ADA CE Program ARTICLE 3

Pain-related worry in patients with chronic orofacial pain

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ABSTRACT

Background. Pain-related worry is distinct from, but related to, pain catastrophizing (PC) and anxiety. Worry and its relationship with other variables have been studied in people with chronic pain but not in people with chronic orofacial pain. The authors explored the prevalence of trait, general and pain-related worry and the association of worry with higher pain levels and other variables.

Methods. The authors assessed people who had a diagnosis of chronic orofacial pain by using nonpain-related trait worry, state anxiety, trait anxiety, PC and pain measures. The participants' answers to an open-ended question about what they were most worried about led to the identification of worry domains, including worry about pain.

Results. The authors found that worrying about pain was related significantly to worst and least pain levels, pain interference and pain duration, as well as moderated trait worry in predicting pain interference. Although trait worry was not correlated directly with pain, when moderated by PC, it made substantial contributions in predicting pain interference.

Conclusions. Participants with chronic orofacial pain reported experiencing substantial levels of trait worry, anxiety, PC and worry about pain that related to pain ratings directly and indirectly.

Practical Implications. Clinicians should assess pain-related worry in patients with chronic orofacial pain to understand the effects of worry on pain and functioning. Clinicians could treat these patients more effectively by helping them reduce their levels of pain-related worry and focusing on improved coping.

Key Words. Psychological adaptation; anxiety disorders; behavioral sciences; facial pain; myofascial pain; orofacial pain.

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Orofacial pain" refers to pain associated with the hard and soft tissues of the head, face and neck. In terms of prevalence, about 22 percent of the general population has experienced it.[1,2] The range of diagnoses includes disorders of muscular and joint origin, headache and neuropathic pain. Research results suggest that chronic pain disorders—including chronic orofacial pain—are characterized by a state of pain amplification and heightened psychological distress.[3] Somatization, negative affect or mood, and high levels of perceived stress also are important risk factors for chronic orofacial pain.[4] Worry, which is distinct from pain catastrophizing (PC), has been recognized as an important factor in patients with chronic pain.[5-10] Worry may be the patient's attempt to solve the chronic pain problem.[5-10] The author of a 2013 review highlighted treatment implications of PC for dental patients.[11] Other research results have demonstrated the importance of PC in patients with orofacial pain.[12-14] However, investigators have not studied worry and its possible relationships to PC and other variables in patients with chronic orofacial pain.

In general, the worry process represents a negative, affect-laden cognitive activity that may be uncontrollable.[15] It also may be an attempt by the patient to engage in mental problem solving for an issue for which the outcome is uncertain and possibly negative. Patients who perceive possible dangers in different ways from one another may worry to varying extents to rehearse possible unpleasant outcomes. They may engage in avoidance or escape rather than in effective coping strategies or problem solving.[16] People who have generalized anxiety disorder may worry continuously about many minor problems and have been characterized as having trait worry (the tendency to worry uncontrollably about many things much of the time).[17] Worry is a common feature of chronic pain, especially when the cause of the

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chronic pain is largely unknown, and patients may worry about the possible threats and consequences of their painful condition.[7] Eccleston and colleagues[9] said that patients experienced worry about chronic pain as being more difficult to dismiss, more distracting, more attention grabbing, more intrusive, more distressing and less pleasant than worrying about something other than pain. Worry also has been associated strongly with the unpleasant emotional aspects of pain, particularly PC, which is related to increased pain, sleep disturbances, pain interference (the extent to which pain interfered with daily activities), abnormal cortisol stress responses and treatment seeking in patients with orofacial pain.[12-14,18] However, worry as a pattern of thought and misdirected problem solving is distinct from PC, anxiety, and pain-related fear and avoidance.[10,19]

