Original Article

Eur J Breast Health
DOI: 10.4274/ejbh.galenos.2025.2025-5-7

Exploring Body Image Satisfaction in Post-Mastectomy Female Breast Cancer Patients

Rija Latifee[1], Usra Parvez[1], Shah Muhammad[1], Bushra Shirazi[1], Muhammad Arsalan Khan[2]

[1]Department of General Surgery, Sindh Institute of Urology and Transplantation (SIUT), Karachi, Pakistan
[2]Network for Hope, Louisville, Kentucky, USA

ABSTRACT

Objective: Mastectomy is a widely used surgical intervention for breast cancer in Pakistan, where late-stage diagnoses are common and breast-conserving options are often limited. While effective oncologically, mastectomy can significantly affect a woman's body image, emotional well-being, and social relationships. In Pakistan, sociocultural norms and limited reconstructive services further shape the post-mastectomy experience. This study aimed to assess self-perception, body image satisfaction, and related psychosocial impact in Pakistani women following mastectomy.

Materials and Methods: This descriptive cross-sectional study was conducted at the breast oncology clinic of the Sindh Institute of Urology and Transplantation, Karachi. A total of 159 post-mastectomy patients aged 18–65 years were surveyed using a structured, culturally adapted questionnaire based on the body image scale. Statistical analyses included chi-square testing and multinomial logistic regression to assess associations between body image perception and demographic or psychosocial variables. Internal consistency was confirmed (Cronbach's alpha = 0.863).

Results: While 34% reported no change in body image perception, 66% reported varying degrees of change. Strong associations were identified between negative body image perception and feelings of reduced attractiveness, mirror discomfort, and spousal relationship changes (p<0.001). Multinomial regression confirmed these as significant predictors of reporting major body image change. Interest in breast reconstruction was low (15.7%), and although age and education were not significantly associated, time since surgery approached significance (p = 0.07).

Conclusion: A substantial proportion of Pakistani women experience emotional and psychosocial distress following mastectomy. These findings highlight the importance of early counseling, spousal support, and culturally sensitive body image discussions to promote long-term psychosocial recovery.

Keywords: Body image perception; breast cancer; mastectomy; Pakistan; patient satisfaction; psychosocial impact

Cite this article as: Latifee R, Parvez U, Muhammad S, Shirazi B, Khan MA. Exploring body image satisfaction in post-mastectomy female breast cancer patients. Eur J Breast Health. [Epub Ahead of Print]

Key Points

- This cross-sectional study assessed body image perception and emotional impact in 159 Pakistani women following mastectomy, using an adapted body image scale.
- Two-thirds of participants reported some degree of body image disturbance, with strong associations between negative self-perception and feelings of sadness, reduced confidence, and perceived loss of femininity.
- Time since surgery showed a near-significant effect on perception, while age and education were not significantly associated.
- The findings highlight the importance of culturally sensitive counseling and open discussion of body image in breast cancer care in Pakistan.

Introduction

Breast cancer is the most frequently diagnosed malignancy among women globally, with over 2.3 million new cases and approximately 685,000 deaths reported in 2020 (1). In Pakistan, the situation is particularly alarming, as one in nine women is projected to develop breast cancer during their lifetime (2). According to the International Agency for Research on Cancer, more than 30,000 new cases were recorded in Pakistan in 2022 alone (3). A significant proportion of these patients present with advanced-stage disease, necessitating mastectomy as a primary surgical intervention (4).

Mastectomy, while effective in managing breast cancer, often leads to profound psychological and psychosocial consequences (5). The removal of one or both breasts can significantly impact a woman's body image, self-esteem, and overall quality of life. Studies have documented that such physical alterations can result in body image disturbances, including feelings of diminished femininity and attractiveness. These

Corresponding Author:
Muhammad Arsalan Khan, FCPS; muhammad.a.khan@ucdenver.edu

Received: 02.06.2025
Accepted: 07.07.2025
Epub: 04.09.2025

issues may persist long after treatment, affecting social reintegration and intimate relationships (6).

