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A Systematic Review of Questionnaires Assessing Patient Satisfaction in Plastic Surgery: Tools, Topics, and Surgical Types

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Background: Patient satisfaction is crucial for evaluating healthcare services, including plastic surgery. This systematic review aims to analyze questionnaires assessing patient satisfaction in plastic surgery, identifying their strengths and weaknesses to improve outcomes and enhance the quality of care.

Methods: A comprehensive literature search was conducted using electronic databases. Studies were included if they were original research articles, written in English, and focused on patient satisfaction questionnaires in plastic surgery. Data extraction and descriptive statistics were used to summarize the data.

Results: A total of 105 studies were included. General/overall satisfaction was the most common topic addressed (99.04%). Cosmetic outcomes were the most frequently assessed category (34.3%). Breast reconstruction was the most common procedure (33.3%). Most studies used a combination of generic and procedure-specific questionnaires (45.71%). The most frequently used measurement tools were BREAST-Q and self-developed questionnaires, each accounting for 28.57% and 27.61%.

Conclusions: This review provides a comprehensive analysis of patient satisfaction questionnaires in plastic surgery, emphasizing the importance of a holistic approach and well-established, validated tools. The findings contribute to improving plastic surgery outcomes and enhancing the quality of care. Future research should refine assessment tools to address patients' needs and promote patient-centered outcomes in plastic surgery. *(Plast Reconstr Surg Glob Open 2024; 12:e6156; doi: 10.1097/GOX.0000000000006156; Published online 13 September 2024.)*

INTRODUCTION

Patient satisfaction serves as a crucial indicator of healthcare quality and plays a vital role in evaluating healthcare services, including plastic surgery.[1,2] The growing demand for plastic surgery in recent years has underscored the importance of assessing patient satisfaction for both patients and surgeons.[3] This has prompted the development of a myriad of questionnaires designed to evaluate different aspects of patient satisfaction within the realm of plastic surgery. However, the vast array of available tools, topics, and surgical types poses a challenge in selecting the most suitable instrument for specific contexts.

Conducting a systematic review of the literature on questionnaires that assess patient satisfaction in plastic surgery is essential to pinpoint the strengths and limitations of existing tools, ultimately providing guidance for their use in clinical practice and research. Earlier reviews predominantly concentrated on the psychometric properties of these questionnaires, with limited focus on their content or suitability for surgical types.[4,5] The current systematic review seeks to bridge this gap by offering an in-depth analysis of the available questionnaires, considering their topics, tools, and surgical types, as well as their applicability to various facets of patient satisfaction.

Grasping the subtleties of these questionnaires is crucial for accurately gauging patient satisfaction, which can

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lead to improved plastic surgery outcomes. Moreover, this review will aid in the development of new instruments that cater more effectively to the needs of both patients and surgeons. By consolidating existing knowledge on patient satisfaction questionnaires in plastic surgery, this systematic review aspires to enhance the overall quality of care and foster patient-centered outcomes within the field.[6]

METHODS

Literature Search Strategy

A comprehensive literature search was conducted using the electronic databases Google Scholar, PubMed/MEDLINE, Ovid, Embase, and Web of Science to identify studies relevant to patient satisfaction questionnaires in plastic surgery. The search was conducted from inception to September 2022. The following search terms were used: ("patient satisfaction" OR "patient-reported outcome measures" OR "PROMs" OR "quality of life" OR "QOL") AND ("plastic surgery" OR "cosmetic surgery" OR "reconstructive surgery" OR "aesthetic surgery" OR "breast surgery" OR "facial surgery" OR "body contouring" OR "abdominoplasty" OR "liposuction" OR "rhinoplasty" OR "mastectomy" OR "mastopexy" OR "breast reduction" OR "breast augmentation" OR "breast reconstruction" OR "nipple-areola complex reconstruction" OR "gender-affirming surgery" OR "chest reconstruction" OR "lipectomy" OR "lipolysis" OR "tummy tuck" OR "lipoplasty" OR "body-lift").

Study Selection Criteria

Studies were included in this systematic review if they met the following criteria: (1) original research articles, (2) written in English, (3) published between inception and December 2022, (4) focused on patient satisfaction questionnaires in plastic surgery, and (5) reported primary data related to patient-reported outcomes.

Data Extraction

Two reviewers independently reviewed the articles to determine eligibility for inclusion in the systematic review. Disagreements were resolved by consensus. The following data were extracted from each study: study design, patient characteristics, type of plastic surgery procedure, questionnaire type, outcome categories and combinations, measurement tools used, and reported results.

Statistical Analysis

Descriptive statistics were used to summarize the extracted data. Frequencies and percentages were calculated for each category and subcategory in the extracted data.

Included Studies

The search yielded a total of 1639 potentially relevant studies. After screening the titles and abstracts, 211 full-text articles were assessed for eligibility. Of these, 105 studies met the inclusion criteria and were included in the systematic review. Figure 1 presents the flowchart and reasons for exclusion through each screening phase.

Takeaways

Question: This study analyzes patient satisfaction questionnaires in plastic surgery to identify strengths and weaknesses, aiming to enhance outcomes and quality of care.

Findings: Our systematic review included 97 studies. General/overall satisfaction was the most common topic addressed (65.63%), followed by cosmetic outcomes (29.1%). Breast reconstruction was the most common procedure (37.8%). Most studies used a combination of generic and procedure-specific questionnaires (49.1%). BREAST-Q and nonspecific tools were predominant (34.5% each).

Meaning: This analysis highlights the importance of validated tools and a holistic approach in improving patient satisfaction in plastic surgery, leading to better outcomes and enhanced care quality.

Table Presentations

The extracted data are presented in tables. Table 1 summarizes the frequency of topics addressed in patient satisfaction questionnaires in plastic surgery. Table 2 presents the frequency of outcome categories and combinations in patient satisfaction questionnaires in plastic surgery. Table 3 summarizes the frequency and percentage of types of plastic surgery procedures in patient satisfaction studies. Table 4 presents the frequency and percentage of questionnaire types used in patient satisfaction studies. Supplemental Digital Content 3 summarizes the frequency and percentage of measurement tools used in patient satisfaction studies.

