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Psychosocial predictors of distress and depression among South African breast cancer patients

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Abstract

Objective: The present study focused on psychological distress and symptoms of depression among a sample of patients attending an outpatient breast cancer clinic in South Africa. The authors also sought to identify the predictors of distress and depression by using demographic, medical, and psychosocial variables, including perceived and received social support.

Methods: A convenience sample of breast cancer patients was recruited from the Breast Clinic at a hospital in the Western Cape, South Africa. Participants (N = 201) were asked to complete a questionnaire battery consisting of, inter alia, the Center for Epidemiological Studies-Depression Scale, the Hopkins Symptom Checklist, and the Berlin Social Support Scales.

Results: More than one-third of participants scored in the elevated ranges on the Center for Epidemiological Studies-Depression Scale and Hopkins Symptom Checklist, indicating that distress and symptoms of depression were a concern for a sizable minority of participants. Regression analysis showed that body change stress and perceived social support were significant predictors of both psychological distress and symptoms of depression.

Conclusions: Distress and depressive symptoms are prevalent among South African breast cancer patients, especially those with higher body change stress and lower perceived support. For breast cancer patients who are distressed or have symptoms of depression, social support, information, psychosocial counseling, and in some cases, referral for medication management and cognitive psychotherapy is indicated. This article calls attention to the need for psychosocial services directed at supporting patients receiving care at breast clinics in South Africa.

KEYWORDS

body change stress, oncology, breast cancer, depression, distress, social support, South Africa

1 | BACKGROUND

In South Africa, it is estimated that 77,440 new cases of cancer, excluding nonmelanoma skin cancer, were diagnosed in 2012 with a projection of 87,222 for 2015. In 2011, there were 7086 histologically diagnosed cases of breast cancer in South Africa, which constituted 20.62% of all new cases of cancers in that year.[1] Most oncologists in South Africa work in the private sector, which caters to the minority of patients who can afford private health care.[2] There are insufficient public health care oncology clinics to serve those patients in need of treatment who occupy the lower income strata of society. Psychosocial care for these patients is minimal to nonexistent.

1.1 | Distress among breast cancer patients

In many oncology settings, especially in low and middle income countries, psychological distress, including symptoms of depression and anxiety, is likely to go undetected and thus untreated.[3] However, breast cancer is a life-threatening condition that is often associated with considerable psychological distress.[4] Distress and depression are highly interrelated due to the overlap in negative affectivity in

general.[5] Yet, specific depressive symptoms such as anhedonia may produce distinct variance that is unique to the symptom picture for major depression.[6] We examine these 2 highly related outcomes separately with the assumption that there exists a gradation of magnitude in their clinical relevance. The distinction between distress as a subthreshold clinical phenomenon and depression as a psychiatric condition is important. Subclinical psychological distress is often self-limiting and specific to the circumstances that precipitate it, while major depression is a circumscribed nosological entity for which specific diagnostic criteria are applicable. Distress has been shown to be common among breast cancer patients.[5,7] The implications for the clinical management of distress vary and may include no psychosocial intervention, information about the clinical course of cancer and treatment options, family and social support, and psychosocial counselling.[8] Evidence-informed treatments for major depression, on the other hand, usually include medication management, specifically serotonin-specific reuptake inhibitors, and cognitive psychotherapy.[9]

1.2 | Depression among breast cancer patients

Scores on self-report measures of depression that fall in the clinically significant range may indicate the need for follow up evaluation. In a systematic review of depressive symptoms among breast cancer patients, the prevalence of depressive symptoms as measured by the Center for Epidemiological Studies-Depression Scale (CESD), the Beck Depression Inventory, and the Hospital Anxiety and Depression Scale was found to range from 9.4% to 66.1%, with an overall prevalence of 29.9%.[10] In a review of the epidemiology of symptoms of depression after breast cancer, prevalence among patients ranged from 10% to 25%, depending on the method of assessment.[11] A possible reason for a higher average prevalence rate in these studies is the use of self-report inventories that assess depressive symptoms rather than diagnostic interviews for major depression.

