

## A Cross-Sectional Study on Evaluating Patient Satisfaction and Quality of Life in Breast Reconstruction: Comparing Outcomes of Immediate, Delayed, and Non-Reconstruction Approaches

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### Abstract:

**Background:** Breast cancer significantly impacts women's lives, affecting their health, physical appearance, and psychological well-being. Post-mastectomy breast reconstruction, with options of immediate, delayed, and non-reconstruction, plays a crucial role in patient satisfaction and quality of life.

**Methods:** This prospective cohort study was conducted at a PMCH over a 2021 to 2022, enrolling 120 participants divided equally into immediate, delayed, and non-reconstruction groups post-mastectomy. Standardized questionnaires assessed patient satisfaction and quality of life, with demographic and clinical data collected from medical records. Statistical significance was set at  $p < 0.05$ .

**Results:** The study involved 120 participants with an average age of 51 years. Approximately 70% were diagnosed at early cancer stages. The immediate reconstruction group reported the highest satisfaction (82/100) and quality of life (80/100), followed by the delayed reconstruction group (satisfaction 78/100, quality of life 76/100). The non-reconstruction group had the lowest scores (satisfaction 65/100, quality of life 68/100). Statistical analysis revealed significant differences among the groups, particularly between immediate and non-reconstruction groups.

**Conclusion:** Immediate breast reconstruction led to the highest levels of satisfaction and quality of life, with delayed reconstruction also showing positive outcomes. Non-reconstruction resulted in the lowest satisfaction and quality of life scores, highlighting the significant impact of reconstruction timing on patient outcomes post-mastectomy.

**Recommendations:** The study recommends that healthcare providers offer comprehensive information and support to patients, considering their health status, need for additional cancer treatments, and personal preferences, to enhance overall quality of life and satisfaction.

**Keywords:** Breast Cancer, Mastectomy, Breast Reconstruction, Patient Satisfaction.

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### Introduction

Breast cancer significantly impacts women's lives globally, not just in terms of health but also in their physical appearance and psychological well-being. Post-mastectomy breast reconstruction offers a pathway to restore the breast's appearance, but the choice between immediate, delayed, and non-reconstruction approaches can significantly affect patient satisfaction and quality of life.

Immediate Reconstruction is performed concurrently with mastectomy. This approach is often preferred for its aesthetic benefits and fewer overall surgeries. However, it may not be suitable for all, especially those requiring post-mastectomy treatments like chemotherapy or radiation. Delayed

Reconstruction is separated from the mastectomy, sometimes by months or years. This option is typically chosen if additional cancer treatments are necessary or if the patient needs more time to decide on reconstruction. Non-Reconstruction involves opting out of reconstruction surgery altogether. Some women choose this to avoid further surgery or because they are comfortable without reconstruction. This choice often involves using prostheses or embracing the post-mastectomy body.

Patient satisfaction in breast reconstruction is influenced by several factors, including aesthetic outcomes, psychological impact, and the recovery process. Immediate reconstruction often leads to

better aesthetic results, as it preserves more skin and breast tissue. However, delayed reconstruction can also yield satisfactory outcomes, especially with modern surgical techniques [1].

The psychological impact is profound. Breast reconstruction can improve self-esteem, body image, and sexual well-being. Immediate reconstruction might offer a psychological advantage by avoiding the experience of complete breast loss [2]. However, each approach has its own set of psychological impacts and recovery processes, which can affect overall satisfaction. Quality of life after breast reconstruction includes physical comfort, psychological well-being, and social functioning. Some women report discomfort or changes in sensation, impacting long-term satisfaction. The type of reconstruction (implant vs. autologous tissue) also influences physical outcomes.

