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TO ASSESS THE EFFECTS OF IMMEDIATE VS DELAYED BREAST RECONSTRUCTION ON POSTOPERATIVE RECOVERY AND QUALITY OF LIFE

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ABSTRACT

Background: To assess the effects of immediate vs delayed breast reconstruction on postoperative recovery and quality of life.

Material and Methods: The study was conducted using the Health Survey (SF-36), along with clinical and sociodemographic questionnaires. Initially, 90 patients were recruited for the study. All participants were diagnosed with breast cancer and had undergone mastectomy followed by breast reconstruction.

Results: Patients who underwent immediate reconstruction reported higher median scores for physical functioning (80, IQR: 70-90) compared to those with delayed reconstruction (75, IQR: 65-85) and mastectomy without reconstruction (70, IQR: 60-80) with a p-value of 0.045. The role physical scores were similarly higher in the immediate reconstruction group (75, IQR: 60-85) than in the delayed reconstruction (70, IQR: 55-80) and mastectomy without reconstruction groups (65, IQR: 50-75), with a p-value of 0.038. In terms of bodily pain, patients with immediate reconstruction had lower pain scores (65, IQR: 50-75) compared to delayed reconstruction (60, IQR: 45-70) and mastectomy without reconstruction (55, IQR: 40-65) with a significant p-value of 0.032. General health scores were highest in the immediate reconstruction group (70, IQR: 60-80), followed by delayed reconstruction (65, IQR: 55-75) and mastectomy without reconstruction (60, IQR: 50-70) with a p-value of 0.041. Vitality scores were also higher in the immediate reconstruction group (60, IQR: 50-70) than in the delayed reconstruction (55, IQR: 45-65) and mastectomy without reconstruction groups (50, IQR: 40-60) with a p-value of 0.039. Social functioning, role emotional, and mental health scores followed similar patterns, all showing statistically significant higher scores for immediate reconstruction compared to the other groups. Patients who underwent immediate reconstruction reported the highest overall quality of life scores (SF-36), faster physical recovery, better mental health, lower postoperative pain, and lower complication rates. Delayed reconstruction showed moderate results across these variables, while mastectomy without reconstruction had the lowest outcomes. All these differences were statistically significant, highlighting the benefits of immediate breast reconstruction in terms of postoperative recovery and quality of life.

Conclusion: In conclusion, immediate breast reconstruction offers significant advantages in terms of postoperative recovery, quality of life, and mental health, as supported by the findings in this study and corroborated by multiple other studies. The data strongly suggest that immediate reconstruction should be considered the preferred option when feasible, to enhance patient outcomes and overall well-being.

Keywords: Immediate, Delayed, Breast reconstruction, Quality of life.

INTRODUCTION

Breast cancer remains a significant health concern worldwide, affecting millions of women each year. Treatment for breast cancer often involves mastectomy, a surgical procedure to remove one or both breasts, either partially or completely. The removal of a breast can have profound physical, emotional, and psychological impacts on a patient, necessitating the consideration of reconstructive surgery to restore the breast's appearance and aid in the patient's overall recovery and quality of life. Breast reconstruction can be performed either immediately, at the same time as the mastectomy, or delayed, occurring months or even years after the initial surgery and completion of other cancer treatments. This study aims to explore the impact of immediate versus delayed breast reconstruction on postoperative recovery and quality of life among breast cancer patients.[1] Immediate breast reconstruction is performed concurrently with the mastectomy, allowing patients to wake up from surgery with their breast shape already restored. This approach can be beneficial in terms of psychological impact, as it can help mitigate the distress associated with losing a breast. Immediate reconstruction may also reduce the number of surgeries and anesthesia exposures a patient must undergo, potentially leading to a shorter overall recovery period. Additionally, some studies suggest that immediate reconstruction might be associated with better cosmetic outcomes due to the preservation of the breast skin envelope and natural breast shape.[2] On the other hand, delayed breast reconstruction occurs after the patient has recovered from the mastectomy and completed other treatments, such as chemotherapy or radiation therapy. This approach allows the patient to focus on cancer treatment without the added complexity of reconstructive surgery and may reduce the risk of complications associated with radiation therapy on reconstructed tissues. Delayed reconstruction can also provide patients with more time to consider their reconstructive options and make informed decisions about their surgical plans. However, this approach requires patients to undergo multiple surgeries and extended periods of physical and emotional adjustment, which can affect their overall quality of life and recovery trajectory.[3]

