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Aesthetic Surgery Journal
33(1) 75–76

DOI: 10.1177/1090820X12468446
www.aestheticsurgeryjournal.com
SAGE

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In this article, Dr Kecici and coauthors have taken a previously published patient-reported outcomes (PRO) measure, translated it into Turkish, and tested its validity in a cohort of women presenting with breast hypertrophy. They have described the methodology of translation in excellent detail and performed high-quality statistical analysis of the validity of the questionnaire in a group of Turkish women with symptoms related to large breasts.

I fully agree with the authors' comments about the benefits of PRO measures, and we will undoubtedly continue to see an increase in the development, use, and validation of PRO measures across a diverse set of health conditions. Many research studies have used these measures as an important dimension of analysis. A growing number of clinicians are finding them to be useful at the bedside for individual patient evaluation and for tracking changes over time.[1] It has been difficult in the past to quantify the benefits of many interventions such as breast reduction, but with these new tools, we can begin to assign real numbers to the changes and compare the benefits of different types of interventions. This helps to emphasize one limitation of this present study. The Turkish Breast Reduction Assessed Severity Scale (BRASS) was studied on a cohort of women prior to breast reduction. It will be important to also study a cohort of women after breast reduction to ensure that the questionnaire is responsive to change, and it appears from the Discussion that the authors have such a study under way.

One of the challenges in selecting PRO measures is that, frequently, multiple options exist in the literature. The authors chose the BRASS[2] for translation, and, in the meantime, the English literature has advanced the use of the BREAST-Q,[3,4] which is a more thoroughly developed, validated, and scored instrument than the BRASS. Although the BRASS has similar dimensions to the BREAST-Q, the latter has additional dimensions that are particularly useful in the postoperative period (Table 1). The length of a questionnaire is important to consider, as one that is too long creates a burden on the patient, and many may not be willing to take the time to complete it. The BREAST-Q team has gone to great lengths to reduce the number of items in the questionnaire without losing the value of the scales. In addition, a lot of analysis has gone into the development of the scoring algorithm of the BREAST-Q, so that scale scores have meaningful relative intervals. The BREAST-Q, in turn, can be used on cohorts of women undergoing other types of breast surgery such as breast augmentation (already translated into 9 other languages),[5] breast reconstruction (already translated into 15 other languages),[5] and mastectomy, with significant

Table 1. BREAST-Q and Breast Reduction Assessed Severity Scale (BRASS) Comparison Table

BREAST-Q Scales	BRASS Scales
Physical well-being	Physical implications
Sexual well-being	Poor self-concept
Psychosocial well-being	Body pain
Satisfaction with breasts	Negative social interactions
Satisfaction with outcome	Physical appearance
Satisfaction with process of care	
Satisfaction with information	
Nipples	
Additional scales for other types of breast surgery	

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overlap in question items that allows some degree of comparison between different cohorts.

Scoring of both these questionnaires is not a straightforward mathematical summing of responses but rather involves a complex algorithm best left to a computer to calculate. Interpretation of the meaning of the scores takes some learning on the part of the clinician. Thus, having patients complete a paper version of the survey at the time of their clinic visit would have little likelihood of benefit in decision making at the time of the visit. Integrating PRO measures into the electronic medical record (EMR) so that patients complete their responses via the Internet prior to their visit or on a tablet computer in the clinic on the day of the visit allows immediate scoring and reporting to the clinical team. Completion of PRO measures at follow-up visits at different postoperative intervals allows the surgeon and patient to monitor progress. It also allows analysis of cohorts of patients and tracking of their outcomes over time while adjusting for other variables in the EMR such as body mass index, complications, duration of surgery, and surgical technique. In the United States, the Centers for Medicare & Medicaid Services has incentives in place for providers to make "meaningful use" of EMR. It is highly likely that in upcoming iterations of "meaningful use," there will be incentive payment available for integration of these questionnaires in clinical care.[6]

There remains additional work to mature these instruments so that we understand normal scale ranges in different populations, what represents a meaningful change following an intervention, and what we, as surgeons, can learn in general from these scales that will allow us to provide higher quality care to our patients. I congratulate the authors on this work and encourage them to continue to use such measures, not just in research but in everyday care to help in decision making, to track changes over time after interventions, and then to examine different populations of patients to see where we can make improvements.

Disclosures

The author declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

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