

Musculoskeletal Pain During Long COVID: Are There Gender or Racial-Ethnic Differences?



Tracy Anastas, PhD,^{1,2} Rachel Geyer, MPH,¹ Nikki L. Gentile, MD, PhD,^{1, 3} Jing Zhang, MS,³ & Annette L. Fitzpatrick, PhD^{1,4}

¹Department of Family Medicine, ²Department of Psychiatry & Behavioral Sciences, ³Department of Laboratory Medicine & Pathology, ⁴Department of Epidemiology, University of Washington, Seattle, WA

Background

- Musculoskeletal pain is a common symptom during long COVID.
- Women and People of Color are more likely to experience worse pain-related outcomes in general.
- Less is known about the effects of patient gender and race-ethnicity on long COVID pain outcomes.

STUDY AIMS

- 1) Examine patient gender and race-ethnicity differences in musculoskeletal pain during long COVID.
- 2) Examine interactions between patient gender and race-ethnicity with pain during long COVID on PROMIS-29 outcomes.

Methods

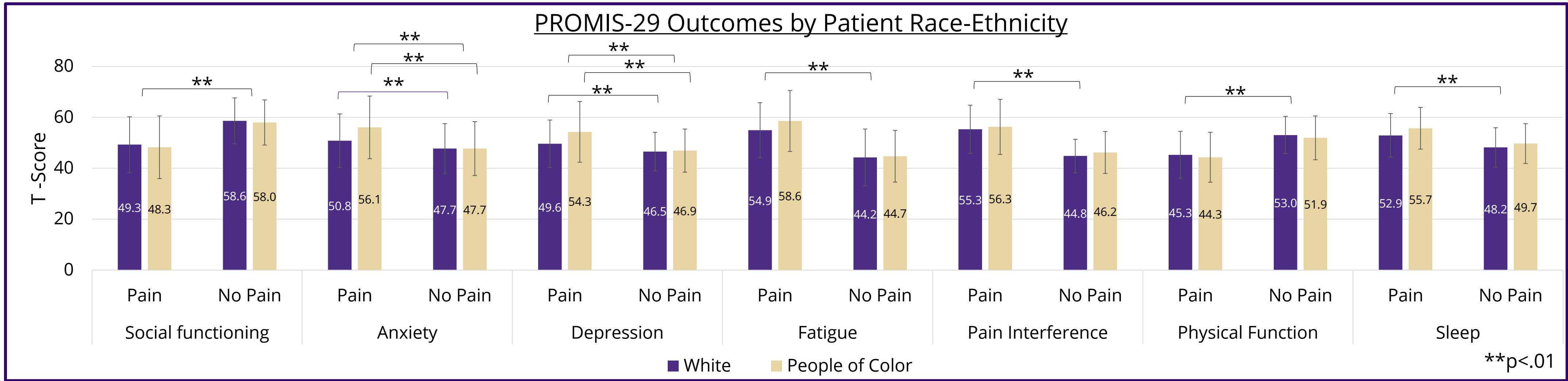
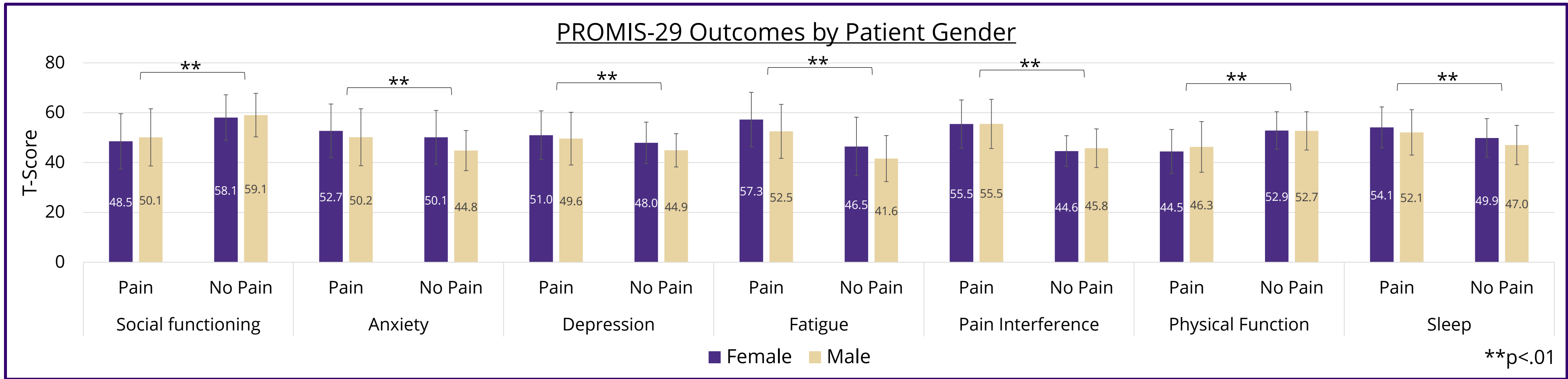
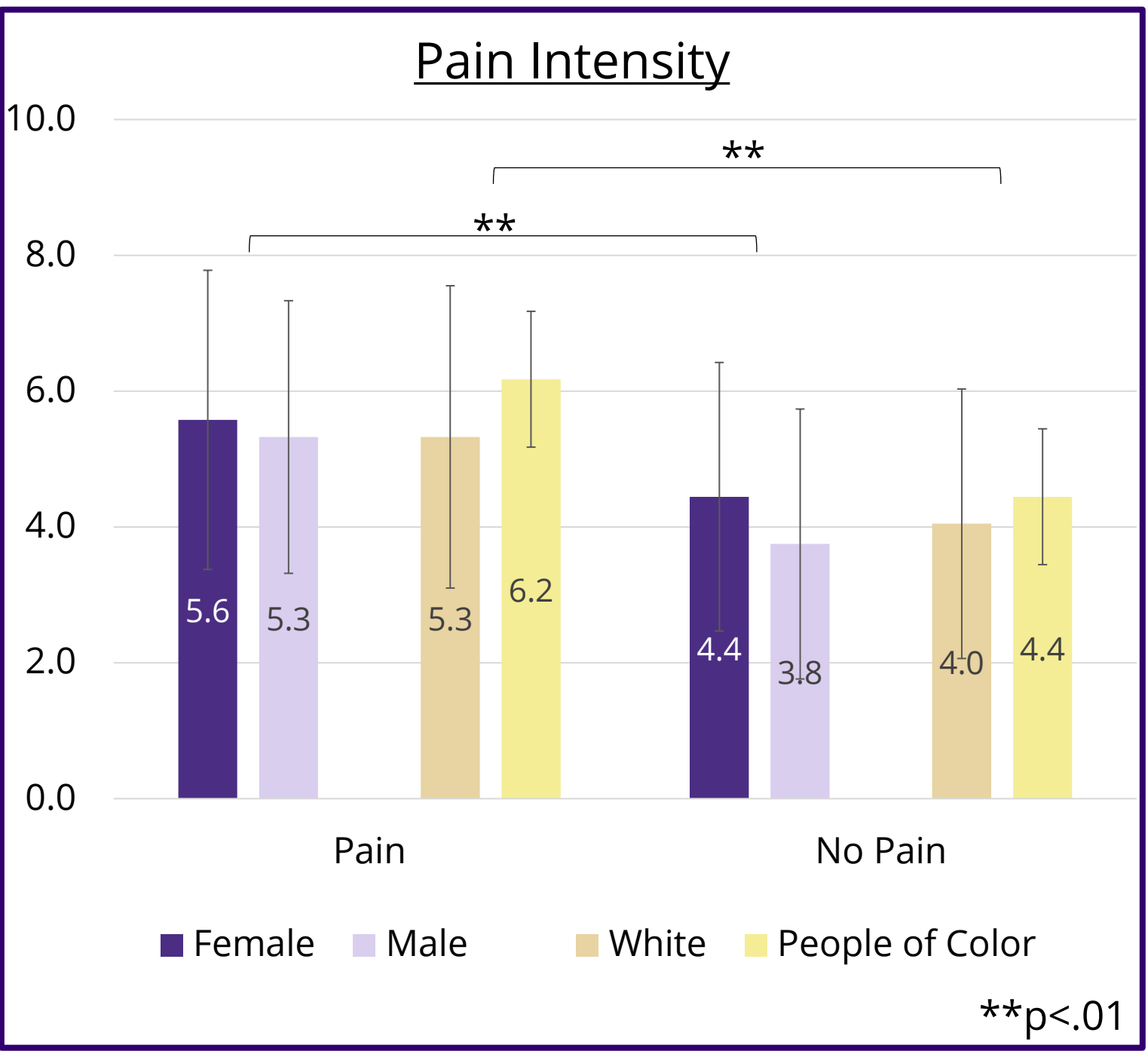
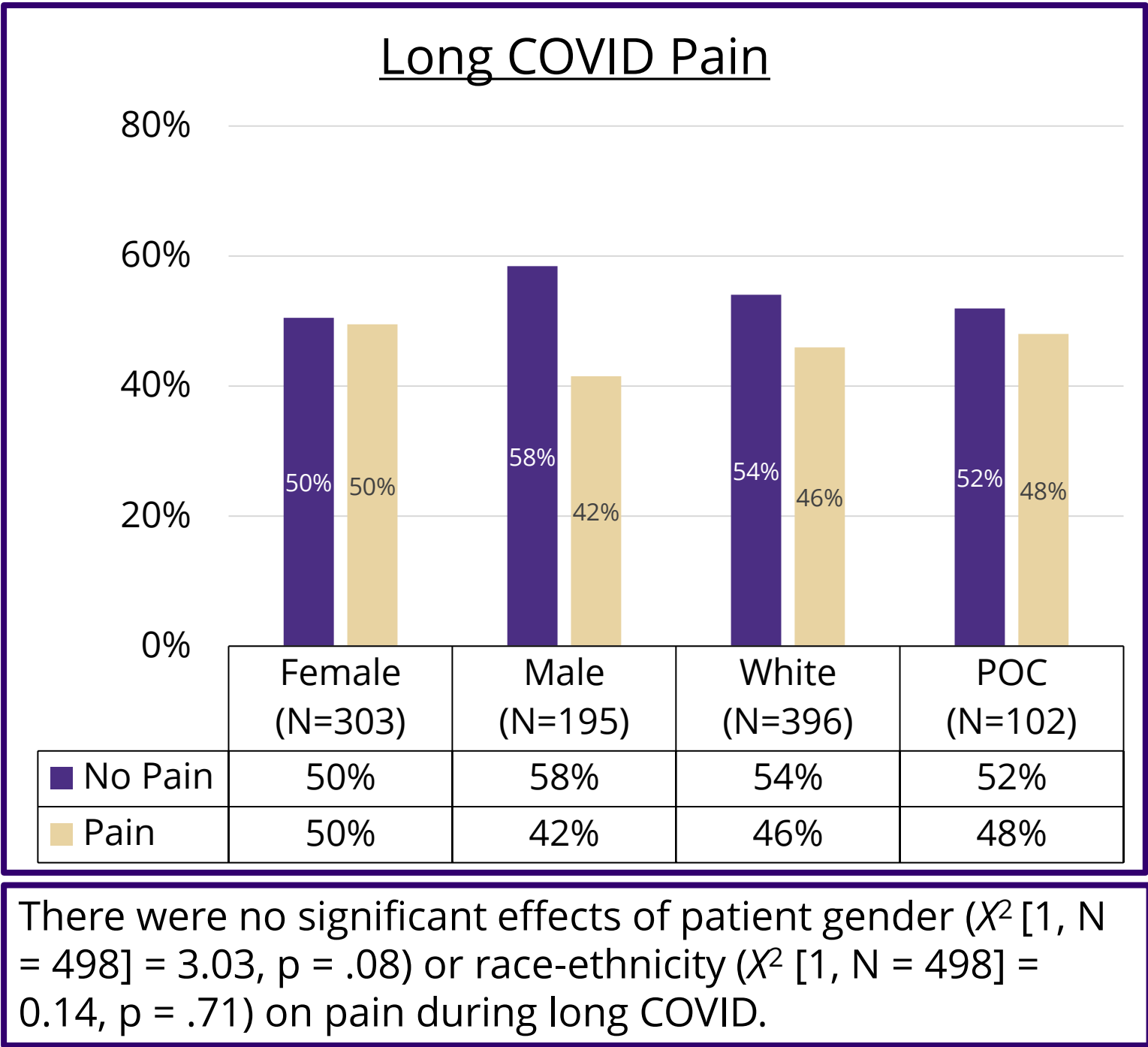
- Adult patients (≥18 years) were identified through an electronic health record as having a positive PCR COVID test.
- Patients were invited to complete a questionnaire to assess their symptoms after their acute COVID phase (i.e., long COVID), which included if they had **musculoskeletal pain** in the past month and the **PROMIS-29**.
- Statistical analyses included chi-squared tests and two-way ANOVAs.

