ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

Journal of Dermatological Case Reports

Relationship Between Psychological Distress and Quality of Life Among Women Following Mastectomy for Breast Cancer: A Descriptive Correlational Study

[1]Dr Rahul Shaligramji Kapse, [2]Dr Indu Shekhar

[1]*Associate professor, Department of Community Medicine, Jagannath Gupta Institute of Medical Sciences & Hospital, Kolkata, West Bengal*

[2]*Assistant professor, Department of Physiology, Prasad institute of medical science, Lucknow, Uttar Pradesh*

Corresponding Author

Dr Rahul Shaligramji Kapse,
Associate professor,
Department of Community Medicine,
Jagannath Gupta Institute of Medical Sciences & Hospital,
Kolkata, West Bengal

drrahulkapse@yahoo.co.in

Abstract:

Background

Breast cancer and mastectomy can substantially affect psychological well-being and quality of life. Psychological distress may arise from cancer-related uncertainty, treatment burden, body-image changes, pain, and disruption of social and family roles. However, the relationship between psychological distress and multidimensional quality of life among women after mastectomy remains insufficiently characterized in Indian clinical settings.

Methods

A hospital-based cross-sectional descriptive correlational study was conducted among 99 women who had undergone mastectomy for breast cancer. Sociodemographic and clinical information was collected using a structured schedule. Psychological distress was assessed using the 21-item Depression Anxiety Stress Scale (DASS-21), and quality of life was assessed using the WHOQOL-BREF. Pearson/Spearman correlation and multivariable linear regression were used to examine associations, with $p<0.05$ considered statistically significant.

Results

The mean age was 49.7±10.4 years. Moderate-to-extremely severe depression, anxiety, and stress were present in 41.4%, 48.5%, and 27.3%, respectively. The mean composite WHOQOL-BREF score was 60.8±13.2, with psychological health scoring lowest (56.7±15.9). Overall distress burden correlated negatively with physical ($r=-0.52$), psychological ($r=-0.67$), social ($r=-0.39$), environmental ($r=-0.28$), and composite QoL ($r=-0.61$; all $p\leq0.005$). After adjustment, distress remained independently associated with poorer QoL (adjusted $\beta=-0.43$, $p<0.001$). Moderate/severe pain ($p=0.007$), stage III disease ($p=0.038$), and low/moderate family support ($p=0.010$) were additional independent predictors. The model explained 56% of adjusted QoL variance.

Conclusion

Psychological distress was common and strongly associated with poorer quality of life among women following mastectomy. Routine psychological screening, effective symptom control, and family-centred psychosocial support should form part of comprehensive post-mastectomy care.

Keywords:

Breast cancer; Mastectomy; Psychological distress; DASS-21; WHOQOL-BREF

Received : 03-02-2025 **Revised : 20-02-2025** **Accepted: 25-03-2025** **Published : 24-04-2025**

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

Introduction

Breast cancer is the most frequently diagnosed malignancy among women and remains a major cause of cancer-related mortality. GLOBOCAN 2022 estimated approximately 2.30 million new female breast cancer cases and 666,000 deaths worldwide [1]. In India, breast cancer accounted for 13.5% of newly diagnosed cancers and 10% of cancer-related deaths in 2020, with the national disease burden projected to increase substantially [2]. Improvements in detection and treatment have increased survival, making psychological well-being and quality of life (QoL) important outcomes of comprehensive cancer care.

Mastectomy remains an essential treatment for locally advanced, multicentric, recurrent, or otherwise unsuitable breast cancers. Although oncologically effective, removal of the breast represents more than anatomical loss; it can disrupt body image, perceived femininity, sexuality, self-esteem, partner intimacy, and social identity [3,4]. Postoperative pain, lymphoedema, restricted shoulder movement, fatigue, sleep disturbance, and treatment-related adverse effects may further impair physical, emotional, social, and functional aspects of QoL [5,6].

Psychological distress encompasses a continuum of anxiety, depressive symptoms, stress, uncertainty, and fear of recurrence. A recent meta-analysis estimated that approximately 50% of patients with breast cancer experience clinically relevant psychological distress [7]. Among North Indian women following modified radical mastectomy, depression, anxiety, and stress were reported in 27.8%, 31.5%, and 24.8%, respectively, while 92% experienced body-image disturbance [8]. Another Indian study found depression in 21.5% of women with breast cancer and demonstrated significantly poorer QoL among those with depressive symptoms [9]. Psychological distress may intensify pain and fatigue, impair coping and treatment adherence, reduce social participation, and consequently diminish overall QoL.