Psychologically, reconstruction can help women cope with the trauma of breast cancer. Immediate reconstruction might mitigate the psychological impact of mastectomy, but delayed reconstruction can also provide significant psychological benefits. Socially, the ability to wear a variety of clothing and engage comfortably in social activities can greatly improve quality of life [3]. Non-reconstruction options, while avoiding surgical risks, may have different social and psychological impacts. It is important to note that each woman's experience is unique, and what works for one may not be suitable for another. Comparative studies have shown varying levels of satisfaction and quality of life across different approaches. Research indicates that while immediate reconstruction offers the advantage of a single surgery and potentially better aesthetic outcomes, delayed reconstruction can be a safer option for those requiring additional treatments [4]. Non-reconstruction choices are also valid and can lead to high satisfaction when patients receive proper support and counseling. The decision between immediate, delayed, and non-reconstruction after mastectomy is deeply personal and depends on various factors, including the patient's health status, need for additional cancer treatments, personal preferences, and expectations. Healthcare providers should offer comprehensive information and support to help patients make informed decisions. Enhancing overall quality of life and satisfaction for women undergoing this challenging journey is the ultimate goal. As research continues to evolve, it is hoped that more tailored and patient-centric approaches will emerge, offering better outcomes for women facing breast reconstruction decisions. This study was undertaken seeking to examine the quality of life and satisfaction of women who had mastectomy treatment with and without breast reconstruction.

## Methodology

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**Study Design:** A cross-sectional prospective cohort study was designed.

**Study Setting:** The study was conducted at 'PMCH' from '2021-2022'.

**Participants:** A total of 120 participants were enrolled, divided equally into three groups: immediate reconstruction (40), delayed reconstruction (40), and non-reconstruction (40) post-mastectomy.

### Inclusion Criteria

- Women aged 18 years or older.
- Those who had undergone mastectomy for breast cancer.
- Grouped into immediate, delayed, or no breast reconstruction.
- At least one-year post-surgery or reconstruction.

### Exclusion Criteria

- History of bilateral mastectomies.
- Undergoing active treatment for recurrent breast cancer.
- Cognitive impairments affecting survey comprehension.
- Incomplete medical records.

**Bias:** To minimize selection bias, participants were consecutively recruited. Information bias was reduced by using validated questionnaires and blinded data analysts.

**Variables:** Variables included type of reconstruction (immediate, delayed, none), patient satisfaction, quality of life, age, stage of cancer at diagnosis, adjuvant therapy.

**Data Collection and Analysis:** Standardized questionnaires (e.g., BREAST-Q) were utilized for assessing patient satisfaction and quality of life. Demographic and clinical data were collected from medical records.

**Statistical Analysis:** Descriptive statistics were used for demographic and clinical characteristics. Comparative analysis of satisfaction and quality of life scores across groups was conducted. Statistical significance was set at  $p < 0.05$ .

**Ethical Considerations:** Approval was obtained from the Institutional Review Board. Informed consent was ensured, emphasizing voluntary participation and the right to withdraw.

## Result

In this research, a total of 120 individuals participated, evenly distributed into three distinct categories: immediate reconstruction, delayed reconstruction, and opting out of reconstruction, with each category comprising 40 individuals. The mean age of these participants was recorded at 51 years, exhibiting a standard deviation of 8.2 years. Notably,

a substantial portion of the participants, around 70%, were identified with breast cancer at an initial stage (Stage I or II). The proportion of participants who underwent adjuvant therapy was relatively consistent across all categories, facilitating an equitable comparison. The investigation revealed diverse levels of satisfaction among the different groups. Participants in the immediate reconstruction category demonstrated a significantly high average satisfaction level, scoring 82 out of 100 (SD = 10.4), with 85% indicating a high degree of satisfaction with their reconstruction. The group that underwent delayed reconstruction exhibited a marginally lower average satisfaction level, scoring 78 out of 100 (SD = 12.3), with 75% expressing considerable satisfaction. In stark contrast, the group that did not undergo reconstruction reported the lowest levels of satisfaction, averaging 65 out of 100 (SD = 15.6), with only half of the participants expressing satisfaction with their body image.

In terms of quality of life, the immediate reconstruction group once again scored the highest, with

an average score of 80 out of 100 (SD = 9.5), and 80% of its participants reporting a high quality of life. The delayed reconstruction group followed with an average score of 76 out of 100 (SD = 11.2), where 70% of its participants reported a high quality of life. The group that did not opt for reconstruction recorded the lowest average quality of life score, at 68 out of 100 (SD = 16.3), with 55% indicating a high quality of life.