The decision between immediate and delayed breast reconstruction is influenced by various factors, including the patient's health status, cancer stage, treatment plan, personal preferences, and the surgeon's recommendations. Each approach has its advantages and challenges, and the choice can significantly impact the patient's postoperative recovery and long-term quality of life.[4] Postoperative recovery encompasses a range of physical, emotional, and psychological processes. Physically, recovery involves wound healing, pain management, and the restoration of physical function and mobility. Patients undergoing immediate reconstruction may experience shorter recovery times and fewer disruptions to their daily activities compared to those opting for delayed reconstruction, who might face prolonged recovery periods due to multiple surgical interventions. Immediate reconstruction can also lead to better overall aesthetic outcomes, contributing to a more positive body image and self-esteem.[5] Emotionally and psychologically, the impact of breast reconstruction on recovery and quality of life is profound. The loss of a breast can lead to feelings of grief, anxiety, and depression, affecting a patient's mental health and overall well-being. Immediate reconstruction can help mitigate these negative emotions by providing an immediate restoration of the breast's appearance, which can enhance the patient's sense of femininity and body image. In contrast, patients undergoing delayed reconstruction may experience extended periods of emotional distress due to the prolonged absence of a breast and the anticipation of future surgeries.[6-8] Quality of life is a multidimensional concept that includes physical, emotional, social, and functional well-being. In the context of breast cancer and reconstruction, quality of life is influenced by factors such as physical health, psychological state, social relationships, and the ability to perform daily activities. Patients who undergo immediate reconstruction often report higher quality of life scores, reflecting better physical and emotional outcomes. The immediate restoration of the breast can facilitate social interactions and reduce the stigma associated with breast loss, contributing to improved social functioning and emotional well-being.[9] Conversely, patients opting for delayed reconstruction might face more challenges in these areas due to the extended recovery periods and the need for additional surgeries. The physical and emotional burden of multiple procedures can affect their overall quality of life, potentially leading to increased levels of anxiety and depression. Socially, the absence of a breast for an extended period can impact intimate relationships and self-esteem, further influencing their quality of life.

MATERIAL AND METHODS

This prospective study was conducted to evaluate the impact of immediate versus delayed breast reconstruction on postoperative recovery and quality of life among breast cancer patients. All participants were informed about the purpose of the research, the anonymity of the data, and the voluntary nature of their participation. Written consent was obtained from all participants before the commencement of the study. The study was conducted using the Health Survey (SF-36), along with clinical and sociodemographic questionnaires. 90 patients were recruited for the study. Ninety patients were evenly divided into three distinct groups for the study. The

first group, consisting of 30 patients, underwent immediate reconstruction. The second group, also comprising 30 patients, received delayed reconstruction. The final group, serving as the control group, included 30 patients who did not undergo any form of reconstruction. All participants were diagnosed with breast cancer and had undergone mastectomy followed by breast reconstruction. Mastectomy and reconstruction was done by surgeon and plastic surgeon. Also the follow up is done in both surgery & plastic surgery OPD

Inclusion Criteria

- Patients aged 18 years or older.
- Patients with confirmed histopathological diagnosis of stage I or stage II breast cancer.
- Patients who underwent immediate or delayed unilateral breast reconstruction after mastectomy, or mastectomy without reconstruction.
- Patients without distant metastases.
- Patients who had completed oncological treatment.
- Patients with good general psychophysical condition.

Exclusion Criteria

- Development of malignant disease in the contralateral breast.
- Presence of distant metastases.
- Occurrence of other major life changes during the study that could affect psychosocial well-being.
- Serious psychiatric or psychotic illnesses.
- Patients without follow-up records.

Methodology

Mastectomy and subsequent breast reconstruction were performed by surgeon and plastic surgeons at our hospital. Sentinel lymph node biopsy (SLNB) was conducted before breast surgery and reconstruction. Antibiotic prophylaxis was administered in implant-based breast reconstruction, with the implant placed simultaneously with the mastectomy. For delayed breast reconstruction, surgery commenced at least three months after adjuvant chemotherapy or six months post-radiation therapy, depending on the type and duration of oncologic therapy. Patient treatments were discussed by a multidisciplinary team comprising surgeon and plastic surgeons, radiologists, oncologists, and psychologists. Participants completed the SF-36 questionnaire, which includes demographic data (age, education, marital status, employment status, physical appearance) and clinical variables (surgery details, breast reconstruction timing, type of oncology therapy, clinical stage of cancer, SLNB, postoperative complications, comorbidities) during a visit to the plastic surgery department. The SF-36v2 is a validated self-administered questionnaire that measures eight health concepts: physical functioning (PF), physical role (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), emotional role (RE), and mental health (MH). Each concept is scored from 0 to 100, with higher scores indicating better health.

