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Optimising Postoperative Recovery After DIEP Flap Breast Reconstruction: Addressing Unmet Exercise and Education Needs Through Phase-Based Exercise Oncology.

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DIEP flap reconstruction involves harvesting abdominal skin, adipose tissue, and perforating blood vessels to reconstruct one or both breasts following mastectomy. The procedure requires extensive abdominal wall dissection, affecting trunk muscle function, shoulder mobility, and posture, often leading to difficulty standing upright and shoulder impingement. Despite the complexity and duration of recovery, structured pre- and postoperative education and exercise-based rehabilitation remain limited. Many women access Accredited Exercise Physiologists (AEPs) several months postoperatively, suggesting missed opportunities for earlier intervention. This study aimed to identify postoperative functional limitations and gaps in exercise education to inform a phased, exercise oncology–led rehabilitation program.

Fifty-eight women (2 months–7 years post-DIEP) participated in a mixed-methods study comprising online surveys (n=20), facilitated roundtable discussions (n=12), and follow-up surveys (n=13). Quantitative data described recovery timelines, persistent functional impairments, and exercise prescription. Qualitative data explored patient-reported experiences of education, recovery expectations, exercise guidance, and unmet rehabilitation needs.

Functional recovery was varied: 35% regained full function by 6 months, 15% by 12 months, 15% by 18 months, and 35% remained functionally limited. Persistent impairments included numbness (45%), shoulder range-of-motion limitations (40%), abdominal weakness (35%), lymphoedema (35%), shoulder impingement (20%), and postural deviations (10%). Although 85% received postoperative exercise prescription, only 10% included abdominal or core-specific exercises. Early rehabilitation primarily focused on shoulder mobility (80%), ambulation (70%), and safe transfers (60%). Participants reported insufficient preoperative education around expectations and post-operative care regarding abdominal recovery, fatigue management, and restoring posture. Eighty-six percent indicated willingness to engage with an AEP within the first four weeks postoperatively.

DIEP patients experience prolonged functional impairments, compounded by delayed exercise intervention and omission of targeted abdominal wall rehabilitation. A structured, phase-based, exercise rehabilitation model—including prehabilitation, early postoperative intervention, and long-term recovery support—may optimise functional outcomes, accelerate recovery, and improve patient confidence, psychological wellbeing, and quality of life.

Keywords

Exercise oncology; DIEP reconstruction; breast cancer rehabilitation; abdominal wall rehabilitation

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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