

PSYCHOSOCIAL IMPACT ON YOUNG FEMALES
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Abstract

Objective: To determine the prevalence of psychological disorders in young females undergoing mastectomy.**Study Design :** A cross sectional observational study.**Place and Duration of study :** Department of General Surgery, Jinnah Postgraduate Medical Centre (JPMC) Karachi, from July 2024 to November 2024.**Methods:**

This cross-sectional study on the evaluation of the effect of mastectomy was conducted in the Department of General Surgery JPMC Karachi. A total of 88 female patients of age up to 40 years who underwent either breast-sparing mastectomy or total mastectomy for treatment of breast cancer, having a duration of mastectomy of at least 6 months were included from July 2024 to November 2024. The DASS-21 questionnaire, was utilized to gather information related to psychological disorders. While Insomnia Severity Index (ISI) score was used to gather information regarding insomnia.

Results:

The average age of participants was approximately 34.3 ± 3.6 years. Regarding study outcomes, 35 individuals (37.7%), experienced depression, 30 patients (34.1%) experienced anxiety. Insomnia was diagnosed in 12 patients (13.6%) patients. 28 patients (43.1%) who underwent Breast Sparing Mastectomy reported depression, compared to 7 patients (30.4%) from the Total Mastectomy group (p -value 0.11). 24 patients (36.9%) in the Breast Sparing Mastectomy group and 06 patients (26.0%) in the Total Mastectomy group had anxiety (p -value 0.34).

Conclusion:

There is a high prevalence of psychological disorders in women undergoing mastectomy. The prevalence rate is a little high in those undergoing breast-sparing mastectomy in comparison to total mastectomy.

INTRODUCTION

Breast cancer (BC) is recognized as the most prevalent cancer diagnosed in women across the globe.¹ In 2022, there were approximately 2.3 million new cases reported, contributing to nearly 670,000 deaths worldwide. The most significant risk factor associated with breast cancer is female gender, with nearly 99% of cases occurring in women. Although breast cancer in men is relatively rare, it still constitutes about 0.5% to 1% of all breast cancer diagnoses.² In Asia, Pakistan faces a significant challenge with breast cancer, as it has the highest incidence rate in the region. Statistics indicate that 1 in 9 women will be diagnosed with this disease at some point in their lives. Alarming, many young women are diagnosed at an advanced stage, which severely impacts their prognosis and treatment options.³

The survival rates for individuals diagnosed with breast cancer have seen remarkable improvements over the years, largely attributed to advancements in early detection techniques and groundbreaking treatment options.⁴ These enhancements have not only increased the number of women who successfully overcome breast cancer but have also heightened awareness around the disease. However, changes like chest asymmetry and post-mastectomy scars can lead to psychological challenges.⁵ As a result, breast cancer patients frequently face enduring psychological issues, which can severely impact their quality of life (QOL), resulting in poor physical wellbeing and increased risk of mortality.^{6, 7} The aim of present study was to determine the prevalence of psychological disorders in young females undergoing mastectomy.

METHODS:

This cross-sectional study on the evaluation of the effect of mastectomy was conducted in the Department of General Surgery JPMC Karachi. We included all female patients of age up to 40 years who underwent either breast-sparing mastectomy or total mastectomy for treatment of breast cancer, having a duration of mastectomy of at least 6 months. The study participants were recruited from July 2024 to November 2024. Approval from the hospital IRB board was obtained. we took significant steps to ensure that all participants were fully

informed before agreeing to partake in the study. We provided comprehensive details about the research, including its objectives, methodology, potential risks, and anticipated benefits. The sample size for this study was calculated by taking estimated frequency of psychologic disorders from the study of Ahn et al.⁴ and taking desired precision level 8.0%. We included 88 patients in the study.

The participants were recruited from the OPD clinic when they came for routine follow-up. The DASS-21 questionnaire, was utilized to gather important information related to psychological disorders. This self-report instrument consists of 21 items that assess the emotional states of depression, anxiety, and stress over the past week. By measuring these three distinct yet interrelated constructs, the DASS-21 provides valuable insights into an individual's mental health status. To evaluate the prevalence of insomnia among the patients in our study, we employed the Insomnia Severity Index (ISI) score as a key measurement tool. Patients who obtained a score of 15 or higher on the ISI were classified as experiencing significant insomnia. This threshold indicates a greater level of sleep disturbance that could impact their overall quality of life.

