



Anxiety, catastrophizing and fatigue mediate the impact of widespread pain on functional disability in youth with chronic pain

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INTRODUCTION

- Pediatric chronic pain is a common clinical concern that can be overwhelming for families and clinicians alike to address.
- Pain in multiple body locations with other central nervous system symptoms such as multi-sensory sensitivity, sleep and cognition problems, affective disturbances, and fatigue, are hallmarks of widespread nociplastic pain
- Nociplastic pain confers risk for pain-related disability; understanding additional factors could help identify mechanisms of pain interference and treatment targets to reduce pain-related disability

OBJECTIVE

We hypothesized that emotional factors (anxiety and depression), pain-related cognitive factors (kinesiophobia and catastrophizing) and energy-related factors (sleep and fatigue) would mediate the association between widespread body pain and pain-related disability.

METHODS

Sample: Children and adolescents (n = 223) between the ages of 8-23 years (M = 15.93, SD = 2.08, 82% female) completed surveys prior to evaluation at a pediatric pain clinic.

Procedures: patients completed pain-related questionnaires prior to pain clinic evaluations

Measures:

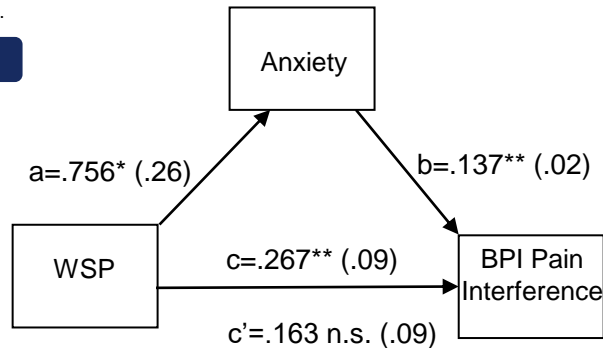
- Emotional factors** (Hospital Anxiety and Depression Scale)
- Pain-related Cognitive Factors** (Tampa Scale of Kinesiophobia, Catastrophizing scale of the Coping Strategies Questionnaire)
- Energy-Related Factors** (PROMIS Fatigue and Sleep short forms)
- Pain Measures** (Michigan Body Map as widespread pain; Brief Pain Inventory pain interference)

RESULTS

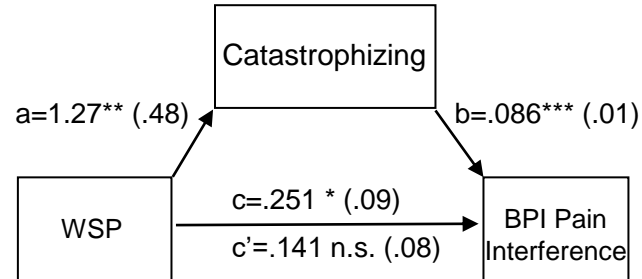
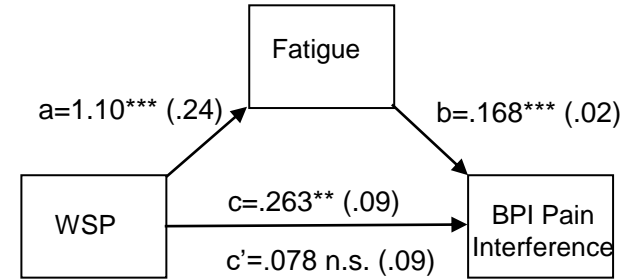
Analysis: To investigate whether **emotional factors** (anxiety and depression), **pain-related cognitive factors** (kinesiophobia and catastrophizing) and **energy-related factors** (sleep and fatigue) **MEDIATED** the relationship between **widespread pain** and **pain interference scores**, six simple mediation analyses were performed using PROCESS. Baseline pain intensity, age and sex were entered as covariates.

- Anxiety [Effect=.1036, 95% CI (.0342, .1910)],
- Catastrophizing [Effect=.1096, 95% CI (.0302, .1969)]
- Fatigue [Effect=.1848, 95% CI (.0953, .2865)] fully mediated the association between widespread pain and pediatric pain interference.

Figure 1. Mediation models



*:p <.05.; **:p <.01; ***:p<.001



CONCLUSIONS

- Anxiety, Catastrophizing and Fatigue** all played a mediational role in understanding the relationship between widespread pain (nociplastic pain) and pain-related disability measured by a pain interference scale
- Interventions specifically targeting catastrophizing have been shown to improve fatigue in adult samples, so may be a target in pediatric populations as well.