Quality Assessment

To guarantee the authenticity and dependability of the evidence compiled, we conducted a thorough quality evaluation of all the included studies. Applying the Methodological Index for Non-Randomized Studies (MINORS) criteria for nonrandomized, noncomparative studies and taking extra variables into account for comparative studies allowed us to carefully assess every study in a variety of areas vital for study validity and credibility.

The MINORS instrument was used to evaluate eight critical domains for the 83 nonrandomized, noncomparative studies that were part of our analysis: the clarity of aims, the inclusion of consecutive patients, the prospective nature of data collection, the suitability of the follow-up period, the rate of loss to follow-up, the appropriateness of study endpoints, and the impartial assessment of these endpoints. The degree to which each study satisfied these requirements determined the score, which ranged from a low of 4 to a high of 14 out of the maximum 16 points. The included studies' strengths and areas for development were highlighted by this ranking system, which also frequently pointed out flaws in the computation of sample size and prospective data collecting.

For comparative studies, which were 22 in number, the comparative quality assessment was used, which involves 12 criteria to take into account the added complexities inherent in comparative studies. The criteria included

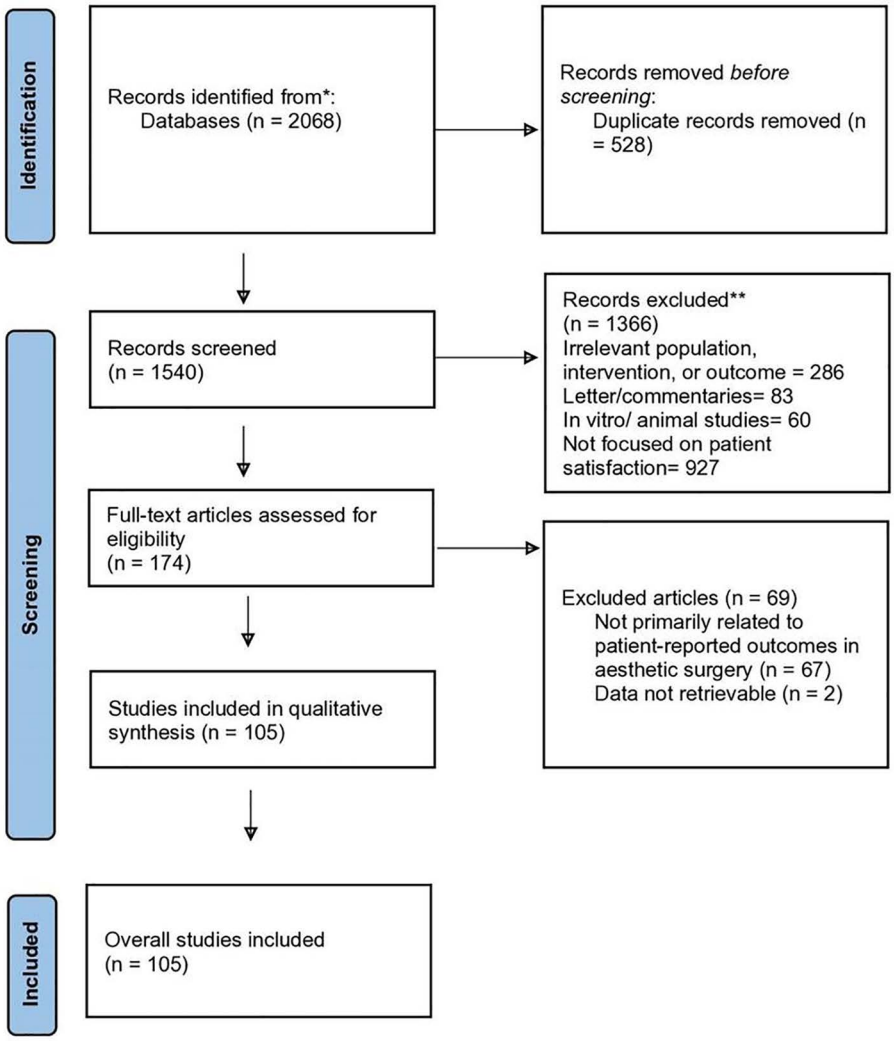

Fig. 1. PRISMA flowchart.

Table 1. Frequency of Topics Addressed in Patient Satisfaction Questionnaires in Plastic Surgery

Topic	Frequency	Percentage
General/overall satisfaction alone	72	68.6%
General/overall satisfaction in combination	32	30.04%
Satisfaction with relationships/social life	16	15.2%
Satisfaction with sex-life/libido	18	17.14%
Satisfaction with rate of recovery	10	9.5%
Satisfaction with educational/support resources	11	10.47%

the adequacy of control groups, the contemporaneity of groups, baseline equivalence, and the comprehensiveness of statistical analyses, with a minimum score of 8 and a maximum of 20 out of the potential 24 points. This careful assessment made it possible to analyze the methodological integrity of the comparison studies and the possible implications of their findings for clinical practice. Further details of each study and their scores can be found in Supplemental Digital Content 1 and 2. (**See table, Supplemental Digital Content 1,** which displays the quality assessment for nonrandomized noncomparative studies using the MINORS instrument, **http://links.lww.com/PRSGO/D492**.) (**See table, Supplemental Digital Content 2,** which displays the quality assessment for nonrandomized comparative studies using the MINORS instrument, **http://links.lww.com/PRSGO/D493**.)

RESULTS

A total of 105 studies were reviewed in this systematic analysis to investigate patient satisfaction outcomes in the different fields of aesthetic plastic surgery.[7–111] The results

Table 2. Frequency of Outcome Categories and Combinations in Patient Satisfaction Questionnaires in Plastic Surgery

Outcome Categories/Combinations	Frequency	Percentage
Cosmetic (aesthetic) outcomes	36	34.3%
Functional outcomes	1	1.0%
Psychological outcomes	1	1.0%
Provider (surgeon)-related issues	1	1.0%
Cosmetic & functional outcomes	9	8.6%
Cosmetic & psychological outcomes	16	15.2%
Cosmetic & provider (surgeon)-related issues	2	1.9%
Functional & psychological outcomes	2	1.9%
Cosmetic, functional & provider (surgeon)-related issues	1	1.0%
Cosmetic, psychological & provider (surgeon)-related issues	7	6.6%
Cosmetic, functional & psychological outcomes	18	17.1%
Cosmetic, functional, psychological outcomes & provider (surgeon)-related issues	11	10.4%