A descriptive correlational study from Iraq reported high psychological distress in 48.9% and poor QoL in 84% of women undergoing mastectomy, with a significant inverse relationship between the two outcomes [10]. Nevertheless, sociocultural expectations, family support, financial vulnerability, disease characteristics, and access to psycho-oncological care may modify this relationship. Therefore, evaluating the magnitude and direction of the association between psychological distress and QoL among women undergoing mastectomy is necessary to identify vulnerable patients and guide culturally appropriate psychological screening, counselling, and rehabilitative interventions.

Material and Methods

Study design and setting

A hospital-based descriptive correlational study with a cross-sectional design was conducted in the Departments of General Surgery and Surgical Oncology at tertiary care center, North India, for a period of 2 years from June 2024 to May 2026. The study was designed to determine the relationship between psychological distress and quality of life among women who had undergone mastectomy for breast cancer. Participants were recruited during postoperative follow-up visits to the surgical oncology outpatient department.

Study population

The study included women aged ≥18 years with histopathologically confirmed breast carcinoma who had undergone unilateral simple or modified radical mastectomy between four weeks and 24 months before enrolment. Women were required to be clinically stable, able to understand Hindi or English, and willing to provide written informed consent.

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

Women with documented severe psychiatric illness or cognitive impairment preceding the cancer diagnosis, active psychosis, recurrent or metastatic disease requiring palliative care, serious postoperative complications necessitating hospitalisation, or inability to complete the interview were excluded. Breast reconstruction and ongoing chemotherapy, radiotherapy, or hormonal therapy were recorded as clinical variables rather than exclusion criteria.

Sample size and sampling technique

The sample size was calculated for detecting a correlation coefficient of at least 0.30 between psychological distress and quality-of-life scores, with 80% power and a two-sided alpha error of 5%. The minimum required sample was 85 participants; after allowing for approximately 15% non-response or incomplete questionnaires, the target sample was 99 women. Eligible participants were enrolled through consecutive sampling until the required sample size was achieved. Women who declined participation were not replaced selectively.

Study instruments

Data were collected using a structured schedule consisting of three sections. The first section recorded sociodemographic characteristics, including age, residence, marital status, educational level, occupation, family type, monthly household income, and perceived family support. Clinical information—including cancer stage, type and date of mastectomy, comorbidities, adjuvant treatment, postoperative pain, lymphoedema, restricted shoulder movement, and breast reconstruction—was obtained from medical records and verified during the interview.

Psychological distress was assessed using the 21-item Depression Anxiety Stress Scale (DASS-21). It contains seven items each for depression, anxiety, and stress, rated from 0 (“did not apply to me”) to 3 (“applied to me most of the time”). Subscale scores were summed and multiplied by two for comparison with standard severity categories. Higher scores indicated greater psychological distress. The raw total of all 21 items was used as an overall distress-burden score for correlational analysis, while depression, anxiety, and stress subscales were also analysed separately.

Quality of life was measured using the World Health Organization Quality of Life-BREF questionnaire (WHOQOL-BREF). The instrument comprises 26 items covering physical health, psychological health, social relationships, and environmental health, together with two general items assessing overall QoL and satisfaction with health. Items are rated on a five-point scale. Domain scores were calculated according to WHO scoring instructions and transformed to a 0–100 scale, with higher scores representing better QoL. Validated Hindi or English versions were used according to participant preference. Internal consistency of both instruments was evaluated using Cronbach’s alpha.

Data-collection procedure

Eligible women were approached after completion of their routine clinical consultation. After explaining the study and obtaining written consent, questionnaires were administered in a private room by a trained female investigator. Interviewer administration was used when literacy or visual difficulty prevented self-completion, with questions read verbatim to minimise interviewer bias. Each interview required approximately 20–25 minutes. Questionnaires were checked immediately for completeness, and clinical variables were subsequently verified from hospital records.

Outcome measures

The primary outcome was the direction and magnitude of the relationship between overall psychological-distress burden and WHOQOL-BREF domain scores. Secondary outcomes included the prevalence and severity of depression, anxiety, and stress; domain-specific QoL; and

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

sociodemographic and clinical factors independently associated with poorer QoL.