Research in various cultural contexts has highlighted the individualized and contextual nature of women's experiences post-mastectomy. For instance, a study conducted in Sweden investigated life satisfaction and body image among women post-mastectomy, emphasizing the importance of understanding these experiences to improve quality of life (7). Similarly, studies in other regions have identified factors associated with body image dissatisfaction and self-esteem in mastectomized breast cancer survivors (8). However, there is a notable lack of data from Pakistan, where sociocultural factors such as modesty norms, familial roles, and societal expectations significantly influence women's perceptions of illness and recovery. Open discussions about body image and psychological distress are often discouraged, potentially exacerbating the emotional burden following mastectomy. Moreover, access to breast reconstruction in Pakistan is limited due to financial constraints, lack of awareness, and insufficient surgical expertise (9).

To address this gap, our study used a quantitative survey based on the body image scale (BIS), a validated instrument designed for assessing body image in cancer patients (7, 10). The BIS, which has been translated and linguistically validated across various cultural settings (11), provides a standardized framework for evaluating subjective constructs, enabling comparative analysis with other regional and global cohorts. By adapting the BIS to the Pakistani context, we aimed to capture nuanced perspectives on body image and life satisfaction among women following mastectomy.

Understanding women's self-perception after mastectomy is important for developing culturally sensitive psychosocial interventions, particularly in Pakistan, where late-stage diagnoses and limited reconstructive options make mastectomy a frequent reality (12). This study therefore aimed to assess self-perception, including body image and life satisfaction, among Pakistani women post-mastectomy and to identify socio-demographic and clinical factors associated with negative perceptions. The findings are intended to guide tailored support services and enhance holistic, patient-centered care strategies within oncology settings.

Materials and Methods

This descriptive cross-sectional study was conducted at the breast oncology clinic of the Sindh Institute of Urology and Transplantation (SIUT), Karachi. A total of 159 post-mastectomy patients aged 18–65 years were surveyed using a structured, culturally adapted questionnaire based on the BIS. The BIS is a 10-item validated tool for cancer patients assessing affective, behavioral, and cognitive aspects of body image. Each item is rated on a 4-point Likert scale, with higher scores indicating more severe dissatisfaction. The tool evaluated body image perception, self-confidence, emotional impact, and social relationships.

The study protocol was approved by the SIUT Institutional Review Board (approval no: SIUT-ERC-2025/A-543, date: 03.03.2025), and written informed consent was obtained from all participants prior to enrollment.

The sample size was calculated using the World Health Organization sample size calculator. Based on a previous estimate that 33.6% of patients experience body image disturbance following mastectomy [Phoosuwan and Lundberg (7)], with a 7% margin of error and a 95% confidence level, the minimum required sample size was found to be 159 participants.

Eligible participants included all consenting female patients aged 18 to 65 years who had undergone mastectomy (simple, modified radical, or radical) at SIUT and were attending regular follow-up appointments. Exclusion criteria included patients with metastatic disease, those who had undergone breast-conserving procedures (e.g., lumpectomy, quadrantectomy), male patients, individuals who were operated on outside of SIUT, and those who declined to participate.

Participants were recruited through convenience sampling and interviewed by the primary investigator using a structured, pre-tested questionnaire. The instrument collected demographic data, clinical history, and responses related to body image perception and the psychosocial impact of mastectomy on personal and interpersonal domains. To ensure data confidentiality and participant anonymity, all responses were coded, and patient identifiers were removed. Data verification processes, including double-entry techniques and secure digital storage, were employed to maintain data integrity.

Statistical Analysis

Statistical analysis was performed using SPSS, version 27.0 (IBM Corp., Armonk, NY, USA). Continuous variables such as age and time since surgery are reported as mean ± standard deviation. Categorical variables, including educational status, employment, self-confidence, and dissatisfaction with physical appearance, are presented as frequencies and percentages.

