



Association Between Central Sensitization Inventory Scores with Fear of Pain, Pain Catastrophizing, and Pressure Pain Threshold in Healthy Participants

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Introduction

- Pain is a growing global health issue. An estimated 1 in 5 adults suffer from some type of pain, while 1 in 10 are diagnosed with a chronic pain problem every year.
- Pain catastrophizing, fear of pain, and central sensitization are major psychosocial factors that help shape this experience.
- The Pain Catastrophizing Scale (PCS), Fear of Pain Questionnaire (FoP), and Central Sensitization Inventory (CSI) are validated outcome measures used to assess these variables, respectively. They have been utilized in people with chronic pain conditions to help determine if individuals are predisposed to transition from acute pain to chronic pain at some point in life.
- Unfortunately, it has not been determined how these variables are completely processed in the central nervous system of a healthy individual

Objective

- The purpose of this study was to investigate CSI scores in healthy individuals and explore the association of those scores with PCS, FoP, and pressure pain threshold (PPT).

Methods

- Study design:
 - Double blind randomized control trial, Cross sectional design
- Study was approved by IRB (1208684-5)
- Population:
 - 60 participants
 - Brenau University students, faculty, staff, and public of northeast Georgia ages 18-65
- Testing:
 - Self report measures: CSI, PCS, FoP Questionnaire
 - Quantitative Sensory Testing: Pain Pressure Threshold (PPT)
 - Locations tested: Thenar eminence, dorsal aspect of 1st CMC, of the left upper extremity
 - Values reported as avg of 2 places
- Data Analysis: Descriptive Statistics generated by SPSS version 25.0 software
- Bivariate correlation analysis performed to investigate the association between the variables of interest

