The Mediational Effect of Pain Self-Efficacy on the Relationship Between PTSD Severity and Disability in Trauma-Exposed Adults with Chronic Pain

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Abstract

Chronic pain and posttraumatic stress disorder (PTSD) commonly cooccur and are mutually maintaining. Although previous research has established relationships between self-efficacy and positive outcomes among chronic pain (Arnstein, Caudill, Mandle, Norris, & Beasley, 1999) and PTSD patients (Benight & Bandura, 2004), the relationship between pain self-efficacy and disability outcomes in a trauma-exposed population with chronic pain is unknown. A sample of trauma-exposed adults with chronic pain (N = 251) was collected using Amazon’s MTurk. We hypothesized that pain self-efficacy (measured by the Pain Self-Efficacy Questionnaire and defined as an individual’s perceived ability to manage pain) mediates the relationship between PTSD severity and disability (measured by the WHO Disability Assessment Schedule 2.0) while covarying for chronic pain severity. Pain self-efficacy mediated the relationship between PTSD severity and disability, F(2, 248) = 69.95, p < .001. There was a significant total effect of PTSD severity on disability, while covarying for chronic pain severity (c = 0.65, p < .001), which remained significant after being mediated by pain self-efficacy (c’ = 0.49, p < .001). Clinically, these findings suggest that targeting pain-related appraisals and pain self-efficacy in individuals with comorbid chronic pain and PTSD may in turn improve overall functioning.

Hypotheses

1. PTSD symptom severity is hypothesized to be positively related to disability outcomes.
2. PTSD symptom severity is hypothesized to be negatively related to pain self-efficacy.
3. Pain self-efficacy is hypothesized to be negatively related to disability outcomes.
4. Pain self-efficacy is hypothesized to mediate the relationship between PTSD symptom severity and disability outcomes, while statistically controlling for chronic pain severity.

Method

Participants
• 251 adults recruited from Amazon’s Mechanical Turk (MTurk)
• All participants were trauma exposed (as defined by Criterion A of the PTSD diagnosis in DSM-5) and experiencing chronic pain (as defined by suffering from pain for over three months)
• PTSD symptom severity: M = 29.08, SD = 19.79
• Chronic pain severity: M = 6.25, SD = 1.68

Materials
• Participants were administered instruments through MTurk
• Pain Self-Efficacy Questionnaire: a measure of an individual’s perceived ability to manage pain
• World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0): a measure of disability severity
• Brief Pain Inventory (Short Form): a measure of pain severity in the past 24 hours, on average, and at the present moment
• PTSD Checklist for DSM-5 (PCL-5): a measure of PTSD symptoms

Results

• There was a significant total effect of PTSD severity on disability, while covarying for chronic pain severity
  \( c = 0.65, p < .001 \)
• Pain self-efficacy exerted an indirect effect on the relationship between PTSD severity and disability,
  \( F(2, 248) = 69.95, p < .001 \)
• The total effect of PTSD severity on disability, while controlling for chronic pain severity, remained significant after accounting for the indirect effect of pain self-efficacy
  \( c' = 0.49, p < .001 \)

Table 1. Correlation Matrix

<table>
<thead>
<tr>
<th>Variable</th>
<th>PTSD Symptom Severity</th>
<th>Pain Self-Efficacy</th>
<th>Disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD Symptom</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain Self-Efficacy</td>
<td>-.22**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Disability</td>
<td>.58**</td>
<td>-.42**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the p < .01 level

Conclusions

• The results of this study have clinical applications
  • Clinicians who see patients with comorbid PTSD and chronic pain should target pain self-efficacy along with trauma coping self-efficacy to improve overall outcomes
  • Individuals with comorbid PTSD and chronic pain should receive treatment for both disorders
  • Future research should examine trauma coping self-efficacy and pain self-efficacy as mediators between chronic pain severity and disability outcomes, and between PTSD severity and disability outcomes, in a sample of individuals with comorbid chronic pain and PTSD

References