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Current Physical Medicine and Rehabilitation Reports

e-ISSN 2167-4833

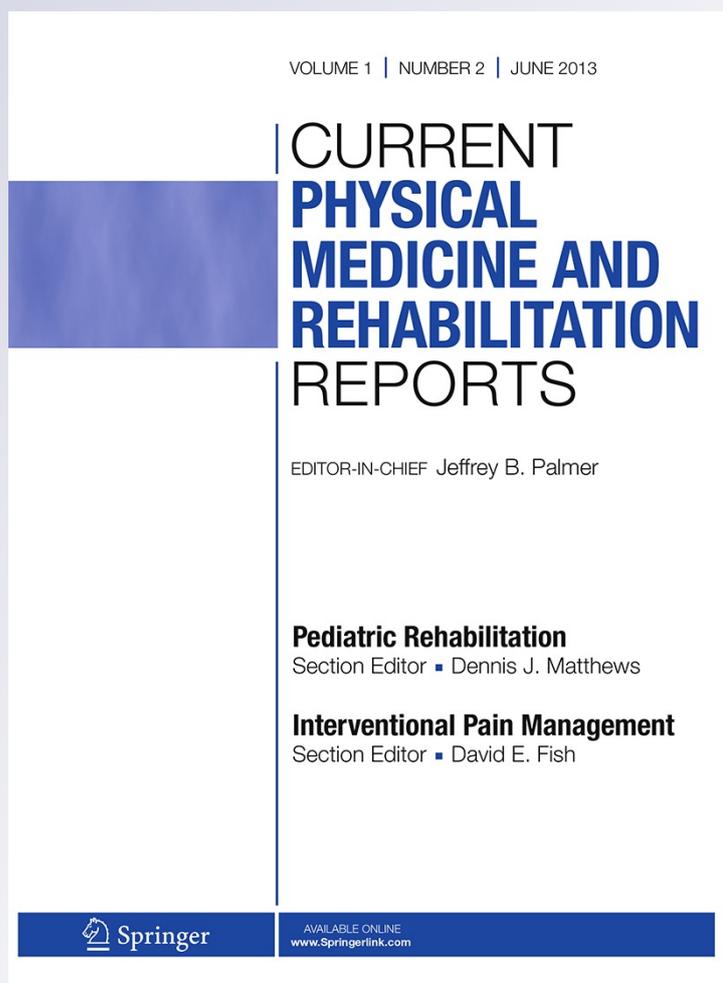
Volume 1

Number 2

Curr Phys Med Rehabil Rep (2013)

1:135-141

DOI 10.1007/s40141-013-0015-0



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Psychological Factors Influencing Chronic Pain and the Impact of Litigation

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Published online: 24 March 2013
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Abstract Understanding chronic pain requires an understanding of psychological factors related to the pain experience. This paradigm is the standard foundation for pain medicine as well as physical medicine and rehabilitation diagnosis and treatment. Pain patients with spine disease frequently present with a multifaceted array of physical and psychological aspects including depression, anxiety, traumatic stress, cognitive dysfunction, a potential for substance abuse, and regressed social functioning. An evolving standard of care mandates that prior to invasive pain therapies for spinal pain psychological suitability be determined. Spine pain disorders in the context of ongoing litigation present complex clinical situations which cannot be managed by medical treatments alone. The litigation will add stress and disruption to the medical diagnosis and treatment. The biopsychosocial model with inclusion of clinical psychologists as members of the treatment team is essential. This review will consider the important factors essential for a best practice approach to management of the spine pain patient with coexisting litigation.

Keywords Pain psychology · Psychological trauma · Somatization

Introduction

Psychological factors are accepted as a significant component of the experience of chronic pain. Pain is regarded

to be not only a sensation related to tissue damage but also as an individual perception. Injury produces disruption in the somatic integrity which causes neurobiological phenomena that are modified by a matrix of psychological and social factors. Physical stimuli related to tissue damage are experienced within a brain state context which is influenced by a complex combination of interacting factors which are both internal and external [1].

Therefore, comprehensive medical treatment of patients with pain disorders should always include a psychological assessment of the patient's emotional state. Treatment planning should include management of psychological problems. The origins and progression of chronic pain are bidirectional. "Psychological events are both risk factors in, and consequences of, chronic pain" [2].

