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Psychosocial Aspects of Chronic Pelvic Pain

Pain is unwanted, is unfortunately common, and remains essential for survival (i.e., evading danger) and facilitating medical diagnoses. This complex amalgamation of sensation, emotions, and thoughts manifests itself as pain behavior. Pain is a motivating factor for physician consultations[1] and for emergency department visits and is regarded as a cause of almost one-third of primary care utililization.[2] Pain has been defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage."[3]

In part, pain is a sensory experience that varies in its severity and life impact according to the individual's subjective meaning associated with a pain situation, his or her emotional responses, the attention given to the pain, and other personal appraisals.[4] Indeed, the biopsychosocial model for pain purports that biological aspects of chronic illness (changes in muscles, joints, or nerves) have multidirectional relationships with psychological factors (catastrophizing) and with the social context for individuals (activities of daily living, interpersonal relationships) (see Fig. 1). Cognitive-biobehavioral pain models home in on the interaction between environment and cognitive factors, highlighting the role of coping skills and environmental support for the person in pain. Regardless of the model discussed, it is clear that self-regulatory processes are engaged, making individual patients' characteristics central components of their adaptive or maladaptive pain interpretation and thus experience.[5,6]

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Concerted deliberation on the subjective experience of pain has changed the way many clinicians conceptualize and manage pain, especially in chronic pain conditions refractory to existing treatments. The primary aim of this clinical update is to introduce the reader to urologic chronic pelvic pain syndromes (UCPPS). In particular, it offers a focused review of the psychosocial research associated with patient pain and quality of life (QoL) for chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) and interstitial cystitis/bladder pain syndrome (IC/BPS). This update will also highlight the research on interpersonal relationships and psychotherapeutic attempts to alleviate suffering in these patients. Conclusions will focus on advancing clinical practice in these syndromes.

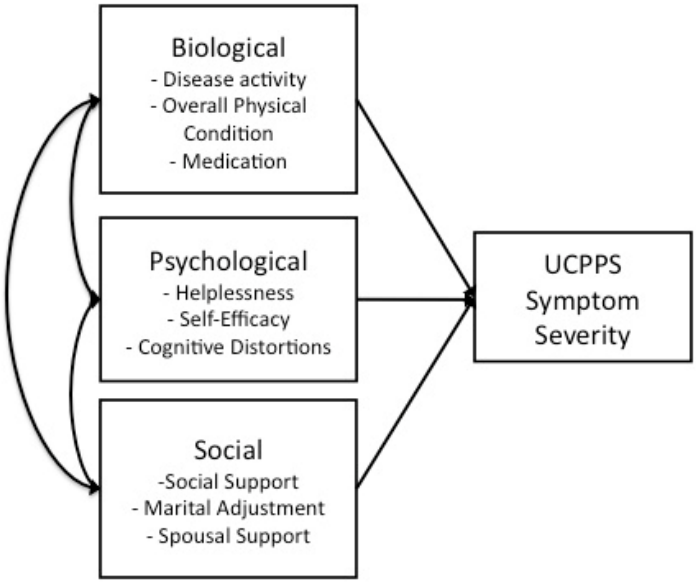

Fig. 1. Urologic chronic pelvic pain syndromes (UCPPS): biopsychosocial contributions to outcomes.

Urologic Chronic Pelvic Pain Syndromes

UCPPS are characterized by longstanding pelvic pain with acute symptom flare-up episodes and are a significant health care issue. CP/CPPS and IC/BPS are two such syndromes that manifest overlapping symptom profiles. These syndromes have similar theories of etiology and pathogenesis,[7,8] but their exact etiology is unknown. The similar symptoms of CP/CPPS and IC/BPS include dysuria; perineal, suprapubic, bladder, and/or sexual pain; and diminished QoL.[9]

Chronic Prostatitis/Chronic Pelvic Pain Syndrome

Acute (Category 1) and chronic (Category 2) bacterial prostatitis are the best understood and least common of the prostatitis syndromes. CP/CPPS, with or without inflammation, is the third category of prostatitis syndrome. In CP/CPPS type 3A (with inflammation), urine, semen, and other fluids from the prostate show no evidence of infection. Type 3B (no inflammation) is regarded as the most common but also least understood.[10] The fourth category of prostatitis is asymptomatic inflammatory prostatitis in which white blood cells are present in the semen but there is no pain.