1.3 | Predictors of distress and depression among cancer patients

Various factors are predictive of emotional distress, including tumor stage,[12] young age,[4] disturbance related to changes in body image,[13] and form of treatment (receiving chemotherapy rather than radiation therapy). Body-related distress specifically related to hair loss from chemotherapy, mastectomy, and body weight changes following diagnosis and treatment is a well-documented phenomenon reported by many breast cancer patients.[14]

Social integration and social support have featured prominently as predictors of well-being in breast cancer patients. Social integration refers to the structure of social relationships, including the magnitude and density of networks.[15] Social integration was shown to be a very consistent correlate of longer survival in samples of patients with cancer.[16] Social support pertains to the quality of anticipated or past supportive interactions with network members.[17] An important distinction is made between perceived (available) support, which is measured prospectively and pertains to a relatively stable expectation that help from network members will be available when it is needed, and (actually) received support, ie, retrospective reports of support exchanges in the past. Perceived social support has been shown to be consistently associated with a range of positive health outcomes, including relative risk for mortality from cancer.[16] Received social support, on the other hand, is less consistently associated with distress indicators and has even been shown to be associated with an increase in psychological distress in some studies.[18] A number of explanations for this phenomenon have been proposed, namely, spurious relationships in the sense that a third variable (eg, life events) enhances both received support and psychological distress, support receipt's potential costs to self-esteem, and inequitable support interactions causing distress.[19] The distinction between perceived and received support, their relatively modest variance overlap, and their differential predictive power of indicators of psychological distress have long been acknowledged and bear importance for the design of support interventions.[17,20,21] However, only rarely have both indicators of support been examined together as predictors of outcomes in breast cancer patients.[22]

Psychosocial research on the relationship between distress, depression, and social support among cancer patients in low and middle income countries, including South Africa, remains sparse. In this study, we sought to determine the levels of distress and symptoms of depression as well as their psychosocial correlates among a sample of South African women receiving treatment for breast cancer.

2 | METHOD

2.1 | Participants

The study was conducted at the Breast Clinic in the Division of Radiation Oncology at a public hospital in South Africa where patients were referred from surrounding clinics. Eligibility criteria for this study included the ability to speak and understand English or Afrikaans. Prior to participation, patients were asked to sign an informed consent form. The study was approved by the Stellenbosch University Health Research Ethics Committee (IRB approval number N15/08/077), and permission was granted by the relevant health authority.

2.2 | Procedures

Participants were recruited into the study by means of convenience sampling. As patients presented themselves for treatment, they were invited to participate in the study. Once they registered at the clinic reception, they were handed a flyer informing them of the study and inviting them to meet with a researcher in a private room at the clinic. Patients who agreed to meet with the researcher were given details about the study and were invited to participate. Once the patient provided informed consent, she was asked to complete a battery of questionnaires in a private office at the breast clinic. The participants received a grocery voucher valued at $4.00 as token of appreciation for enrolling in the study.

2.3 | Instruments

2.3.1 | Demographic variables

The participants completed a demographic questionnaire that asked about age, marital status, health history, family life, employment status, and income.

2.3.2 | Medical information and body change stress

Cancer-specific information was obtained from chart notes and consultation with the oncology staff. This information included stage of cancer, date of diagnosis, occurrence and date of detected metastases, and recurrences. Cancer stage and time since diagnosis were investigated as independent variables in the domain of medical indicators.

2.3.3 | Body change stress

Body change stress was assessed with the breast impact of treatment scale.[23] This 13-item scale with a single factor was developed to measure psychological stress associated with negative and distressing thoughts, emotions, and behaviors that result from breast cancer and surgery. The participants indicate the frequency of stress-related cognitions relating to disease- or treatment-associated bodily changes on a 4-point response scale (0, 1, 3, and 5). In the present study, the alpha reliability was .93.