Internal consistency of the BIS was assessed using Cronbach's alpha, which yielded a reliability coefficient of 0.863, indicating strong internal consistency. Stratification was performed based on age group, occupation, education level, and time since surgery to explore variations in outcomes. The chi-square test was used to examine associations between categorical variables, with a p-value of <0.05 considered statistically significant. We note that the chi-square test assesses statistical association (or independence) between categorical variables and is appropriate in this context (McHugh ML. The chi-square test of independence. *Biochem Med (Zagreb)*. 2013;23(2):143-149. doi:10.11613/BM.2013.018).

A multinomial logistic regression was conducted to explore factors associated with self-perceived changes in body image following breast surgery. The outcome variable was categorized into "Not at all," "A little," "Quite a bit," and "Very much" change in BI self-perception. Predictor variables included sociodemographic characteristics (e.g., age group, education level, marital and employment status, and time since surgery) and psychosocial factors (e.g., feelings of attractiveness, sadness, mirror discomfort, and spousal relationship changes). Predictors were initially assessed via univariate analyses and then entered into a multivariate multinomial logistic regression model. Odds ratios (ORs) and 95% confidence intervals were calculated, and all statistical outputs were rounded to two decimal places.

The manuscript complies with the STROBE guidelines for reporting observational original research study.

Results

A total of 159 women who had undergone mastectomy were surveyed at the breast oncology clinic of SIUT. The highest representation was

in the 41–50 age group (35.2%), followed by 31–40 years (26.4%) and 51–60 years (20.8%). Education levels varied, with 34.6% having no formal education and 27% completing primary education. Most participants were married (76.7%) and housewives (84.3%). Regarding the time since surgery, 45.9% had undergone mastectomy 1–2 years prior, while 37.1% had surgery less than a year ago. Table 1 summarizes the sociodemographic and clinical characteristics of the participants.

Regarding body image perception, 34% of participants reported no change post-mastectomy, while 27% experienced mild change, 17% noted moderate change, and 21% indicated significant change. Feelings of decreased attractiveness were reported by 61%, while 42.1% experienced no emotional distress. Self-confidence was unaffected in 57% of women, and over half (51.6%) had no difficulty looking at themselves in the mirror. Most women (66%) did not avoid social interaction, but 13.9% did. Around 35% reported changes in spousal relationships, while only 27.7% indicated changes with friends. About 80% noticed no change in the behavior of others. Grouped Likert-scale distributions for these responses are illustrated in Figure 1.

Approximately 15.7% expressed interest in breast reconstruction, while 45.3% did not prioritize it. Importantly, 43.3% of women emphasized the value of discussing body image as part of breast cancer treatment. These comparative perceptions are presented in bar chart format in Figure 2.

Table 2 presents the associations between demographic characteristics and self-perception of body image following mastectomy. The chi-square test results showed no significant relationship between age group ($p = 0.54$) or education level ($p = 0.90$) and perceived changes in body image. However, the association between time since surgery and body image perception approached statistical significance ($p = 0.07$), suggesting a potential trend where time elapsed since mastectomy may influence how women perceive changes in their body image.

Table 3 displays the associations between psychosocial and emotional factors and post-mastectomy changes in body image perception. Strong statistical associations were observed with feeling less attractive or feminine ($p<0.001$), sadness and emotional distress ($p<0.001$), reduced self-confidence ($p<0.001$), and difficulty looking in the mirror ($p<0.001$). Additional associations were noted with social withdrawal ($p = 0.06$) and changes in spousal relationships ($p<0.001$), while shifts in the behavior of others or relationships with close friends did not reach statistical significance.

Multinomial logistic regression analysis revealed that feeling less attractive (OR = 10.07), mirror discomfort (OR = 1.78), and spousal relationship changes (OR = 1.92) were strong predictors of reporting "very much" change in body image perception. In contrast, higher education level was modestly associated with lower odds of substantial body image change (OR = 0.93), and sadness or emotional distress was also inversely associated (OR = 0.66). These results are summarized in Table 4.

