CORR Insights

CORR Insights®: Can Preoperative Patient-reported Outcome Measures Be Used to Predict Meaningful Improvement in Function After TKA?

James B. Stiehl MD

Where Are We Now?

As a surgical approach, TKA has been proven in countless studies to be both effective and safe for most patients. However, studies continue to show that 15% to

This CORR Insights® is a commentary on the article “Can Preoperative Patient-reported Outcome Measures Be Used to Predict Meaningful Improvement in Function After TKA?” by Berliner and colleagues available at: DOI: [10.1007/s11999-016-4770-y](https://doi.org/10.1007/s11999-016-4770-y).

The author certifies that he, or a member of his immediate family, has no funding or commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article.

All ICMJE Conflict of Interest Forms for authors and *Clinical Orthopaedics and Related Research*® editors and board members are on file with the publication and can be viewed on request.

The opinions expressed are those of the writers, and do not reflect the opinion or policy of *CORR*® or The Association of Bone and Joint Surgeons®.

This *CORR Insights*® comment refers to the article available at DOI: [10.1007/s11999-016-4770-y](https://doi.org/10.1007/s11999-016-4770-y).

25% of patients are dissatisfied with the intervention [1, 2]. For a variety of reasons, including patient comorbidities, emotional health, disease-specific causes, and surgical technique problems, we have not moved the needle for the dissatisfied patient. Those of us with extensive experience would advocate that if we just perform better techniques, develop better implants, or apply the latest technology, we will solve these problems. However, we need to take a different approach, and the current study by Berliner and colleagues does just that by examining preoperative patient-reported outcome measures (PROMs).

Where Do We Need To Go?

This paper seems complex, but that reflects the careful statistical analysis done by the authors. The research asks

a simple question: Can we identify patients in advance who do not need surgical intervention? In their study, Berliner and colleagues demonstrate that high-functioning patients before surgery (as measured by preoperative PROM scores) are less likely to achieve meaningful improvement from TKA (as defined by improvements in PROM scores above the minimally clinical important difference [MCID]). The study is important because it proposes threshold values for preoperative PROM scores that may help us to predict which patients are more likely to be dissatisfied with surgery, even when performed competently. The study's figures make this especially clear. This study also shows how PROMs might transition from being instruments of scientific analysis to becoming relevant clinical tools that are practical in the hands of the community surgeon.

How Do We Get There?

Ideally, we would want the mean of our preoperative PROMs to be at least

J. B. Stiehl MD (✉)
Department Of Surgery, St Mary's
Hospital, 1054 Martin Luther King
Drive, Centralia, IL 62801, USA
e-mail: jbstiehl@me.com

CORR Insights

two or three sigmas (standard deviations) below the MCID. If the mean approximates the MCID, then a substantial number of patients at the upper bound will exceed the MCID, as projected by Berliner and colleagues. With higher quality of prospective data and a large enough sample size, refinements in the concept of MCIDs could be realized. For example, we

may learn that there are certain independent variables that influence the MCID more than others. For the practicing orthopaedic surgeon, the data need to be convincing and the presentation intuitive. One could conclude that there is scientific merit in replicating Berliner and colleagues' use of PROMs before surgery as a tool to decide whom to operate on and whom to continue to manage without surgery.

References

1. Judge A, Arden NK, Cooper C, Kassim Javaid M, Carr AJ, Field RE, Dieppe P. Predictors of outcomes of total knee replacement surgery. *Rheumatology (Oxford)*. 2012;51:1804–1813.
2. Scott CEH, Howie CR, MacDonald D, Biant LC. Predicting dissatisfaction following total knee replacement: a prospective study of 1217 patients. *J Bone Joint Surg Br*. 2010;92:1253–1258.