Table 3. Frequency and Percentage of Types of Plastic Surgery Procedures in Patient Satisfaction Studies

Type of Procedure	Frequency	Percentage
Breast reconstruction	35	33.3%
Breast reduction	15	14.3%
Breast augmentation	6	5.7%
Cosmetic facial surgery	14	13.3%
Abdominoplasty	2	1.9%
Other reconstructive operations	6	5.7%
Body contouring	7	6.6%
Breast augmentation, reconstruction, and reduction	3	2.8%
Breast augmentation and body contouring	2	1.9%
Breast reconstruction and augmentation	1	1.0%
Breast reconstruction and reduction	1	1.0%
Breast reconstruction, augmentation, reduction, body contouring, and cosmetic facial surgery	1	1.0%
Body contouring and others	2	1.9%
Breast reconstruction and other reconstructive operations	2	1.9%
Others	7	6.7%
Breast reconstruction, cosmetic facial surgery, and body contouring	1	1.0%

Table 4. Frequency and Percentage of Questionnaire Types Used in Patient Satisfaction Studies

Questionnaire Type	Frequency	Percentage
Ad hoc questionnaires only	21	20.0%
Combination of generic AND well-developed, procedure-specific questionnaire	48	45.71%
Well-developed, procedure-specific questionnaire only	23	21.90%
Generic questionnaire only	7	6.7%
Combination of ad hoc questionnaires AND well-developed, procedure-specific questionnaire	4	3.80%
Combination of ad hoc questionnaires AND generic questionnaires	1	1.0%
Interviewed the patients without structured questionnaire	1	1.9%

are organized into five tables, each highlighting specific aspects of the patient satisfaction questionnaires and the context in which they were used.

General/Overall Satisfaction and Other Topics Addressed

In the analyzed studies, general/overall satisfaction was the most common topic, addressed in 104 out of 105 questionnaires (99.04%). General/overall satisfaction alone was reported in 72 out of 105 questionnaires (68.6%), whereas it was reported in combination with other topics in 32 out of 105 questionnaires (30.04%). Other topics included satisfaction with sex-life/libido (17.14%), satisfaction with relationships/social life (15.2%), satisfaction with educational/support resources (10.47%), and satisfaction with rate of recovery (9.5%). The details of the frequency and percentage of these topics can be found in Table 1.

Outcome Categories and Combinations

Cosmetic (aesthetic) outcomes were the most frequently assessed category, appearing in 36 questionnaires (34.3%). Other outcome categories included functional outcomes (1.0%), psychological outcomes (1.0%), and provider (surgeon)-related issues (1.0%). Several combinations of outcome categories were also reported, with cosmetic, functional, and psychological outcomes being the most common (17.1%). Table 2 summarizes the frequency and percentage of outcome categories and combinations in patient satisfaction questionnaires.

Types of Plastic Surgery Procedures

Breast reconstruction was the most common procedure, appearing in 35 studies (33.3%). Other procedures included breast reduction (14.3%), breast augmentation (5.7%), cosmetic facial surgery (13.3%), and various others. The frequency and percentage of the types of plastic surgery procedures featured in the patient satisfaction studies are presented in Supplemental Digital Content 3. (**See table, Supplemental Digital Content 3,** which displays frequency and percentage of measurement tools used in patient satisfaction studies, **http://links.lww.com/PRSGO/D494**.)

Questionnaire Types Used in Patient Satisfaction Studies

The majority of the studies (45.71%) used a combination of generic and well-developed, procedure-specific questionnaires. Other questionnaire types included ad hoc questionnaires only (20.0%), well-developed procedure-specific questionnaires only (21.90), and generic questionnaires only (6.7%). Some studies also combined ad hoc questionnaires with other types of questionnaires (4.80%) or interviewed the patients without using a structured questionnaire (1.9%). Supplemental Digital Content 3 provides the frequency and percentage of the different questionnaire types used in the studies. (**See table, Supplemental Digital Content 3, http://links.lww.com/PRSGO/D494.**)

Measurement Tools Used in Patient Satisfaction Studies

The measurement tools used in the studies varied, with the most frequently used tools being BREAST-Q and self-developed questionnaires, each accounting for 28.57% and 27.61% of the studies, respectively. Other tools included FACE-Q (6.67%), Michigan Breast Reconstruction Outcome Survey (5.71%), European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Breast-Cancer Specific Module (2.85%), Short Form 36 (2.85%), Rosenberg Self-Esteem Scale (1.9%), and several others. The frequency and percentage of the measurement tools used in patient satisfaction studies are detailed in Supplemental Digital Content 3. (**See table, Supplemental Digital Content 3, http://links.lww.com/PRSGO/D494**.)

DISCUSSION

This systematic review examined 105 studies to explore patient satisfaction outcomes in aesthetic plastic surgery, focusing on the questionnaires used and the context in which they were applied. A wide range of topics, outcome categories, and surgical types were addressed, reflecting the diversity of aesthetic surgery procedures and the various aspects of patient satisfaction that are pertinent to the field.[1]

General/overall satisfaction emerged as the most common topic in the studies, aligning with previous research that highlights its significance as a critical indicator of healthcare quality.[2,3] However, the review also identified other important satisfaction topics, such as relationships/social life, sex-life/libido, rate of recovery, and educational/support resources. These findings emphasize the need to consider a holistic approach to patient satisfaction that encompasses various aspects of patients' lives, as well as the importance of developing questionnaires that address these diverse topics.[4,5]

The review's identification that cosmetic (aesthetic) outcomes were the most frequently assessed outcome category is consistent with the primary goal of many plastic surgery procedures to enhance patients' appearance.[6] However, the fact that the examined questionnaires included functional and psychological outcomes indicates that the importance of these dimensions in determining patient satisfaction is becoming increasingly acknowledged. This emphasizes for physicians the significance of using a multifaceted assessment strategy in preoperative consultations and postoperative assessments to guarantee precise management of patients' expectations and comprehensive attention to recovery and satisfaction.[112,113]

Breast reconstruction emerged as the most common procedure in the reviewed studies, demonstrating the profound effects of cosmetic surgery on individuals' psychological well-being and quality of life.[114,115] The variety of other procedures, such as breast reduction, breast augmentation, and cosmetic facial surgery, highlights the diverse range of plastic surgery procedures that can influence patient satisfaction. These findings imply that to properly assess and manage expectations, physicians should have thorough preoperative discussions with patients, especially those undergoing life-altering procedures like breast reconstruction. The variety of techniques examined further highlights the significance of customized satisfaction questionnaires, which help clinicians pinpoint certain areas of patient care and outcomes that have the potential to be improved.