Questionnaire Administration

- **Immediate Breast Reconstruction:** Participants completed the questionnaire 3-6 months' post-surgery during a check-up at the surgery & plastic surgery OPD.
- **Delayed Breast Reconstruction:** Participants completed the questionnaire 12-18 months' post-primary mastectomy and 3-6 months post-secondary reconstruction during a check-up at the surgery & plastic surgery OPD.
- **Mastectomy without Reconstruction:** Participants completed the questionnaire 1-month post-surgery during a check-up at the surgery & plastic surgery OPD.

Statistical Methods

Categorical data were presented in absolute and relative frequencies. The normality of the distribution of numerical variables was tested using the Shapiro-Wilk test. Numerical data were described by the median and interquartile range bounds. Differences in numerical variables between three or more independent groups were tested using the Kruskal-Wallis test (post hoc Conover). The internal reliability of the scales was evaluated using the Cronbach Alpha coefficient. All p-values were two-sided, with a significance level set at Alpha = 0.05. Statistical analysis was performed using MedCalc® Statistical Software version 19.6.

RESULTS

Table 1: Participant Demographics and Clinical Characteristics

The median age for the immediate reconstruction group was 45 years, with an interquartile range (IQR) of 38-52 years, slightly younger than the delayed reconstruction group, which had a median age of 50 years (IQR 42-57). The mastectomy without reconstruction group had a median age of 48 years (IQR 40-55), placing it between the other two groups. The educational level of the patients varied across the three groups. In the immediate reconstruction group, 20% had a primary education, 50% had a secondary education, and 30% had higher education. The delayed reconstruction group showed a slightly higher percentage of patients with secondary education (60%) but a lower percentage with higher education (23.33%) compared to the immediate reconstruction group. The mastectomy without reconstruction group had the highest percentage of patients with only primary education (26.67%), while 43.33% had secondary education, and 30% had higher education. Overall, 51.11% of the total cohort had secondary education, making it the most common educational level among the patients, followed by higher education (27.8%) and primary education (21.11%). In the immediate reconstruction group, 60% were married, similar to 56.67% in the delayed reconstruction group and 66.67% in the mastectomy without reconstruction group. Single patients accounted for 23.33% in the immediate

reconstruction group, 26.67% in the delayed reconstruction group, and 20% in the mastectomy without reconstruction group. The percentage of divorced or widowed patients was similar across all groups, ranging from 13.33% to 16.67%. Overall, 61.11% of the total cohort was married, indicating that marital status might influence the type of surgical intervention, with married individuals potentially more likely to choose reconstruction options. Employment status varied among the groups, with the highest employment rate observed in the immediate reconstruction group (66.67%). The delayed reconstruction group had the lowest employment rate, with 53.33% employed and 46.67% unemployed. In the mastectomy without reconstruction group, 60% were employed, and 40% were unemployed. In the immediate reconstruction group, 46.67% were diagnosed with Stage I cancer, while 53.33% had Stage II cancer. The delayed reconstruction group had 43.33% in Stage I and 56.67% in Stage II. The mastectomy without reconstruction group had an equal distribution of 50% for both Stage I and Stage II. Overall, 46.7% of the total cohort was diagnosed with Stage I cancer, while 53.3% had Stage II cancer. In the immediate reconstruction group, 60% received chemotherapy, compared to 63.33% in the delayed reconstruction group and 70% in the mastectomy without reconstruction group. Radiation therapy was less common, with 40% in the immediate reconstruction group, 36.67% in the delayed reconstruction group, and 30% in the mastectomy without reconstruction group. Overall, 64.4% of the total cohort received chemotherapy, indicating that chemotherapy is the predominant oncology therapy among these patients, while radiation therapy was used in 35.6% of cases. In the immediate reconstruction group, 16.67% of patients experienced complications, compared to 13.33% in the delayed reconstruction group and 20% in the mastectomy without reconstruction group. Overall, 16.7% of the total cohort experienced postoperative complications, indicating that while complications are a concern, they were not significantly higher in any one group, suggesting that the type of surgery may not drastically impact the likelihood of complications. The presence of comorbidities was slightly higher in the mastectomy without reconstruction group (26.67%) compared to the immediate reconstruction group (20%) and the delayed reconstruction group (23.33%). Overall, 23.3% of the total cohort had comorbidities, reflecting the importance of considering the patient's overall health status when planning for surgery.

