Poster 683

MASSACHUSETTS GENERAL HOSPITAL

HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

Effects of Mental Health on PROMIS Scores After Primary THA

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INTRODUCTION

- Worldwide trends continue to demonstrate an increase in the number of total hip arthroplasties (THA) performed each year.[1]
- THA has proven to be one of the most successful orthopaedic surgical procedures.
- Despite its effectiveness, many patients continue to experience pain and discomfort following surgery.[2,3]
- Recent work has identified that preoperative mental health may negatively influence postsurgical outcomes.[4,5]
- To better understand and manage patient-perceived outcomes in terms of surgical success, orthopaedic surgeons have increasingly utilized patient-reported outcome measures (PROMs).[4]

Study Aims

- **To investigate whether preoperative PROMIS mental health scores influence preoperative and postoperative physical function following primary THA.**
- **To better understand the relationship between mental health and the change in physical function following surgery.**

METHODS

- An arthroplasty registry was queried for patients having undergone **primary THA** between June 2016 and December 2018 at one academic medical center.
- Patients were included in this study if they completed a preoperative PROMIS questionnaire within 3 months of their index surgery and 1 year postoperatively.
- Data from the following **PROM surveys** were collected:
  - PROMIS Scale v1.2 – Global Health (PROMIS Physical and PROMIS Mental)
  - PROMIS Short Form v2.0 – Physical Function 10a questionnaire (PROMIS PF10a)
  - Hip Disability and Osteoarthritis Outcome Score Physical Function Shortform (HOOS-PS)
- **Patients were divided into five categories** based on their baseline PROMIS Mental score: "Poor" (≤ 29), "Fair" (29-40), "Good" (40-48), "Very Good" (48-56), and "Excellent" (> 56).[7]
- Categorical and continuous variables were compared using the Pearson Chi-Squared test and the Wilcoxon signed-rank sum test, respectively.
- Patients grouped by preoperative PROMIS Mental scores were examined using locally estimated scatterplot smoothing (LOESS) curves.
- ANOVA and ANCOVA were used to measure significance. The Kruskal-Wallis test was used when assumptions were not met.