The use of both generic and well-developed, procedure-specific questionnaires was the most common approach in the studies. This combination allows for a comprehensive assessment of patient satisfaction, capturing both general aspects of care and those specific to procedures.[116] However, the use of ad hoc questionnaires or unstructured interviews in some studies raises concerns about the validity and reliability of the findings.[117] Prioritizing well-established and validated instruments can improve the caliber of patient satisfaction research and its practicality in clinical settings for researchers and clinicians.[118]

The review identified a variety of measurement tools, with BREAST-Q being the most frequently used. This underscores the tool's validity and reliability for assessing patient satisfaction in breast surgery.[119,120] However, addressing the absence of standardized measurement tools in other studies suggests a need for further development and validation of instruments for various surgical types and satisfaction topics, especially those that were self-developed, as the standardization of these instruments will help guide future studies to report critical data on these topics and increase the accuracy of satisfaction assessments.[121]

This systematic review highlights the diverse range of questionnaires, topics, and surgical types used to assess patient satisfaction in plastic surgery. The findings underscore the need for a comprehensive and holistic approach to evaluating patient satisfaction, incorporating a variety of outcome categories and addressing different aspects of patients' lives. To enhance the quality of patient satisfaction

research and ultimately improve plastic surgery outcomes, it is crucial to develop and promote the use of well-established and validated questionnaires tailored to the unique needs of plastic surgery patients and procedures.

The findings of this systematic review yield several recommendations for future research and clinical practice in the field of plastic surgery. First, it is essential to develop and validate questionnaires addressing a diverse range of topics and outcome categories, such as functional, psychological, and provider-related issues, in addition to cosmetic outcomes. This comprehensive approach will capture the multifaceted nature of plastic surgery outcomes and ensure a more accurate assessment of patient satisfaction. Second, researchers and clinicians should be encouraged to use well-established and validated questionnaires to enhance the quality and comparability of patient satisfaction data across studies.

Moreover, there is a need to prioritize the development of procedure-specific questionnaires to assess patient satisfaction more effectively in various plastic surgery procedures. This focus will allow for a more precise evaluation of patient satisfaction, helping to identify areas for improvement in specific surgical contexts. It is also crucial to promote collaboration among researchers, clinicians, and patient advocacy groups to pinpoint additional topics of importance for patient satisfaction in plastic surgery and integrate these topics into future questionnaires and assessment tools. Finally, implementing training and education programs for plastic surgeons and healthcare professionals will emphasize the importance of patient satisfaction and the appropriate use of patient-reported outcome measures in clinical practice.

Although this systematic review offers valuable insights into patient satisfaction questionnaires in plastic surgery, it is important to acknowledge certain limitations. The heterogeneity of the included studies, particularly with respect to study design, patient populations, and surgical types, may have impacted the comparability and generalizability of the findings. Furthermore, the quality assessment of the included studies has shown that scores varied greatly across studies, this is likely owing to the absence of a standardized tool for evaluating the quality of patient-reported outcome studies. This limitation should be considered when interpreting the results of the scores and this review, especially when applying the recommendations to clinical practice.

Additionally, although a comprehensive literature search was conducted, it is possible that some relevant studies may have been missed due to publication bias, database restrictions, or the use of different search terms. The review was also limited to studies published in English, which may have excluded important findings from non-English-language publications. Finally, as the knowledge in the field evolves, new questionnaires and assessment tools may emerge, necessitating regular updates to this systematic review to ensure its continued relevance and accuracy.

CONCLUSIONS

This systematic review offers a comprehensive analysis of patient satisfaction questionnaires in various aesthetic surgery disciplines, emphasizing the importance of a holistic approach and well-established, validated tools. The findings contribute to improving aesthetic plastic surgery outcomes and enhancing the quality of care by identifying areas for improvement and fostering collaboration among researchers, clinicians, and patient advocacy groups. Future research should continue refining assessment tools to better address patients' needs and promote patient-centered outcomes in plastic surgery.

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DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

REFERENCES

1. Bleustein CB, Rothschild DB, Valen A, et al. Wait times, patient satisfaction scores, and the perception of care. *Am J Manag Care*. 2014;20:393–400.
2. Sofaer S, Firminger K. Patient perceptions of the quality of health services. *Annu Rev Public Health*. 2005;26:513–559.
3. Alderman AK, Bauer J, Fardo D, et al. Understanding the effect of breast augmentation on quality of life: prospective analysis using the BREAST-Q. *Plast Reconstr Surg*. 2014;133:787–795.
4. Mira JJ, Tomás O, Virtudes-Pérez M, et al. Predictors of patient satisfaction in surgery. *Surgery*. 2009;145:536–541.
5. Cano SJ, Klassen AF, Scott AM, et al. The BREAST-Q: further validation in independent clinical samples. *Plast Reconstr Surg*. 2012;129:293–302.
6. Pusic AL, Klassen AF, Scott AM, et al. Development and psychometric evaluation of the FACE-Q satisfaction with appearance scale: a new patient-reported outcome instrument for facial aesthetics patients. *Clin Plast Surg*. 2013;40:249–260.
7. Jabor MA, Shayani P, Collins DR, et al. Nipple–areola reconstruction: satisfaction and clinical determinants. *Plast Reconstr Surg*. 2002;110:457–63; discussion 464.
8. Zhong T, McCarthy C, Min S, et al. Patient satisfaction and health-related quality of life after autologous tissue breast reconstruction: a prospective analysis of early postoperative outcomes. *Cancer*. 2012;118:1701–1709.
9. Klassen AF, Cano SJ, Schwitzer JA, et al. FACE-Q scales for health-related quality of life, early life impact, satisfaction with outcomes, and decision to have treatment: development and validation. *Plast Reconstr Surg*. 2015;135:375–386.
10. Cogliandro A, Barone M, Cassotta G, et al. Patient satisfaction and clinical outcomes following 414 breast reductions: application of BREAST-Q. *Aesthetic Plast Surg*. 2017;41:245–249.
11. Shaikh-Naidu N, Preminger BA, Rogers K, et al. Determinants of aesthetic satisfaction following TRAM and implant breast reconstruction. *Ann Plast Surg*. 2004;52:465–470; discussion 470.
12. Egan KG, Cullom M, Nazir N, et al. Patient satisfaction increases with nipple reconstruction following autologous breast reconstruction. *Plast Reconstr Surg*. 2021;148:177e–184e.
13. Liliav B, Loeb J, Hassid VJ, et al. Single-stage nipple-areolar complex reconstruction technique, outcomes, and patient satisfaction. *Ann Plast Surg*. 2014;73:492–497.

