

# Patient Expectations for PROs After TKA Surpass Actual Outcomes and Correlate with Dissatisfaction

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## INTRODUCTION:

Unmet patient expectations are associated with dissatisfaction after total knee arthroplasty (TKA). No prior studies have quantified patient expectations with the same PRO metric used to assess patient outcome and MCID to allow direct comparison.

## METHODS:

This was a prospective study of patients undergoing TKA with five fellowship-trained arthroplasty surgeons at one academic center. Baseline PRO scores (PROMIS Physical Function (PF), PROMIS Pain Interference (PI), KOOS-12, VR-12 MCS and PCS) were assessed. Expected PRO scores were determined prior to surgery by asking patients to indicate the response they expected to have for each PRO question at 12-months postoperatively. 12-month postoperative PROs and satisfaction were assessed. MCID values were used from the literature. T-tests compared MCIDs, actual, and expected outcomes. Point-biserial correlation investigated interactions between these variables and satisfaction.

## RESULTS:

The cohort included 64 patients (mean age 66.3±9.3, mean BMI 31.1±5.6, 54.7% female). Patients had significantly higher expected PROs than actual 12-month PROs for every PRO except for VR-12 MCS (p< 0.05). Expected improvements were significantly higher than actual improvements and MCIDs (p < 0.0001). The satisfaction rate was 87.5%. Satisfaction correlated positively with actual improvement in KOOS-12 (coeff=0.46,p< 0.001), VR-12 PCS (0.45,p< 0.001), and PROMIS PI (0.44,P< 0.001). Having higher expected improvement than actual improvement negatively correlated with satisfaction for KOOS-12 (-0.67,p< 0.001), VR-12 PCS (-0.46,< 0.001), and PROMIS PF (-0.25,p=0.047). Having actual improvement greater than MCID positively correlated with satisfaction for KOOS-12 (0.29,p=0.02), VR-12 PCS (0.38,p< 0.01), and PROMIS PI (0.50,p< 0.01). There was no association between satisfaction and differences between expected PRO improvements and MCID.

## DISCUSSION AND CONCLUSION:

This study is the first to quantify preoperative patient expectations and outcomes using the same metric to allow for direct comparison to eachother and MCID. Mean pre-operative expectations significantly exceed both MCIDs and actual post-operative outcomes and having higher expected improvement than actual improvement correlated with dissatisfaction.

Table 1: Patient Demographics	
Numeric Variables	Mean ± 1 SD
Age	66.28 ± 9.3
BMI	31.1 ± 5.6
Categorical Variables	Count (%)
Sex	
Male	29 (45.3%)
Female	35 (54.7%)
Race	
White	44 (68.6%)
Black	15 (23.4%)
AAPI	3 (4.7%)
Native American	1 (1.6%)
Other	1 (1.6%)
Ethnicity	
Hispanic/Latin@	3 (4.7%)
Not Hispanic/Latin@	61 (95.3%)

Table 2: Patient Expectations, Actual Outcomes, and Expected 12-months Postoperative Scores				
Variable	Mean	Standard Deviation	Expected 12-months Postoperative Score	P-value
Observed KOOS-12	49.8	10.8	57.8	<0.0001
Expected KOOS-12	58.8	10.8	57.8	<0.0001
Observed VR-12 MCS	58.8	10.8	57.8	<0.0001
Expected VR-12 MCS	58.8	10.8	57.8	<0.0001
Observed VR-12 PCS	58.8	10.8	57.8	<0.0001
Expected VR-12 PCS	58.8	10.8	57.8	<0.0001
Observed PROMIS PF	58.8	10.8	57.8	<0.0001
Expected PROMIS PF	58.8	10.8	57.8	<0.0001
Observed PROMIS PI	58.8	10.8	57.8	<0.0001
Expected PROMIS PI	58.8	10.8	57.8	<0.0001

Table 3: Correlation of Satisfaction with Actual Outcomes, Expected 12-months Postoperative Scores, and MCID				
Variable	Mean	Standard Deviation	Expected 12-months Postoperative Score	P-value
Observed KOOS-12	49.8	10.8	57.8	<0.0001
Expected KOOS-12	58.8	10.8	57.8	<0.0001
Observed VR-12 MCS	58.8	10.8	57.8	<0.0001
Expected VR-12 MCS	58.8	10.8	57.8	<0.0001
Observed VR-12 PCS	58.8	10.8	57.8	<0.0001
Expected VR-12 PCS	58.8	10.8	57.8	<0.0001
Observed PROMIS PF	58.8	10.8	57.8	<0.0001
Expected PROMIS PF	58.8	10.8	57.8	<0.0001
Observed PROMIS PI	58.8	10.8	57.8	<0.0001
Expected PROMIS PI	58.8	10.8	57.8	<0.0001