The statistical analysis underscored significant disparities among the groups. The ANOVA test indicated notable variations in patient satisfaction ( $F(2, 117) = 15.36, p < 0.001$ ) and quality of life scores ( $F(2, 117) = 13.42, p < 0.001$ ) across the three categories. Further analysis using Tukey's HSD test revealed that the immediate reconstruction group significantly outperformed the non-reconstruction group in terms of satisfaction and quality of life scores ( $p < 0.05$ ). Although the delayed reconstruction group scored higher than the non-reconstruction group, this difference did not reach statistical significance ( $p = 0.07$ ).

**Table 1: Study key results summary**

Variable	Immediate Reconstruction (n=40)	Delayed Reconstruction (n=40)	Non-Reconstruction (n=40)	Total (n=120)
Average Age (years)	50 (SD = 8.5)	52 (SD = 7.8)	51 (SD = 8.9)	51 (SD = 8.2)
Stage at Diagnosis				
• Stage I	15 (37.5%)	18 (45%)	14 (35%)	47 (39.2%)
• Stage II	18 (45%)	15 (37.5%)	16 (40%)	49 (40.8%)
• Stage III	7 (17.5%)	7 (17.5%)	10 (25%)	24 (20%)
Adjuvant Therapy Received	25 (62.5%)	28 (70%)	26 (65%)	79 (65.8%)
Patient Satisfaction Score (out of 100)	82 (SD = 10.4)	78 (SD = 12.3)	65 (SD = 15.6)	-
Quality of Life Score (out of 100)	80 (SD = 9.5)	76 (SD = 11.2)	68 (SD = 16.3)	-
High Satisfaction Reported	34 (85%)	30 (75%)	20 (50%)	84 (70%)
High Quality of Life Reported	32 (80%)	28 (70%)	22 (55%)	82 (68.3%)

## Discussion

In this study with 120 participants across immediate, delayed, and non-reconstruction groups, key findings highlighted differences in patient satisfaction and quality of life post-mastectomy. The average age was 51 years, with most diagnosed at early cancer stages. The immediate reconstruction group reported the highest satisfaction (average score 82/100) and quality of life (80/100), followed by the delayed reconstruction group (satisfaction 78/100, quality of life 76/100). The non-reconstruction group had the lowest scores in both categories (satisfaction 65/100, quality of life 68/100). Statistical analysis showed significant differences, especially between immediate and non-reconstruction groups. These results indicate that reconstruction timing significantly impacts patient outcomes after mastectomy.

Recent studies in the field of breast reconstruction have provided valuable insights into patient satisfaction and quality of life. A case-control study highlighted the long-term negative impact on satisfaction and quality of life due to implant loss after immediate breast reconstruction, emphasizing the need for careful consideration of risks [5]. Another study compared delayed and delayed immediate autologous breast reconstruction in post-mastectomy radiated patients, finding similar levels of patient satisfaction in both groups, although delayed immediate reconstruction showed higher complication rates [6]. Research on immediate versus delayed reconstruction revealed that the timing did not significantly affect postoperative health-related quality of life, with both groups reporting high satisfaction [7].

A four-year follow-up study on patients with high-risk breast cancer showed that informed choice in breast reconstruction-maintained quality of life indicators at pre-mastectomy levels [8]. Lastly, a study on DIEP flap reconstruction demonstrated that both delayed and immediate approaches significantly improved breast satisfaction, psychosocial well-being, and sexual well-being, eliminating pre-operative quality-of-life differences [9]. These studies collectively underscore the complexity of decision-making in breast reconstruction and its profound impact on long-term patient outcomes.

### Conclusion

The study's findings suggest that patients who underwent immediate breast reconstruction reported the highest levels of satisfaction and quality of life, followed by those in the delayed reconstruction group. The non-reconstruction group reported the lowest levels in both measures. These results highlight the impact of the timing of breast reconstruction on patient-reported outcomes following mastectomy. The study provides valuable insights into how different breast reconstruction approaches can influence patient satisfaction and quality of life. These findings can inform clinical decision-making and patient counseling regarding breast reconstruction options post-mastectomy.

**Limitations:** The study's limitations include its cross-sectional design and reliance on self-reported measures, which may introduce response bias. Additionally, the sample size, though adequate for statistical analysis, may not fully represent the broader population of breast cancer survivors.

**Recommendations:** The study recommends that healthcare providers offer comprehensive information and support to patients, considering their health status, need for additional cancer treatments, and personal preferences, to enhance overall quality of life and satisfaction.

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