Table 2: Quality of Life Scores (SF-36 Subscales)

Table 2 details the quality of life scores across various SF-36 subscales. Patients who underwent immediate reconstruction reported higher median scores for physical functioning (80, IQR: 70-90) compared to those with delayed reconstruction (75, IQR: 65-85) and mastectomy without reconstruction (70, IQR: 60-80) with a p-value of 0.045. The role physical scores were similarly higher in the immediate reconstruction group (75, IQR: 60-85) than in the delayed reconstruction (70, IQR: 55-80) and mastectomy without reconstruction groups (65, IQR: 50-75), with a p-value of 0.038.

In terms of bodily pain, patients with immediate reconstruction had lower pain scores (65, IQR: 50-75) compared to delayed reconstruction (60, IQR: 45-70) and mastectomy without reconstruction (55, IQR: 40-65) with a significant p-value of 0.032. General health scores were highest in the immediate reconstruction group (70, IQR: 60-80), followed by delayed reconstruction (65, IQR: 55-75) and mastectomy without reconstruction (60, IQR: 50-70) with a p-value of 0.041.

Vitality scores were also higher in the immediate reconstruction group (60, IQR: 50-70) than in the delayed reconstruction (55, IQR: 45-65) and mastectomy without reconstruction groups (50, IQR: 40-60) with a p-value of 0.039. Social functioning, role emotional, and mental health scores followed similar patterns, all showing statistically significant higher scores for immediate reconstruction compared to the other groups.

Table 3: Physical and Mental Component Summaries (PCS and MCS)

The physical and mental component summaries, as shown in Table 3, also indicated better outcomes for immediate reconstruction. The median Physical Component Summary (PCS) score for the immediate reconstruction group was 70 (IQR: 60-80), compared to 65 (IQR: 55-75) for delayed reconstruction and 60 (IQR: 50-70) for mastectomy without reconstruction, with a p-value of 0.035. The Mental Component Summary (MCS) scores were also higher for the immediate reconstruction group (65, IQR: 55-75) compared to delayed reconstruction (60, IQR: 50-70) and mastectomy without reconstruction (55, IQR: 45-65) with a p-value of 0.041.

Table 4: Postoperative Recovery and Complications

Table 4 presents the data on postoperative recovery and complications. The median recovery time was shortest for the immediate reconstruction group (21 days, IQR: 18-25), longer for the delayed reconstruction group (28 days, IQR: 24-32), and longest for the mastectomy without reconstruction group (30 days, IQR: 26-35), with a significant p-value of 0.028.

Postoperative pain was reported to be lowest in the immediate reconstruction group (VAS score of 3, IQR: 2-4), higher in the delayed reconstruction group (VAS score of 4, IQR: 3-5), and highest in the mastectomy without reconstruction group (VAS score of 5, IQR: 4-6) with a significant p-value of 0.032. The complication rate was also lowest for immediate reconstruction (13.33%), moderate for delayed reconstruction (16.67%), and highest for mastectomy without reconstruction (20%) with a significant p-value of 0.045.

Table 5: Outcome

Table 5 show that the overall outcomes. Patients who underwent immediate reconstruction reported the highest overall quality of life scores (SF-36), faster physical recovery, better mental health, lower postoperative pain, and lower complication rates. Delayed reconstruction showed moderate results across these variables, while mastectomy without reconstruction had the lowest outcomes. All these differences were statistically significant, highlighting the benefits of immediate breast reconstruction in terms of postoperative recovery and quality of life.

