Patients with Major Depressive Disorder and Undiagnosed Situational Depression Are at Risk for Inferior Outcomes After MPFL Reconstruction

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MEDICINE of THE HIGHEST ORDER

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Faculty Disclosures

- Nothing to disclose

Background

- Patellar dislocations are a relatively rare injury, however recurrence rates maybe as high as 44%.[1]
- One of the major soft-tissue restraints preventing lateral translation of the patella is the medial patellofemoral ligament (MPFL) and is injured in 96-100% of lateral patellar dislocations.[2]
- MPFL reconstruction has proven to be a good surgical solution for recurrent instability.
- There remains limited information on the effects of mental health conditions on baseline and post-operative outcome measures after MPFL reconstruction (MPFL-R).
- Purpose of this study is to assess how mental health disorders such as MDD or unrecognized depression can affect pre- and post-operative outcomes in patients undergoing MPFL surgery.

Methods

- Retrospective, IRB approved review of patients undergoing MPFL reconstruction from 2015 to 2023 was performed.
- Demographic data, presence of diagnosed mental health disorders, complications, and Patient Reported Outcomes Measurement Information Systems (PROMIS) scores related to their procedure were collected.
- Exclusion criteria included patients aged <10 or >75 years, or those with incomplete PROMIS data. Patients without a formal diagnosis of MDD, but with a pre-op PROMIS-Dep score ³ 52.5 were considered PROMIS-Depressed.
- Kruskal-Wallis and chi-squared tests were used to compare continuous and categorical cohort descriptive statistics respectively. Logistic and mixed-effects regression were used to investigate the association between PROMIS T-scores and mental health disorders while adjusting for confounding patient and surgical variable.

Results

- 187 patients met inclusion criteria (overall average age 20.4, range 12-63).
- Average time of follow up: 607 days.
- 77 patients had a formal diagnosis of mental health disorder.
- No significant differences in age, BMI, (ADI), laterality, additional procedures, or complications between patients with and without a formal mental health diagnosis.

Figure 1: Comparison of pre-operative and post-operative PROMIS scores for patients with and without a mental health diagnosis. Asterisks signify P < .05.

