Global Rating of Change scales

Description

Global Rating of Change (GRC) scales provide a means of measuring self-perceived change in health status. The main purpose is to quantify the extent to which a patient has improved or deteriorated over time. GRC scales are commonly used in both clinical practice and research settings for the measurement of outcome. Several different names have been used for these scales, including: Global Perceived Effect Scale, Transition Ratings, and Patient Global Impression of Change, but all essentially measure the same thing.

GRC scales involve a single question that asks the patient to rate their change with respect to a particular condition over a specified time period. An example question might be: With respect to your low back pain, how would you describe yourself now compared to when you first came in for treatment? The patient then rates a scale to score the magnitude of this change. The smallest scale has just 3 points (better, the same, or worse), but such a simple scale risks losing information, as it does not discriminate between marginal improvement and complete recovery. Most commonly a numerical scale with 7, 11 or 15 points is used. While there is little compelling evidence to choose one scale over another, there is some reason to believe an 11-point scale, ranging from -5 (very much worse), through 0 (unchanged) to +5 (completely recovered) is optimal (Kamper et al. 2009).

There are some clinimetric data that demonstrate the reliability and validity of GRC scales. Test-retest reliability is high (ICC 0.9) (Costa et al. 2008) and face validity is supported by strong association between GRC and patient ratings of the importance of change (Pearson’s r = 0.90) (Watson et al. 2005), and patient satisfaction measures (Spearman’s rho 0.56–0.70) (Fischer et al. 1999). Significant correlations between GRC and change on various construct-specific measures indicate construct validity; examples include: disability (Roland Morris Disability Questionnaire r = 0.50, Shoulder Disability Questionnaire r = 0.74) (Pengel et al. 2004, van der Windt et al. 1998), pain (Numerical Rating Scale r = 0.49) (Stewart et al. 2007), and quality of life (Asthma Quality of Life questionnaire r = 0.83) (Guyatt et al. 2002). Based on data from patients with low back pain and chronic whiplash associated disorder, a change of 2 units or more on the 11-point scale is likely to be clinically meaningful (Kamper et al. 2009).

Commentary

The question of whether a patient has improved or deteriorated is fundamental to clinical practice. Determination of patient-rated clinical progression is important in directing treatment and making decisions regarding prognosis. While it is likely that many clinicians routinely gather this information, there is value in formalising the process and considering the limitations of the method.

A notable criticism of GRC scales involves the question of whether patients are able to accurately recall previous health status, which is necessary to provide an anchor for their change over time. If patients are unable to estimate their previous condition accurately it may be that GRC ratings are unduly influenced by their current health status (Kamper in press). Practically, this means that a patient who is doing well at the time of asking will rate a large positive change on a GRC and vice versa. Further it is likely that this bias will increase as the time interval lengthens, meaning that ratings that span a long transition period (several months) are less likely to measure true change accurately. GRC scales also cannot direct a clinician towards a particular physical or functional deficit, in the way that specific multi-item measures such as the Patient-Specific Functional Scale can.

The key strengths of GRC scales are short administration time, applicability to nearly all patient groups, ease of understanding, and strong clinical relevance. The nature of the question gives the patient the opportunity to weight whatever is important to them in their rating which ensures their score is uniquely relevant to the individual. The ‘global’ aspect of the scales sets it apart from single-construct outcome measures in that patients are encouraged to consider as many constructs as they see fit. It is noted, however, that a GRC scale should not be considered in isolation or seen as replacement for other measures, rather a GRC scale is a way to access patients’ impressions of their global clinical change.

Steve Kamper
The George Institute, Australia

References

Kamper SJ et al (in press) J Clin Epidemiol