Pre-Operative Patient Reported Outcomes Can Help Predict Candidacy for Outpatient Total Knee Arthroplasty

Bhavana Gunda, Sara Elaine Strecker, Robert James Magaldi, Donald Aniello Allen, Daniel Witmer

INTRODUCTION:

The incidence of Total Knee Arthroplasty (TKA), an effective orthopedic procedure for end stage osteoarthritis, is increasing substantially. The shift towards performing this procedure in the outpatient setting necessitates precise patient selection criteria to ensure optimal post-operative outcomes. This study examines the predictive value of pre-operative Patient Reported Outcome Measures (PROMs), including the Brief Resilience Scale (BRS), in determining candidacy for outpatient TKA.

METHODS:

A retrospective analysis of 2,167 patients undergoing elective primary, unilateral TKA from May 2020 to June 2023 was conducted. Pre-operative PROMs, including Knee Injury and Osteoarthritis Outcomes Score for Joint Replacement (KOOS, JR), PROMIS-10, Risk Assessment and Prediction Tool (RAPT), and BRS, were collected. Patients were stratified into three groups by BRS, indicating low (BRS<3), average (BRS≥3 and <4.3), and high resilience (BRS≥ 4.3). Length of stay (LOS), discharge disposition, and complications were assessed postoperatively. Logistic regression and Receiver Operative Characteristic (ROC) curve analyses were used to assess the predictive validity of PROMs for discharge to a skilled nursing facility (SNF) in conjunction with extended LOS.

RESULTS:

Patients with low resilience (BRS<3) were seen to have a significantly higher likelihood of discharge to a SNF and extended LOS compared to the other 2 groups (11.5% v 1.6%, $p<0.001$). Logistic regression demonstrated that BRS, RAPT, and PROMIS-10 scores were also significant predictors, with a combined model predicting an extended LOS with discharge to SNF with 82.4% sensitivity and 79.9% specificity.

DISCUSSION AND CONCLUSION:

Preoperative PROMs such as BRS can serve as a valuable tool in predicting the failure of outpatient TKA. Incorporating preoperative PROMs into pre-surgical decision-making can enhance patient selection for ambulatory procedures and improve surgical outcomes. Further prospective studies are warranted to validate these findings within other elective surgical populations and to determine how to best modify resilience.