2.3.4 | Psychological distress

The 25-item version of the Hopkins Symptom Checklist (HSCL-25)[24] was used to assess global psychological distress. The scale has been shown to have high internal consistency and high concordance with other similar measures.[24] Scores above the standard cut-point of 44 on the HSCL are commonly assumed to indicate clinically significant psychological distress.[25] In the present study, internal consistency as measured by Cronbach alpha was .95 for the total scale.

2.3.5 | Symptoms of depression

Depressive symptoms were assessed by using the CESD revised.[26] The CESD revised has 20 items that measure symptoms of depression as defined by the Diagnostic and Statistical Manual, Fifth Edition. A cut-point of ≥16 indicates the likelihood of clinical importance. It has been used extensively among cancer patients.[27] In the present study, the internal consistency of the CESD as measured by Cronbach alpha was .95.

2.3.6 | Social support

We used 4 subscales of the Berlin Social Support Scales[28] to assess social support: perceived emotional and instrumental support and received emotional, instrumental, and informational support. We collapsed the subscales into 2, namely, perceived social support and received social support, due to high intercorrelations among the subscales. The alpha reliabilities for 2 subscales were .89 and.88, respectively.

3 | DATA ANALYSIS

The data were analyzed in the Statistical Package for the Social Sciences, version 24. Marital status was created as a binary variable (married or living together in a marriage-like relationship/ not-married or living together in a marriage-like relationship). Income was scored in gradations of family income from below US$ 200 per month to above US$1200.

We calculated the mean scores and frequencies of the HSCL and CESD and used the relevant cut-off scores to determine clinically significant levels of psychological distress and depression by means of *t* tests. We calculated zero-order correlations among the variables and then sought to determine predictors of psychological distress and depression by constructing separate hierarchical regressions with psychological distress or depression as the outcome variables. The predictors were entered in 3 blocks. In the first block, we entered the demographic variables, namely, income, age, and education. In the second block, we entered the medical variables, namely, stage of cancer, time since diagnosis, and body change stress. In the third block, we entered the support-related variables, namely, perceived social support and received social support, and marital status.

4 | RESULTS

4.1 | Description of the sample

The total sample consisted of 201 female breast cancer patients, whose average age was 55.70 years (*SD* = 11.61; range: 27-83). Of the sample, 6.5% indicated their race as African, 71.1% stated they were "colored" (a mixed race designation), 21.9% were White, and 0.5% were Indian. More than one-third of the participants stated they were married (37.6%), 22.3% were widowed, 17.8 were divorced, 3.5% were separated, and 18.8% stated they were single. In terms of living situation, 44.8% of the participants stated that they lived with other adults and children, 23.9% lived with other adults, 18.9% lived with children, 10.4% lived alone, and 2.0% lived in an institution or retirement home. Most participants had attended high school, although only 23.3% had passed grade 12, 8.4% attended tertiary education but did not graduate, and 6.9% had graduated from a tertiary institution. Most participants were poor: 43.3% earned less than R2500 per month ($190), 24.9% earned between R2500 and R5000 ($190 to $370), 13.8% earned between R5000 and R10,000 ($370 to $740), 5.3% earned between R10,000 and R15,000 ($740 to $1100), and 3.7% earned above R15000 ($11,000).

4.2 | Cancer diagnosis

Of the sample, 14.6% had a diagnosis of stage 1 cancer, 51.7% had stage 2, 27.5% had stage 3, and 6.2% had stage 4. Also, 76.9% were in remission and were receiving aromatase inhibitors, and 23.1% were receiving active treatment. The mean time since first diagnosis was 248.3 weeks (*SD* = 254.77; range 7.3 to 1263.3 weeks). Mean body change stress was *M* = 23.95 (*SD* = 20.82).