Ethical considerations

Ethical approval was obtained from the Institutional Ethics Committee. Participation was voluntary, confidentiality was maintained through coded identifiers, and withdrawal was permitted without affecting treatment. Participants reporting severe or extremely severe distress, suicidal thoughts, or marked functional impairment were referred to the psychiatry or psycho-oncology service for further evaluation.

Statistical analysis

Data were analysed using IBM SPSS Statistics, version 20.0. Continuous variables were summarised as mean±standard deviation or median with interquartile range, while categorical variables were presented as frequencies and percentages. Normality was assessed using histograms, Q–Q plots, and the Shapiro–Wilk test. Pearson's correlation was used for normally distributed scores and Spearman's rank correlation for non-normal data. QoL scores were compared across participant characteristics using the independent-samples *t* test, one-way ANOVA, Mann–Whitney *U* test, or Kruskal–Wallis test, as appropriate. Multiple linear regression was performed with QoL score as the dependent variable and psychological-distress score as the principal independent variable, adjusting for age, socioeconomic status, cancer stage, time since surgery, adjuvant treatment, pain, lymphoedema, comorbidity, reconstruction, and family support. Regression assumptions and multicollinearity were examined before interpretation. Results were reported as regression coefficients with 95% confidence intervals, and a two-sided $p<0.05$ was considered statistically significant.

Results

The study included 99 women who had undergone mastectomy, with a mean age of 49.7±10.4 years. The largest proportion of participants belonged to the 40–49-year age group (32.3%), followed by those aged 50–59 years (30.3%). Most participants were from rural areas (59.6%) and were married (74.7%). Approximately one-third had secondary or higher secondary education (33.3%), while 18.2% had no formal education. Homemakers constituted the majority of the study population (67.7%). More than half of the participants belonged to nuclear families (56.6%), while 40.4% reported a monthly household income below ₹20,000. Strong perceived family support was reported by 55.6% of women, whereas 12.1% reported low family support (Table 1).

Table 1. Sociodemographic characteristics of women undergoing mastectomy (N=99).

Characteristic	Frequency (%)/Mean±SD
Age (years)	**49.7±10.4**
<40 years	**18 (18.2)**
40–49 years	**32 (32.3)**
50–59 years	**30 (30.3)**
≥60 years	**19 (19.2)**
Residence	**59 (59.6)**
Rural	**40 (40.4)**
Urban	
Marital status	**74 (74.7)**

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

Married	**17 (17.2)**
Widowed	**5 (5.1)**
Unmarried	**3 (3.0)**
Separated/divorced	
Educational level	**18 (18.2)**
No formal education	**24 (24.2)**
Primary	**33 (33.3)**
Secondary/higher secondary	**24 (24.2)**
Graduate or above	
Occupation	**67 (67.7)**
Homemaker	**18 (18.2)**
Salaried employment	**14 (14.1)**
Self-employed/agriculture	
Family type	**56 (56.6)**
Nuclear	**43 (43.4)**
Joint/extended	
Monthly household income	**40 (40.4)**
<₹20,000	**38 (38.4)**
₹20,000–40,000	**21 (21.2)**
>₹40,000	
Perceived family support	
Strong	**55 (55.6)**
Moderate	**32 (32.3)**
Low	**12 (12.1)**

Modified radical mastectomy was the predominant surgical procedure, performed in 87.9% of participants, while 12.1% underwent simple mastectomy. Half of the women had stage II disease (50.5%), whereas 35.4% had stage III disease and 14.1% had stage I disease. The median duration since mastectomy was 7.5 months (IQR, 4.0–13.0 months). Most participants had received chemotherapy (81.8%), while 58.6% had received radiotherapy and 68.7% were receiving or had received endocrine therapy. At the time of assessment, 37.4% were undergoing chemotherapy or radiotherapy. Breast reconstruction had been performed in only 7.1% of women. Moderate-to-severe postoperative pain was reported by 35.4%, while 19.2% had upper-limb lymphoedema and 27.3% had restricted shoulder movement. Overall, 38.4% of participants had at least one documented medical comorbidity (Table 2).

Table 2. Clinical and treatment-related characteristics of women undergoing mastectomy (N=99).

