

What Factors Are Associated with Failure to Achieve Substantial Clinical Benefit Following Primary TKA?

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INTRODUCTION: The purpose of this study was to examine the relationship between a comprehensive set of patient-level variables and failure to achieve substantial clinical benefit (SCB) at 1 year following primary total knee arthroplasty (TKA).

METHODS:

We identified 1,478 primary TKAs performed from August 1, 2015, to July 21, 2023, at a single tertiary care academic institution. All patients had matched preoperative and 1-year postoperative Knee Disability and Osteoarthritis Outcome Score for Joint Replacement (KOOS JR) scores. Univariate and multivariate logistic regression models were used to evaluate for associations between patient demographic and comorbidity data, preoperative patient reported outcome measure scores, and 90-day complications and the achievement of SCB. Significance was set at $p < 0.10$ for inclusion in the multivariate model and $p < 0.05$ for all other statistical tests.

RESULTS: The 1-year rate of SCB achievement was 77%. In univariate analyses, the following variables were associated with failure to achieve SCB: higher preoperative KOOS JR score (OR 1.08, 95% CI 1.07-1.09; $p < 0.001$), preoperative KOOS JR score ≥ 60 (OR 5.1, 95% CI 3.6-7.2; $p < 0.001$), lower PROMIS Global-10 physical function score (OR 1.13, 95% CI 1.06-1.19; $p < 0.001$), and preoperative back pain (OR 1.5, 95% CI 1.1-2.0; $p = 0.02$). In multivariate analyses, higher preoperative KOOS JR scores (OR 1.09, 95% CI 1.07-1.10; $p < 0.001$) and preoperative back pain (OR 1.9, 95% CI 1.4-2.7; $p < 0.001$) remained associated with failure to achieve SCB at 1 year after primary TKA.

DISCUSSION AND CONCLUSION: Higher preoperative KOOS JR scores and the presence of self-reported preoperative back pain were associated with failure to achieve SCB at 1 year after primary TKA. These data may be used to inform surgical indications and preoperative patient counseling.