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Assessing if a whole person pain assessment explain variability in nociceptive functioning in adults with chronic low back pain

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Introduction

- Chronic low back pain is heterogeneous, reflecting interacting biopsychosocial factors that contribute to differences in pain and function.
- The Whole Person Pain Assessment (WPPA) integrates temperament traits with chronic pain severity, socioenvironmental factors, and behavioral/psychosocial life experiences to characterize individual risk profiles.
- Prior work in individuals with primary knee pain shows profile components help explain clinical, nociceptive, and biomarker variability in individual health status outcomes (1-3).

Objective: Determine whether the WPPA profiles similarly explain differences in nociceptive functioning in adults with chronic low back pain.

WPPA distributions:
0- Proactive/Low Risk: n=77
1- Sensitive/Low Risk: n=34
2- Proactive/Sensitive High Risk: n = 29

Materials and Methods

- Cross-sectional analysis of baseline ERASED-2 (IRB#202306132) data from 140 adults aged 18-85 years with chronic low back pain.
- Participants were recruited at Washington University in St. Louis and Vanderbilt University
- WPPA profiles integrated temperament (proactive or sensitive) with low or high-risk life experiences across chronic pain severity, socioenvironmental, and behavioral/psychosocial domains.
- Nociceptive-functioning outcomes were:
  - Movement-evoked pain during the Short Physical Performance Battery chair task
  - Hand temporal summation using a 256-g monofilament

Results

	Total N=140
Age, mean ± std	47.8 ± 16.5
Comorbidities, median [IQR]	1.0 [3.0]
Sex, n (%)	
Male	52 (37.1)
Female	88 (62.9)
Study Site, n (%)	
Vanderbilt	68 (48.6)
Washington University	72 (51.4)
Sociocultural Group, n (%)	
Non-Hispanic Black	57 (40.7)
Non-Hispanic White	83 (59.3)

Table 1. Participant Characteristics

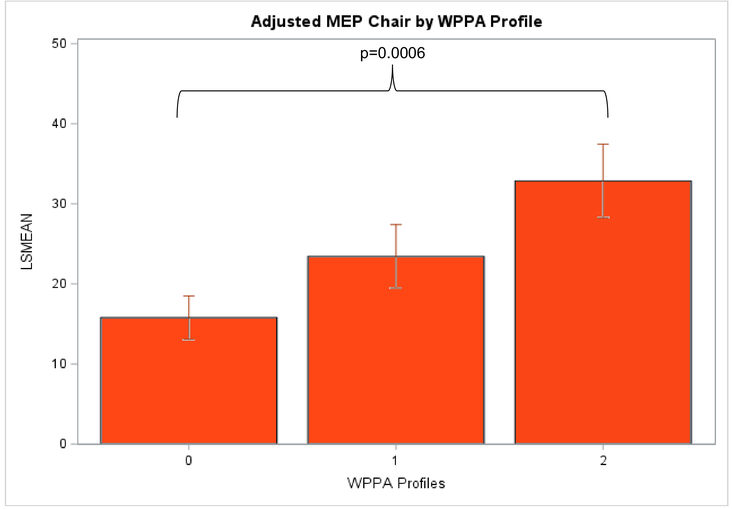


Figure 1. Adjusted movement evoked pain during the chair task by Whole Person Pain Assessment Profiles. Covariates: age, sex, study site and comorbidities. Overall model (f=4.28, p=0.0006). Error bars: standard error.

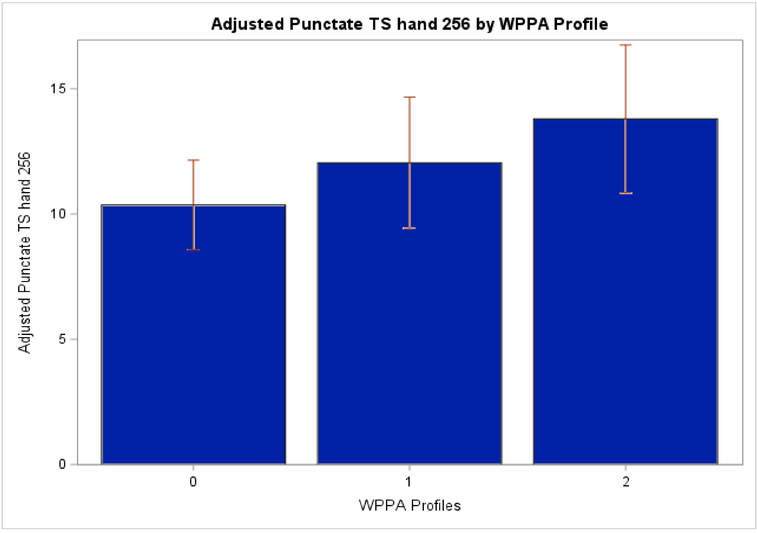


Figure 2. Adjusted punctate temporal summation at the back of the hand by Whole Person Pain Assessment Profiles. Covariates: age, sex, study site and comorbidities. Overall model (F=0.93, p=0.4782). Error bars: standard error.

Discussion

- WPPA profiles explained meaningful variability in nociceptive functioning among adults with chronic low back pain.
- Despite the limited sample size, these findings support WPPA as a clinically relevant approach for identifying individuals more vulnerable to worse pain-related outcomes and informing personalized treatment planning.

References

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