Injury or illness which results in chronic pain invariably results in multiple psychologically traumatic losses. This is, in essence, a "loss of the assumptive world" of the patient [3]. Body integrity, financial status, social and occupational functioning, meaning, and identity can all be damaged by a pain disorder.

Patients with pain disorders who become involved in litigation will inevitably experience a complex array of psychological responses to their situation. Litigation in this patient population is a frequent occurrence as the origin of chronic pain is correlated highly with the occurrence of injuries, accidents, natural and manmade disasters, and negative medical outcomes. Both pain disorders and ongoing litigation are negative experiences which further interact synergistically.

Spine pain in the context of litigation is one of the most challenging and often enigmatic clinical problems. Litigation in this context burdens the treating physician and medical team. The motivation of the physician to evaluate the patient with litigation and optimize treatment decisions

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will be influenced in ways not always recognized when litigation is present.

Pain Psychology

Overview

The inclusion of clinical psychology in physical medicine and rehabilitation is an approach with significant consensus. Validation is derived from many levels of evidence. Clinical experience has evolved to create a compendium of empirical data, educational guidelines, and health care policy which all substantiate the value of pain psychology in guidelines for best practice in pain management.

The International Association for the Study of Pain [4] has defined pain as

An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. Pain is always subjective. Each individual learns the application of the word through experiences related to injury in early life. Biologists recognize that those stimuli which cause pain are liable to damage tissue. Accordingly, pain is that experience we associate with actual or potential tissue damage. It is unquestionably a sensation in a part or parts of the body, but it is also always unpleasant and therefore also an emotional experience Many people report pain in the absence of tissue damage or any likely pathophysiological cause; usually this happens for psychological reasons. There is usually no way to distinguish their experience from that due to tissue damage if we take the subjective report. If they regard their experience as pain, and if they report it in the same ways as pain caused by tissue damage, it should be accepted as pain. This definition avoids tying pain to the stimulus. Pain ... is always a psychological state

The Institute of Medicine of the National Academy of Sciences has recognized psychological therapies to be an essential aspect of the provision of pain-related health care [5••]. Psychological factors were seen as highly relevant in this study, which asserted that “because pain varies from patient to patient, healthcare providers should increasingly aim at tailoring pain care to each person’s experience.”

The Psychology of Pain

The transition from acute pain to chronic pain involves psychological factors [6]. A three-stage model for this process includes stage 1, where there is initial psychological

distress, largely fear; stage 2, where there is the development of psychological problems which are largely dependent on the patient’s character structure and social factors; and stage 3, when the patient may assume the sick role and regress to an identity characterized by abnormal illness behavior.

Hasenbring et al. [7] reviewed 900 studies of psychological variables and pain onset. Of these, 37 were deemed of good methodological quality. The findings substantiated that psychological factors were prominent in the transition from acute to chronic pain, and that these factors had more predictive power of the perception of the pain experience than the biomedical or biomechanical factors. Fear-related experiences such as catastrophic thinking and avoidance were especially significant in exacerbating pain perceptions.

Thus, findings related to psychological disturbance are normative in the population of patients with pain disorders. Knaster et al. [8] describe that “pain patients have a remarkable psychiatric morbidity.” Problems with common frequency include depression, anxiety, somatization, traumatic stress, cognitive impairment, substance abuse, and personality dysfunction. Psychological comorbidity is therefore nearly universal in people with pain illness.

Depression is especially comorbid with chronic pain, although it is often underrecognized and undertreated in this patient population. Pain patients tend to present with somatic complaints of depression (e.g., sleep, appetite, and sexual dysfunction) rather than the mood-related symptoms (e.g., sad mood, suicidal ideation, low self-esteem) noted in mental health populations [9]. This nuance can lead to depression being unrecognized. The self-report of depressive symptoms correlates highly with pain-related and disability-related negative thoughts [10]. Depression in patients with acute low back pain will adversely affect the clinical course [11]. Psychological variables such as the cognitive mediators of helplessness/hopelessness can mediate the development of depression in patients with pain [12]. Neurobiological variables have also been identified, including the finding that immune function and inflammation are activated by pain states [13].