Table 1. Socio-demographic characteristics of the participants

Variable	Category	Frequency (n)	Percentage (%)
Age group (years)	Less than 20	3	1.9
	21–30	8	5.0
	41–50	56	35.2
	31–40	42	26.4
	51–60	33	20.8
	More than 60	17	10.7
Education	No formal education	55	34.6
	Elementary school	43	27.0
	Middle/high school	37	23.3
	College education	21	13.2
	Post-graduate	3	1.9
Marital status	Married	122	76.7
	Un-married	18	11.3
	Widowed	15	9.4
	Divorced	4	2.5
Employment	Home-maker	135	84.9
	Employed	19	11.9
	Unemployed	5	3.1
Time since surgery	Less than one year	59	37.1
	1–2 years	73	45.9
	3–5 years	22	13.8
	More than 5 years	5	3.1

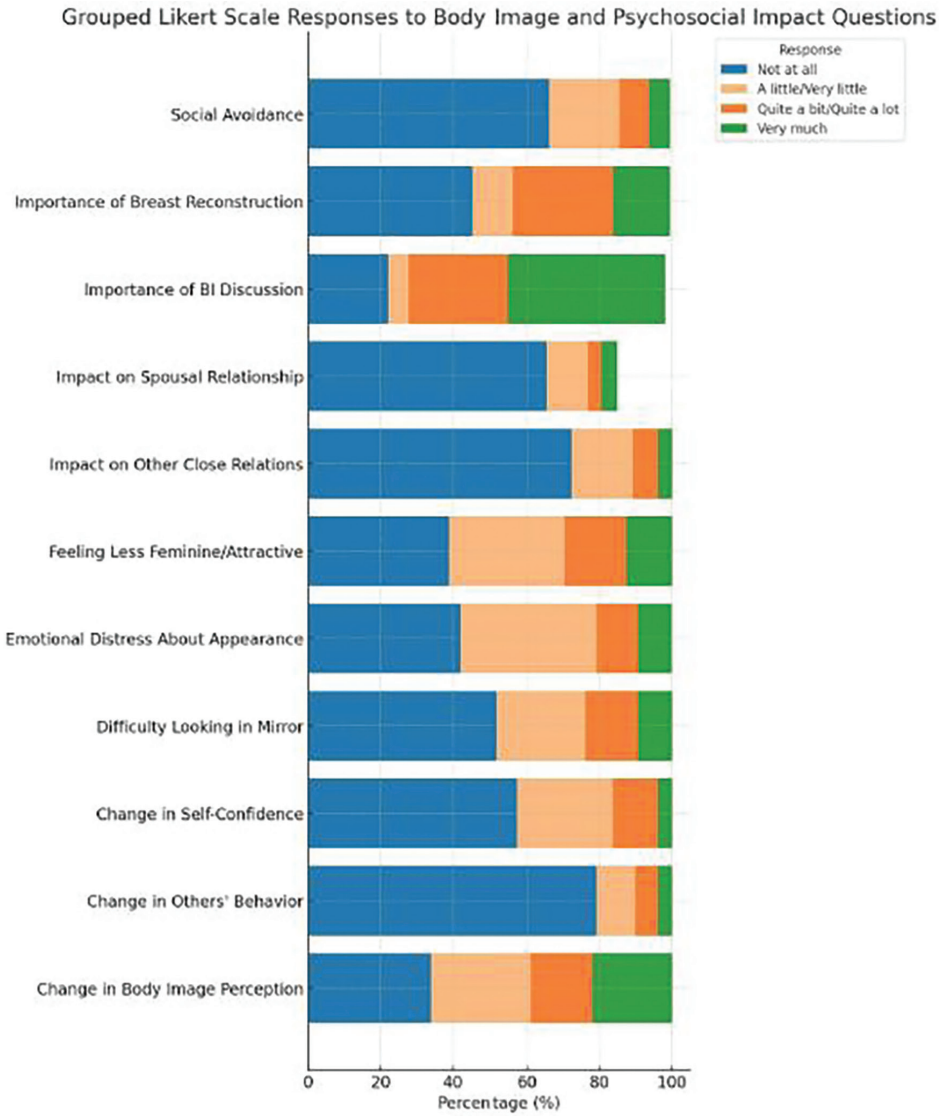

Figure 1. Grouped Likert scale responses to psychosocial impact questions

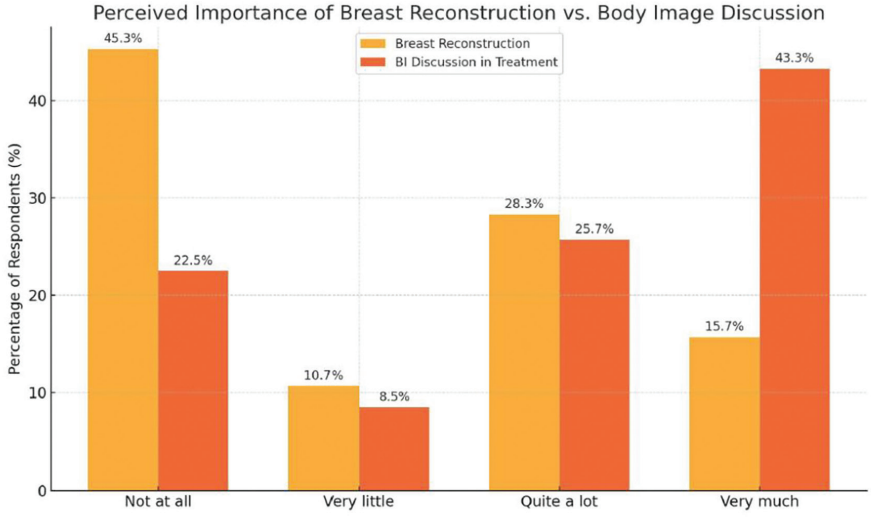

Figure 2. Bar chart of importance perceptions

Bar chart comparison of perceived importance of:

• Breast reconstruction

• Body image discussion during treatment across four response categories: Not at all, very little, quite a lot, very much

Table 2. Demographic associations with body image perception

Variable	Chi-square statistic	Degrees of freedom	*p*-value
Age group	23.61	4	0.54
Education level	12.26	3	0.90
Time since surgery	23.60	3	0.07

Table 3. Psychosocial associations with body image perception

Psychosocial variable	Chi-square statistic	Degrees of freedom	*p*-value
Feeling less attractive	151.52	3	<0.001
Sadness or distress	90.32	3	<0.001
Low self-confidence	67.98	3	<0.001
Mirror discomfort	76.77	3	<0.001
Social withdrawal	24.05	1	0.06
Spousal relationship changes	46.13	1	<0.001

Table 4. Predictors of body image change (regression analysis)

Predictor	OR (very much)	95% CI lower	95% CI upper
Feeling less attractive	10.07	6.79	14.30