Results

Sample Characteristics

- 507 out of 766 participants had complete demographic data and were included in analyses.
 - Age: Mean=54.3 (SD=15.1)
 - Gender: 61% women, 39% men
 - Race: 79% White, 7% Asian, 6% Black, 4% Other Person of Color, 2% American Indian/Alaska Native, 1% Latino, 1% Multi-Racial

46% of patients with long COVID reported **musculoskeletal pain**



Results

- Nearly half (46%) of patients with long COVID reported musculoskeletal pain.
- There were no significant differences in long COVID pain by patient gender or race-ethnicity.
- Patients with pain (vs. no pain) during long COVID had significantly worse outcomes across all PROMIS-29 measures.
- Anxiety and depression was worse for both White and People of Color patients with pain (vs. no pain), but the effects of pain were stronger for People of Color (anxiety: $\eta_p^2 = .02$ vs. $.12$; depression: $\eta_p^2 = .03$ vs. $.12$).

Conclusions

Musculoskeletal pain during long COVID is associated with *worse* PROMIS-29 outcomes, and pain may have more negative affects on the mental health of *People of Color*.

- Pain may add to the social burdens (e.g., discrimination) and healthcare barriers (e.g., lack of access) that People of Color face, leading to higher depression and anxiety.
- This line of inquiry may inform tailoring treatment plans, such as incorporating mental health services, to improve pain and health equity.