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Review

Outcome measurement in plastic surgery

Justin C.R. Wormald, Jeremy N. Rodrigues *

Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Botnar Research Centre, Nuffield Orthopaedic Centre, Windmill Road, Oxford, UK

Authored by a member of BAPRAS

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Summary Outcome measurement in plastic surgery is often surgeon-centred, and clinician-derived. Greater emphasis is being placed on patient-reported outcomes (PROs), in which the patients' perspective is measured directly from them. Numerous patient-reported outcome measures (PROMs) have been developed in a range of fields, with a number of good quality PROMs in plastic surgery. They can be deployed to support diagnosis, disease severity determination, referral pathways, treatment decision-making, post-operative care and in determining cost-effectiveness. In order to understand the impact of disease and health interventions, appropriate PROMs are a logical choice in plastic surgery, where many conditions involve detriment of function or cosmesis. PROMS can be classified as disease-specific, domain-specific, dimension-specific, population-specific and generic. Choosing the correct outcome and measure can be nebulous. The two most important considerations are: is it suitable for the intended purpose? And how valid is it? Measurement that combines being patient-centred and aligning with clinicians' understanding is achievable, and can be studied scientifically. Rational design of new PROMs and considered choice of measures is critical in clinical practice and research. There are a number of tools that can be employed to assess the quality of PROMs that are outlined in this overview. Clinicians should consider the quality of measures both in their own practice and when critically appraising evidence. This overview of outcome measurement in plastic surgery provides a tool set enabling plastic surgeons to understand, implement and analyse outcome measures across clinical and academic practice.

* Corresponding author. Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, Botnar Research Centre, Nuffield Orthopaedic Centre, University of Oxford, Windmill Road, Oxford OX3 7LD, UK.
E-mail address: j.n.rodrigues@doctors.org.uk (J.N. Rodrigues).

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Introduction

Outcome measurement is often surgeon-centred, and clinician-derived. Greater emphasis is being placed on patient-reported outcomes (PROs), in which the patients' perspective is measured directly from them.[1] Numerous patient-reported outcome measures (PROMs) have been developed in a range of fields, and across the tiers of the World Health Organisation's International Classification of Functioning, Disability and Health (ICF): capturing physical impairment, function, participation and health status or quality of life.[2–6] PROMs can be deployed across the patient care journey, to support diagnosis, disease severity determination, referral pathways, treatment decision-making, and post-operative care. They are used in determining cost-effectiveness and quality assurance.[7] Furthermore, PROMs have been promoted politically.[8]

This does not undermine the value of clinician-derived outcomes, which are particularly appropriate where clinical expertise is required (e.g. determining post-operative wound infection).[9] However, to understand the impact of disease and health interventions, appropriate PROMs are a logical choice in plastic surgery, where many conditions involve detriment of function or cosmesis.

A current overview of outcome measurement is provided. Some of this is PROM-specific, though much is applicable to all kinds of measures that plastic surgeons might use.

Definitions

The United States of America Food and Drugs Administration (FDA) provide detailed PROM guidance. They define a patient-reported outcome as: 'any report of the status of a patient's health condition that comes directly from the patient, without interpretation of the patient's response by a clinician or anyone else. The outcome can be measured in absolute terms (e.g., severity of a symptom, sign, or state of a disease) or as a change from a previous measure'.[10] There is a difference between a patient-reported outcome (PRO) and a PROM: the latter describes a 'tool' or 'instrument' used to quantify the former. For example, satisfaction after facial surgery is a patient-reported outcome (PRO), which can be measured using FACE-Q PROM.[11]

PROMs are usually questionnaires, comprising a series of questions or "items". Although the FDA definition of a PROM focuses on patient completion of the tool, contemporary PROMs are typically considered fit for use if their content is also patient-centred, i.e. their items are of importance to patients. Importantly, a PROM may not be patient-centred, if the items it comprises do not reflect patients' priorities (for example, a hand function PROM is unlikely to reflect what matters to patients following breast reconstruction). At the same time, clinician-derived measurement (such as grip strength) may represent what matters to patients in specific situations. The key issue is the patient's perspective, and surgeons should avoid assumptions about patient opinion.

Often, PROM items are pre-specified, though some PROMs exist in which each individual patient defines the items, for example the Canadian Occupational Performance Measure, in which a patient specifies his or her priorities, and then scores them.[12] PROMs can be completed in different ways: e.g. on paper or on electronic devices. The latter can allow for selective deployment methods such as Computerised Adaptive Testing, which will be discussed.