14. Struckmann V, Peek A, Wingenbach O, et al. The free fasciocutaneous infragluteal (FCI) flap: Outcome and patient satisfaction after 142 breast reconstructions. *J Plast Reconstr Aesthet Surg*. 2016;69:461–469.
15. Gahm J, Jurell G, Edsander-Nord A, et al. Patient satisfaction with aesthetic outcome after bilateral prophylactic mastectomy and immediate reconstruction with implants. *J Plast Reconstr Aesthet Surg*. 2010;63:332–338.
16. Momeni A, Padron NT, Föhn M, et al. Safety, complications, and satisfaction of patients undergoing submuscular breast augmentation via the inframammary and endoscopic transaxillary approach. *Aesthetic Plast Surg*. 2005;29:558–564.
17. Adham M, Sawan K, Lovelace C, et al. Patient satisfaction with vertical reduction mammaplasty: part I. *Aesthet Surg J*. 2010;30:814–820.
18. East C, Badia L, Marsh D, et al. Measuring patient-reported outcomes in rhinoplasty using the FACE-Q: a single site study. *Facial Plast Surg*. 2017;33:461–469.
19. Mundy LR, Homa K, Klassen AF, et al. Understanding the health burden of macromastia: normative data for the BREAST-Q reduction module. *Plast Reconstr Surg*. 2017;139:846e–853e.
20. Poudrier G, Nolan IT, Cook TE, et al. Assessing quality of life and patient-reported satisfaction with masculinizing top surgery: a mixed-methods descriptive survey study. *Plast Reconstr Surg*. 2019;143:272–279.
21. Hammond DC, Chandler AR, Baca ME, et al. Abdominoplasty in the overweight and obese population: outcomes and patient satisfaction. *Plast Reconstr Surg*. 2019;144:847–853.
22. Lee BT, A Adesiyun T, Colakoglu S, et al. Postmastectomy radiation therapy and breast reconstruction: an analysis of complications and patient satisfaction. *Ann Plast Surg*. 2010;64:679–683.
23. Boczar D, Huayllani MT, Forte AJ, et al. Microsurgical breast reconstruction in the obese patient using abdominal flaps: complication profile and patient satisfaction. *Ann Plast Surg*. 2020;84:S361–S363.
24. Yueh JH, Slavin SA, Adesiyun T, et al. Patient satisfaction in postmastectomy breast reconstruction: a comparative evaluation of DIEP, TRAM, latissimus flap, and implant techniques. *Plast Reconstr Surg*. 2010;125:1585–1595.
25. Pusic AL, Klassen AF, Scott AM, et al. Development of a new patient-reported outcome measure for breast surgery: the BREAST-Q. *Plast Reconstr Surg*. 2009;124:345–353.
26. Howard MA, Sisco M, Yao K, et al. Patient satisfaction with nipple-sparing mastectomy: a prospective study of patient reported outcomes using the BREAST-Q. *J Surg Oncol*. 2016;114:416–422.
27. Klassen AF, Cano SJ, Scott A, et al. Measuring patient-reported outcomes in facial aesthetic patients: development of the FACE-Q. *Facial Plast Surg*. 2010;26:303–309.
28. Makki AS, Ghanem AA. Long-term results and patient satisfaction with reduction mammaplasty. *Ann Plast Surg*. 1998;41:370–377.
29. Pontes GH, Mendes Carneiro Filho FS, Vargas Guerrero LA, et al. Patient satisfaction following inverted-T and short-scar mammaplasty as measured by the breast evaluation questionnaire 55. *Aesthet Surg J*. 2021;41:NP300–NP314.
30. Gusenoff JA, Coon D, Rubin JP. Pseudogynecomastia after massive weight loss: detectability of technique, patient satisfaction, and classification. *Plast Reconstr Surg*. 2008;122:1301–1311.
31. Cogliandro A, Salzillo R, Barone M, et al. Direct-to-implant breast reconstruction after unilateral and bilateral mastectomy: cross-sectional study of patient satisfaction and quality of life with BREAST-Q. *Aesthetic Plast Surg*. 2023;47:43–49.
32. Michon A. A prospective study determining patient satisfaction with combined cryolipolysis and shockwave therapy treatment for noninvasive body contouring. *Aesthetic Plast Surg*. 2021;45:2317–2325.
33. Tenna S, Cagli B, Brunetti B, et al. Management of tuberous breast deformities: review of long-term outcomes and patient satisfaction with BREAST-Q. *Aesthetic Plast Surg*. 2017;41:1249–1258.
34. Klassen AF, Cano SJ, East CA, et al. Development and psychometric evaluation of the FACE-Q scales for patients undergoing rhinoplasty. *JAMA Facial Plast Surg*. 2016;18:27–35.
35. Atisha DM, Rushing CN, Samsa GP, et al. A national snapshot of satisfaction with breast cancer procedures. *Ann Surg Oncol*. 2015;22:361–369.
36. Ramon Y, Sharony Z, Moscona RA, et al. Evaluation and comparison of aesthetic results and patient satisfaction with bilateral breast reduction using the inferior pedicle and McKissock's vertical bipedicle dermal flap techniques. *Plast Reconstr Surg*. 2000;106:289–295; discussion 295.
37. Kim J-Y, Cha M-J, Kwon S-S, et al. Factors that contribute to disagreement in satisfaction between surgeons and patients after corrective septorhinoplasty. *Am J Rhinol Allergy*. 2017;31:416–419.
38. Kamburoğlu HO, Ozgür F. Postoperative satisfaction and the patient's body image, life satisfaction, and self-esteem: a retrospective study comparing adolescent girls and boys after cosmetic surgery. *Aesthetic Plast Surg*. 2007;31:739–745.
39. Handel N, Cordray T, Gutierrez J, et al. A long-term study of outcomes, complications, and patient satisfaction with breast implants. *Plast Reconstr Surg*. 2006;117:757–67; discussion 768.
40. Colakoglu S, Khansa I, Curtis MS, et al. Impact of complications on patient satisfaction in breast reconstruction. *Plast Reconstr Surg*. 2011;127:1428–1436.
41. Yueh JH, Houlihan MJ, Slavin SA, et al. Nipple-sparing mastectomy: evaluation of patient satisfaction, aesthetic results, and sensation. *Ann Plast Surg*. 2009;62:586–590.
42. Menéndez-Cardo A, Guillen-Grima F, Hontanilla B. Analysis of satisfaction after breast reduction comparing vertical scar versus inverted T-shaped technique using the Breast-Q questionnaire. Is patient satisfaction influenced by the amount of tissue removed? *J Plast Surg Hand Surg*. 2017;51:414–419.
43. Kooiman L, Torensma B, Stevens H, et al. Single center and surgeon's long-term (15-19 Years) patient satisfaction and revision rate of round textured eurosilicone breast implants. *Aesthet Surg J*. 2022;42:NP282–NP292.
44. Manrique OJ, Kuruoglu D, Yan M, et al. Immediate breast reconstruction using the Goldilocks procedure: a balance between more surgery and patient satisfaction. *Plast Reconstr Surg*. 2022;149:801–809.
45. Le NK, Persing S, Dinis J, et al. A comparison of BREAST-Q scores between prepectoral and subpectoral direct-to-implant breast reconstruction. *Plast Reconstr Surg*. 2021;148:708e–714e.
46. Cogliandro A, Barone M, Tenna S, et al. The role of lipofilling after breast reconstruction: evaluation of outcomes and patient satisfaction with BREAST-Q. *Aesthetic Plast Surg*. 2017;41:1325–1331.
47. Ridha H, Colville RJI, Vesely MJJ. How happy are patients with their gynaecomastia reduction surgery? *J Plast Reconstr Aesthet Surg*. 2009;62:1473–1478.
48. Temple CLF, Cook EF, Ross DC, et al. Development of a breast reconstruction satisfaction questionnaire (BRECON): dimensionality and clinical importance of breast symptoms, donor site issues, patient expectations, and relationships. *J Surg Oncol*. 2010;101:209–216.
49. Shammas RL, Sergesketter AR, Taskindoust M, et al. An assessment of patient satisfaction and decisional regret in patients undergoing staged free-flap breast reconstruction. *Ann Plast Surg*. 2021;86:S538–S544.
50. Juhl AA, Christensen S, Zachariae R, et al. Unilateral breast reconstruction after mastectomy—patient satisfaction, aesthetic outcome and quality of life. *Acta Oncol*. 2017;56:225–231.

