

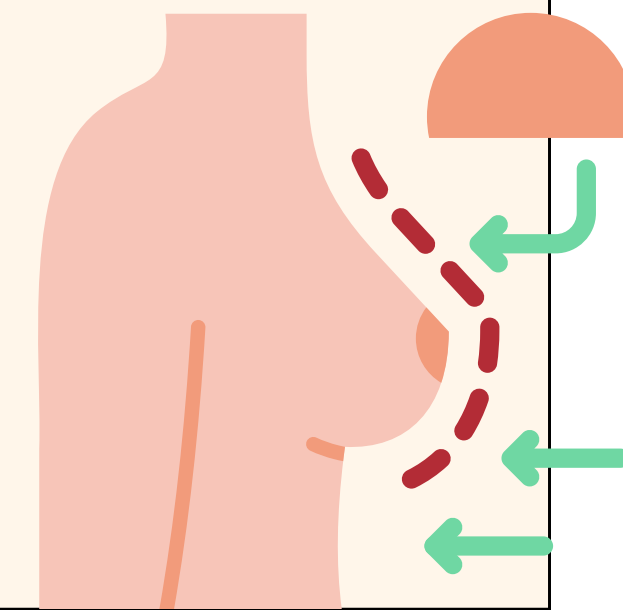
Patient Reported Outcome Measures Following Breast Reconstruction: A Systematic Review and Meta-analysis Utilizing the BREAST-Q

Jonathan **Mokhtar**^{1†}; Fatemeh **Akbarpoor**^{1†}; Karen **Blanco**, BS¹; Emanuele **Batista**²; Hanin **Al-Kilani**³; Guilherme Franceschini **Machado**, MD⁴; Juliana **Oliveria**, MD⁵; Abanob **Attalah**⁶; Sara **Vidha**¹; Lucas Kreutz-**Rodrigues**, MD⁷; Aparna **Vijayasekaran**, MBBS⁷; Alexandre G. **Lellouch**, MD, PhD^{8,9,10}; Curtis L. **Cetrulo**, MD, FACS¹⁰; Krishna S. **Vyas**, MD, PhD, MHS^{11,12,13}; Mario **Cherubino**, MD, PhD¹⁴; Raffi **Gurunian**, MD, PhD¹⁴

1. Mohammed bin Rashid University of Medicine and Health Sciences (MBRU); 2. Universidade do Estado do Rio de Janeiro, Faculdade de Ciências Médicas, Rio de Janeiro, Brazil. 3. Faculty of Medicine, Vision College, Riyadh, Saudi Arabia; 4. Hospital Santa Marcelina, São Paulo, Brazil; 5. Department of Gynecology and Obstetrics, Federal University of Minas Gerais, Av.A Pres. Antônio Carlos, 6627 – Pampulha, Belo Horizonte, MG, 31270-901, Brazil; 6. University of Missouri Kansas City School of Medicine, Missouri, TX, USA; 7. Division of Plastic Surgery, Mayo Clinic, MN, United States; 8. Université Paris Cité, Inserm The Paris Cardiovascular Research Center, Team Endotheliopathy and Hemostasis Disorders, Paris, France; 9.1.2- AP-HP, Hôpital Européen Georges Pompidou, Hematology department, Paris, France; 10. Division of Plastic and Reconstructive Surgery, Cedars Sinai Hospital, Los Angeles, USA; 11. Breast Surgery Group, New York, New York, USA; 12. Department of Plastic Surgery, Manhattan Eye, Ear and Throat Hospital and Lenox Hill Hospital, New York, USA; 13. Division of Plastic and Reconstructive Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts, USA; 14. Department of Plastic Surgery, Surgical Subspecialty Institute, Cleveland Clinic Abu Dhabi, Abu Dhabi, United Arab Emirates. ***Authors contributed equally.**

INTRODUCTION

- **Breast reconstruction** improves **body image and quality of life**, but traditional outcomes do not capture patient experience¹.
- The **BREAST-Q** enables **standardized assessment** of patient-reported outcomes (PROMs)².
- Comparative outcomes between **ABBR** and **IBBR** remain unclear → **this systematic reviw and meta-analysis evaluates these differences.**



METHODS

PubMed
CENTRAL
Scopus
Embase
Web of Science

All Screened up
to May 2025

Compared outcomes of IBBR and ABBR using the
BREAST-Q domains as a PROM tool

Pooled analyses were conducted using random
effects models on R software.