Mirror discomfort	1.78	1.20	2.60
Spousal relationship changes	1.92	1.30	2.90
Education level	0.93	0.85	1.02
Sadness or distress	0.66	0.50	0.85

OR: Odds ratio; CI: Confidence interval

Discussion and Conclusion

This study explored body image perception and its psychosocial impact in Pakistani women following mastectomy for breast cancer, offering insights into a relatively under-researched population. Using a culturally adapted, structured questionnaire based on the BIS, the study quantitatively assessed self-perception, emotional well-being, and interpersonal relationships, while identifying demographic variables associated with these outcomes.

The findings reaffirm that mastectomy continues to be a significant psychological event in the lives of breast cancer survivors. Although 34% of women reported no change in body image perception, the majority experienced various degrees of distress, 27% mild, 17% moderate, and 21% significant, highlighting a spectrum of emotional responses. These outcomes are consistent with prior literature, including Phoosuwan and Lundberg (7), who found body image dissatisfaction closely associated with reduced life satisfaction among breast cancer patients, especially younger women and those with limited psychosocial support.

Our revised analysis showed that although age and education were not significant predictors of body image change, important trends emerged. Women with lower education were more likely to report mirror discomfort and diminished self-esteem, while younger patients tended to experience heightened emotional distress. These patterns mirror findings from studies conducted in Iran and Egypt, underscoring how educational background and life stage influence psychosocial recovery post-mastectomy (8, 13).