51. Blok YL, Verduijn PS, Corion LUM, et al. An analysis of complication rates and the influence on patient satisfaction and cosmetic outcomes following oncoplastic breast surgery. *J Plast Reconstr Aesthet Surg.* 2022;75:4152–4159.
52. Roth RS, Lowery JC, Davis J, et al. Psychological factors predict patient satisfaction with postmastectomy breast reconstruction. *Plast Reconstr Surg.* 2007;119:2008–2015.
53. Sarwer DB, Infield AL, Baker JL, et al. Two-year results of a prospective, multi-site investigation of patient satisfaction and psychosocial status following cosmetic surgery. *Aesthet Surg J.* 2008;28:245–250.
54. Visser NJ, Damen THC, Timman R, et al. Surgical results, aesthetic outcome, and patient satisfaction after microsurgical autologous breast reconstruction following failed implant reconstruction. *Plast Reconstr Surg.* 2010;126:26–36.
55. Oliver JD, Menapace DC, Staab JP, et al. How patient decision-making characteristics affect satisfaction in facial plastic surgery: a prospective pilot study. *Plast Reconstr Surg.* 2019;144:1487–1497.
56. Macadam SA, Ho AL, Cook EF, et al. Patient satisfaction and health-related quality of life following breast reconstruction: patient-reported outcomes among saline and silicone implant recipients. *Plast Reconstr Surg.* 2010;125:761–771.
57. Coriddi M, Nadeau M, Taghizadeh M, et al. Analysis of satisfaction and well-being following breast reduction using a validated survey instrument: the BREAST-Q. *Plast Reconstr Surg.* 2013;132:285–290.
58. Gibstein AR, Chen K, Nakfoor B, et al. Facelift surgery turns back the clock: artificial intelligence and patient satisfaction quantitate value of procedure type and specific techniques. *Aesthet Surg J.* 2021;41:987–999.
59. Cohen MB, Insalaco LF, Tonn CR, et al. Patient satisfaction after aesthetic chondrolaryngoplasty. *Plast Reconstr Surg Glob Open.* 2018;6:e1877.
60. Xu B, Mu D, Yang Y, et al. Endoscopic axillary approach improves patient satisfaction of gynecomastia subcutaneous mastectomy: a cross-sectional study using the BODY-Q chest module. *Aesthetic Plast Surg.* 2020;44:2011–2020.
61. Hessler JL, Moyer CA, Kim JC, et al. Predictors of satisfaction with facial plastic surgery: results of a prospective study. *Arch Facial Plast Surg.* 2010;12:192–196.
62. Asimakopoulou E, Zavrides H, Askitis T. "Plastic surgery on body image, body satisfaction and self-esteem." "The impact of aesthetic plastic surgery on body image, body satisfaction and self-esteem." *Acta Chir Plast.* 2020;61:3–9.
63. Younis I, Gault D, Sabbagh W, et al. Patient satisfaction and aesthetic outcomes after ear reconstruction with a Branemark-type, bone-anchored, ear prosthesis: a 16 year review. *J Plast Reconstr Aesthet Surg.* 2010;63:1650–1655.
64. Schwitzer JA, Sher SR, Fan KL, et al. Assessing patient-reported satisfaction with appearance and quality of life following rhinoplasty using the FACE-Q appraisal scales. *Plast Reconstr Surg.* 2015;135:830e–837e.
65. Jørgensen MG, Albertsdottir E, Dalaei F, et al. Age and body mass index affect patient satisfaction following reduction mammoplasty: a multicenter study using BREAST-Q. *Aesthet Surg J.* 2021;41:NP336–NP345.
66. Morselli PG, Micai A, Boriani F. Eumorphic plastic surgery: expectation versus satisfaction in body dysmorphic disorder. *Aesthetic Plast Surg.* 2016;40:592–601.
67. Damen THC, Timman R, Kunst EH, et al. High satisfaction rates in women after DIEP flap breast reconstruction. *J Plast Reconstr Aesthet Surg.* 2010;63:93–100.
68. Mo YW, Jung GY. Surgical results and patient satisfaction after a new surgical technique for Asian medial epicanthoplasty: a modified skin redraping method using a horizontal point incision and staged 'Y-shaped' dog ear correction. *Ann Plast Surg.* 2021;87:389–395.