CP/CPPS symptoms can vary without warning, with most men reporting acute pain attacks, longstanding persistent pain, or a combination

CP/CPPS symptoms can vary without warning,[11] with most men reporting acute pain attacks, longstanding persistent pain, or a combination. CP/CPPS pain is localized to urogenital regions (perineum, pelvic area, and/or genitalia).[12,13] Similar to other chronically painful conditions, the pain in CP/CPPS does not correspond strongly with medical findings.[14] Although CP/CPPS may include patients with inflammatory prostate findings, no pathognomonic, histologic, or radiologic findings exist for confirmatory diagnosis. Thus, CP/CPPS is a symptom complex rather than a specific disease.[15,16] The National Institutes of Health definition of CP/CPPS is pelvic pain for 3 of the previous 6 months, with or without voiding symptoms and with no evidence of uropathogenic bacterial infection.[11] A prostatitis

CP/CPPS is a symptom complex rather than a specific disease

diagnosis accounts for up to 8% of urology outpatient visits in the United States and almost 3% in Canada.[11] Symptoms peak at 35–65 years of age,[17] but can range considerably by socioeconomic status, race, and age.[13] The North American prevalence of CP/CPPS-like symptoms is estimated between 2–16%.[18,19] In a North American adolescent sample, 8.3% reported experiencing CP/CPPS-like symptoms, with a 3% prevalence of moderate-to-severe symptoms.[20] Similarly alarming prevalence rates were also found in an African adolescent male sample, with 13.3% reporting mild symptoms, and 5.4% moderate symptoms.[21] Symptoms of CP/CPPS do not routinely remit, with 66% of subjects in community-based samples experiencing symptoms 1 year later,[11] and tertiary care patients showing no drop in their pain, disability, or catastrophizing over a multi-year assessment.[22] Treatment successes in CP/CPPS have been described as dismal, with strategies based on sequential monotherapies considered suboptimal for patients with long histories of severe CP/CPPS.[10] The QoL of individuals with CP/CPPS is diminished to a level comparable to that experienced by patients with severe congestive heart failure, myocardial infarction, unstable angina, hemodialysis-dependent end-stage renal disease, or active Crohn's disease.[23,24]

Treatment successes in CP/CPPS have been described as dismal

CP/CPPS reviews of psychological and QoL outcomes suggest that physical disease and psychiatric disorders strongly coexist.[25] Personality measures in CP/CPPS have argued for a heterogeneous personality type (e.g., psychosomatic, alexithymic, borderline, or narcissistic), suggesting that individual prognosis can be challenging. Newer research advocates a biopsychosocial model for CP/CPPS pain, QoL, and psychological factors such as catastrophizing.[6,26] Pain-related "catastrophizing" is a negative, exaggerated cognitive schema typically engaged in when a patient is in, or anticipates being in, pain.[27] Catastrophizing can be assessed using the reliable and validated Pain Catastrophizing Scale,[27] which captures three factors: rumination, magnification, and helplessness (see Fig. 2). Rumination and magnification tend to be considered reactionary or proximal cognitive responses to pain experience, whereas helplessness may develop at a later time following ruminative or magnifying thoughts about pain. Helplessness is associated with feelings of despair and represents 'the internal belief that one cannot manage one's pain.

Catastrophizing is a robust pain predictor across clinical and nonclinical samples[19] and is important in understanding CP/CPPS outcomes. The first study examining catastrophizing in CP/CPPS found it to be associated with greater disability, depression, urinary symptoms, and pain.[6] Further, helplessness catastrophizing was the strongest pain predictor, even when urinary symptoms and depression were controlled for. In another study, CP/CPPS QoL determinants showed that diminished mental health status was predicted by greater helplessness catastrophizing and lower social support from friends and family, beyond all demographic, medical status, and other competing psychosocial variables.[26] Helplessness catastrophizing is a predominant pain and QoL predictor in CP/CPPS and is expressed by patients reporting longer pain durations (e.g., 4–7 years).[28] It is worth noting that the relationship between helplessness and pain is not specific to UCPPS and is likely to be a manifestation of suffering from long-term pain. Thus, it might be expected that those suffering in the earlier stages of chronicity may manifest different interrelating factors. For example, the male adolescent community-dwelling sample in Canada (16–19 years old) reported a high prevalence of chronic prostatitis-like symptoms (8.3%),[20] with pain, urinary symptoms, depressive symptoms, and catastrophizing all being associated with diminished QoL. Ancillary analyses also indicated that the magnification subscale for catastrophizing (e.g., "I keep thinking of other painful events") was the lone predictor of poorer QoL when we controlled for urinary status and pain.