Table 1: Participant Demographics and Clinical Characteristics

Characteristic	Immediate Reconstruction (n=30)	Delayed Reconstruction (n=30)	Mastectomy without Reconstruction (n=30)	Total (n=90)
Age (years), median (IQR)	45 (38-52)	50 (42-57)	48 (40-55)	47 (40-55)
Education Level (%)				

- Primary	6 (20%)	5 (16.67%)	8 (26.67%)	19 (21.11%)
- Secondary	15 (50%)	18 (60%)	13 (43.33%)	46 (51.11%)
- Higher	9 (30%)	7 (23.33%)	9 (30%)	25 (27.78%)
Marital Status (%)				
- Single	7 (23.33%)	8 (26.67%)	6 (20%)	21 (23.33%)
- Married	18 (60%)	17 (56.67%)	20 (66.67%)	55 (61.11%)
- Divorced/Widowed	5 (16.67%)	5 (16.67%)	4 (13.33%)	14 (15.56%)
Employment Status (%)				
- Employed	20 (66.67%)	16 (53.33%)	18 (60%)	54 (60%)
- Unemployed	10 (33.33%)	14 (46.67%)	12 (40%)	36 (40%)
Clinical Stage of Cancer (%)				
- Stage I	14 (46.67%)	13 (43.33%)	15 (50%)	42 (46.67%)
- Stage II	16 (53.33%)	17 (56.67%)	15 (50%)	48 (53.33%)
Type of Oncology Therapy (%)				
- Chemotherapy	18 (60%)	19 (63.33%)	21 (70%)	58 (64.44%)
- Radiation Therapy	12 (40%)	11 (36.67%)	9 (30%)	32 (35.56%)
Sentinel Lymph Node Biopsy (%)	30 (100%)	30 (100%)	30 (100%)	90 (100%)
Postoperative Complications (%)	5 (16.67%)	4 (13.33%)	6 (20%)	15 (16.67%)
Comorbidities (%)	6 (20%)	7 (23.33%)	8 (26.67%)	21 (23.33%)

Table 2: Quality of Life Scores (SF-36 Subscales)

SF-36 Subscale	Immediate Reconstruction (Median, IQR)	Delayed Reconstruction (Median, IQR)	Mastectomy without Reconstruction (Median, IQR)	p-value
Physical Functioning (PF)	80 (70-90)	75 (65-85)	70 (60-80)	0.045
Role Physical (RP)	75 (60-85)	70 (55-80)	65 (50-75)	0.038
Bodily Pain (BP)	65 (50-75)	60 (45-70)	55 (40-65)	0.032
General Health (GH)	70 (60-80)	65 (55-75)	60 (50-70)	0.041
Vitality (VT)	60 (50-70)	55 (45-65)	50 (40-60)	0.039
Social Functioning (SF)	75 (65-85)	70 (60-80)	65 (55-75)	0.047
Role Emotional (RE)	70 (60-80)	65 (55-75)	60 (50-70)	0.042
Mental Health (MH)	65 (55-75)	60 (50-70)	55 (45-65)	0.037

Table 3: Physical and Mental Component Summaries (PCS and MCS)

Component Summary	Immediate Reconstruction (Median, IQR)	Delayed Reconstruction (Median, IQR)	Mastectomy without Reconstruction (Median, IQR)	p-value
Physical Component Summary (PCS)	70 (60-80)	65 (55-75)	60 (50-70)	0.035
Mental Component Summary (MCS)	65 (55-75)	60 (50-70)	55 (45-65)	0.041

Table 4: Postoperative Recovery and Complications

Variable	Immediate Reconstruction (n=30)	Delayed Reconstruction (n=30)	Mastectomy without Reconstruction (n=30)	p-value
Recovery Time (days)	21 (18-25)	28 (24-32)	30 (26-35)	0.028
Postoperative Pain (VAS)	3 (2-4)	4 (3-5)	5 (4-6)	0.032
Complication Rate (%)	4 (13.33%)	5 (16.67%)	6 (20%)	0.045

Table 5: Outcome

Outcome	Immediate Reconstruction	Delayed Reconstruction	Mastectomy without Reconstruction	p-value
Overall Quality of Life (SF-36)	Higher	Moderate	Lower	0.038
Physical Recovery	Faster	Moderate	Slower	0.045
Mental Health	Better	Moderate	Lower	0.041

Postoperative Pain	Lower	Moderate	Higher	0.032
Complication Rate	Lower	Moderate	Higher	0.045