A notable contribution of this study is the strong statistical association found between body image change and specific emotional and interpersonal variables. Mirror discomfort, perceived loss of attractiveness, and spousal relationship changes emerged as the most robust predictors of reporting "very much" change in body image, based on multinomial logistic regression (14). These findings reaffirm that body image is not only an individual perception but is deeply embedded in interpersonal contexts (13).

The role of spousal relationships was particularly pronounced. A considerable number of participants reported changes in their intimate relationships following surgery, despite most indicating that overt behavior from others, including spouses, remained unchanged. This subtle emotional shift may reflect internalized anxieties rather than explicit rejection, a nuance that aligns with cultural norms of emotional restraint in Pakistani society (15). Familial support, in this context, may buffer visible social withdrawal while leaving underlying emotional needs unaddressed.

Reconstruction was a relatively low priority for many participants with only 15.7% expressing a strong interest, while nearly half prioritized disease remission over cosmetic or restorative goals. This finding resonates with prior studies indicating that cultural expectations, financial limitations, and fears about surgery can dampen interest in reconstruction, even when medically available (16).

Importantly, our analysis highlighted that body image is perceived less in physical terms and more through affective self-perception, with traits like character and resilience seen as core to identity. This has crucial implications for the design of psychosocial interventions in Pakistan. As Morales-Sánchez et al. (5) argue, culturally sensitive self-esteem enhancement strategies must reflect localized norms and personal identity frameworks rather than Western-centric ideals of physical recovery.

From a methodological perspective, the structured, face-to-face survey approach enabled richer data collection from a population often underserved in academic research. However, despite adapting the BIS for local use and confirming strong internal consistency, the lack of full psychometric revalidation may limit international comparability. Similarly, the absence of a preoperative psychological baseline remains a limitation in assessing true change (17).

Future studies should build on this foundation by employing longitudinal designs that track body image perception from diagnosis through long-term survivorship. Integration of fully validated tools and culturally adapted cognitive-behavioral interventions (18), especially those that include a couple's counseling and uses mirror exposure therapy, may provide further benefit. Such approaches, shown to be effective in other regions, should be tested locally to inform policy and practice.

This study highlighted that while around a third of women from a single center in Karachi, Pakistan, report stability in body image and self-confidence after mastectomy, the majority reported varying degrees of emotional and psychosocial distress. Although no significant associations were found between body image perception and age or education, emotional distress, mirror discomfort, and changes in spousal relationships were strong predictors of perceived body image deterioration. The findings underscore the importance of integrating culturally sensitive counseling, early psychosocial intervention, and patient-centered discussions about body image into breast cancer care in Pakistan. These strategies are vital for improving emotional well-being and supporting long-term recovery in resource-limited settings, like Pakistan.

Acknowledgment

The authors thank the clinical and administrative staff at SIUT for facilitating patient recruitment and data collection. We also acknowledge the contribution of patients who generously shared their experiences for the purpose of this study.

Ethics

Ethics Committee Approval: The study protocol was approved by the SIUT Institutional Review Board (approval no: SIUT-ERC-2025/A-543, date: 03.03.2025),

Informed Consent: Written informed consent was obtained from all participants prior to enrollment.