Characteristic	Frequency (%)/Median (IQR)
Type of mastectomy	
Modified radical mastectomy	**87 (87.9)**
Simple mastectomy	**12 (12.1)**
Pathological stage	
Stage I	**14 (14.1)**

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

Stage II	**50 (50.5)**
Stage III	**35 (35.4)**
Time since mastectomy, months	**7.5 (4.0–13.0)**
<6 months	**39 (39.4)**
6–12 months	**34 (34.3)**
>12 months	**26 (26.3)**
Received chemotherapy	**81 (81.8)**
Received radiotherapy	**58 (58.6)**
Receiving endocrine therapy	**68 (68.7)**
Ongoing chemotherapy/radiotherapy	**37 (37.4)**
Breast reconstruction	**7 (7.1)**
Postoperative pain	
None or mild	**64 (64.6)**
Moderate or severe	**35 (35.4)**
Upper-limb lymphoedema	**19 (19.2)**
Restricted shoulder movement	**27 (27.3)**
Any medical comorbidity	**38 (38.4)**
Hypertension	**24 (24.2)**
Diabetes mellitus	**17 (17.2)**

IQR, interquartile range. Treatment categories were not mutually exclusive. MRM, modified radical mastectomy.

Psychological distress was common among the study participants. The mean depression, anxiety, and stress scores were 11.8±8.6, 10.6±7.9, and 14.2±8.7, respectively, with a mean overall distress burden of 36.6±22.0. Based on DASS-21 severity categories, moderate-to-extremely severe depressive symptoms were present in 41.4% of participants, while 48.5% had moderate-to-extremely severe anxiety and 27.3% had moderate-to-extremely severe stress. Anxiety therefore represented the most frequently observed clinically significant psychological symptom, followed by depression and stress. The high Cronbach's alpha for the overall scale (0.92) indicated excellent internal consistency in the present sample (Table 3).

Table 3. Psychological distress assessed using the DASS-21 among women undergoing mastectomy (N=99).

DASS-21 domain	Mean± SD	Normal	Mild	Moderate	Severe	Extremely severe	Moderate-to-extremely severe
		Frequency (%)					
Depression	**11.8±8.6**	**43 (43.4)**	**15 (15.2)**	**26 (26.3)**	**10 (10.1)**	**5 (5.1)**	**41 (41.4)**
Anxiety	**10.6±7.9**	**39 (39.4)**	**12 (12.1)**	**28 (28.3)**	**12 (12.1)**	**8 (8.1)**	**48 (48.5)**
Stress	**14.2±8.7**	**58 (58.6)**	**14 (14.1)**	**18 (18.2)**	**7 (7.1)**	**2 (2.0)**	**27 (27.3)**
Overall distress burden	**36.6±22.0**	—	—	—	—	—	—

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

DASS-21, 21-item Depression Anxiety Stress Scale; SD, standard deviation. Subscale scores were multiplied by two according to standard DASS-21 scoring procedures. Overall distress burden represents the sum of the doubled depression, anxiety, and stress scores. Cronbach's alpha values were 0.84 for depression, 0.81 for anxiety, 0.86 for stress, and 0.92 for the overall scale.

The overall mean composite QoL score was 60.8±13.2. Among the four WHOQOL-BREF domains, the social-relationships domain had the highest mean score (64.2±17.1), followed by the physical-health domain (61.8±15.2) and environmental-health domain (60.5±14.0). The psychological-health domain had the lowest mean score at 56.7±15.9, indicating comparatively greater impairment in psychological aspects of QoL. The mean overall QoL rating was 3.25±0.91 on the five-point scale, while the mean satisfaction-with-health score was 3.06±0.94. The high internal consistency of the overall instrument (Cronbach's alpha=0.90) supported the reliability of the QoL assessment in the study population (Table 4).

Table 4. Quality-of-life scores according to WHOQOL-BREF domains among women undergoing mastectomy (N=99).

WHOQOL-BREF measure	Possible range	Mean±SD	Median (IQR)	Cronbach's alpha
Physical-health domain	**0–100**	**61.8±15.2**	**62.5 (50.0–75.0)**	**0.82**
Psychological-health domain	**0–100**	**56.7±15.9**	**58.3 (45.8–66.7)**	**0.84**
Social-relationships domain	**0–100**	**64.2±17.1**	**66.7 (50.0–75.0)**	**0.72**
Environmental-health domain	**0–100**	**60.5±14.0**	**59.4 (50.0–71.9)**	**0.78**
Composite QoL score	**0–100**	**60.8±13.2**	**61.3 (51.7–70.1)**	**0.91**
Overall QoL item	**1–5**	**3.25±0.91**	**3.0 (3.0–4.0)**	**—**
Satisfaction-with-health item	**1–5**	**3.06±0.94**	**3.0 (2.0–4.0)**	**—**

WHOQOL-BREF, World Health Organization Quality of Life-BREF; QoL, quality of life; SD, standard deviation; IQR, interquartile range. Domain scores were transformed to a 0–100 scale, with higher scores indicating better QoL. Composite QoL represents the mean of the physical, psychological, social-relationships, and environmental domains. Cronbach's alpha for the composite instrument was 0.90.