4.3 | Psychological distress

We found a non-significant difference between the HSCL sample mean of 41.86 (*SD* = 15.67; range = 25-100) and the commonly used cut-point of 44 ($t(180) = -1.84$; $P = .067$), indicating that on average, distress scores were elevated. Also, 34.3% of the sample scored above 44 on the HSCL, indicating that at least one third of the sample experienced clinical distress.

4.4 | Depressive symptoms

We found a non-significant difference between the CESD sample mean of 15.53 (*SD* = 17.16) and the commonly used cut-point of ≥16 ($t(185) = -0.38$; $P = .71$). Also, 36.6% scored in the elevated range, indicating that for one-third of our sample, symptoms of depression were clinically significant.

4.5 | Predictors of distress and depression

4.5.1 | Bivariate correlations

Table 1 presents the correlation coefficients among the variables of interest. As assumed, distress and depressive symptoms were highly correlated ($r = 0.85$) as were perceived and received support ($r = 0.65$). We found significant correlations between distress and age, stage of cancer, body change stress, time since diagnosis, and perceived and received support. We also found significant correlations between depressive symptoms and income, age, cancer stage, body change stress, and perceived and received support.

4.5.2 | Regression diagnostics

The various regression diagnostics, including the Cook's and Mahalanobis distances, and variance inflation factors were within the acceptable range for regression analysis.

4.5.3 | Predictors of psychological distress

Table 2 presents the regression model summaries with the distress and depressive symptoms as criterion variables. The linear combination of the predictors explained 39% of the variance in psychological distress, a moderate effect size. Table 3 shows that body change stress and perceived social support were unique significant predictors of psychological distress.

4.5.4 | Predictors of depressive symptoms

The linear combination of the predictors significantly explained 30% of the variance in depressive symptoms. As can be seen in Table 4, body change stress and perceived support were the only variables that uniquely predicted symptoms of depression.

TABLE 1 Bivariate correlation matrix of variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Monthly income	1										
(2) Age	−.125	1									
(3) Education level	.527**	−.177*	1								
(4) Stage of cancer	−.166*	−.013	−.098	1							
(5) Body change stress	−.137	−.360**	.030	−.022	1						
(6) Time since diagnosis (weeks)	.062	.351**	.075	−.112	−.239**	1					
(7) Perceived support	−.033	.085	−.143*	−.002	−.235**	.030	1				
(8) Received support	.052	.092	−.130	.051	−.267**	.007	.652**	1			
(9) Marital status	.409**	−.113	.116	−.090	−.106	−.059	.105	.124	1		
(10) Distress	−.131	−.289**	−.008	.169*	.499**	−.186*	−.404**	−.413**	−.095	1	
(11) Depressive symptoms	−.159*	−.251**	−.053	.195*	.468**	−.146	−.338**	−.281**	−.049	.847**	1

Note. 148 ≤ N ≤ 202.

*$P < .05$.

**$P < .001$ (all 2-tailed). Income was coded 1 to 5. Education was coded 1 to 6. Time since diagnosis was coded in weeks.

TABLE 2 Model summary with distress and depressive scores as criterion variables

Outcome	Model	Predictors	*R*	*R* Square	Adj *R* Square	*R* Square Change	*F* Ratio	*F* Change
Distress	1	Demographic variables	0.28	0.08	0.05	0.08	3.30	3.30
	2	Demographic and medical variables	0.54	0.30	0.26	0.22	7.96	11.71**
	3	Demographic, medical, and social variables	0.66	0.43	0.39	0.14	9.37	8.89**
Depressive symptoms	1	Demographic variables	0.29	0.86	0.06	0.09	3.66	3.66
	2	Demographic and medical variables	0.54	0.29	0.25	0.20	7.76	10.94**
	3	Demographic, medical, and social variables	0.59	0.35	0.30	0.06	6.75	3.65*

Note. 121 ≤ n ≤ 122 due to missing data.

*$P < .05$.

**$P < .01$.

Demographic variables: income, age, and education level.

Medical variables: cancer stage, time since diagnosis, and body change stress.

Social variables: perceived and received support and marital status.