69. Leuzzi S, Stivala A, Shaff JB, et al. Latissimus dorsi breast reconstruction with or without implants: a comparison between outcome and patient satisfaction. *J Plast Reconstr Aesthet Surg.* 2019;72:381–393.
70. Lancien U, Leduc A, Tilliet Le Dentu H, et al. Evaluation of satisfaction and well being with Breast-Q of aesthetic breast augmentations by implants using the 'dual plane' technique: a series of 191 cases. *Ann Chir Plast Esthet.* 2021;66:314–319.
71. Ozbey R, Cansel N, Firat C, et al. Factors affecting patient satisfaction in breast reduction surgeries: a retrospective clinical study. *Aesthetic Plast Surg.* 2021;45:2658–2664.
72. Isern AE, Tengrup I, Loman N, et al. Aesthetic outcome, patient satisfaction, and health-related quality of life in women at high risk undergoing prophylactic mastectomy and immediate breast reconstruction. *J Plast Reconstr Aesthet Surg.* 2008;61:1177–1187.
73. Brandel MG, D'Souza GF, Reid CM, et al. Analysis of a resident aesthetic clinic: process for rhinoplasty, resident experience, and patient satisfaction. *Ann Plast Surg.* 2017;78:S175–S179.
74. Menderes A, Mola F, Vayvada H, et al. Evaluation of results from reduction mammaplasty: relief of symptoms and patient satisfaction. *Aesthetic Plast Surg.* 2005;29:83–87.
75. Cooper JM, Paige KT, Beshlian KM, et al. Abdominal panniculectomies: high patient satisfaction despite significant complication rates. *Ann Plast Surg.* 2008;61:188–196.
76. Alderman AK, Wilkins EG, Lowery JC, et al. Determinants of patient satisfaction in postmastectomy breast reconstruction. *Plast Reconstr Surg.* 2000;106:769–776.
77. Bragg TWH, Jose RM, Srivastava S. Patient satisfaction following abdominoplasty: an NHS experience. *J Plast Reconstr Aesthet Surg.* 2007;60:75–78.
78. Ng SK, Hare RM, Kuang RJ, et al. Breast reconstruction post mastectomy: patient satisfaction and decision making. *Ann Plast Surg.* 2016;76:640–644.
79. Klassen AF, Pusic AL, Scott A, et al. Satisfaction and quality of life in women who undergo breast surgery: a qualitative study. *BMC Womens Health.* 2009;9:11.
80. McCarthy CM, Cano SJ, Klassen AF, et al. The magnitude of effect of cosmetic breast augmentation on patient satisfaction and health-related quality of life. *Plast Reconstr Surg.* 2012;130:218–223.
81. Bazzarelli A, Baker L, Petrcich W, et al. Patient satisfaction following level II oncoplastic breast surgery: a comparison with mastectomy utililizing the Breast-Q questionnaire will be published in surgical oncology. *Surg Oncol.* 2020;35:556–559.
82. Papadopulos NA, Kolassa MJ, Henrich G, et al. Quality of life following aesthetic liposuction: a prospective outcome study. *J Plast Reconstr Aesthet Surg.* 2019;72:1363–1372.
83. Song P, Patel NB, Gunther S, et al. Body image & quality of life: changes with gastric bypass and body contouring. *Ann Plast Surg.* 2016;76:S216–S221.
84. Smeets R, Noah EM, Seiferth NY, et al. Bioelectric impedance analysis and quality of life after body-contouring procedures in plastic surgery. *J Plast Reconstr Aesthet Surg.* 2009;62:940–945.
85. Danilla S, Cuevas P, Aedo S, et al. Introducing the Body-QoL: a new patient-reported outcome instrument for measuring body satisfaction-related quality of life in aesthetic and post-bariatric body contouring patients. *Aesthetic Plast Surg.* 2016;40:19–29.
86. Bolton MA, Pruzinsky T, Cash TF, et al. Measuring outcomes in plastic surgery: body image and quality of life in abdominoplasty patients. *Plast Reconstr Surg.* 2003;112:619–25; discussion 626.
87. Tremp M, Delko T, Kraljević M, et al. Outcome in body-contouring surgery after massive weight loss: a prospective matched single-blind study. *J Plast Reconstr Aesthet Surg.* 2015;68:1410–1416.