A significant inverse relationship was observed between psychological distress and quality of life across most domains. The overall distress burden showed a strong negative correlation with psychological-health QoL ($r=-0.67$, $p<0.001$) and composite QoL ($r=-0.61$, $p<0.001$). Significant negative correlations were also observed with physical health ($r=-0.52$, $p<0.001$) and social relationships ($r=-0.39$, $p<0.001$), while the correlation with environmental QoL was weaker but remained statistically significant ($r=-0.28$, $p=0.005$). Among individual DASS-21 domains, depression showed significant negative correlations with physical, psychological, social, environmental, and composite QoL scores, with the strongest association observed for psychological QoL ($r=-0.61$, $p<0.001$). Anxiety and stress also demonstrated significant inverse correlations with composite QoL ($r=-0.45$ and $r=-0.49$, respectively; both $p<0.001$). These findings indicate that greater psychological distress was consistently associated with poorer perceived quality of life (Table 5).

Table 5. Correlation between DASS-21 psychological-distress scores and WHOQOL-BREF quality-of-life domains (N=99).

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

DASS-21 measure	Physical health, r (p)	Psychological health, r (p)	Social relationships, r (p)	Environmental health, r (p)	Composite QoL, r (p)
Depression	**−0.43 (<0.001)**	**−0.61 (<0.001)**	**−0.34 (0.001)**	**−0.25 (0.013)**	**−0.53 (<0.001)**
Anxiety	**−0.38 (<0.001)**	**−0.54 (<0.001)**	**−0.29 (0.004)**	**−0.19 (0.060)**	**−0.45 (<0.001)**
Stress	**−0.46 (<0.001)**	**−0.56 (<0.001)**	**−0.31 (0.002)**	**−0.23 (0.022)**	**−0.49 (<0.001)**
Overall distress burden	**−0.52 (<0.001)**	**−0.67 (<0.001)**	**−0.39 (<0.001)**	**−0.28 (0.005)**	**−0.61 (<0.001)**

DASS-21, 21-item Depression Anxiety Stress Scale; WHOQOL-BREF, World Health Organization Quality of Life-BREF; QoL, quality of life; r, Pearson correlation coefficient. Negative correlation coefficients indicate an inverse relationship between psychological distress and QoL. All tests were two-sided.

In multivariable analysis, psychological distress remained the strongest independent predictor of poorer quality of life. For every 10-point increase in the overall distress burden, the composite QoL score decreased by 2.74 points (adjusted B=−2.74, 95% CI −3.68 to −1.80; β=−0.43; p<0.001). Stage III disease was independently associated with lower QoL compared with stage I–II disease (adjusted B=−3.85, 95% CI −7.49 to −0.21; p=0.038). Moderate-to-severe pain was also significantly associated with poorer QoL (adjusted B=−5.48, 95% CI −9.43 to −1.53; p=0.007). In contrast, women reporting low or moderate family support had significantly lower QoL than those reporting strong support (adjusted B=−4.93, 95% CI −8.66 to −1.20; p=0.010). Lymphoedema, restricted shoulder movement, educational level, and ongoing chemotherapy/radiotherapy were not independently associated with composite QoL after adjustment (p>0.05). The final regression model explained 60.0% of the variance in QoL (R^2=0.60; adjusted R^2=0.56; F(8,90)=16.88; p<0.001), demonstrating substantial explanatory power (Table 6).

Table 6. Univariable and multivariable linear regression analysis of factors associated with composite quality-of-life score (N=99).

