powered by

dkfz.
GERMAN
CANCER RESEARCH CENTER
IN THE HELMHOLTZ ASSOCIATION

Contribution ID: **61** Type: **1 - Scientific Poster**

# Risk-Guided Rehabilitation After Breast Cancer: Development, Validation, and Implementation of the ARM-BCT Tool

*Thursday 23 July 2026 14:55 (20 minutes)*

Breast cancer treatment frequently leads to postoperative arm morbidity, including shoulder dysfunction, pain, reduced range of motion, seroma, and lymphedema. Despite this burden, many women at highest risk do not receive timely rehabilitation, resulting in preventable functional decline. To address this critical gap, we developed the Arm Morbidity following Breast Cancer Treatment (ARM-BCT) tool—an evidence-based clinical screening system designed to identify patients at elevated risk and guide early referral to physiotherapy. This abstract integrates findings from three complementary research phases: tool development, prospective validation, and clinical implementation.

The ARM-BCT tool was initially constructed through a systematic process that included clinical record review, patient-reported outcomes, literature-based risk factor identification, and multidisciplinary expert consensus. A subsequent prospective validation study confirmed the tool's predictive accuracy: higher ARM-BCT risk scores were consistently associated with early postoperative morbidity, including restricted shoulder range of motion, increased symptom burden, and delayed return to functional activities. These findings demonstrated strong construct validity and supported the tool's clinical relevance.

The third phase evaluated real-world implementation. Women receiving ARM-BCT–guided recommendations demonstrated significantly higher physiotherapy attendance when classified as high risk compared to low-risk patients. However, despite increased rehabilitation utilization, morbidity remained more frequent among high-risk women, highlighting the need for intensifying early therapeutic strategies and sustained monitoring.

Collectively, this body of work demonstrates that the ARM-BCT tool offers a practical, patient-centered, and scalable approach for improving postoperative outcomes. By enabling risk-guided referral pathways, the tool supports more efficient resource allocation, reduces delays in rehabilitation initiation, and enhances individualized recovery planning. Clinical integration of the ARM-BCT tool—both in its in-clinic format and digital application—has the potential to transform postoperative care for breast cancer survivors and ensure that women most likely to benefit from physiotherapy receive timely, targeted intervention.

## Keywords

breast cancer, rehabilitation, morbidity, screening tool

## Conflict of Interest & Ethical Approval

yes

## Abstract submitters declaration

yes

**Author:** KLEIN, Ifat (Ben-Gurion University of the Negev, Faculty of Health Sciences, department of Epidemiology and Biostatistics)

**Co-authors:** Ms ROSENBERG, Irena (Assuta hospital, Tel Aviv israel); Prof. BEN- DAVID, Merav A. (Assuta hospital, Tel Aviv israel)

**Presenter:** KLEIN, Ifat (Ben-Gurion University of the Negev, Faculty of Health Sciences, department of Epidemiology and Biostatistics)

**Session Classification:** Poster Session