88. Susarla SM, Ganske I, Helliwell L, et al. Comparison of clinical outcomes and patient satisfaction in immediate single-stage versus two-stage implant-based breast reconstruction. *Plast Reconstr Surg*. 2015;135:1e–8e.
89. Lei C, Xu L, Xu F, et al. Patient satisfaction in one-stage immediate breast reconstruction after mastectomy: a multi-center comparative patient evaluation of prosthesis, LDMF, and TRAM techniques. *Medicine (Baltimore)*. 2020;99:e19991.
90. Tønseth KA, Hokland BM, Tindholdt TT, et al. Quality of life, patient satisfaction and cosmetic outcome after breast reconstruction using DIEP flap or expandable breast implant. *J Plast Reconstr Aesthet Surg*. 2008;61:1188–1194.
91. Kim H, Park S-J, Woo K-J, et al. Comparative study of nipple-areola complex position and patient satisfaction after unilateral mastectomy and immediate expander-implant reconstruction nipple-sparing mastectomy versus skin-sparing mastectomy. *Aesthetic Plast Surg*. 2019;43:313–327.
92. Innocenti A, Melita D, Affortunati M, et al. Immediate-implant-based-breast-reconstruction with two-stage expander-implant reconstruction versus one-stage-reconstruction with acellular dermal matrix: analysis of patients' satisfaction. *Acta Biomed*. 2021;92:e2021228.
93. Danilla S, Dominguez C, Cuevas P, et al. The Body-QoL: patient reported outcomes in body contouring surgery patients [corrected]. *Aesthetic Plast Surg*. 2014;38:575–583.
94. Freiberg A, Giguère D, Ross DC, et al. Are patients satisfied with results from residents performing aesthetic surgery? *Plast Reconstr Surg*. 1997;100:1824–31; discussion 1832.
95. Panchapakesan V, Klassen AF, Cano SJ, et al. Development and psychometric evaluation of the FACE-Q aging appraisal scale and patient-perceived age visual analog scale. *Aesthet Surg J*. 2013;33:1099–1109.
96. Jacono A, Chastant RP, Dibelius G. Association of patient self-esteem with perceived outcome after face-lift surgery. *JAMA Facial Plast Surg*. 2016;18:42–46.
97. Cogliandro A, Barone M, Persichetti P. Prospective analysis of satisfaction by means of BREASTQ in 156 patients who underwent breast reduction. *Plast Reconstr Surg*. 2017;140:752e–753e.
98. Skwirczyńska E, Piotrowiak M, Ostrowski M, et al. Welfare and self-assessment in patients after aesthetic and reconstructive treatments. *Int J Environ Res Public Health*. 2022;19:11238.
99. Sinno S, Salvino MJ, Vandevender D. Comparing patient satisfaction in bilateral and unilateral breast reconstruction. *Plast Surg Nurs*. 2014;34:141–145; quiz 146.
100. Cruz-Korchin N, Korchin L. Vertical versus wise pattern breast reduction: patient satisfaction, revision rates, and complications. *Plast Reconstr Surg*. 2003;112:1573–1578; discussion 1579.
101. Deschler A, Stroumza N, Pessis R, et al. Primary breast augmentation with autologous fat grafting alone: evaluation of patient satisfaction using the BREAST-Q. *Aesthet Surg J*. 2020;40:1196–1204.
102. Moscona RA, Holander L, Or D, et al. Patient satisfaction and aesthetic results after pedicled transverse rectus abdominis muscle flap for breast reconstruction. *Ann Surg Oncol*. 2006;13:1739–1746.
103. Spear SL, Pelletiere CV, Menon N. One-stage augmentation combined with mastopexy: aesthetic results and patient satisfaction. *Aesthetic Plast Surg*. 2004;28:259–267.
104. Tykkä E, Asko-Seljavaara S, Hietanen H. Patients' satisfaction with breast reconstruction and reduction mammaplasty. *Scand J Plast Reconstr Surg Hand Surg*. 2001;35:399–405.
105. Miśkiewicz H, Antoszewski B, Woźniak E, et al. Satisfaction with life and social factors in decision-making process on breast reconstruction in women after mastectomy. *Pol Przegl Chir*. 2016;88:270–276.
106. Veiga DF, Neto MS, Garcia EB, et al. Evaluations of the aesthetic results and patient satisfaction with the late pedicled TRAM flap breast reconstruction. *Ann Plast Surg*. 2002;48:515–520.
107. Koulaxouzidis G, Momeni A, Simunovic F, et al. Aesthetic surgery performed by plastic surgery residents: an analysis of safety and patient satisfaction. *Ann Plast Surg*. 2014;73:696–700.
108. Litner JA, Rotenberg BW, Dennis M, et al. Impact of cosmetic facial surgery on satisfaction with appearance and quality of life. *Arch Facial Plast Surg*. 2008;10:79–83.
109. Davis MJ, Roy MG, Monson LA. Analysis of adolescent patient satisfaction and well-being following reduction mammaplasty using the BREAST-Q survey. *J Pediatr Surg*. 2022;57:538–543.
110. Kappos EA, Temp M, Schaefer DJ, et al. Validating facial aesthetic surgery results with the FACE-Q. *Plast Reconstr Surg*. 2017;139:839–845.
111. Meal C, Mocquard C, Bergeat D, et al. Impact of lipo-body lift compared to classical lower body lift on postoperative outcome and patient's satisfaction: a retrospective study. *Aesthetic Plast Surg*. 2020;44:464–472.
112. Klassen AF, Pusic AL, Scott A, et al. Satisfaction after plastic surgery: aprospective cohort study. *Clin Plast Surg*. 2013;40:311–318.
113. Bredal IS, Skaug K, Møller B, et al. Patient reported outcomes (PROs) after total hip arthroplasty: a systematic review of the literature. *J Physiother*. 2018;64:210–218.
114. Juhl AA, Christensen S, Zachariae R, et al. Patient-reported outcomes post-bariatric body contouring surgery: a systematic review of the literature. *Obes Surg*. 2017;27:3042–3050.
115. Liu C, White M, Newell R. Psychological distress in outpatients with lymphedema. *Psychooncology*. 2013;22:675–681.
116. Kim MK, Lee W, Kang HC, et al. Patient satisfaction after total knee arthroplasty: comparison of short-term results in rheumatoid arthritis and osteoarthritis. *J Korean Med Sci*. 2008;23:54–59.
117. Cheung YB, Thumboo J, Goh C, et al. The equivalence and difference between the English and Chinese versions of two major, cancer-specific, health-related quality-of-life questionnaires. *Cancer*. 2004;101:2874–2880.
118. Beaton DE, Bombardier C, Guillemin F, et al. Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*. 2000;25:3186–3191.
119. American Society of Plastic Surgeons. 2018 plastic surgery statistics report. Arlington Heights, Ill.: American Society of Plastic Surgeons; 2018. Available at https://www.plasticsurgery.org/documents/News/Statistics/2018/plastic-surgery-statistics-full-report-2018.pdf. Accessed March 5, 2023.
120. Albornoz CR, Bach PB, Mehrara BJ, et al. A paradigm shift in U.S. breast reconstruction: increasing implant rates. *Plast Reconstr Surg*. 2013;131:15–23.
121. Cano SJ, Klassen AF, Scott AM, et al. A closer look at the BREAST-Q. *Clin Plast Surg*. 2013;40:287–296.