Data was analyzed using SPSS v25. Comparison of psychological disorders and insomnia between the groups was compared using Chi-square test by taking p-value ≤ 0.05 as significant.

RESULTS:

The average age of participants is approximately 34.3 years, with a standard deviation of 3.6 years. In terms of breast cancer stage, a majority of the participants are staged at 1, comprising 53.4%, followed by stage 2 at 31.8%, stage 0 at 9.1%, and stage 3 at 5.7%. Hormone receptor status reveals that 60.2% of the participants are ER+ / PR+, while 39.8% are ER- / PR-. Regarding marital status, an overwhelming 89.8% of the individuals are married, with only 10.2% not married. Regarding type of surgical procedure performed, 73.8% underwent a breast-sparing mastectomy, while 26.2% had a total mastectomy (Table 1).

The study outcomes for all patients, totalling 88 participants, revealed that 35 individuals (37.7%), experienced depression. When breaking this down

by surgical type, 28 patients (43.1%) who underwent Breast Sparing Mastectomy reported depression, compared to 7 patients (30.4%) from the Total Mastectomy group (p-value 0.11). In terms of anxiety, 30 patients (34.1%) reported symptoms, with a further breakdown showing 24 patients (36.9%) in the Breast Sparing Mastectomy group and 06 patients (26.0%) in the Total Mastectomy group (p-value 0.34). The prevalence of depression and anxiety was high in breast sparing mastectomy but it

did not achieve statistical significance. Lastly, insomnia was reported by 12 patients (13.6%) overall, with 9 patients (13.8%) from the Breast Sparing Mastectomy group and 3 patients (13.0%) from the Total Mastectomy group. The p-value for insomnia was 0.92, indicating no significant difference in insomnia rates between the two surgical approaches [Table 2].

Table 1. Baseline Characteristics.

Age (Y)	34.3±3.6
BC Stage	
0	08 (9.1%)
1	47 (53.4%)
2	28 (31.8%)
3	05 (5.7%)
HR Status	
ER+ / PR+	53 (60.2%)
ER- / PR-	35 (39.8%)
Marital Status	
Married	79 (89.8%)
Not-married	09 (10.2%)
Type of Procedure	
Breast Sparing Mastectomy	65 (73.8%)
Total Mastectomy	23 (26.2%)

Table 2. Study Outcomes.

	All Patients (N=88)	Breast Sparing Mastectomy (N=65)	Total Mastectomy (N=23)	P-value
Depression (%)	35 (37.7%)	28 (43.1%)	07 (30.4%)	0.11
Anxiety (%)	30 (34.1%)	24 (36.9%)	06 (26.0%)	0.34
Insomnia (%)	12 (13.6%)	09 (13.8%)	03 (13.0%)	0.92

DISCUSSION:

Although mastectomy is no longer the first option for the treatment of breast cancer, a considerable number of women still undergo mastectomy, especially when the cancer is aggressive.⁸ In addition to the cancer diagnosis itself, undergoing mastectomy carries a high risk of developing depression, anxiety, and post-traumatic stress. Young women diagnosed with breast cancer often face distinct concerns compared to older women.⁹ Being premenopausal, they may have worries about raising their children,

which adds an additional layer of stress to their diagnosis for both themselves and their families.¹⁰

The psychological effects of mastectomy are often not given attention in Pakistan, therefore we determined the prevalence of psychologic disorders in patients undergoing mastectomy. We find significant prevalence of depression and anxiety with rate of 37.7% and 34.1% respectively.