Anxiety disorders are also a component of the clinical picture of chronic pain and are also underrecognized and undertreated, leading to medical illness complications and higher health care costs [14]. It is often anxiety sensitivity (the fear of anxiety sensations) and not anxiety per se which a problem for this population [15]. This anticipatory anxiety contributes to withdrawal and avoidance of functionality because of negative appraisal of capacities. Catastrophic thinking about pain correlates with increased psychological distress [16]. These issues limit the ability of the pain patient to effectively cope with the pain condition and to function. The fear of being hurt and the anxiety of expected suffering are factors which maintain disability

and the retreat into a withdrawn, debilitated, and regressed state.

Chronic pain is highly correlated with a history of traumatic interpersonal interactions [17]. A history of abuse—either during development or later in life—is highly prevalent. A history of sexual abuse is associated with a lifetime diagnosis of multiple and complex somatic and pain-related disorders [18–20]. Patients with a history of sexual abuse are also at high risk of having medically unexplained symptoms, including chronic pain, and of having increased health care use and unproductive health care provision, leading to frustration and conflict [21]. Overlapping neurobiological mechanisms are found in posttraumatic stress disorder and chronic pain [22•]. Early life trauma can culminate in abnormalities in inflammation, immune function, neuroendocrine regulation, neurotransmitter stability, and vulnerability to central sensitization and abnormal brain function [23, 24]. All of these mechanisms lead to a higher risk of illness and disease.

Psychological trauma from exposure to extreme levels of stress which is apart from that which is considered normal human experience can cause psychological dysregulation along a continuum. The syndrome of posttraumatic stress disorder (with flashbacks, nightmares, and emotional constriction) is the common consequence of this type of exposure to unbearable circumstances. The severer presentation of trauma is complex posttraumatic stress, which is characterized by altered self-capacities, cognitive symptoms, mood disturbance, overdeveloped avoidance response somatoform distress, and posttraumatic stress [25]. There is a risk that such exposure can cause cortical sensitization and complex chronic pain disorders [26].

Pain patients have been observed to have unique personality characteristics which manifest themselves in a complex array of unusual functioning. Such characteristics do not necessarily indicate a personality disorder. It has been observed that although the incidence of personality disorders in the general population is 3 %, reports of personality disorders in the chronic pain population reveal an incidence of up to 59 % [27]. This high prevalence, however, is not credible. No consistent finding has been found to explain or support such a trend. The distress of chronic pain may make patients seem as though they had a personality disorder due to diminished functioning and disability.

Chronic pain disorders may be due to premorbid personality predispositions (vulnerability) in a situational context of tissue damage and impairment (stress), leading to the so-called stress diathesis model for pain and psychological dysfunction [28]. Nonetheless, personality organization is an essential dimension in the diagnosis and treatment of patients with chronic pain as “it represents a measure of structural impairment that is to a considerable extent independent of Axis I and Axis II diagnoses” [29].

The high levels of emotional distress caused by persistent pain can amplify physical sensations, leading to a habit of somatization (emotional processes are felt in the body) and hypochondria (interpretations of normal physical functioning as abnormal). The personality trait of alexithymia [30], which is found in a substantial number of pain patients, can worsen somatization. The trait of alexithymia is characterized by emotional constriction, a limited ability to communicate inner experiences, and a concrete manner of expression. Patients with the alexithymia trait perceive emotional experience physically, which increases pain perception.

Cognitive dysfunction is also common in people with pain. Typically, patients with pain disorders are maintained with pharmacotherapy regimens with agents that affect the central nervous system. As well, pain causes alteration of brain structure, including decision making in emotional situations [31], processing speed [32], disrupted attention and memory [33], and loss of gray matter in pain-processing structures [34].

As the trend toward the use of opioid agents in pain medicine has increased, so has the risk of chemical dependency and the abuse of pharmacotherapy. Benzodiazepines can also cause addiction and abuse. Reliance on alcohol and street drugs to augment pharmacotherapy regimens is a continual threat to safe pain management. Many variants of psychological disturbance and physical suffering are paths to substance abuse and dependence in pain patients. Where opioid therapies are needed for management of pain states, the risk of abuse can be minimized by reliance on the biopsychosocial model of medical care [35].

The recent “epidemic” of opioid abuse in the USA has led to the development of guidelines for opioid monitoring. It may be that the omission of the psychological perspective has contributed to the problem. These approaches are augmented by assessment of psychological functioning apart from substance-related factors.

