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EDITORIAL

Beyond numbers: Clinical significance in orthopedic treatment outcomes

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For both the orthopedic surgeon and the patient, the primary expectation of any treatment is the restoration of functional capacity and the alleviation of pain. The primary goal is to achieve clinically satisfactory outcomes for patients. However, the evaluation of these outcomes is often considered easier and more straightforward than it actually is. Historically, improvements in range of motion, pain intensity, and imaging findings were regarded as the indicators of surgical success.[1] However, over time, the adoption of Patient-Reported Outcome Measures (PROMs) has enabled more specific and standardized assessments.[2,3] In PROMs, pre- and postoperative scores are compared, and a statistically significant increase with an alpha of 0.05 is commonly interpreted as indicative of a favorable outcome. However, the extent to which these statistical values accurately reflect patient recovery remains debatable. From the patient's perspective, numerical scores and p-values may hold limited significance. Therefore, incorporating patients' personal experiences may provide a more meaningful interpretation of the treatment outcomes.

At this point, the assessments defined as clinically meaningful outcomes, namely the Minimal Clinically Important Difference (MCID), Substantial Clinical Benefit (SCB), and Patient Acceptable Symptom State (PASS), have gained increasing prominence.[4] The MCID refers to the minimal change in an outcome that a patient considers significant, while the PASS describes the level of symptoms that a patient deems acceptable and SCB represents the minimum change for a patient to feel their condition is highly satisfactory. These assessments are based on analyses of PROMs to establish threshold values and identify patients who reach these values.[5] Although the methodological approach may seem detailed, the basic principle is quite simple: asking patients about their current condition. For MCID and SCB, patients are asked about changes in their pain or functional status after surgery. For the PASS, patients are asked whether they are satisfied with their current conditions. More intriguingly, rather than relying solely on threshold values reported in the literature, researchers should establish these values within their own cohorts using anchor questions.[6,7] This is because each patient population has distinct characteristics. Furthermore, as the MCID reflects a relatively low level of improvement, SCB and PASS must also be evaluated to provide a comprehensive assessment of clinical success. In cohorts with high preoperative PROMs, the assessment of Maximal Outcome Improvement (MOI) may be incorporated to further strengthen the reliability of the findings.[8]

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This concept is also supported by the literature. An analysis of knee and shoulder surgery publications in the *Journal of Shoulder and Elbow Surgery, American Journal of Sports Medicine, and Arthroscopy* revealed that, in 2016, studies evaluating MCID represented only 1 to 4% of published articles, while by 2020, this rate increased up to 7 19%.[2] Although no formal data are available for the following five years, the growing focus on these fundamental metrics indicates that this trend remains ongoing.

In conclusion, the sentiment captured by Harris et al.[4] remains profoundly relevant: "Patients don't know what their *p* value is, nor do they care.".[4] Ultimately, patients prioritize their satisfaction with surgical outcomes. Therefore, researchers should move beyond raw statistical significance, ensuring that clinically meaningful metrics are actively integrated into the evaluation of treatment efficacy.

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