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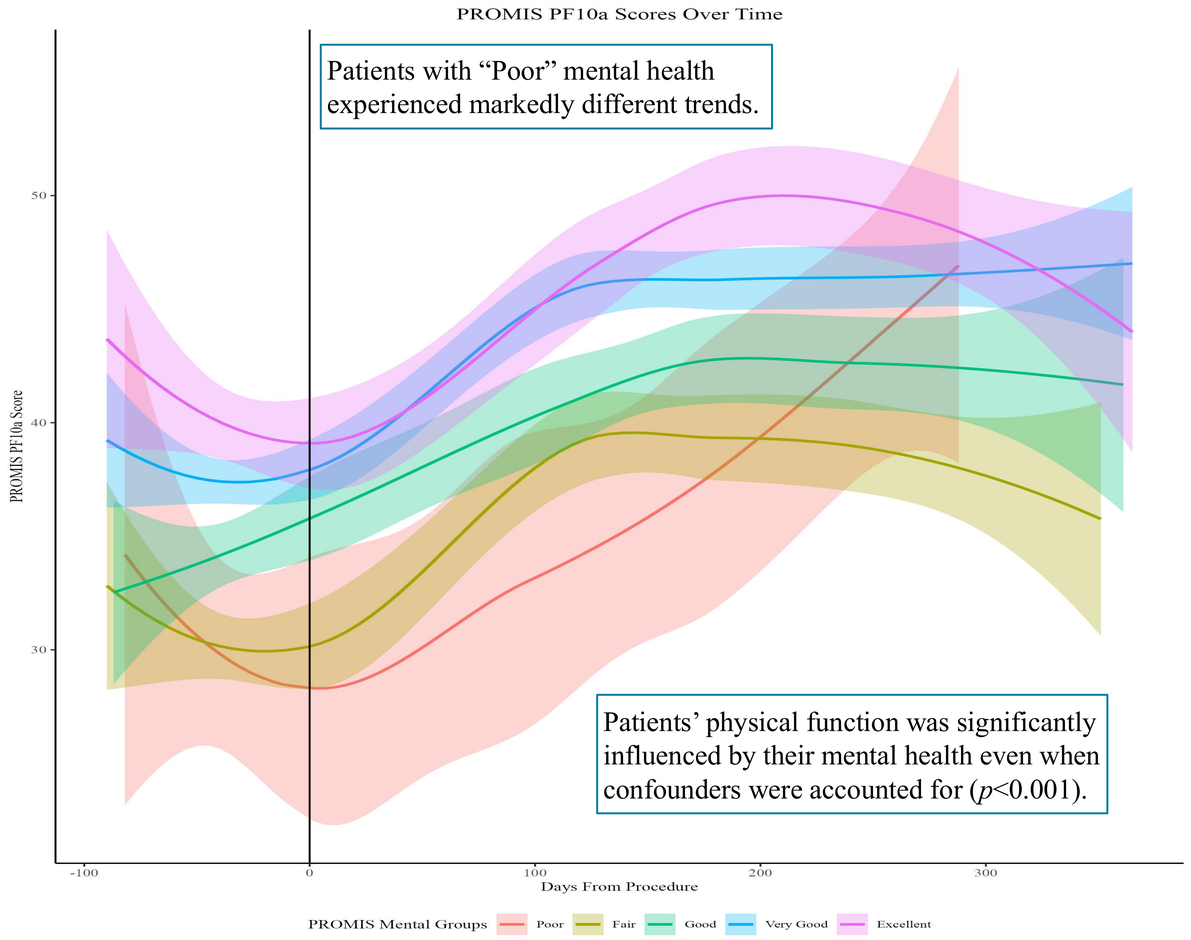
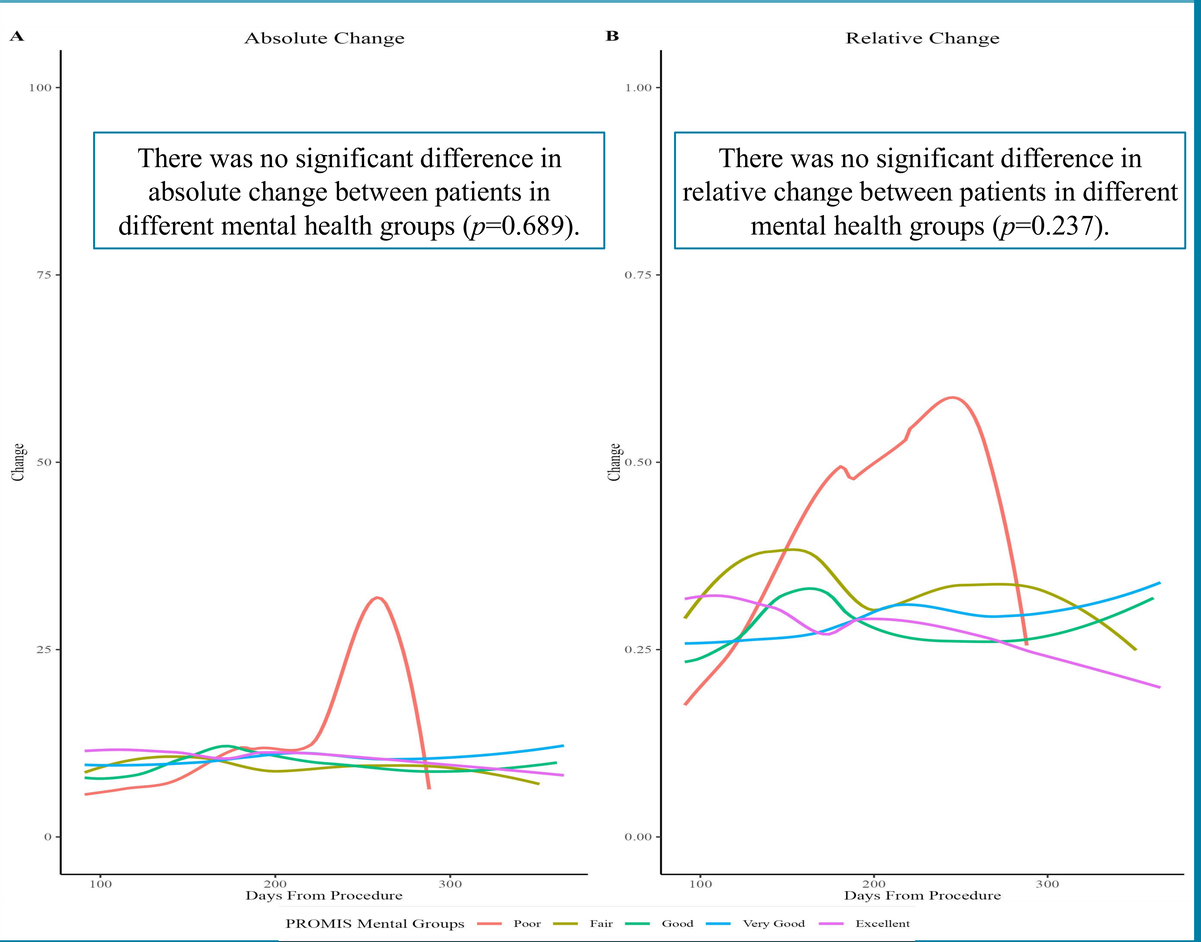
LOESS FIT PLOT OF PROMIS PF10A SCORES OVER TIME



