Variability in Standardized Outcome Thresholds of Clinically Important Changes Following Medial Patellofemoral Ligament Reconstruction: A Systematic Review

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Disclosures:

Introduction: Medial Patellofemoral Ligament Reconstruction (MPFLR) outcomes are increasingly evaluated using Patient-Reported Outcome Measures (PROMs). However, interpretation of these scores remains inconsistent without established clinically meaningful thresholds. The purpose of this study was to review reported Minimal Clinically Important Difference (MCID), Substantial Clinical Benefit (SCB), and Patient Acceptable Symptom State (PASS) thresholds following MPFLR and assess variability across studies.

Methods: A systematic review of MCID, PASS, and SCB values after MPFLR was conducted according to PRISMA guidelines. Embase, PubMed, and Cochrane CENTRAL databases were queried from 2000 to 2025. Studies were included if they reported MCID, PASS, or SCB values for PROMs following MPFLR. Extracted data included study demographics, intervention characteristics, and outcomes of interest. Continuous variables were summarized using medians and ranges, and categorical variables using percentages.

Results: A total of 507 studies were screened, with 9 meeting inclusion criteria. Four studies (44%) reported newly derived patient-reported outcome thresholds, while five (56%) used previously published thresholds. Among the studies deriving new thresholds, MCID was identified in all (100%), with three studies (75%) reporting MCID, PASS, and SCB concurrently. The most frequently evaluated PROM was the Kujala Score (n=6, 67%), followed by the International Knee Documentation Committee (IKDC) score (n=5, 56%). For the Kujala Score, distribution-based MCID values ranged from 8.5-10.0 and anchor-based MCID from 12.0-13.5, with anchor-based PASS values ranging from 78.5-85.5. For the IKDC score, distribution-based MCID values ranged from 1.54-1.71, anchor-based MCID was 9.9, anchor-based PASS values ranged from 64.9-73.2, and anchor-based SCB values ranged from 14.5-23.6.

Conclusion: Clinically meaningful PROM thresholds following MPFLR remain inconsistently reported. Although MCID is the most frequently evaluated metric, substantial variability exists across studies. Further research is needed to establish standardized and validated PROM thresholds following MPFL reconstruction in order to guide clinical interpretation of PROMs and improve postoperative decision-making.

Table 1. Study Demographics and Design

Author	Study Design	No. of Patients	Method of Derivation
Qiao et al.	Retrospective comparative prognostic trial	142	All anchor
Walsh et al.	Retrospective cohort (diagnosis)	139	MCID: Distribution and Anchor PASS: Anchor SCB: Anchor
Elias et al.	Retrospective case series	107	MCID: Distribution and Anchor PASS: Anchor SCB: Anchor
Waters et al.	Retrospective cohort	49	Distribution
Studies Utilizing Previously Published Thresholds			
Erden et al.	Retrospective case series	34	Both anchor and distribution
Sharma et al.	Retrospective cohort	97	Distribution
Runer et al.	Retrospective cohort	64	Both anchor and distribution
Long et al.	Retrospective case series	61	Anchor
Peter et al.	Prospective cohort study	38	Distribution

Table 2. MCID, PASS, and SCB Score Ranges from Studies That Calculated Values

PROM	MCID		PASS	SCB
	Distribution	Anchor	Anchor	Anchor
Kujala Score	8.5-10.0	12.0-13.5	78.5-85.5	14.5-25.5
IKDC Score	1.54-1.71	9.9	64.9-73.2	14.5-23.6

MPFLR, Medial Patellofemoral Ligament Reconstruction; MCID, Minimal Clinically Important Difference; PASS, Patient Acceptable Symptom State; SCB, Substantial Clinical Benefit