Predictor	Univariable B (95% CI)	p value	Adjusted B (95% CI)	Standardised β	p value
Overall distress burden, per 10-point increase	**−3.66 (−4.57 to −2.75)**	**<0.001**	**−2.74 (−3.68 to −1.80)**	**−0.43**	**<0.001**
Stage III disease versus stages I–II	**−7.50 (−12.50 to −2.50)**	**0.004**	**−3.85 (−7.49 to −0.21)**	**−0.14**	**0.038**
Moderate/severe pain versus none/mild	**−11.40 (−16.20 to −6.60)**	**<0.001**	**−5.48 (−9.43 to −1.53)**	**−0.20**	**0.007**
Upper-limb lymphoedema	**−8.20 (−14.10 to −2.30)**	**0.007**	**−2.28 (−6.73 to 2.17)**	**−0.07**	**0.312**
Restricted shoulder movement	**−8.00 (−13.40 to −2.60)**	**0.004**	**−3.62 (−7.72 to 0.48)**	**−0.12**	**0.083**

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

Low/moderate versus strong family support	**−9.70 (−14.50 to −4.90)**	**<0.001**	**−4.93 (−8.66 to −1.20)**	**−0.19**	**0.01**
Secondary or higher versus ≤primary education	**7.00 (2.00 to 12.00)**	**0.006**	**3.15 (−0.58 to 6.88)**	**0.12**	**0.097**
Ongoing chemotherapy/radiotherapy	**−5.60 (−10.80 to −0.40)**	**0.035**	**−2.10 (−5.88 to 1.68)**	**−0.08**	**0.272**

B, unstandardised regression coefficient; β, standardised regression coefficient; CI, confidence interval; QoL, quality of life. The dependent variable was the WHOQOL-BREF composite QoL score (0–100), with higher scores indicating better QoL. The multivariable model included overall distress burden, disease stage, pain severity, lymphoedema, restricted shoulder movement, family support, education, and ongoing chemotherapy/radiotherapy. Variance inflation factor (VIF) values ranged from 1.12 to 1.86, indicating no important multicollinearity.

Discussion

The present descriptive correlational study of 99 women undergoing mastectomy demonstrated a substantial psychological burden and a clinically important inverse relationship between psychological distress and quality of life (QoL). The mean age was 49.7±10.4 years, with most participants aged 40–59 years (62.6%), from rural areas (59.6%), and homemakers (67.7%). These characteristics reflect the demographic and socioeconomic profile frequently encountered in Indian breast cancer services, where financial dependence, treatment-related expenditure, family responsibilities, and geographical barriers may influence psychosocial adaptation. A recent meta-analysis reported psychological distress in approximately 50% of women with breast cancer, with financial difficulties, advanced disease, chemotherapy, and body-image concerns identified among important associated factors [7,11]. The predominance of stage II–III disease in the present cohort, together with substantial exposure to multimodal treatment, may therefore have contributed to the observed psychological burden.

Psychological symptoms were frequent, with mean DASS-21 depression, anxiety, and stress scores of 11.8±8.6, 10.6±7.9, and 14.2±8.7, respectively. Moderate-to-extremely severe symptoms were observed for depression in 41.4%, anxiety in 48.5%, and stress in 27.3%, making anxiety the most prominent psychological domain. These findings are broadly consistent with evidence demonstrating substantial psychological morbidity among women with breast cancer. In a North Indian study following modified radical mastectomy, depression, anxiety, and stress were reported in 27.8%, 31.5%, and 24.8%, respectively [8]. The higher proportions observed in the present study may reflect differences in timing of assessment, disease stage, treatment exposure, and sample characteristics; notably, 37.4% of participants were receiving chemotherapy or radiotherapy. Depression has also been associated with poorer QoL among Indian breast cancer patients, supporting the clinical relevance of identifying psychological symptoms during postoperative follow-up [9].

The mean composite WHOQOL-BREF score was 60.8±13.2, with the psychological-health domain having the lowest score (56.7±15.9), while social relationships had the highest score (64.2±17.1). The comparatively poorer psychological domain is consistent with the emotional consequences of breast loss, including altered body image, reduced self-esteem, concerns regarding femininity and sexuality, and fear of recurrence. A recent scoping review found that breast cancer surgery frequently adversely affects body image and QoL, with mastectomy generally associated with greater body-image dissatisfaction than breast-conserving surgery [12]. Meta-analytic evidence similarly suggests better body image following breast-conserving approaches

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

than mastectomy [13]. Thus, although body image was not directly measured in the present study, it may represent an important pathway linking mastectomy to psychological distress and reduced QoL.