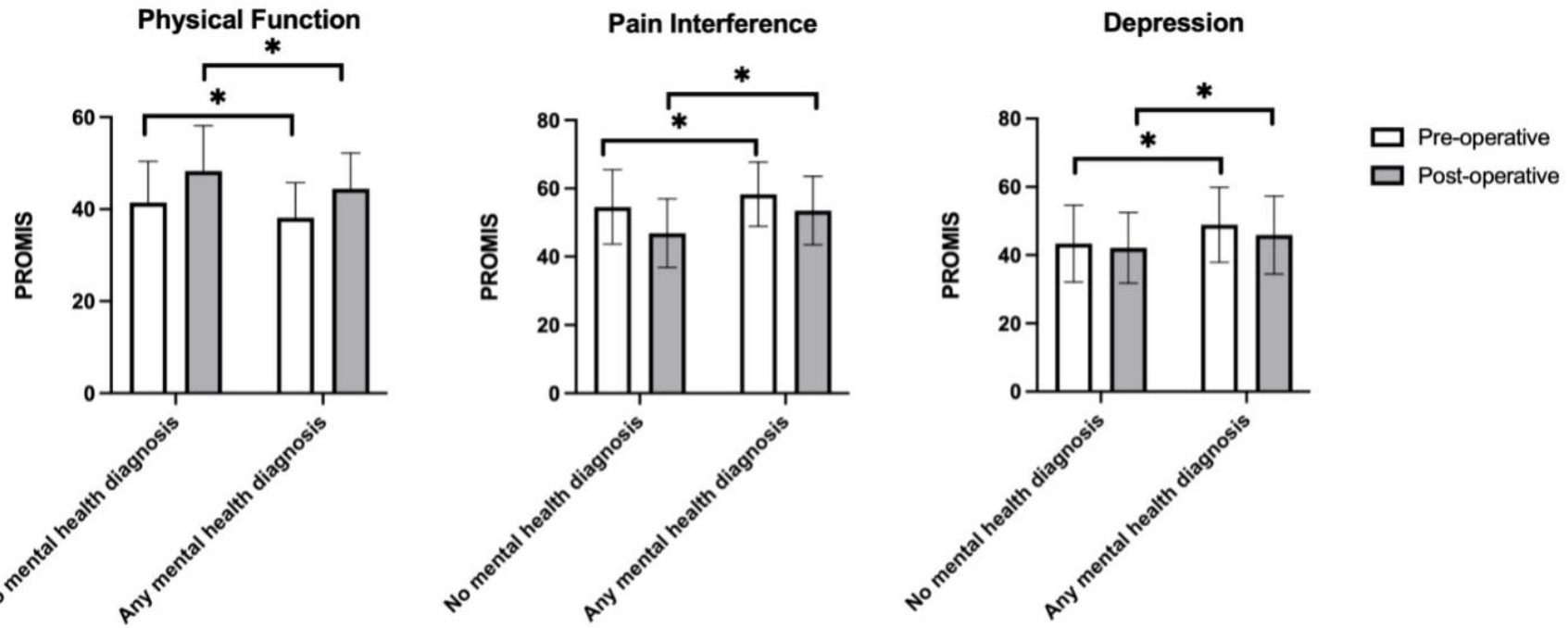


Figure 2: Comparison of patients achieving MCID for measure PROMIS score for patients with and without a mental health diagnosis. MCID, Minimal Clinically Important Difference