Catastrophizing is a robust pain predictor across clinical and nonclinical samples and is important in understanding CP/CPPS outcomes

Monitoring CP/CPPS symptoms prospectively, we performed a 2-year evaluation of QoL, pain and psychosocial factors in tertiary care urology outpatient prostatitis clinics.[22] The results showed significant patient depression and anxiety that remained stable over the study period without direct treatment. Further, patient pain, self-reported disability, and catastrophizing did not lessen over the assessment period. The catastrophizing level in this sample was comparable to patients with whiplash,[29] IC/BPS,[30] and other CP/CPPS samples.[6] Thus, in the absence of a psychosocial or catastrophizing intervention or a reduction in pain, CP/CPPS patients are likely to exhibit alarmingly steady negative affect and catastrophic thinking about pain for extended periods. Indeed, catastrophizing and perhaps its associated helplessness is most likely a product of feeling underpowered to affect positive changes in one's ability to manage pain. In an attempt to guide the development of patient management, Shoskes et al. incorporated the CP/CPPS catastrophizing data into the clinically motivated UPOINT phenotyping system.[31] Here, the psychosocial UPOINT domain targets catastrophizing reduction as a primary objective. Empirically supported interventions that target reductions in catastrophizing and helplessness are suggested as valuable for men with CP/CPPS.[32]

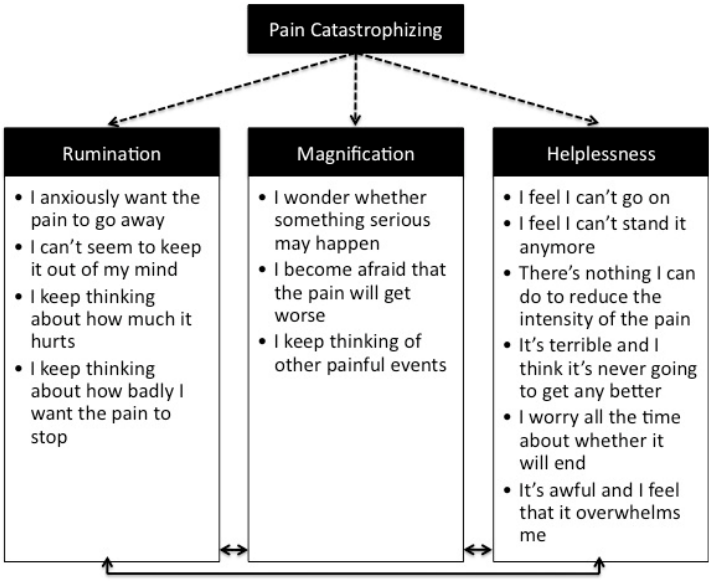

Fig. 2. The items, subscales and relations of the Pain Catastrophizing Scale.

Research has also provided insights into UCPPS catastrophizing and how social support from spouses may also be an important target for improving QoL. When we examined perceived spousal support in relation to patient pain behavior, solicitous spouse responses to patient pain were associated with poorer patient adjustment in CP/CPPS.[33] We studied changes in the association between pain and different outcome variables such as patient QoL, depression, and disability, at different levels of spousal responses to patient pain. Of these outcomes, only mental QoL and disability were predicted, and the association between pain and the outcome variables did not vary as a function of distracting and negative spousal responses.[33] At higher levels of spouse solicitousness (e.g., "tries to get me to rest"), patient pain was more highly associated with disability than at lower levels of spouse solicitousness. In fact, when lower levels of spouse solicitousness were reported, pain was not significantly associated with disability. This study suggests that greater levels of solicitous responses from a spouse, for the man's pain behavior, may increase the negative impact that pain can have on disability for men with CP/CPPS and thus should be avoided. However, the data could also mean that spouses may be responding solicitously as a reaction to the patient's pain and level of disability, where patients are physically incapable of completing certain tasks, and thus require the help of their spouse. Surprisingly, this study also reported that distracting and negative spousal responses to the patient had no impact on the association between patient pain and mental QoL. Perhaps this result supports the notion that spouse responses to pain behavior may be differentially associated with patient adjustment in men and women with chronic pain[34] and may be influenced by a series of inter- and intrapersonal variables.[35,36] We and our colleagues have also produced a novel finding yet to be published from this data. We analyzed the moderating potential of catastrophizing on patient outcomes (QoL, depression, and disability). The association between pain and mental QoL was stronger at higher levels of catastrophizing

than it was at moderate and lower levels of pain catastrophizing. Therefore, catastrophizing appears to be increasing the negative impact of pain on mental QoL.