Results

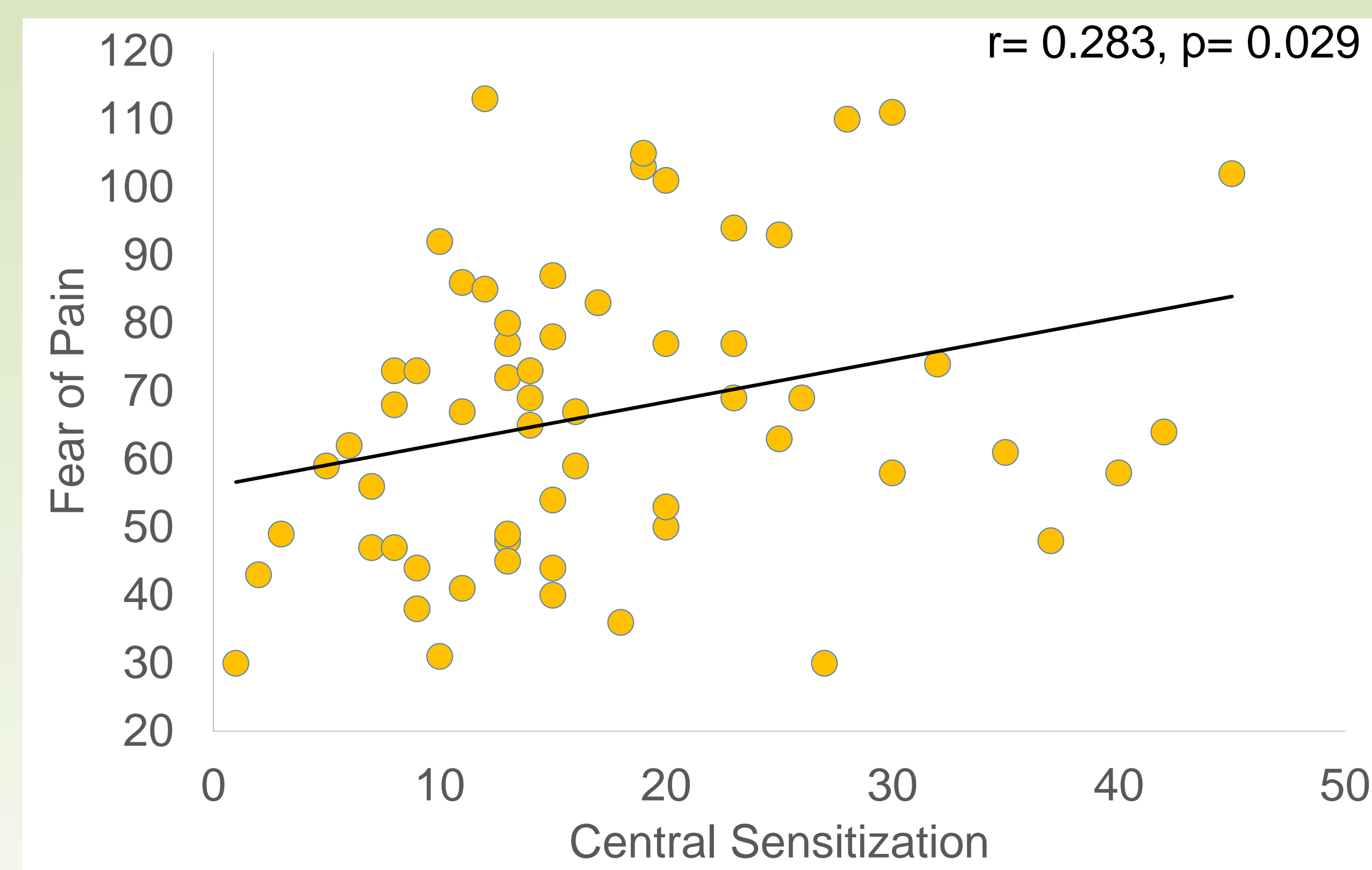


Fig 1. Correlation between CSI and FoP

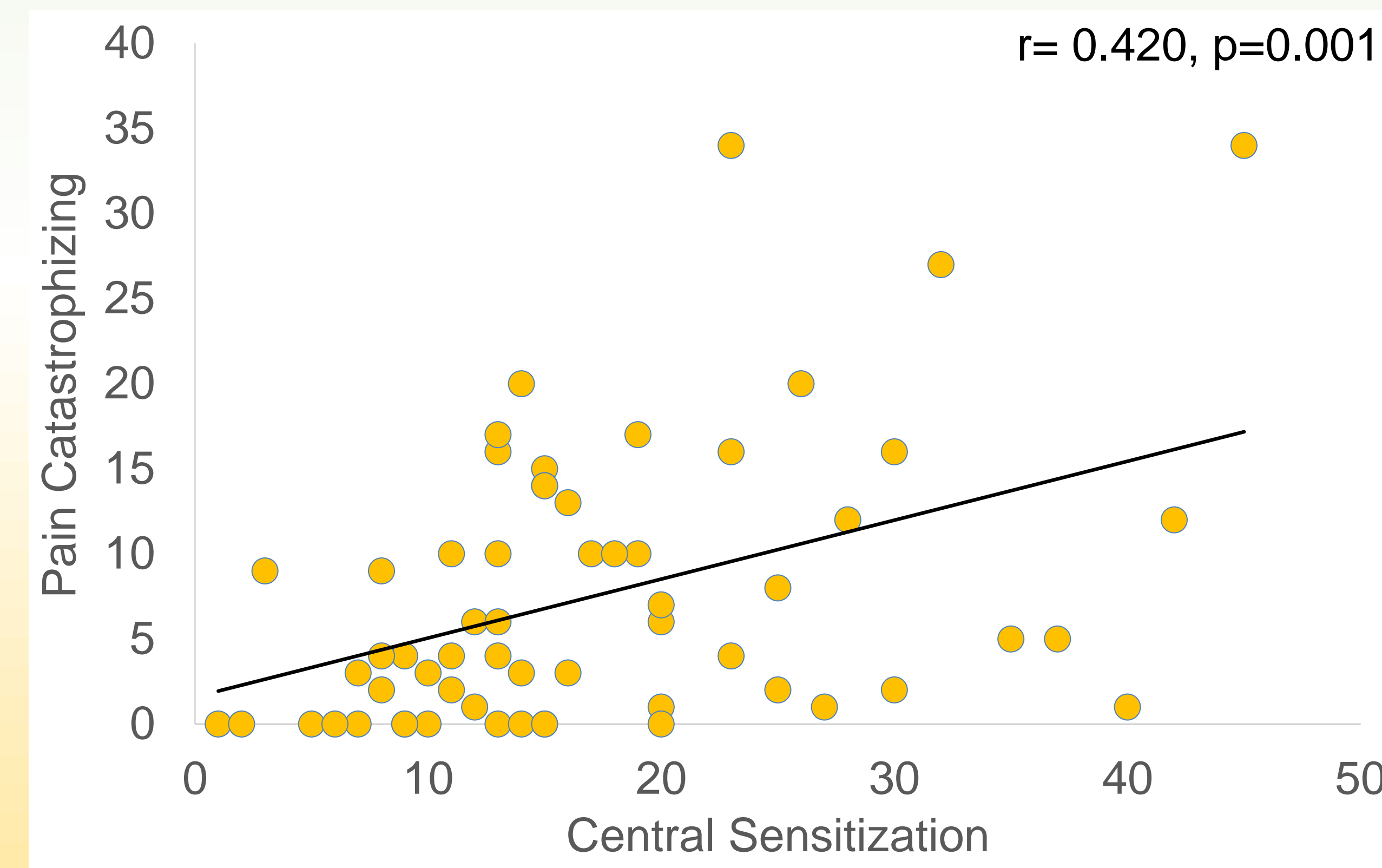


Fig 2. Correlation between CSI and PCS

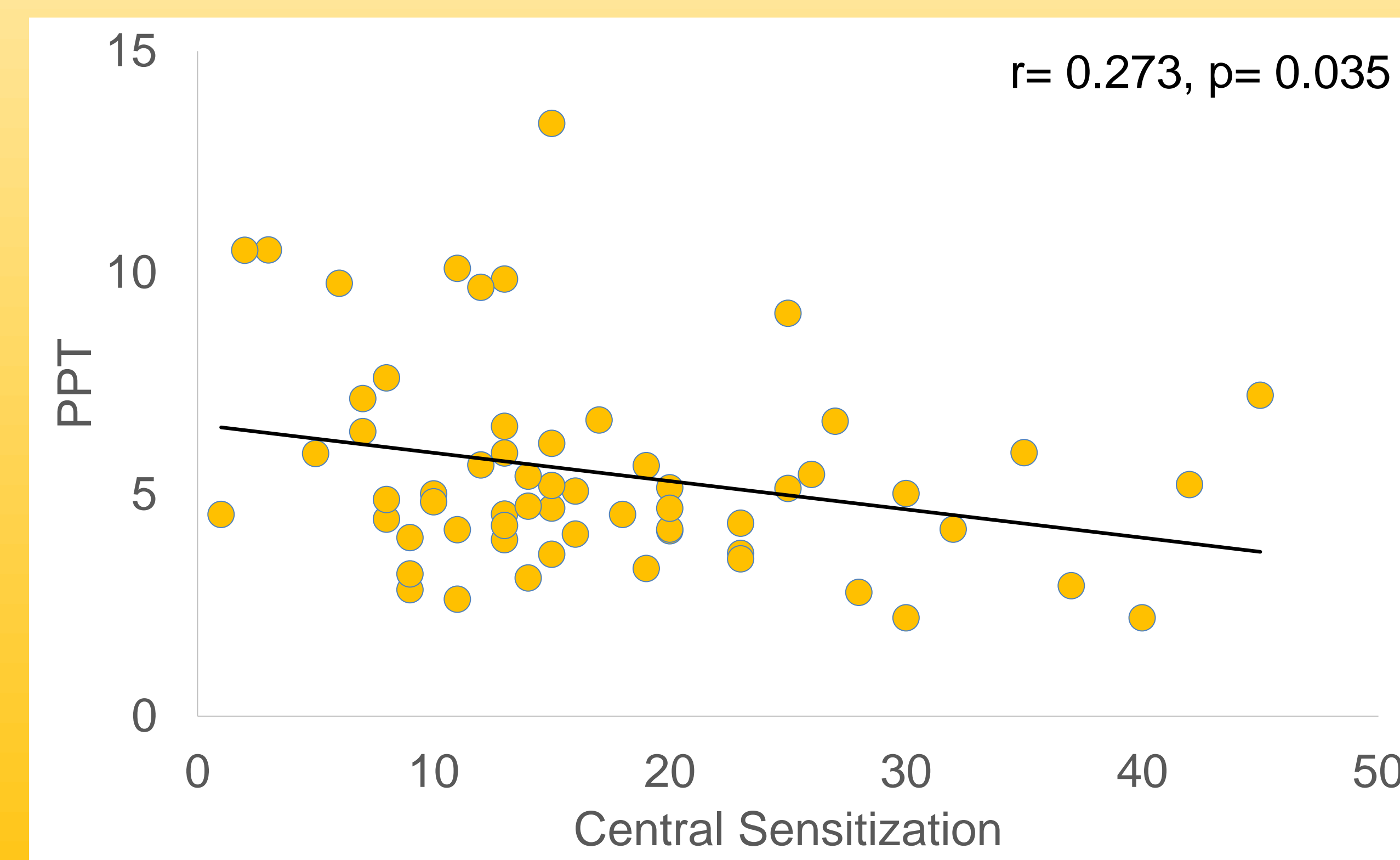


Fig 3. Correlation between CSI and PPT

Results

Table 1: Descriptive statistics of all pain measures

Measure	Mean	Std. Deviation	N
CSI- Part A	17.17	9.901	60
FPQ- Total	66.67	21.728	60
PCS- Total	7.53	8.156	60
PPT-LUE	5.48425	2.31832	60

Discussion

- Results from this study showed that even in a pain-free state, people may present with high scores in CSI; and those scores seem to be moderately correlated with other psychosocial factors that have been previously reported in people with chronic pain conditions.
- Moreover, those participants with higher scores in CSI showed decreased threshold to pressure pain (PPT) as demonstrated by the negative correlation between these two variables.
- Psychosocial factors such as FoP and PCS are seldom reported in healthy individuals; however, this finding is relevant because the presence of these factors is often reported in people with chronic pain conditions.
- To our knowledge, CSI has not been investigated in healthy individuals, and its association with other psychosocial factors deserve attention in a pain-free state because physical therapists could screen healthy people for psychosocial factors as part of health promotion and wellness programs and identify the future risk for developing chronic pain.

Future Research

- Further research is warranted to explore these findings in more depth as literature in this area is still scarce