A Brief Measure of Fear of Pain: Assessing the Factor Structure and Psychometric Properties of the Short Form Fear of Pain Questionnaire

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INTRODUCTION

- Emotions, particularly fear, play an important role in the experience of both acute and chronic pain (Geisser et al., 1994; McCracken et al., 1992; Romano & Turner, 1985).
- Fear of pain impacts pain-related disability, pain intensity, and pain behavior (e.g., avoidance, complaining, help seeking), among other aspects of the pain experience, across medical and general populations (e.g., Crombez et al., 1999; George et al., 2006; McCracken et al., 1996; Parr et al., 2012; van Wijk & Joogsraaten, 2009).
- The 30-item Fear of Pain Questionnaire-III (FPQ-III; McNeil & Rainwater, 1998) was designed to assess fear of pain and has been utilized widely in experimental and clinical research in the areas of psychology, medicine, and dentistry.
- The measure contains 3 subscales: Fear of Severe Pain, Fear of Medical/Dental Pain, and Fear of Minor Pain.
- The instrument has well-evidenced reliability and validity (Łuszczyńska & Cieślak, 2005; McNeil & Rainwater, 1998; Osman et al., 2001; Roelofs et al., 2005).
- Given the need for shorter and more efficient screening and assessment tools, a short-form version of the FPQ-III, known as the SF-FPQ, was developed using both undergraduate and chronic pain samples (McNeil et al., 2013). The SF-FPQ maintained the three-factor structure of the original FPQ-III.
- Though certainly promising as a screening instrument, especially in medical and dental settings, and as a brief research tool, there is limited literature addressing the psychometric properties of the SF-FPQ.
- This study aimed to replicate the factor structure of the SF-FPQ and to examine psychometric properties of the instrument using a large community sample.

METHOD

- Measures: Fear of Pain Questionnaire-Short Form (McNeil et al., 2013; see Figure 1) – 9-item, self-report measure of pain-related fear; established norms for clinical and non-clinical samples; well-evidenced reliability and validity
- Total score range: 9-45; Subscale score range: 3-15

RESULT

- A Principal Components Analysis (with Varimax rotation) confirms the original three-factor structure of the SF-FPQ (using an Eigenvalue cutoff of 0.90). After rotation, 71.4% of total variance is accounted for by the solution. See Table 1.

Table 1. Results of Principal Components Analysis

<table>
<thead>
<tr>
<th>Factor</th>
<th>Subscale Name</th>
<th>Variance Accounted For (%)</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fear of Severe Pain</td>
<td>50.2</td>
<td>1, 6, 9</td>
</tr>
<tr>
<td>2</td>
<td>Fear of Medical/Dental Pain</td>
<td>11.1</td>
<td>2, 4, 8</td>
</tr>
<tr>
<td>3</td>
<td>Fear of Minor Pain</td>
<td>10.1</td>
<td>3, 5, 7</td>
</tr>
</tbody>
</table>

- High internal consistency was observed for total SF-FPQ score ($M = 23.6, SD = 8.2, Cronbach’s $\alpha = .88$). See Table 2 for reliability estimates for each subscale.

Table 2. Means & Reliability Statistics for Subscales of the SF-FPQ

<table>
<thead>
<tr>
<th>Subscale</th>
<th>M score (Range: 3-15)</th>
<th>SD</th>
<th>Cronbach’s $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of Severe Pain</td>
<td>9.9</td>
<td>3.7</td>
<td>.84</td>
</tr>
<tr>
<td>Fear of Medical/Dental Pain</td>
<td>6.1</td>
<td>2.6</td>
<td>.70</td>
</tr>
<tr>
<td>Fear of Minor Pain</td>
<td>7.7</td>
<td>3.3</td>
<td>.77</td>
</tr>
</tbody>
</table>

DISCUSSION

- As was observed in the original chronic pain sample, Minor, Severe, and Medical/Dental Pain subscales emerged in the SF-FPQ for this Appalachian community sample. High internal consistency was observed for total and subscale SF-FPQ scores.
- These results provide additional support for the use of the SF-FPQ as a psychometrically sound measure of fear of pain.
- Evidence from this study confirms that the SF-FPQ is a reliable and valid measure of fear of pain, and may have particular utility in multidisciplinary research and clinical contexts as a result of its brevity.

PARTICIPANTS

- Participants were members of families taking part in the Center for Oral Health Research in Appalachia (COHRA) study on determinants of oral diseases in families.
- N = 1164 (740 female)
- Ages 18 – 81 years ($M = 34.3, SD = 9.4$)

SUPPORT AND CONTACT INFORMATION

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