Worry about chronic pain has been conceptualized as a perseverance loop of misdirected problem solving concerning the possible causes and the negative consequences of pain.[5] Instead of being helpful, this type of worry can result in being hypervigilant about pain. Chronic pain also may be perceived as a persistent and unpleasant signal of threat—that is, a problem without an acceptable solution.[7] If patients experience relentless pain, they may develop maladaptive ways of coping. Such efforts are maintained by negative thinking, such as the tendency to catastrophize about pain and its consequences.[6,11,20] Investigators have not studied worry in patients with orofacial pain; however, patients with chronic irritable bowel syndrome who worried more also engaged in more catastrophic thinking, and by means of this cognitive process, they experienced more intense pain and suffering.[10] PC also mediated the relationship between worry and pain.[10] Therefore, worrying about more general concerns or about pain and its consequences may cause further psychological distress, leading to more specific catastrophizing. This chain of events can become a self-perpetuating threat, resulting in heightened vigilance and attention to pain, thereby increasing pain and suffering in general.[5,7,8,10]

On the basis of this model, we hypothesized that specific pain-related worry and a higher level of trait worry in patients with chronic orofacial pain would be associated directly or indirectly with a higher level of experienced pain. To examine this relationship, we assessed the prevalence and levels of self-reported pain-related worry, trait worry and pain in a clinical sample of patients with a diagnosis of chronic orofacial pain. We also examined the type and extent of worry these patients experienced, explored possible indirect relationships between worry and pain (such as those moderated by PC and anxiety) and explored interactions between trait worry and pain-specific worry. Having a better understanding of these relationships should improve the assessment of the psychosocial aspects of chronic orofacial pain and help guide and refine interventions.

METHODS

Participants. This study received approval from the institutional review board at the University of North Carolina at Chapel Hill, and we obtained informed consent from each patient. We recruited consecutive patients from the Orofacial Pain Clinic in the School of Dentistry at the University of North Carolina at Chapel Hill. Inclusion criteria involved having received a diagnosis of chronic orofacial pain lasting for more than three months and being 18 years or older. Exclusion criteria included the inability to speak or write in English fluently and decisional impairment. Fifty patients (46 women, four men) with a mean (standard deviation [SD]) age of 41.28 (14.44) years (age range, 18-80 years) participated in the study (Table 1). This sex ratio is typical in patients who seek care for orofacial pain.[21] Table 1 shows the participants' demographic information.

Measures. Participants completed five questionnaires: demographic information, pain and mental health information, the Penn State Worry Questionnaire (PSWQ), the State-Trait Anxiety Inventory (STAI) and the Pain Catastrophizing Scale (PCS). We also assessed worry domains, including worry domain pain (WDP) or pain-related worry, by asking the open-ended question "What is the thing you are most worried about?"

Demographics, pain, diagnosis and mental health information. We recorded the participants' demographic information (that is, age, sex and race or ethnicity). Participants rated pain intensity on a scale ranging from zero to 10 (in which zero indicated "no pain" and 10 indicated "the worst possible pain") for current pain, as well as for the average, worst and least pain experienced in the preceding week. Participants also rated pain interference with general activity or normal work routine on a scale ranging from zero to 10 (in which zero indicated no interference and 10 indicated extreme interference). We recorded the participants' pain durations, mental health histories and current medications. We made diagnoses of orofacial pain by using guidelines from the American Academy of Orofacial Pain and the Research Diagnostic Criteria for Temporomandibular Disorders[22] after a trained orofacial pain clinician took the participants' medical, dental and mental health histories, conducted a clinical examination and reviewed relevant investigations.[1]

Worry domain pain (WDP). We assessed pain-related worry or WDP on the basis of responses to the open-ended question "What is the thing you are most worried about?" For participants who said they worried about pain, we coded yes as 1 and no as zero. We reported but did not use other domains of worry in the data analysis.

ABBREVIATION KEY. **PC:** Pain catastrophizing. **PCS:** Pain Catastrophizing Scale. **PSWQ:** Penn State Worry Questionnaire. **STAI:** State-Trait Anxiety Inventory. **WDP:** Worry domain pain.