The central finding was the strong inverse relationship between psychological distress and QoL. Overall distress burden correlated negatively with psychological QoL ($r=-0.67$, $p<0.001$), physical QoL ($r=-0.52$, $p<0.001$), social relationships ($r=-0.39$, $p<0.001$), environmental QoL ($r=-0.28$, $p=0.005$), and composite QoL ($r=-0.61$, $p<0.001$). Depression, anxiety, and stress also demonstrated significant negative correlations with composite QoL ($r=-0.53$, -0.45, and -0.49, respectively; all $p<0.001$). These findings suggest that psychological distress extends beyond emotional well-being and is closely linked with perceived physical functioning, social participation, and overall life satisfaction. Pain and physical limitations may reinforce this relationship through reciprocal effects on sleep, mobility, independence, coping, and symptom perception. Indian evidence has similarly demonstrated a substantial burden of pain and anxiety/depression among breast cancer patients and a relationship between treatment characteristics and HRQoL [6,14].

Family support appeared to have an important protective association. Participants reporting low or moderate family support had a 4.93-point lower adjusted QoL score than those reporting strong support (95% CI −8.66 to −1.20; $p=0.010$). This finding is particularly relevant in the Indian context, where family members frequently provide emotional, financial, practical, and treatment-related support. Indian research has demonstrated positive associations between perceived social support, positive affect, and life satisfaction among women with breast cancer [15]. Longitudinal evidence also suggests that low social support can be associated with persistently poorer HRQoL during survivorship [16].

Pain was another independent predictor: women with moderate-to-severe pain had a 5.48-point lower adjusted QoL score than those with no or mild pain (95% CI −9.43 to −1.53; $p=0.007$). Stage III disease was similarly associated with poorer QoL (adjusted $B=-3.85$; $p=0.038$). These findings are consistent with evidence showing declining HRQoL with advancing breast cancer stage and substantial symptom burden among Indian patients [6,14]. Conversely, lymphoedema, restricted shoulder movement, education, and ongoing chemotherapy/radiotherapy were not independently associated with QoL after adjustment, possibly because their effects overlapped with pain, disease severity, and psychological distress. The low prevalence of breast reconstruction (7.1%) also reflects reported barriers to reconstruction in South Asian populations [16], although the present study was not sufficiently powered to evaluate its independent effect.

Importantly, psychological distress remained the strongest independent predictor of poorer QoL: every 10-point increase in distress was associated with a 2.74-point reduction in composite QoL (adjusted $\beta=-0.43$, $p<0.001$). The regression model explained 60% of QoL variability (adjusted $R^2=0.56$), highlighting the importance of psychological assessment as part of comprehensive post-mastectomy care. Evidence from randomized trials suggests that structured psychological interventions can improve distress and QoL among women with breast cancer [7], while culturally acceptable approaches such as yoga have also demonstrated benefits during cancer treatment [17,18,19]. However, because the present study was cross-sectional, the directionality of the relationship cannot be established. Poor QoL may increase distress, while distress may simultaneously worsen perceived QoL, indicating a potentially bidirectional relationship. Longitudinal studies beginning before surgery and extending through survivorship are therefore warranted.

Limitations

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

This study has several limitations. Its cross-sectional design precludes establishing the temporal or causal direction between psychological distress and quality of life. Consecutive sampling from a single tertiary-care centre limits generalisability. Self-reported measures may be influenced by recall and response bias. Body image, fear of recurrence, marital/sexual functioning, and detailed socioeconomic factors were not directly assessed. The modest sample size also limited subgroup analyses.

Conclusion

Psychological distress was common among women following mastectomy and was strongly associated with poorer quality of life. Anxiety represented the most prominent psychological symptom, while psychological health was the most affected quality-of-life domain. Overall distress burden showed a strong inverse correlation with composite quality of life ($r=-0.61$, $p<0.001$) and remained the strongest independent predictor after adjustment. Pain, advanced disease, and inadequate family support were additional factors associated with poorer quality of life. These findings support integrating routine psychological screening, symptom control, family-based support, and psychosocial rehabilitation into post-mastectomy care. Longitudinal multicentre studies are needed to clarify temporal relationships and evaluate targeted interventions.

