

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 & Joogsraten, 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 (Łuszczynska & 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.*

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 ($M = 34.3$, $SD = 9.4$)

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

Short Form of the FEAR OF PAIN QUESTIONNAIRE

Name: _____ Date: _____

INSTRUCTIONS: The items listed below describe painful experiences. Please look at each item and think about how FEARFUL you are of experiencing the PAIN associated with each item. If you have never experienced the PAIN of a particular item, please answer on the basis of how FEARFUL you expect you would be if you had such an experience. Circle one number for each item below to rate your FEAR OF PAIN in relation to each event.

I FEAR the PAIN associated with:

	Not At All	A Little	A Fair Amount	Very Much	Extreme
1. Breaking your arm.	1	2	3	4	5
2. Having a foot doctor remove a wart from your foot with a sharp instrument.	1	2	3	4	5
3. Getting a paper-cut on your finger.	1	2	3	4	5
4. Receiving an injection in your mouth.	1	2	3	4	5
5. Getting strong soap in both your eyes while bathing or showering.	1	2	3	4	5
6. Having someone slam a heavy car door on your hand.	1	2	3	4	5
7. Gulping a hot drink before it has cooled.	1	2	3	4	5
8. Receiving an injection in your hip/buttocks.	1	2	3	4	5
9. Falling down a flight of concrete stairs.	1	2	3	4	5

Figure 1. Short Form Fear of Pain Questionnaire

- Procedure
 - Participants completed the study questionnaire as part of a larger, comprehensive protocol involving interviews, oral health assessment, microbiological assessment, and DNA collection.
 - Factor structure of the SF-FPQ was assessed using a Principal Components Analysis. Reliability also was measured. All statistical analyses were completed with SPSS 21 (IBM, 2012).

RESULTS

- 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

Factor	Subscale Name	Variance Accounted For (%)	Items
1	Fear of Severe Pain	50.2	1, 6, 9
2	Fear of Medical/Dental Pain	11.1	2, 4, 8
3	Fear of Minor Pain	10.1	3, 5, 7

- 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

Subscale	M score (Range: 3-15)	SD	Cronbach's α
Fear of Severe Pain	9.9	3.7	.84
Fear of Medical/Dental Pain	6.1	2.6	.70
Fear of Minor Pain	7.7	3.3	.77

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.

SUPPORT AND CONTACT INFORMATION

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