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Pain anxiety among chronic pain patients: specific phobia or manifestation of anxiety sensitivity?

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Abstract

Rather than viewing anxiety among chronic pain patients as simply a component of negative affectivity, investigators have developed a model of "pain anxiety" in which patients develop fear and avoidance of activity linked to pain. We examined whether pain anxiety can be conceptualized as a specific phobia, or whether evidence supported the notion that pain anxiety is better understood as a manifestation of anxiety sensitivity in the context of chronic pain. Chronic musculoskeletal pain patients (N=70) underwent cold pressor and mental arithmetic tasks while cardiovascular, self-report, and behavior indexes were recorded. They completed measures of pain anxiety, anxiety sensitivity, fear of negative evaluation, depression and trait anxiety. Correlation analyses showed pain anxiety was related to pain-relevant responses during cold pressor, but it was also related to evaluation-relevant responses during cold pressor, and to pain- and evaluation-relevant responses (including subtraction accuracy) during mental arithmetic. Regression analyses showed that almost all effects of pain anxiety on task responses were accounted for by anxiety sensitivity. Fear of negative evaluation, in contrast, correlated only with evaluation-relevant responses, and mostly during mental arithmetic. These effects remained significant when depression, trait anxiety, or anxiety sensitivity were statistically controlled. Pain anxiety may be an expression of anxiety sensitivity rather than a circumscribed phobia; a distinction that could profitably guide treatment strategies.

Keywords: Pain anxiety; Anxiety sensitivity; Chronic pain; Anxiety-provocation

Theory and research indicate that anxiety is an important emotional concomitant of chronic pain. Not only are measures of trait anxiety at least moderately correlated with such indexes of

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adjustment as pain severity and perceived disability (e.g., McCracken, Gross, Aikens, & Carnrike, 1996), but chronic pain patients appear to suffer disproportionately from anxiety disorders (Asmundson, Jacobson, Allerdings, & Norton, 1996; Asmundson, Norton, Allerdings, Norton, & Larsen, 1998). A straightforward conceptualization of these empirical findings is that anxiety is a component of the pronounced negative affectivity experienced by patients afflicted with chronic pain. That is, anxiety may be viewed as just one symptom of a general malaise also composed of depression and suppressed anger.

Another view of how anxiety and chronic pain are linked borrows from Mowrer's two-factor model of fear conditioning (1947), and conceptualizes chronic pain syndromes as products of fear and avoidance (Lethem, Slade, Troup, & Bentley, 1983; Philips, 1987). According to the two-factor model, fear is originally learned through classical conditioning, and the fear behavior is then maintained by avoiding the cues that have become associated with fear and anxiety. Fears are difficult to extinguish because individuals learn to avoid fear- or anxiety-provoking situations. Applied to chronic pain, the two-factor theory would suggest that individuals first experience fear or anxiety during activity that has become painful due to injury or other pathology, become anxious when faced with the prospect of such painful activity, and then avoid the activities associated with the possibility of experiencing pain or reinjury. Although adaptive in the short run as it promotes healing of damaged tissue, "avoidance behavior" may come to be maintained and generalized less as an attempt to escape noxious sensory stimuli, but more as an effort to reduce anxious arousal in anticipation of pain. Seen perhaps by the individual as a way to control and reduce pain, avoidance instead may lead to overprediction of pain severity (Rachman, 1994), and to reduced opportunities to have experiences that "disconfirm" the implicit belief that pain should be feared (Philips, 1987). Far from viewing anxiety among pain patients as merely one element of an elevated but diffuse negative affectivity, anxiety becomes the engine of a phenomenon akin to a specific phobia variously labeled pain anxiety (McCracken, Zayfert & Gross, 1992), fear-avoidance (Waddell, Newton, Henderson, Somerville, & Main, 1993), or kinesiophobia (Kori, Miller, & Todd, 1990).

Support has accumulated for the view that pain anxiety and avoidance is a kind of specific phobia. One overarching concern in this research has been to demonstrate that pain anxiety is a construct distinct from negative affect and trait anxiety. If this is indeed the case, then scales designed to tap pain anxiety (e.g., the Pain Anxiety Symptoms Scale; PASS; McCracken et al., 1992) should account for variance in chronic pain adjustment criteria beyond that accounted for by measures of negative affect and trait anxiety. Several studies have shown that pain anxiety scales predict significant increments in variance in various measures of disability when indexes of negative affect and even pain severity are controlled (e.g., McCracken et al., 1992; Crombez, Vlaeyen, Heuts & Lysens, 1999; Strahl, Kleinkecht, & Dinnel, 2000). Thus, what is accounted for in patient reports of disability by pain anxiety in particular may not be entirely reducible to, or explainable by negative affect or trait anxiety in general. A second concern has been whether pain anxiety is associated with actual behaviors that signal avoidance. A few studies have defined avoidance behaviors in terms of performances on physical capacity evaluations typically administered by physical and/or occupational therapists (Burns, Mullen, Higdon, Wei, & Lansky, 2000; McCracken, Gross, Sorg, & Edmands, 1993a; Vlaeyen, Kole-Snijders, Boeren, & van Eek, 1995). The activities performed during such evaluations produce fatigue and pain in many patients with chronic musculoskeletal pain, but patients afflicted with pain anxiety were expected to experience