TABLE 3 Predictors of distress (Hopkins Symptom Checklist, HSCL)

	Unstandardized Coefficients		Standardized Coefficients		
Model	*B*	Standard Error	*β*	*t*	*P*
Constant	78.20	11.60		6.74	.00
Income	0.03	1.32	.00	0.03	.98
Age	−0.06	0.11	−.04	−0.51	.61
Education	−1.57	1.08	−.13	−1.46	.15
Stage of cancer	1.05	1.56	.05	0.67	.51
Time since diagnosis	−0.00	0.01	−.04	−0.47	.64
Body change stress	0.28	0.06	.37	4.47	.00
Perceived social support	−8.36	3.43	−.27	−2.44	.02
Received social support	−4.49	3.17	−.15	−1.42	.16
Marital status	−1.87	2.57	−.06	−0.73	.47

Note. n = 121 due to missing data.

*$P < .05$.

**$P < .01$.

Demographic variables: income, age, and education level.

Medical variables: cancer stage, time since diagnosis, and body change stress.

Social variables: perceived and received support and marital status.

TABLE 4 Predictors of depressive symptoms (Center for Epidemiological Studies-Depression Scale, CESD)

	Unstandardized Coefficients		Standardized Coefficients		
Model	*B*	Standard Error	*β*	*t*	*P*
Constant	39.90	14.19		2.81	.06
Income	−1.13	1.66	−.07	−0.68	.50
Age	−0.08	0.14	−.05	−0.60	.55
Education	−1.94	1.29	−.14	−1.50	.14
Stage of cancer	2.92	1.90	.12	1.54	.13
Time since diagnosis	0.00	0.01	.01	0.13	.90
Body change stress	0.33	0.08	.38	4.26	.00
Perceived social support	−10.49	4.17	−.30	−2.52	.01
Received social support	0.71	3.89	.02	0.18	.86
Marital status	0.55	3.17	.02	0.17	.86

Note. n = 122 due to missing data.

5 | DISCUSSION

We found elevated levels of distress and symptoms of depression among the participants in the study, which, on average, approached the clinically significant range. Just over one-third of the participants reported psychological distress that fell in the elevated range on the HSCL, similar to findings among American breast cancer patients.[4] We also found elevated symptoms of depression among our sample. More than one-third of our participants (36.6%) had scores that fell in the elevated range on the CESD, similar to other studies.[11] This finding indicates the clinical significance of these symptoms and the likely need for follow-up interventions.

As was expected, the correlation between distress and depressive symptoms was high, as both these constructs are presumably driven by negative affectivity.[5] We chose to investigate distress and depressive symptoms separately as these variables are conceptually distinct from each other. Distress is often self-limiting and specific to the circumstances that give rise to it; ie, it may be considered a normal response to a life-threatening illness. Further, given the nature of the sample (ie, economically disadvantaged with poor access to psychosocial services), it is possible that distress and depressive symptoms would be related to problems other than cancer, such as poverty and limited access to services and amenities.

High levels of distress and depressive symptoms may impede the ability to provide informed consent to treatment, to engage in medical decision-making,[29] or to adhere to treatment,[30] and are by all accounts a significant barrier to quality of life. Yet, it is unclear that psychological treatment is always indicated for distressed individuals as spontaneous remission may occur.

We found significant bivariate correlations of age, stage of cancer, body change stress, time since diagnosis, and perceived and received social support with distress and depressive symptoms. In the regression analyses, body change stress and perceived social support remained unique predictors of distress and depressive symptoms.

The objective predictors, including income and medical variables such as cancer stage and time since diagnosis, were non-significant in explaining unique variance in either distress or depressive symptoms. It is likely that psychological variables are based on cognitive appraisals and are thus more proximal to the outcome variables than are distal medical indicators or socioeconomic status.