Solicitous spouse responses to patient pain were associated with poorer patient adjustment in CP/CPPS

Following on the clinical necessity of these findings, a psychotherapy model was proposed that targeted the empirically supported UCPPS psychosocial risk factors (negative affect, social support, and catastrophizing),[37] and a study has examined the treatment feasibility of a risk factor reduction intervention.[38] We sought to determine the feasibility of a cognitive-behavioral symptom management program for the acute improvement of psychosocial risk factors of diminished QoL in patients with CP/CPPS. In the study, mean baseline scores showed significant linear reductions in pain, disability, and catastrophizing over time. As well, positive but modest changes were made in depressive symptoms and social support. The study also showed that follow-up scores on QoL were improved and CP/CPPS symptoms significantly reduced. Further, the baseline to 8-week termination analysis showed that score changes for CP/CPPS symptoms and psychosocial risk factors were predicted by reductions in catastrophizing. We concluded that psychosocial management programs could target and significantly reduce several empirically supported psychosocial risk factors associated with poorer CP/CPPS outcomes, but a randomized controlled trial with longitudinal follow-up is needed.

Interstitial Cystitis/Bladder Pain Syndrome

IC/BPS is a chronic pelvic pain syndrome, with pressure or pain perceived to be related to the urinary bladder, with at least one other urinary symptom, such as urinary urgency or frequency and no demonstrable infection or other confusable diseases.[39] IC/BPS can be divided into two general subtypes: ulcerative and non-ulcerative.[40] Pain has been considered to be suprapubically localized, radiating to the groin, vagina, rectum, or sacrum,[41] with patients also reporting multiple pain locations external to the pelvic-abdominal region[42] (see Fig. 3). IC/BPS pain is mild to moderate but can be constant, is sometimes severe, and is usually associated with bladder filling. IC/BPS patients also suffer multiple comorbid conditions with pain as a common symptom (e.g., irritable bowel syndrome, fibromyalgia).[30] Painful voiding frequency