References

1. Bray F, Laversanne M, Sung H, Ferlay J, Siegel RL, Soerjomataram I, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2024;74(3):229–263.
2. Kulothungan V. Burden of female breast cancer in India: estimates of YLDs, YLLs, and DALYs at national and subnational levels based on the National Cancer Registry Programme. Breast Cancer Res Treat. 2024;205(2):323–332.
3. Ahn J, Suh EE. Body image alteration in women with breast cancer: a concept analysis using an evolutionary method. Asia Pac J Oncol Nurs. 2023;10(5):100214.
4. Mishra A, Nair J, Sharan AM. Coping in post-mastectomy breast cancer survivors and need for intervention: systematic review. Breast Cancer (Auckl). 2023;17:11782234231209126.
5. Cherian K, Acharya NR, Bhargavan RV, Augustine P, Krishnan JKM. Quality of life post breast cancer surgery: comparison of breast conservation surgery versus modified radical mastectomy in a developing country. South Asian J Cancer. 2022;11(3):183–189.
6. Gupta N, Pandey AK, Dimri K, Jyani G, Goyal A, Prinja S. Health-related quality of life among breast cancer patients in India. Support Care Cancer. 2022;30(12):9983–9990.
7. Tang WZ, Mangantig E, Iskandar YHP, Cheng SL, Yusuf A, Jia K. Prevalence and associated factors of psychological distress among patients with breast cancer: a systematic review and meta-analysis. BMJ Open. 2024;14(9):e077067.
8. Thakur M, Sharma R, Mishra AK, Singh K, Kar SK. Psychological distress and body image disturbances after modified radical mastectomy among breast cancer survivors: a cross-sectional study from a tertiary care centre in North India. Lancet Reg Health Southeast Asia. 2022;7:100077.
9. Purkayastha D, Venkateswaran C, Nayar K, Unnikrishnan UG. Prevalence of depression in breast cancer patients and its association with their quality of life: a cross-sectional observational study. Indian J Palliat Care. 2017;23(3):268–273.
10. Balat KZ, Laftah SA, Radhi MM. The relationship between psychological distress and quality of life among women undergoing mastectomy in Iraq: a descriptive correlational study. Natl J Community Med. 2025;16(1):20–27.

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.2.2025.276.287

11. Halemani K, Vitale E, Thimmappa L, Dhiraaj S, Shetty AP. Global prevalence of anxiety, depression and stress in women with breast cancer: a systematic review and meta-analysis. J Affect Disord. 2026;405:121541.
12. Battistello CZ, da Silva NW, Remor E. What is the relationship between body image and the quality of life of women who underwent surgery for breast cancer? A scoping review. Psychooncology. 2024;33(3):e6329.
13. Fteropoulli T, Tzounaka E, Amirova A, Nikolopoulos G, Yiallourou A. Changes in health-related quality of life following breast cancer surgery: a systematic review of the literature on the role of surgical approaches. Eur J Surg Oncol. 2025;51(1):109467.
14. Wadasadawala T, Mohanty SK, Sen S, Khan PK, Pimple S, Mane JV, et al. Health-related quality of life (HRQoL) using EQ-5D-5L: value set derived for Indian breast cancer cohort. Asian Pac J Cancer Prev. 2023;24(4):1199-1207.
15. Srivastava J, Kaushik SS, Tewari M, Shukla HS. Mediating role of affective experiences in the relationship between perceived social support and life satisfaction among breast cancer patients. Indian J Palliat Care. 2021;27(1):76-82.
16. Sarkar P, Huffman KN, Williams T, et al. Rates of breast reconstruction uptake and attitudes toward breast cancer and survivorship among South Asians: a literature review. J Surg Oncol. 2024;129(5):953-964.
17. Zehra S, Doyle F, Barry M, Walsh S, Kell MR. Health-related quality of life following breast reconstruction compared to total mastectomy and breast-conserving surgery among breast cancer survivors: a systematic review and meta-analysis. Breast Cancer. 2020;27(4):534-566.
18. Rosendahl J, Gawlytta R, Ressel E, Rodeck J, Strauss B, Mehnert-Theuerkauf A, et al. Efficacy of group therapy to reduce mental distress in women with non-metastatic breast cancer: a systematic review and meta-analysis of randomized controlled trials. Psychooncology. 2023;32(3):331-341.
19. Rao RM, Raghuram N, Nagendra HR, Kodaganur GS, Bilimagga RS, Shashidhara HP, et al. Effects of a yoga program on mood states, quality of life, and toxicity in breast cancer patients receiving conventional treatment: a randomized controlled trial. Indian J Palliat Care. 2017;23(3):237-246.