NO REASON
DIFFICULTY IN RELAXING	MUSCLE TENSION	DIZZY SPELLS FOR NO REASON
DISTURBING DREAMS/NIGHTMARES	FEELING PHYSICALLY UNWELL	FEELING TIGHT-CHESTED FOR NO REASON
	PSYCHOLOGICAL REACTIONS	
FEELINGS OF HELPLESSNESS	FEELINGS OF DISLIKING YOURSELF	FEELINGS THAT YOU ARE A FAILURE
FEELINGS OF DEPRESSION	BEING AFRAID OF DISEASE	FEELING YOU CANT COPE
FEELINGS THAT NO ONE UNDERSTANDS YOU	AN INCREASE IN COMPLAINTS ABOUT WHAT HAPPENS TO YOU	FEELINGS THAT OTHER PEOPLE DISLIKE YOU
FEELINGS OF GENERAL ANXIOUSNESS	LOW SELF-ESTEEM OR LOW OPINION OF YOURSELF	FEELINGS OF CONFUSION
PHOBIAS (IRRATIONAL FEARS)	FEELINGS OF BEING GOSSIPED ABOUT	FEELINGS OF CONCERN MAINLY FOR YOURSELF
AWKWARD FEELINGS WHEN CLOSE TO OTHERS	BEING OVER SELF-CRITICAL	FEELINGS OF FREQUENT CRITICISM
FEELINGS THAT YOU HAVE FAILED IN YOUR ROLE AS A PARENT, SPOUSE, CHILD, EMPLOYEE, EMPLOYER	FEELINGS THAT NO ONE WANTS TO WORK WITH YOU	FEELINGS THAT YOU HAVE BEEN NEGLECTED OR LET DOWN
PANICKY FEELINGS	FEELING TENSE AND KEYED-UP	FEELINGS OF LONELINESS AND NO ONE TO TALK TO
BEING UPSET BY DISEASE IN OTHERS	PERSISTENT GUILT	A LACK OF SELF-CONFIDENCE
	BEHAVIOURAL REACTIONS	

MEMORYLOSS/FORGETFULNESS	DIFFICULTY IN MAKING UP YOUR MIND	DISINTEREST IN OTHER PEOPLE	
POOR LONG TERM PLANNING	DIFFICULTY IN SHOWING/EXPRESSING YOUR TRUE FEELINGS	SUPPRESSED OR UNEXPRESSED ANGER	
POOR CONCENTRATION	WORRYING	FEARFULNESS	
INCONSISTENCY	SOCIAL WITHDRAWAL	POOR DECISION MAKING	
INABILITY TO MEET DEADLINES	MAKING UNNECESSARY MISTAKES	UNCO-OPERATIVE RELATIONSHIPS	
POOR TIME MANAGEMENT	THE NEED TO REGULARLY WORK LATE	FEELING DISGRUNTLED/MOODY/IRRITABLE	
PROCRASTINATION	POOR WORK QUALITY	EMOTIONAL OUTBURSTS	
THE NEED TO CONSTANTLY TAKE WORK HOME	DIFFICULTY IN COMPLETING ONE TASK BEFORE RUSHING ON TO THE NEXT	GREATER USE OF ALCOHOL, CAFFEINE,NICOTINE,MEDICINES TO COPE	
POOR PROBLEM SOLVING SKILLS	THE NEED TO CANCEL LEAVE	FIDGETING/RESTLESSNESS	
ACCIDENT PRONENESS	NAILBITING	UNPREDICTABILITY	
LOW INTEREST IN WORK	AN EXCESSIVE APPETITE	A LOSS OF APPETITE	
A DROP IN PERSONAL STANDARDS	ENGAGING IN FREQUENT CRITICISM OF OTHERS	THE NEED TO CRY FOR NO REASON	
INCREASED AGGRESSIVENESS	FRANTIC BURSTS OF ENERGY	TICS/NERVOUS HABITS	
LACK OF INTEREST IN LIFE	LITTLE SENSE OF HUMOUR	SLEEP DISTURBANCES	

Rate the PRESENT INTENSITY of your stress somewhere on the scale below. Choose any number between lowest intensity (1) to highest intensity (100. Circle only one number along the scale below:

No stress 1 2 3 4 5 6 7 8 9 10 The most intense stress

Patient

No: _____ Date: _____