A research study in Jordan led by Abu-Helalah et al. investigated the impact of breast cancer on patients' quality of life and overall well-being. The results indicated that a significant portion of the

participants experienced mental health challenges, with 53% exhibiting elevated levels of anxiety and 45% showing signs of depression. Additionally, the study identified that 8% of the participants were experiencing severe depression, while 14% faced severe anxiety.¹¹

While a study conducted in Morocco reported depressive symptoms in 26.0% patients after mastectomy.¹²

A study by Ahn et al. conducted in South Korea, reported depression in 5.58% patients, anxiety in 7.64% and insomnia in 9.94% patients.⁴ The prevalence of psychologic disorders in their study was lower to our study.

Regarding type of mastectomy we found that the prevalence of depression was significantly less in patients who underwent total mastectomy in comparison to those who underwent breast sparing mastectomy.

This observation aligns with research indicating that psychological disorders are more prevalent following partial mastectomy (PM) in comparison to total mastectomy.¹³ While PM, often referred to as breast-conserving surgery, is perceived as less disfiguring than other surgical options, the aesthetic results can greatly differ among individuals, with many women reporting noticeable breast asymmetry.¹⁴ Additionally, most patients who opt for PM also undergo radiation therapy, which can further compromise cosmetic results. These unsatisfactory aesthetic outcomes may contribute to an increased occurrence of psychological disorders. Consequently, healthcare providers should not assume that PM offers a psychological advantage over TM. Furthermore, patients who have undergone PM may experience heightened anxiety regarding the possibility of remaining tumors, intensifying their psychological stress.¹⁵ It is crucial to convey to breast cancer patients that both PM and TM are considered radical surgical approaches, and that they share similar long-term survival rates.

A breast cancer diagnosis presents a profound challenge not only for young women but also for their families, necessitating substantial adjustments and the development of effective coping strategies. This phase of life can be overwhelming, as it introduces significant emotional and logistical hurdles that require both understanding and support

from loved ones. Effective communication becomes paramount in this context, serving as a vital tool for fostering relationships and enhancing the emotional well-being of women battling breast cancer.^{16, 17} Open dialogues between the patient and her partner are particularly important, as they allow for a shared understanding of the patient's journey, feelings, and specific needs. These exchanges can significantly alleviate feelings of isolation and anxiety during what can be an intensely difficult time. However, it's not uncommon for family members to grapple with providing the level of support that the patient requires. If they lack a clear understanding of the complexities surrounding breast cancer and its treatment, they may inadvertently overlook the emotional and psychological needs of their loved one.¹⁸ This can unintentionally create a gap in support, making it crucial for patients to articulate their feelings and requirements clearly to their families. Encouraging open conversations can empower women to express what they truly need from their families, thereby fostering a more supportive environment. Furthermore, it can be beneficial for patients to seek help from healthcare professionals, including psychiatrists, especially if they begin to experience psychological distress. These professionals can provide critical support and strategies to manage mental health challenges, ensuring that patients receive comprehensive care that addresses not only their physical health but also their emotional and mental well-being.

In summary, navigating the complexities of a breast cancer diagnosis involves a collective effort from the patient and her support system. Clear communication and professional guidance are essential for fostering an environment where emotional needs are met and where everyone involved can adapt to this new reality together.

CONCLUSION:

There is a high prevalence of psychologic disorders in women undergoing mastectomy. The prevalence rate is little high in those undergoing breast sparing mastectomy in comparison to total mastectomy.

Conflict of Interest: None

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Author's Contribution:

Sadia Arshad: Conceived, designed, and wrote the manuscript.
Prof. Dr. Zahid Mehmood and Dr. Dileep Kumar: Supervised the Research Project, reviewed and approved the final version of the manuscript.
Dr. Anam Taj, Dr. Aeliya Zehra, and Dr. Noor Ul Ain: contributed to data collection and analysis.