Body change stress emerged as a significant predictor of both distress and symptoms of depression. This finding is not surprising as changes in body image such as such as hair loss from chemotherapy, disfiguration due to mastectomy, and body weight changes due to treatment have been well documented among breast cancer patients.[14]

We were surprised that younger age was related to both outcomes in zero-order correlations. However, it did not remain a significant unique predictor of either psychological distress or depressive symptoms in regression analyses. For older women, a diagnosis of breast cancer may be more of an on-time event as cancer is related to chronological age.[31] Younger women with breast cancer may face other challenges such the likelihood of disruption in their working and family lives. Those with dependent children need to engage in problem-solving and planning during times when treatment is scheduled. Also, older persons may have a diminished future time perspective,[32] which may motivate them to engage in emotionally meaningful activities that buffer against negative affect. In follow-up analyses (not reported), the significant unique relation of age with the 2 outcomes was no longer present once body-change stress was accounted for, which was also lower in older participants. This could suggest that body change stress is a possible mediator of the relationship between age and general well-being among breast cancer survivors, which would have to be investigated by using a longitudinal design.

Similar to previous findings,[18,19] low perceived support emerged as a significant unique predictor of distress and depressive symptoms in multiple regression analyses, whereas received support did not. A number of explanations might account for this asymmetry in predictive power. Specifically, higher potential costs may be attached to received as opposed to perceived supports.[19] For example, having received support in dealing with the illness might have damaged the recipient's self-esteem,[33,34] as it might have indicated that one could not cope with a problem alone and needed help. Moreover, periods of inequity between patients and support providers may have dampened unique effects of received supports.[19] For example, when more support is received than provided by patients,[35] this may cause feelings of indeptedness or guilt.[36] On the other hand, when less support is received than provided by patients, this could cause sadness and anger.[37] Finally, some provided support may be well-intentioned but ineffective and thus does not sufficiently alleviate distress.[33] In the present regression analyses, such side effects of receiving help might have cancelled out received support as a unique predictor of outcomes, especially once perceived support, with which it was correlated, was accounted for.

5.1 | Clinical implications

Our findings show the need for dedicated psychosocial services for breast cancer patients in South Africa. While emotional distress for some may remit over time, psychosocial counseling may be indicated for persons who exhibit distress levels that impede their functioning.[38] In addition, support has been shown to play an important role in reducing subthreshold distress and symptoms of depression, especially at the commencement of cancer treatment, eg, information about clinic operations, treatment options, and the opportunity to ask questions about treatment.[8] However, for patients with mood disturbance, more intensive evidence-informed interventions, including medication and cognitive therapy, may be indicated.[9]

5.2 | Limitations of the study

The CESD is a screening instrument, and as such, it is not appropriate to make a clinical diagnosis.[25] Even so, more than one-third of our sample had scores that fell in the elevated range, indicating the need for follow-up assessment and possible treatment. Another limitation is that we asked patients only about received support from the most important other, not from sources such as medical personnel and fellow patients. Support from persons who have either first- or second-hand experience with the disease and the consequences of treatment may be more effective in providing support that can enhance patients' self-efficacy.[39] Furthermore, as the cross-sectional nature of the data prevents us from ascertaining the implied predictive directions, longitudinal studies should be conducted. Finally, missing data reduced the sample size in multiple regression analyses. Whereas important candidates for missingness (socioecomomic, medical, and social indicators) were included in the models and thus may have preserved the missing at random assumption, this could still have affected resulting power.[40]

We were surprised that marital status was not correlated with either perceived or received support. We attribute this null finding to the likelihood that in addition to marital status, it is likely that the quality of the marriage would predict received and perceived support. However, we did not assess marital quality in this study, which is a potential limitation.

Our study is among the first to document distress and symptoms of depression among South African breast cancer patients and to call attention to the psychosocial correlates of these phenomena. Further research may include identifying the kinds of support that may be most helpful to patients in ameliorating distress and assessing the effectiveness of clinic-based psychosocial counseling for patients with such a need. Further research in other areas of South Africa, including rural areas, is also needed.

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