Footnotes

Authorship Contributions

Surgical and Medical Practices: R.L., U.P., B.S.; Concept: R.L., U.P., S.M., M.A.K.; Design: R.L., U.P., S.M.; Data Collection or Processing: R.L., U.P., S.M.; Analysis or Interpretation: R.L., S.M., B.S., M.A.K.; Literature Search: R.L.; Writing: R.L., B.S., M.A.K.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Arnold M, Morgan E, Rumgay H, Mafra A, Singh D, Laversanne M, et al. Current and future burden of breast cancer: Global statistics for 2020 and 2040. Breast. 2022; 66: 15-23. (PMID: 36084384) [Crossref]
2. Menhas R, Umer S. Breast cancer among Pakistani women. Iran J Public Health. 2015; 44: 586-587. (PMID: 26056679) [Crossref]
3. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2021 Feb 4. (PMID: 33538338) [Crossref]
4. Shirazi B, Niaz M, Khan MA. The characteristics and risk factors of breast cancer patients trend distinctive regional differences: a cross-sectional study. J Pak Med Assoc. 2024; 74: 672-676. (PMID: 38751260) [Crossref]
5. Morales-Sánchez L, Luque-Ribelles V, Gil-Olarte P, Ruiz-González P, Guil R. Enhancing self-esteem and body image of breast cancer women through interventions: a systematic review. Int J Environ Res Public Health. 2021; 18: 1640. (PMID: 33572137) [Crossref]
6. Gopie JP, Mureau MA, Seynaeve C, Ter Kuile MM, Menke-Pluymers MB, Timman R, et al. Body image issues after bilateral prophylactic mastectomy with breast reconstruction in healthy women at risk for hereditary breast cancer. Fam Cancer. 2013; 12: 479-487. (PMID: 23224779) [Crossref]
7. Phoosuwan N, Lundberg PC. Life satisfaction, body image and associated factors among women with breast cancer after mastectomy. Psychooncology. 2023; 32: 610-618. (PMID: 36670514) [Crossref]
8. Álvarez-Pardo S, De Paz JA, Montserrat Romero-Pérez E, Portilla-Cueto KM, Horta-Gim MA, González-Bernal JJ, et al. Factors associated with body image and self-esteem in mastectomized breast cancer survivors. Int J Environ Res Public Health. 2023; 20: 5154. (PMID: 36982062) [Crossref]
9. Faisal AB, Shahid F, Khalid L, Rahman MF. Advancing immediate breast reconstruction surgery in Pakistan: bridging literature gaps and meeting patient needs. Arch Plast Surg. 2024; 52: 116-118. (PMID: 40083621) [Crossref]
10. Hopwood P, Fletcher I, Lee A, Al Ghazal S. A body image scale for use with cancer patients. Eur J Cancer. 2001; 37: 189-197. (PMID: 11166145) [Crossref]
11. Belani P, Wadasadawala T, Sarin R, Pathak R, Krishnamurthy R, Syeda N, et al. Translation and linguistic validation of BIS (body image scale) for breast cancer patients in India. Indian J Surg Oncol. 2025; 16: 203-210. (PMID: 40114862) [Crossref]
12. Mehmood M, Aslam A, Ahmed W, Aman S, Ali A, Feroze H, et al. Awareness and acceptability of breast reconstruction among women with breast cancer in twin cities of Islamabad and Rawalpindi. Life and Science. 2024; 5: 9-15. [Crossref]
13. Ahmed MH, Mahmoud AB, Abd Elmoathy H. Correlation between body image, self-esteem and self-efficacy among women with mastectomy. J Nurs Sci Benha Univ. 2024; 5: 945-970. [Crossref]

14. Sheppard LA, Ely S. Breast cancer and sexuality. Breast J. 2008; 14: 176-181. (PMID: 18248559) [Crossref]

15. Konara Mudiyanselage SP, Wu YL, Kukreti S, Chen CC, Lin CN, Tsai YT, et al. Dynamic changes in quality of life, psychological status, and body image in women who underwent a mastectomy as compared with breast reconstruction: an 8-year follow up. Breast Cancer. 2023; 30: 226-240. (PMID: 36319889) [Crossref]

16. Moreira H, Silva S, Marques A, Canavarro MC. The Portuguese version of the body image scale (BIS) - psychometric properties in a sample of breast cancer patients. Eur J Oncol Nurs. 2010; 14: 111-118. (PMID: 19892597) [Crossref]

17. Boesen EH, Karlsen R, Christensen J, Paaschburg B, Nielsen D, Bloch IS, et al. Psychosocial group intervention for patients with primary breast cancer: a randomised trial. Eur J Cancer. 2011; 47: 1363-1372. (PMID: 21458989) [Crossref]

18. Vos PJ, Visser AP, Garssen B, Duivenvoorden HJ, de Haes HC. Effects of delayed psychosocial interventions versus early psychosocial interventions for women with early stage breast cancer. Patient Educ Couns. 2006; 60: 212-219. (PMID: 16442463) [Crossref]