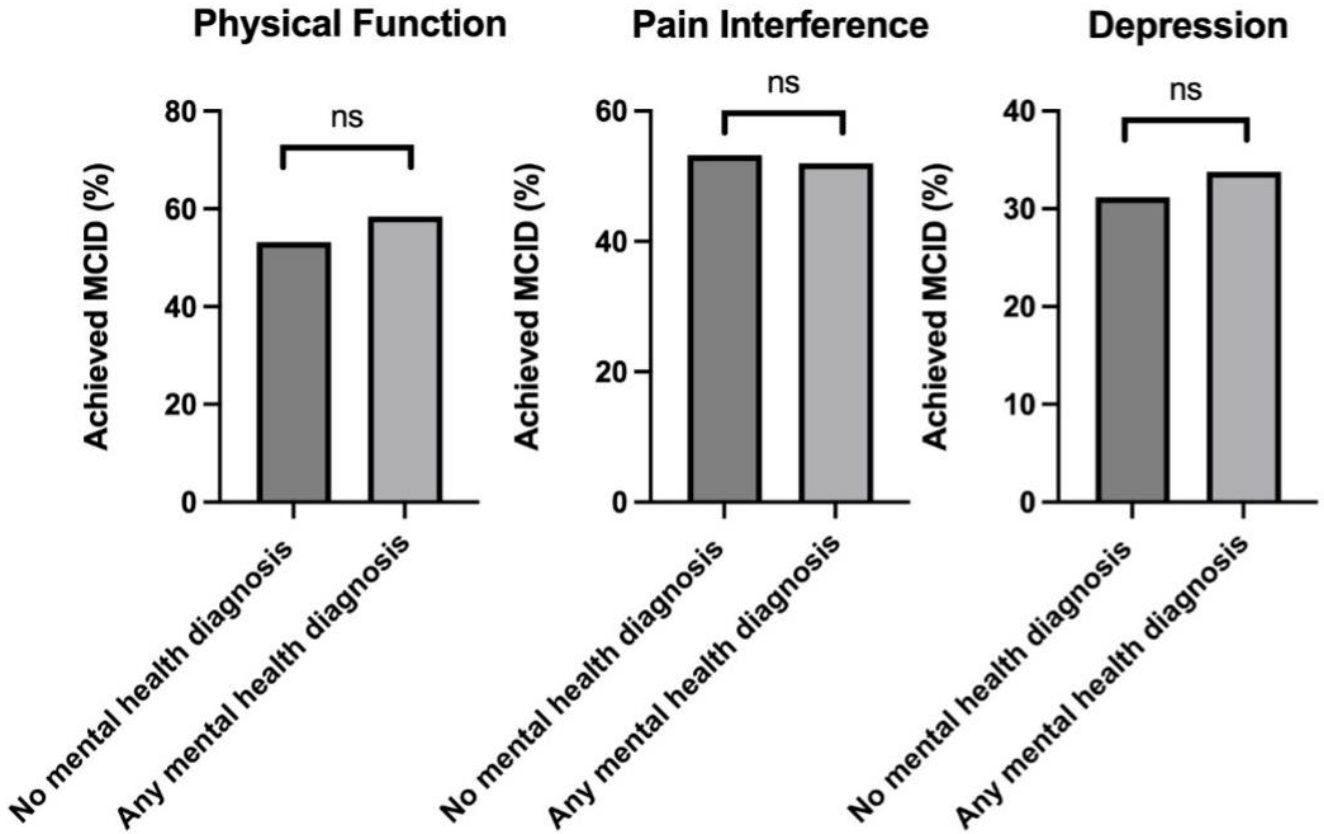


Figure 3: Comparison of pre-operative and post-operative PROMIS scores for patients with no mental health diagnosis, major depressive disorder (MDD), PROMIS-Depressed (patients with a pre-operative PROMIS-Dep > 52.5. Asterisks signify P < .05.

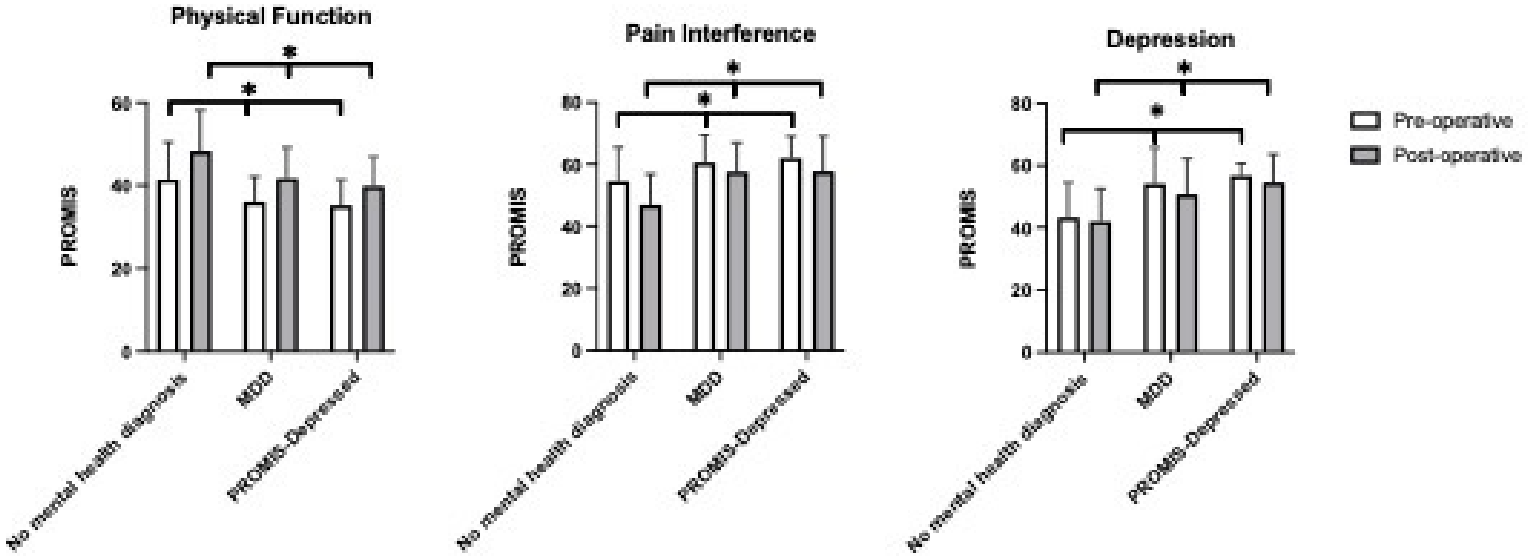
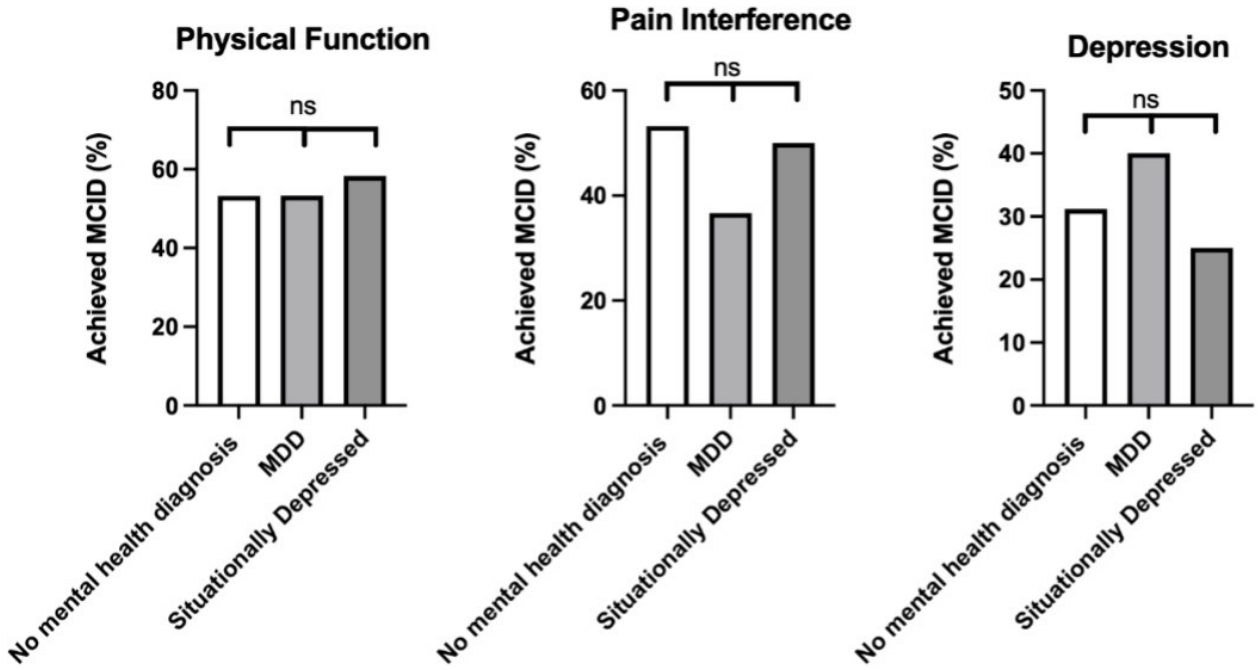