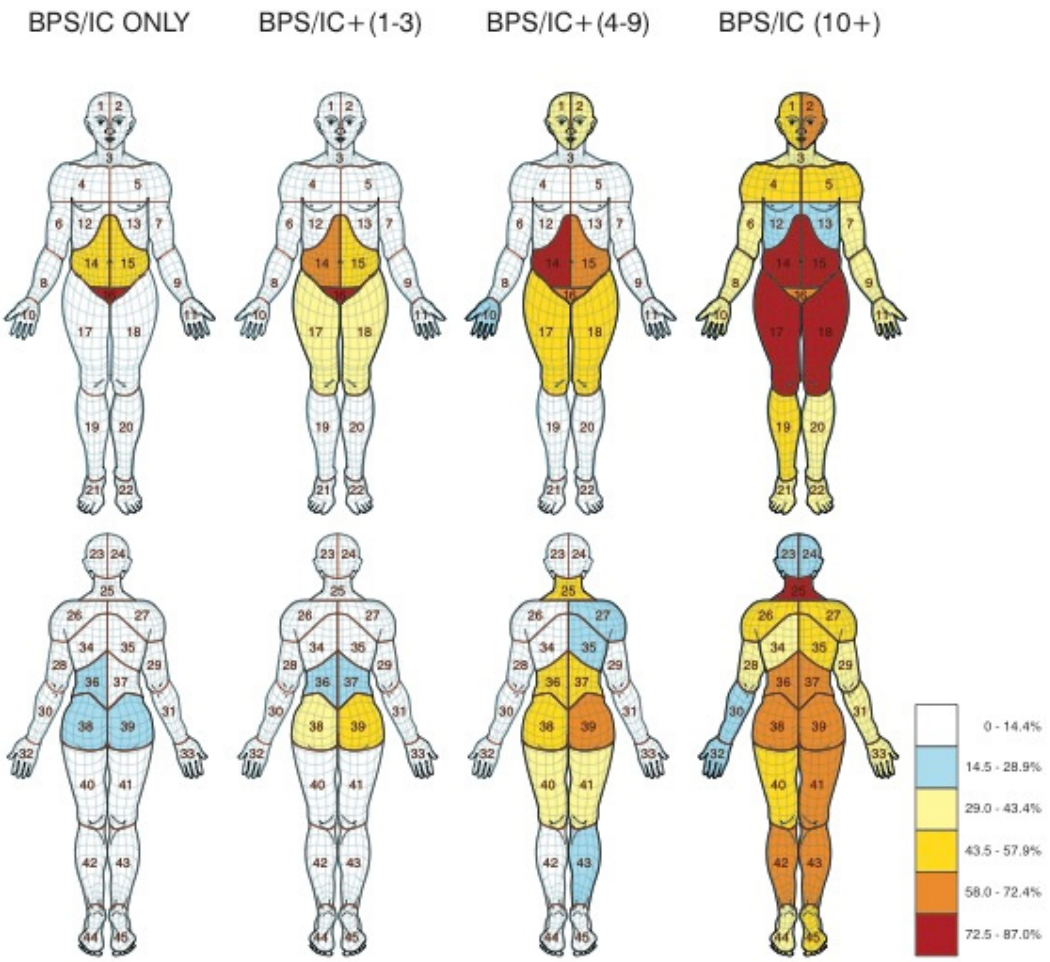

Fig. 3. Pain locations across patients by phenotypic pain groups for pain reported in the traditional pain region [BPS/IC only], the traditional region plus an additional 1–3 areas [BPS/IC + (1–3)], an additional 4–9 areas [BPS/IC + (4–9)], or an additional 10 areas [BPS/IC + (10+)] (adapted from Tripp et al. [42]).

can reach 10–25+ times a day.[43] Prevalence of IC/BPS symptoms is estimated at 3300–11,200/100,000.[44] Typically, symptoms have an onset between the ages of 20 and 40 years, after an acute bacterial cystitis.[43] Biomedical IC/BPS treatments primarily targeting the bladder are often ineffective.[40] Although men are diagnosed with IC/BPS and some respond to therapy,[45] IC/BPS is diagnosed primarily in women (female/male ratio 9:1),[43] so this review focuses on female outcomes of pain and QoL.

Patients in one study moved from a localized to systemic presentation, with pain, stress, depression, and sleep disturbance increasing while social support, sexual functioning, and quality of life deteriorated

IC/BPS has been associated with distinct clinical phenotypes on the basis of overlapping syndrome patterns (BPS and no other symptoms, BPS and irritable bowel syndrome only, BPS and fibromyalgia only, BPS and chronic fatigue syndrome only, and multiple associated conditions).[30] Also, as associated conditions increased, patients in one study moved from a localized to systemic presentation, with pain, stress, depression, and sleep disturbance increasing while social support, sexual functioning, and QoL deteriorated. Both anxiety and catastrophizing remained higher across phenotypes.[46] Further, increased symptom duration was also associated with phenotypic progression (localized to systemic). In a study of IC/BPS pain mapping, patients reported more pain than controls in all reported body areas, and four pain phenotypes were created based on increasing counts of body locations. Patients reported more body pain locations, along with more pain, urinary symptoms, depression, catastrophizing, and diminished QoL than controls. The increased-pain phenotype was associated with poorer psychosocial adjustment and diminished physical QoL, with catastrophizing and scores for low mental QoL remaining stable across all groups.[42] These findings suggest that clinicians carefully consider pain location distributions and the potential impact of body pain phenotypes during patient evaluation and treatment.

