

Editorial

What is a minimal clinically important difference?

In his Comment Professor Herbison mentions 'MCID' or minimal clinically important difference, which has been defined as, 'the smallest difference in score in the domain of interest which patients perceive as beneficial and which would mandate, in the absence of troublesome side effects and excessive cost, a change in the patient's management'.¹ Other more straight-forward definitions are, 'the smallest difference in a score that is considered to be worthwhile or important',² 'the minimum absolute risk reduction for which patients would take a treatment given their understanding of the risk without that treatment'³ or, an interesting variation, the mean score for an optimal result minus the mean score for a group with a sub-optimal result.⁴ Quite simply it is the smallest difference patients (and clinicians) would care about.

When we get around to using them in orthodontics MCIDs will first, and foremost, tell us what is clinically important and what isn't. As Professor Herbison mentioned, a MCID is often larger than a statistically significant difference, which in the absence of a clinically significant difference might be of little practical importance. They will help us judge the benefits when comparing two methods of treatment (e.g. functionals and headgear or early and late treatment); they will help researchers who are planning studies to calculate the sizes of their samples and, therefore, will give us information on the usefulness of their data; they will enable us to make inferences about the percentage of patients improved by a method of treatment; and they will allow us to make cost-effectiveness comparisons.⁵ With MCIDs we will have a much better idea what are appropriate and effective methods of treatment.

A MCID is more likely to be 'context-specific' (i.e. the conditions present when something like a 5 mm reduction in overjet occurs) than a fixed number such as a 5 mm reduction in overjet with no conditions.⁶ Finding out what is clinically important might start with a discussion with colleagues and patients and end up gathering both subjective and objective information. The input from patients could be in the form

of a quality of life questionnaire, and from the clinicians a measurement of, say, overjet, crowding or use of a rating scale. As you can imagine there will be disagreements as to what constitutes a MCID because there will be different opinions of what is clinically important. But according to some authors there are solutions to virtually all the scientific hurdles.^{7,8}

Of the nine methods used in medicine to measure a MCID the method that attracted me was the one that does not rely on memory and does not require longitudinal follow-up.⁹ Instruments that rely on memory are fallible and may provide misleading evaluations of what patients actually experienced.^{5,10,11} Part of the problem comes when they are asked to remember the frequency of events over a fixed period of time (e.g. 'In the last three months how often have you had sores in the mouth?' Can you remember?). Problems can also occur when patients are lost from the study, if they can't be bothered answering the same questionnaire time and time again or if the quality of their responses diminishes over time.

The innovative approach used by Redelmeier et al.^{10,11} gets around the problem of relying on patients' memories by pairing patients with the same condition and asking them to compare themselves with their pairs rather than relying on their memories of the past condition. Clinician administered surveys or measures can be used as well. Although the method has some disadvantages, such as the difficulty of assembling a representative group of patients for a sufficient period of time, its advantages may more than compensate for its disadvantages.^{5,11} But devising a MCID may be just the start of the story: it has been suggested that a MCID (or for that matter one of the indices we use) for improvement may not be the same as one for deterioration: this should be followed-up.⁶ Measurement errors, MCIDs and quality of life instruments have not received the attention they deserve from the profession. Some of the innovative approaches used in medicine may be of value to us.

Michael Harkness

References

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