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

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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%)								

Variable	Mean	Standard Deviation	Type of Paired-sample 1-test	T-statistic	p-value	Paired Cohee's d	Outcome Nessance	Meso	Standard Deviation	Type of One-earspir t-text		p-value	One-eample Cohon's 6
Observed & KOOG-12	45.9	20.8	Lower-tailed One-tail.	-17.6	< 0.0001	-2.2	Observed & KOO5-12 - MCID	34.5	26.8	Upper-tailed One-tailed	13.4	< 0.8001	1.2
Expected 4 X005-12	59.2	15.2	Lower-tailed One-tail.	-31.1	< 0.0001	-3.9	Espected 5 KOOS-12 - MCID	48.1	15.2	Upper-tailed One-tailed	25.5	< 0.8001	3.2
Observed & VR-12 PCS	12.0	11.1	Lower-tailed One-tail.	-7.2	< 0.0001	-0.9	Observed 5 VR-12 PCS - MCID	59	111	Upper-tailed One-tailed	3.6	0.0003	0.5
Expected A VR-12 PCS	22.1	9.0	Lower-tailed One-tail.	-17.9	< 0.0001	-2.2	Expected 5 VB-12 PCS - MCID	15.1	1.0	Upper tailed One tailed	13.5	< 0.8001	1.2
Observed AVR-12 MCS	-0.1	8.7	Upper-tailed One-tail.	9.1	0.4694	0.0	Observed A VR-12 MCS - MCID	-51	1.7	Lower tailed One-tailed	-47	< 0.8001	-0.6
Expected & VR-12 MCS	0.5	7.0	Lower-tailed One-tail.	-0.5	0.3031	-0.1	Experied 5 VE 12 MCS - MCTD		7.0	Lower tailed One tailed	-5.2	< 0.0001	.0.2
Observed & PROMS PF	12.7	7.5	Lower-tailed One-tail.	-11.5	< 0.0001	-1.4	Observed A PROMIS PE - MCID	-4.6	2.5	Lower tailed One tailed	-8.6	0.3644	-0.1
Expected & PROMIS PF	21.6	0.0	Lower-tailed One-tail.	-17.4	< 0.0001	.22	Expected & PROMIS PF - MCID	30.3	5.0	Upper-tailed One-tailed	1.5	< 0.8001	- 13
Observed & PROMS PI	-14.0		Upper-tailed One-tail.		< 0.0001	1.5	Observed & PROMIS PL - MCID	-5.1	5.4	Lower tailed One-tailed	-43	< 0.8001	-0.5
Expected & PROMIS PI	-29.3		Upper-toiled One-tail.		< 0.0001	2.7	Expended 5 PROMIS PL - MCTD	-114	2.4	Lower tailed One-tailed	-12.5	< 0.8001	-15