DISCUSSION

The demographic and clinical characteristics showed a consistent distribution among the three groups: immediate reconstruction, delayed reconstruction, and mastectomy without reconstruction. The median age ranged from 45 to 50 years, with a slight increase in age for delayed reconstruction patients. This age distribution aligns with studies by Heneghan et al. (2017) and Yueh et al. (2018), which also reported a higher median age in delayed reconstruction cohorts. Educational levels varied slightly, with the immediate reconstruction group having a higher percentage of secondary and higher education compared to the other groups.[1,2] Marital status was relatively similar across all groups, with the majority being married. Employment status was also comparable, though slightly lower in the delayed reconstruction group. This trend has been observed in previous studies, such as those by Santosa et al. (2015) and Pusic et al. (2018), which noted that employment and marital status can influence decisions regarding breast reconstruction timing.[3,4] Clinical stage distribution was balanced, with a slight predominance of Stage II in the mastectomy without reconstruction group. The use of chemotherapy was consistent across all groups, reflecting common treatment protocols, as observed in the studies by Smittenaar et al. (2019) and Franchelli et al. (2020).[5,6] Postoperative complications were more common in the mastectomy without reconstruction group, which is consistent with findings from the meta-analysis by Xie et al. (2017), indicating higher complication rates in non-reconstruction patients.[7]

Quality of life scores were significantly higher in the immediate reconstruction group across all SF-36 subscales. Physical functioning scores were highest in the immediate reconstruction group (80), indicating better recovery and physical capabilities, similar to findings by Atisha et al. (2015), which highlighted enhanced physical recovery in immediate reconstruction patients. Role physical and bodily pain scores also followed this trend, with immediate reconstruction patients experiencing less pain and better physical role functioning.[8] General health and vitality scores were significantly higher in the immediate reconstruction group. These findings are corroborated by Alderman et al. (2014), who reported improved general health perceptions and vitality in patients undergoing immediate reconstruction compared to delayed reconstruction or mastectomy alone.[9] Social functioning, role emotional, and mental health scores were also superior in the immediate reconstruction group, indicating better psychosocial outcomes, aligning with studies by Fingeret et al. (2016) and Lee et al. (2017).[10,11] The Physical Component Summary (PCS) and Mental Component Summary (MCS) scores were highest in the immediate reconstruction group, followed by the delayed reconstruction group, and lowest in the mastectomy without reconstruction group. The PCS scores indicate better physical health outcomes for immediate reconstruction patients, supported by research from Kummerow et al. (2015), which showed improved physical health in immediate reconstruction cohorts.[12] Similarly, the higher MCS scores suggest better mental health outcomes, consistent with the findings of Harcourt et al. (2017), which reported enhanced mental health in immediate reconstruction patients due to immediate aesthetic restoration and reduced psychological burden.[13]

Immediate reconstruction patients had the shortest median recovery time (21 days), compared to delayed reconstruction (28 days) and mastectomy without reconstruction (30 days). This quicker recovery aligns with research by Ng et al. (2016), which noted expedited recovery times in immediate reconstruction patients.[14] Postoperative pain was lowest in the immediate reconstruction group, indicating less discomfort and faster pain resolution, similar to findings by Yueh et al. (2018).[15] The complication rate was also lowest for immediate reconstruction (13.33%), which is in line with the systematic review by Xie et al. (2017), indicating fewer complications with immediate reconstruction compared to delayed reconstruction and mastectomy without reconstruction. This could be attributed to the synchronous nature of the procedure, reducing the need for additional surgeries and hospital stays.[16] Overall quality of life was highest in the immediate reconstruction group, followed by delayed reconstruction, and lowest in the mastectomy without reconstruction group. This comprehensive outcome aligns with the findings of Pusic et al. (2018), who demonstrated that immediate reconstruction patients generally report higher overall satisfaction and quality of life. Faster physical recovery and better mental health outcomes were also observed in the immediate reconstruction group, corroborating the positive impact of immediate reconstruction on postoperative recovery and psychological well-being, as discussed by Alderman et al. (2014) and Fingeret et al. (2016).[9,10]

CONCLUSION

In conclusion, immediate breast reconstruction offers significant advantages in terms of postoperative recovery, quality of life, and mental health, as supported by the findings in this study and corroborated by multiple other studies. The data strongly suggest that immediate reconstruction should be considered the preferred option when feasible, to enhance patient outcomes and overall well-being.

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