The Biopsychosocial Approach

The biopsychosocial model has increasingly influenced pain management determinations [36]. This theoretical foundation is implemented by the multidisciplinary model of pain treatment. Pain can best be managed with the involvement of health care practitioners from the disciplines of psychology, psychiatry, and behavioral therapy such as neurofeedback (EEG biofeedback) and hypnosis as well as physical therapy and complementary and alternative therapies (e.g., massage, acupuncture). Regular team treatment meetings of these professionals also enhance patient care and aid in management of difficult clinical dilemmas and presentations. [37].

Presurgical Psychological Screening

Invasive interventions, including spine surgery and the implantation of devices for control of pain, increasingly rely on a database derived from a comprehensive psychological evaluation to assess patient suitability. The complex nature of the psychological state of the patient with a pain disorder requires an understanding of the factors which might adversely influence the efficacy of invasive therapies.

Outcome studies have substantiated that a burden of psychiatric disease and/or psychological personality factors can derail pain therapies [38, 39, 40••] and have suggested that failed invasive pain therapies can increase negative emotions, demands on the physician, demands for increased oral medications, disability, progression of disease, and litigation.

Prior to surgical intervention or the implantation of devices to control pain, a psychological evaluation will identify risk factors which may impede outcomes. A growing literature has substantiated the value of presurgical psychological screening for these interventions and the risks of excluding these from the initial evaluation [39, 41–48]. Patients with litigation for spine pain will especially benefit from this input.

Specialized psychological tests have been developed to aid in this type of assessment. These tests take into account that medical patients are a unique cohort. The tests have thus been standardized on medical patients and thus present a more reliable clinical picture than those standardized on psychiatric patients, which can cause erroneous inflation of scales creating a picture of more serious psychiatric disturbance. These strata of psychological tests assess for variables such as negative health habits, psychiatric symptoms, coping styles, stress moderators, and treatment indicators [49•]. With such a database, pretreatment and posttreatment attributes which will influence somatic intervention for pain can be determined and treatments can be planned to improve outcomes.

Neuropsychological evaluation may also be needed if the pain patient demonstrates cognitive impairment which interferes with treatment and thus worsens the pain disorder. This is most relevant when there has been an associated head injury or loss of consciousness. However, a cautious approach is needed as most patients in this population are being maintained with multiple pharmacotherapy agents that can hamper cognitive functioning, and the brain is invariably sensitized by the ongoing influence of chronic pain. Negative emotions will also influence cognition. The recent neurobiological literature has substantiated that people with chronic pain can develop cognitive deficits as a component of the pain illness [31–34].

Patients who are deemed unsuitable for invasive pain therapies can potentially improve their suitability with mental health therapies, including psychopharmacological consultation and management, individual and family

psychotherapy, behavioral therapies, and improved social context. The goals of such mental health treatment are to reduce negative emotions, ameliorate disorders of dysregulation which will increase pain perception (e.g., substance abuse, eating disorders, or psychosis), improve coping with and management of stress, foster the ability to develop realistic expectations of treatment, and improve interpersonal relationships.

Nonetheless, there are patients with pain disorders who will not be suitable for invasive therapies even with the most optimal mental health intervention. This determination is a valuable one which can benefit both the physician and the patient. Avoiding invasive medical procedures in patients who will have negative outcomes is crucial in pain medicine.

Litigation and Spine Pain

Pain patients with ongoing litigation are a sizable subgroup of this population. Litigation may be related to worker's compensation claims for industrial injuries, personal injury claims for accidents and injuries, medical malpractice, workplace harassment or discrimination, or even criminal proceedings. The process of litigation causes negative emotions in many litigants above and beyond the injuries which are the focus of the proceedings. Given the adversarial nature of the US legal system, patients are potentially subjected to a level of scrutiny which heightens emotional stress and turmoil, thus accentuating the underlying pain disorder [50].

One of the most difficult aspects of the litigation process for the psyche of pain patients is the realization that the validity of the pain complaints will be called into question during the proceedings. This is truly adding insult to injury. The losses consequential to the pain disorder can be accentuated with the anger, frustration, and helplessness of being suspected of falsification when suffering is real. The progress made in medical treatment can be set back and new problems can develop in such circumstances [51].

As well, questioning the validity of a claim can provoke individuals who are augmenting or falsifying their pain disorder in litigation proceedings to engage in behaviors that worsen their condition. Such behaviors can be conscious or unconscious. The outcome is a worsened condition and more difficulty in sorting out the diagnosis and treatment options.