LOESS FIT PLOT OF THE ABSOLUTE AND RELATIVE CHANGE IN PROMIS PF10A SCORES BEFORE AND AFTER SURGERY OVER TIME



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RESULTS

- A total of 445 primary THA patients consisting of 303 (68%) with a mental health diagnosis (MHD) and 142 (32%) without an MHD were studied.
- The mean age was 64.46 years (standard deviation 10.70), and patients were mainly of white or Caucasian descent (94%).
- Patients with **higher preoperative mental health** scores had **higher preoperative and postoperative physical function** scores.
- There was **no significant difference in absolute change** (p=0.689) **or relative change** (p=0.237) between patients in different mental health groups.
- Patients with the **poorest mental health exhibited higher physical function score variability** following surgery, but due to the small sample size of this group (n=15), the interpretation of the data may be unreliable.

CONCLUSION

- **Poor mental health should not be a contraindication** for performing primary THA.
- Instead, surgeons should pay close attention to patients with the lowest preoperative mental health scores when considering their postoperative recovery.
- These patients may require more **collaborative care to improve their mental health preoperatively** and **ensure better patient-reported outcomes** following surgery.

MEAN SURVEY SCORES

	Mental Health Diagnosis (n = 142)		No Mental Health Diagnosis (n = 303)		*P* Value*	
	Pre-Procedure	Post-Procedure	Pre-Procedure	Post-Procedure	Pre-Procedure	Post-Procedure
Days From Operation Survey Completed (mean ± std):	31.76 ± 22.80	193.23 ± 78.44	31.60 ± 21.17	193.58 ± 78.47	0.730	0.830
PROMIS PF10a (mean ± std):	35.41 ± 6.45	42.72 ± 9.00	36.32 ± 5.54	45.07 ± 8.22	0.147	**0.003**
PROMIS PF10a Change (mean ± std):	7.31 ± 8.60		8.75 ± 8.01		0.067	
PROMIS Mental (mean ± std):	47.00 ± 10.84	49.66 ± 10.70	50.42 ± 9.21	54.40 ± 8.99	**0.002**	**<0.001**
PROMIS Mental Change (mean ± std):	2.66 ± 7.87		3.98 ± 7.78		0.113	

*P values were calculated using the Wilcoxon signed-rank test. The null hypothesis was that the medians of the two groups were the same, whereas the alternate hypothesis was that the medians of the two groups were different.

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DISCLOSURE

- A.P., M.S.S., M.G.R., T.O. have no conflicts to disclose.
- A.F.C., C.M.M., H.S.B., M.H. disclose various conflicts that can be found online.
- No disclosures are relevant to this study.

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