Patient Reported Outcomes Associated With "Completely Better" Status After Hip Arthroscopy

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INTRODUCTION:

Contextualizing patient-reported outcomes (PROs) can help to differentiate meaningful outcomes. Measures such as patient acceptable symptom state and minimum clinically important difference have been investigated in recent years. Assessment of patients' perception of being "completely better" (CB) after hip arthroscopy has not been investigated and may be of particular value. The purpose of this study was to assess the rate of patient-reported CB status after hip arthroscopy and determine associations with PROs.

METHODS:

An orthopaedic registry at a single institution was retrospectively analyzed. All patients who underwent hip arthroscopy from 2015 to 2020, and had 2 year follow up data were included in this study. Patients were administered Patient-Reported Outcomes Measurement Information System (PROMIS) in six domains, Numeric Pain Score, and Surgical Satisfaction Questionnaire (SSQ8) pre-operatively and at 2 years postoperatively. Patients completed a CB anchor question at 2 years after surgery. Threshold values for PRO scores associated with achieving a CB status were identified with approximately 90% specificity.

RESULTS:

Overall, 29 of the 62 patients (46.8%) reported their condition CB at 2 years postoperatively. There were no differences in demographics including age, sex, BMI, race, prior hip surgery, pre-op narcotic use, or smoking status between the CB and non-CB groups (Table 1). The 2-year and change in PROMIS Physical Function, PROMIS Pain Interference, Social Satisfaction, Fatigue, and Anxiety, and SSQ8 PROs were significantly better in the CB group than in the non-CB group (Table 2). Numeric Pain Score in the operative hip was significantly better at 2 years in the CB group. There were no differences in pre-treatment expectations between groups. Thresholds of 2-year PROMIS PF ≥51.3, change in PROMIS PF ≥12, 2-year PROMIS PI ≤46.6, change in PROMIS PI ≤-12.2, 2-year Numeric Pain Score – operative hip ≤1.0, and 2-year SSQ8 ≥87.5 were the best predictors of achieving CB status (Table 3).

DISCUSSION AND CONCLUSION:

Nearly half of patients reported being completely better 2 years following hip arthroscopy. Multiple PROs including physical function, pain, and satisfaction were significant predictors of CB status. This is the first study to assess CB status 2 years after hip arthroscopy and provides contextualization to PROs for orthopaedic surgeons and researchers.

Table 2 PRO scores by CB status Bivariate Correlations

	"Yes" n=29 Mean ±SD	"No" n=33 Mean ±SD	P Value
PROMIS PF			
Pre-operative	39.7 ± 6.4	41.6 ± 4.0	0.29
2 y	56.3 ± 8.5	45.7 ± 6.1	<0.0001
Change	16.6 ± 9.9	4.1 ± 5.9	<0.0001
PROMIS PI			
Pre-operative	53.2 ± 10.1	53.3 ± 9.3	0.99
2 y	44.8 ± 7.2	55.9 ± 6.7	<0.0001
Change	-17.2 ± 10.8	-4.15 ± 6.2	<0.0001
PROMIS Fatigue			
Pre-operative	62.1 ± 6.5	60. 0 ± 5.6	0.19
2 y	42.6 ± 9.3	50.3 ± 8.4	0.0013
Change	-11.0 ± 9.5	-3.3 ± 7.6	0.0023
PROMIS SS			
Pre-operative	42.4 ± 7.0	41.9 ± 6.7	0.95
2 y	57.9 ± 11.0	47.5 ± 8.9	<0.0001
Change	15.5 ± 13.1	5.8 ± 9.7	0.0017
PROMIS Anxiety			
Pre-operative	42.4 ± 7.0	41.9 ± 6.7	0.95
2 y	57.9 ± 11.0	47.5 ± 8.9	<0.0001
Change	15.5 ± 13.1	5.8 ± 9.7	0.0017
PROMIS Depression			
Pre-operative	50.4 ± 8.5	50.9 ± 8.2	0.87
2 y	46.5 ± 9.7	50.2 ± 9.1	0.10
Change	-3.8 ± 8.1	-1.0 ± 8.5	0.25
Numeric Pain Score - Operative Hip			
Pre-operative	4.4 ± 2.7	5.1 ± 2.3	0.34
2 y	1.1 ± 1.6	4.1 ± 2.4	<0.0001
Numeric Pain Score – Whole Body			
Pre-operative	1.5 ± 1.9	1.6 ± 2.2	0.89
2 y	1.8 ± 1.5	3.0 ± 2.7	0.17
MARX			
Pre-operative	40.0 ± 36.3	44.5 ± 39.4	0.77
2 y	64.4 ± 27.2	29.5 ± 32.8	0.024
Tegner			
Pre-operative	4.2 ± 2.5	5.5 ± 2.6	0.11
Post-operative	5.1 ± 2.3	3.6 ± 2.5	0.018
Pretreatment Expectations Total	90.1 ± 12.3	89.5 ± 15.2	0.79
MODEMS Total	87.6 ± 17.2	54.8 ± 25.9	<0.0001
SSQ8	88.6 ± 15.3	66.5 ± 19.5	<0.0001

Table 3 Patient-Reported Outcome Thresholds Predictive of "Yes" for Completely Better

Measure	Threshold*	Sensitivity	Specificity	AUC
PROMIS PF				
2 y	≥51.3	0.69	0.91	0.87
Change	≥12.0	0.69	0.91	0.86
PROMIS PI				
2 y	≤46.6	0.62	0.91	0.85
Change	≤-12.2	0.76	0.91	0.85
PROMIS Fatigue				
2 y	≤37.8	0.31	0.91	0.74
Change	≤-13.1	0.43	0.91	0.73
PROMIS SS				
2 y	≥60.0	0.48	0.91	0.79
Change	≥17.8	0.46	0.91	0.74
PROMIS Anxiety				
2 y	≤40.9	0.31	0.91	0.69
Change	≤-16.1	0.25	0.91	0.79
Numeric Pain Score - Operative Hip				
2y	≤1.0	0.79	0.84	0.88
MARX				
2y	≥80.0	0.11	0.90	0.67
Tegner				
Post-operative	≥8.0	0.14	0.90	0.68
MODEMS total	≥95.0	0.62	0.90	0.87
SSQ8	≥87.5	0.66	0.91	0.86

All threshold values were chosen with approximately 90% specificity.