RESULTS

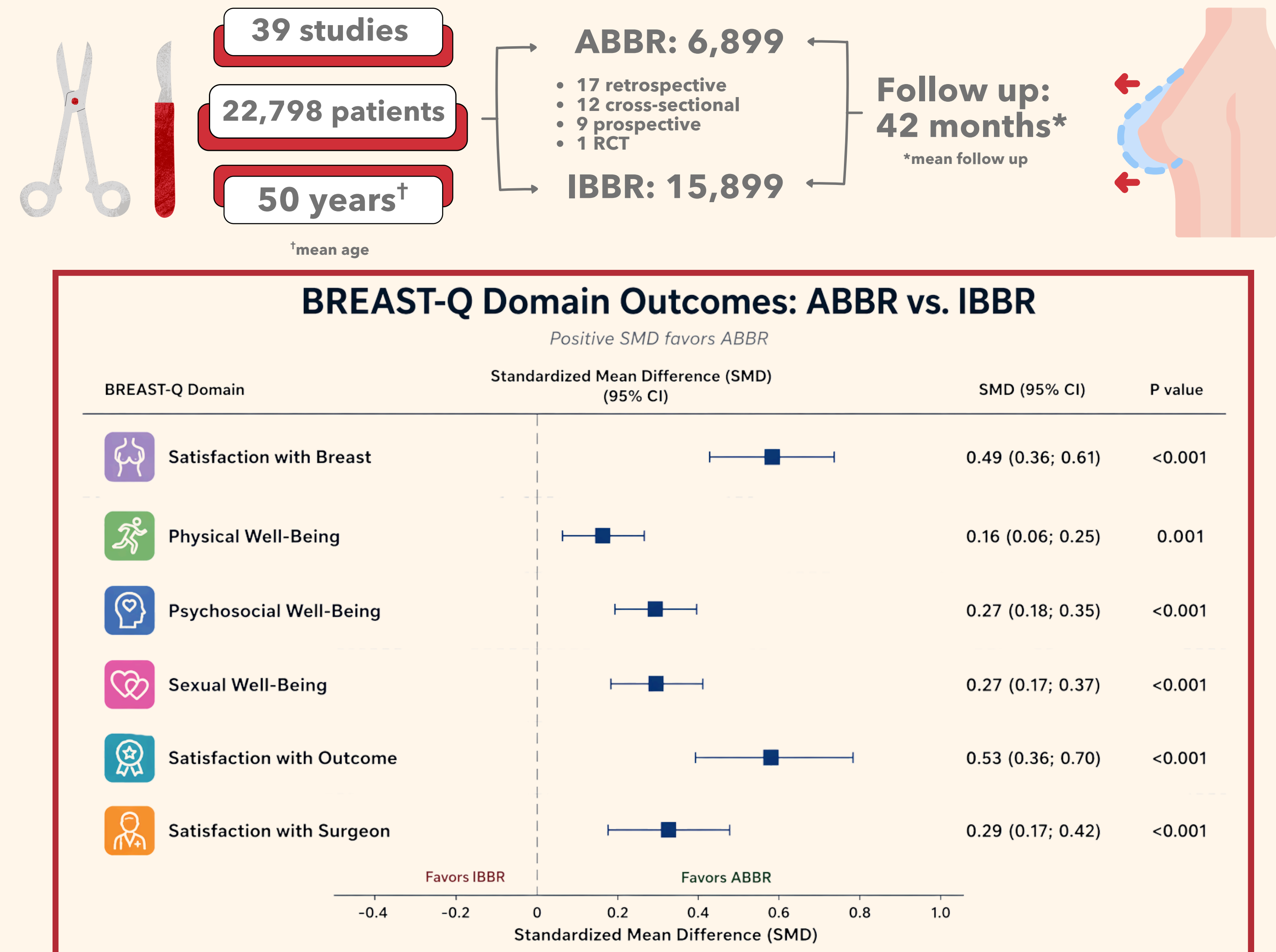


Figure 1 - Standardised Mean differences (SMDs) for BREAST-Q domains comparing ABBR with IBBR.

Significant differences noted in favour of ABBR

- ↑ Satisfaction with Breasts
- ↑ Sexual Well-being
- ↑ Physical Well-being
- ↑ Satisfaction with Outcome
- ↑ Psychosocial Well-being
- ↑ Satisfaction with Surgeon

CONSLUSIONS

- **Autologous breast reconstruction (ABBR) demonstrates superior patient-reported outcomes across** key BREAST-Q domains compared with IBBR.
- Improvements in **satisfaction and psychosocial outcomes are clinically meaningful**, reflecting true patient benefit.
- Despite **higher minor complication rates**, ABBR offers **more durable outcomes with fewer reoperations.**
- These findings support **patient-centered decision-making**, balancing short-term morbidity with long-term quality-of-life gains.

DISCUSSION

- **ABBR consistently outperforms IBBR across BREAST-Q domains**, particularly in **aesthetic satisfaction and psychosocial well-being.**
- These benefits likely reflect **more natural contour, improved durability, and enhanced body image**, leading to higher patient satisfaction.
- Improvements exceed **minimal clinically important differences (MCID)**, indicating **clinically meaningful benefit.**
- Although ABBR is associated with **higher perioperative morbidity**, this is offset by **lower reoperation rates and superior long-term outcomes.**

Abbreviations: ABBR, autologous breast reconstruction; IBBR, implant-based breast reconstruction; PROMs, patient-reported outcome measures; QoL, quality of life; BREAST-Q, breast reconstruction patient-reported outcome measure; PSWB, psychosocial well-being; SWB, sexual well-being; PWB, physical well-being; SMD, standardized mean difference; CI, confidence interval.

References:

1. Fang SY, Shu BC, Chang YJ. The effect of breast reconstruction surgery on body image among women after mastectomy: a meta-analysis. Breast Cancer Res Treat. 2013 Jan;137(1):13-21. doi: 10.1007/s10549-012-2349-1. Epub 2012 Dec 6. PMID: 23225142.
2. Pusic AL, Klassen AF, Scott AM, Klok JA, Cordeiro PG, Cano SJ. Development of a new patient-reported outcome measure for breast surgery: the BREAST-Q. Plast Reconstr Surg. 2009 Aug;124(2):345-353. doi: 10.1097/PRS.0b013e3181aee807. PMID: 19644246.