Figure 4: Comparison of patients achieving MCID for measured PROMIS scores between patients with no mental health diagnosis, major depressive disorder (MDD), and PROMIS-Depressed (patients with a pre-operative PROMIS-Dep > 52.5). NS, not significant. MCID, Minimal Clinically Important Difference



Regression analysis

- Mixed-effects linear regression analysis demonstrated an association between underlying mental health disorders and worse PROMIS PF (-2.48; 95CI: [-4.42, -0.54]; $p < 0.05$), PROMIS PI (4.04; 95CI: [1.90, 6.17]; $p < 0.01$), and PROMIS D (3.34 95CI: [0.51, 6.19]; $p < 0.05$).
- Increasing age was associated with worse PROMIS PF (-0.16; 95CI [-0.27, -0.05); $p < 0.01$) and PROMIS PI (0.41; 95CI: [0.29, 0.53]; $p <0.001$).
- Logistic regression: no statistically significant differences in odds of achieving MCID for each of the PROMIS domains in patients with an underlying mental health disorder relative to patients without an underlying mental health disorder.
- Sensitivity analysis demonstrated that patients with an underlying mental diagnosis or patients with a preoperative PROMIS depression > 52.5 were associated with worse PROMIS PF (-2.24; 95CI: [-4.11, -0.37]; $p < 0.05$), PROMIS PI (3.94; 95CI [1.90, 5.99]; $p < 0.001$), and PROMIS D (8.76; 95CI [6.31, 11.22]; $p < 0.001$).

Conclusion

- Underlying mental health disorders may lead to worse pre- and post-operative PROMIS scores and prevented patients from deriving more improvement from their surgery.
- This finding was exacerbated in patients who were PROMIS-Depressed.
- Overall, our cohort improved with surgery, but both diagnosed and undiagnosed MDD adversely affects patients who undergo MPFL reconstruction.
- These findings highlight the importance of identifying and addressing mental health in this patient population.

References

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2. Lee DY, Park YJ, Song SY, Hwang SC, Park JS, Kang DG (2018) Which Technique Is Better for Treating Patellar Dislocation? A Systematic Review and Meta-analysis. Arthroscopy 34:3082-3093 e3081. https://doi.org/10.1016/j.arthro.2018.06.052