IC/BPS patients reporting greater catastrophizing also reported greater depression, poorer mental health, worse social functioning, and greater pain.[47] Further, catastrophizing, but not age or symptom severity, was related to more severe symptoms for both depression and QoL, suggested similar associations to other pain samples. Pain experience and catastrophizing have also been tested in a laboratory study examining generalized cutaneous hypersensitivity, which found that catastrophizing was correlated with duration of IC/BPS symptoms and with thresholds to warm stimuli at the T12 dermatome, suggesting habituation to somatic stimuli is impaired in patients. Though cautious to draw conclusions, the authors suggested that the physical and psychological differences found in their study could potentially predispose patients with IC/BPS to chronic pain.[48]

IC/BPS has also been examined for unique and shared associations between QoL, symptoms, catastrophizing, depression, pain, and sexual functioning.[49] Women recruited from three North American centers completed measures and hierarchical regressions that tested both unique and combined factor effects on QoL. The results showed that diminished physical QoL scores were predicted by longer symptom duration and greater pain severity. However, poorer mental composite QoL scores were predicted by older age and greater pain catastrophizing (on a helplessness subscale). These data showed that longer symptoms, pain, older age, and helplessness catastrophizing were superior predictors of poorer QoL over sexual functioning.

Another related study sought to repeat the CP/CPPS spousal support analyses in women suffering from IC/BPS.[50] The association between pain and all outcome variables did not vary as a function of levels of solicitous and negative spousal responses. However, the association between pain and mental QoL was stronger at lower levels of distracting responses than it was at moderate and higher levels of such responses from spouses (e.g., "tries to get me involved in some activity"). In essence, distracting spousal responses act to "buffer" the deleterious effects of pain on mental QoL in BPS. This study also tested the effects of "negative" spousal responses as well as "solicitous" spousal responses, but no significant relationships were found. These findings are in contrast to the spousal findings from the CP/CPPS study, where distracting spouse responses did not affect the relationship between pain and mental QoL in men with CP/CPPS. It seems likely that distracting spousal responses may act to "buffer" the deleterious effects of pain on mental QoL for women suffering from IC/BPS, but this type of support does not function similarly in men with CP/CPPS.

Psychosocial factors and catastrophizing in particular significantly affect IC/BPS outcomes

In a similar manner to CP/CPPS, the IC/BPS catastrophizing findings have directed current efforts in the area of clinical assessment and management of psychosocial factors for improved patient adjustment. Using the UPOINT classification system for patients diagnosed with IC/BPS,[46,37] the psychosocial domain (catastrophizing, depression) identified patients with IC/BPS who also reported more severe pain and greater urinary urgency and frequency.[51] Although cause-and-effect determinations in the relationship between pain, IC/BPS symptoms, and psychosocial parameters were not feasible from this study design, psychosocial factors and catastrophizing in particular significantly affect IC/BPS outcomes.

Concluding Comments

By their very nature, painful urology (specifically urogenital) syndromes are more than a physical phenomenon. Rather, they represent a complex physical, emotional, sexual, and interpersonal combination associated with negative patient outcomes.

The research as well as our clinical practice suggest that psychosocial risk factors for patients' pain and QoL are significant, providing insights into potential avenues for better management. Indeed, psychotherapies in UCPPS are feasible, indicating that adjunctive psychosocial interventions should be considered and expanded upon in patient care maps. Discussion of

Painful urology (specifically urogenital) syndromes are more than a physical phenomenon

catastrophizing (or distorted cognitions) concerning pain and its "meaning" with our patients can be critical to improving the patient experience. The basic type of therapy used by Tripp et al.[38,52] is amenable to the physician-patient relationship and can provide extremely valuable insights that can assist physicians in providing a broader set of disease management strategies. This opinion in no way represents a slight to the potential medical advances to be put forth in curing urologic chronic pelvic pain syndromes, which we hope will flourish in the near future, but rather constitutes a strong recommendation for psychosocial support of our patients. The urology pain patient care maps of tomorrow must use all avenues to combat the multidimensional nature of such conditions.

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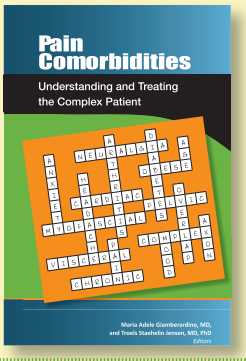

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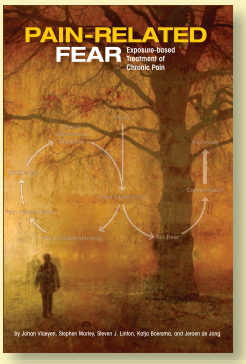

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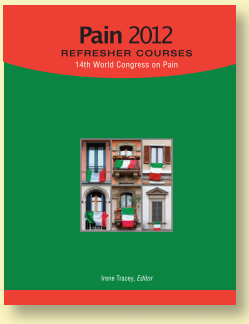

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