Pain medicine practitioners and institutions are often leery of providing treatment to pain patients with pending litigation. This perspective is not realistic or practical given the high percentage of pain patients with legal cases related to their condition. A specific protocol for evaluation and management of these patients with the inclusion of clinical psychologists trained to work in pain medicine will reduce the likelihood of encountering these problems.

Pain-related litigation in and of itself can cause increased depression, anger, frustration, anxiety, and mistrust as well

as hopeless despair and loss of motivation to engage in productive life activities. Family relationships can deteriorate and social networks can weaken. Many patients with pain are inadvertently drawn into the legal system because of the consequences of an industrial injury prompting a worker's compensation claim or other civil litigation such as personal injury or medical malpractice where no alternative to management of medical costs and loss of income-generating ability is seen. Many patients report feeling that they had no choice but to pursue litigation to safeguard their future survival. They may not be prepared for the scrutiny of their past history and personal life or the reality of sub-rosa (surreptitious) video surveillance.

It may be difficult to sort out whether a mental disorder in a patient with pain is a component of the pain or a psychological aspect of the injury itself. This question will be one of interest to the attorneys in the case. A psychological evaluation can potentially sort out this question.

Malingering and factitiousness may exist when pain disorders present in the context of litigation. Malingering is a behavior where there is the intentional production of false physical or psychological symptoms to achieve an external incentive. Factitious disorders (with either physiological or psychological signs and symptoms or a combination of both) are characterized by physical or psychological symptoms which are produced deliberately to present oneself as ill. These disorders differ in that malingering is for an external incentive (e.g., to win a damage award), whereas factitious disorders are intended to assume the sick role and are usually motivated without external incentives. Both of these disorders are relatively rare but they may be missed, especially in the pain medicine setting. These diagnoses can be clarified by specific psychological assessment methods which screen for symptom validity and level of effort and motivation using empirically derived protocols [52].

The best outcomes in the care of pain patients with litigation can be achieved by including psychological evaluation as a component of the initial pain medicine evaluation, and psychologists are members of the treatment team. A psychological evaluation will determine if a patient has psychiatric comorbidity and/or the level of psychological skills present for managing pain. The patient should be assessed for the capacity to realistically understand chronic pain, ability to manage treatment expectations, ability to participate in setting realistic treatment goals for management and potential cure of pain, capacity to form a therapeutic relationship with the treating physician, willingness and capability to take responsibility for maintaining productive life activities, and understanding the influence of the patient's social network. The degree of disability needs to be adequately assessed, and the potential for vocational rehabilitation and reentry into the workforce needs to be defined early in the course of treatment. The length of time

that a pain patient is disabled will be inversely proportional to the likelihood of reentry into the workforce.

The Influence of Culture in Understanding Pain

Culture plays a significant role in the perception of pain and in its treatment and can also influence spine pain in the context of litigation. The Institute of Medicine of the National Academy of Sciences "Report on Health Care Disparities" [53] concluded that there are significant racial and ethnic disparities in pain perception, assessment, and treatment which are found across settings and pain diagnoses. The bases of pain disparities are complex and include problems with patient communication, lack of understanding of cultural diversity by providers of pain care, and limitations in the health care system. Health care providers may not have a framework to understand the different values and expectations in pain treatment for minority groups or the differences in pain sensitivity for these patients. Pain treatments rely on scientific evidence which often does not include individuals from diverse backgrounds [54] and thus may not be effective for different ethnic groups and contexts [55].

Conclusion

People with pain disorders and litigation present a unique challenge to the pain physician. Consideration of the psychological aspects of the patient's pain problem is essential to ensure the best outcome for the patient and to minimize strain on the treatment team. Advances in clinical health psychology have made a variety of techniques and approaches available to the pain physician. Appropriate consideration of the psychological aspects of health care will contribute to optimizing outcomes for all involved.

Disclosure M.S. Jacobs is on the Best Practices Panel for Medtronic, has served as a psychology expert for defense and plaintiff court cases, has received payment as a symposium lecturer for the North American Neuromodulation Society, the International Association for the Study of Pain, and Medtronic, and has received payment for the development of educational presentations on SCS and IDD from Medtronic and the North American Neuromodulation Society.

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