REFERENCES:

1. Łukasiewicz S, Czelelewski M, Forma A, Baj J, Sitarz R, Stanisławek A. Breast cancer-epidemiology, risk factors, classification, prognostic markers, and current treatment strategies-an updated review. *Cancers*. 2021;13(17):4287. doi: 10.3390/cancers13174287.
2. Xu H, Xu B. Breast cancer: epidemiology, risk factors and screening. *Chinese J Cancer Res*. 2023;35(6):565-83. doi: 10.21147/j.issn.1000-9604.2023.06.02
3. Menhas R, Umer S. Breast Cancer among Pakistani women. *Iran J Public Health*. 2015;44(4):586-7. doi: 10.1007/s00268-022-06585-y.
4. Ahn SK, Oh S, Kim J, Choi JS, Hwang KT. Psychological impact of type of breast cancer surgery: a national cohort study. *World J Surg*. 2022;46(9):2224-33. doi: 10.1007/s00268-022-06585-y.
5. 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. doi: 10.1016/j.lansea.2022.100077.
6. Valente S, Roesch E. Breast cancer survivorship. *J Surg Oncol*. 2024;130(1):8-15. doi: 10.1002/jso.27627.
7. Batty GD, Russ TC, Stamatakis E, Kivimäki M. Psychological distress in relation to site specific cancer mortality: pooling of unpublished data from 16 prospective cohort studies. *BMJ (Clinical research ed)*. 2017;356:j108. doi: 10.1136/bmj.j108.
8. Lan B, Jiang S, Li T, Sun X, Ma F. Depression, anxiety, and their associated factors among Chinese early breast cancer in women under 35 years of age: a cross sectional study. *Current problems in cancer*. 2020;44(5):100558. doi: 10.1016/j.currproblcancer.2020.100558.
9. Nakamura ZM, Deal AM, Nyrop KA, Chen YT, Quillen LJ, Brenizer T, et al. Serial assessment of depression and anxiety by patients and providers in women receiving chemotherapy for early breast cancer. *Oncologist*. 2021;26(2):147-56. doi: 10.1002/onco.13528.
10. Dunn J, Steginga SK. Young women's experience of breast cancer: defining young and identifying concerns. *Psycho-oncology*. 2000;9(2):137-46.
11. Abu-Helalah M, Al-Hanaqta M, Alshraideh H, Abdulbaqi N, Hijazeen J. Quality of life and psychological well-being of breast cancer survivors in Jordan. *Asian Pacific J Cancer Prev:APJCP*. 2014;15(14):5927-36. doi: 10.7314/apjcp.2014.15.14.5927.
12. Benallel K, El Kilali R, Benjelloun R, Kadiri M. Depression and breast cancer in morocco: prevalence and associated factors. *Int J Breast Cancer*. 2023;2023:3277929. doi: 10.1155/2023/3277929.
13. Den Oudsten BL, Van Heck GL, Van der Steeg AF, Roukema JA, De Vries J. Predictors of depressive symptoms 12 months after surgical treatment of early-stage breast cancer. *Psycho-oncology*. 2009;18(11):1230-7. doi: 10.1002/pon.1518.
14. Waljee JF, Hu ES, Ubel PA, Smith DM, Newman LA, Alderman AK. Effect of esthetic outcome after breast-conserving surgery on psychosocial functioning and quality of life. *J Clin Oncol*. 2008;26(20):3331-7. doi: 10.1200/JCO.2007.13.1375.

15. Fisher CS, Martin-Dunlap T, Ruppel MB, Gao F, Atkins J, Margenthaler JA. Fear of recurrence and perceived survival benefit are primary motivators for choosing mastectomy over breast-conservation therapy regardless of age. *Ann Surg Oncol*. 2012;19(10):3246-50. doi: 10.1245/s10434-012-2525-x.
16. Jones JM, Lewis FM, Griffith K, Cheng T, Secord S, Walton T, et al. Helping Her Heal-Group: a pilot study to evaluate a group delivered educational intervention for male spouses of women with breast cancer. *Psycho-oncology*. 2013;22(9):2102-9. doi: 10.1002/pon.3263.
17. Chow R, Mathews JJ, Cheng EY, Lo S, Wong J, Alam S, et al. Interventions to improve outcomes for caregivers of patients with advanced cancer: a meta-analysis. *J Natl Cancer Inst*. 2023;115(8):896-908. doi: 10.1093/jnci/djad075.
18. Yates P, Aranda S, Edwards H, Nash R, Skerman H, McCarthy A. Family caregivers' experiences and involvement with cancer pain management. *J Palliat Care*. 2004;20(4):287-96.

