



A PAIN PSYCHOLOGY PRIMER FOR PHYSICIANS

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Editor's Note: *This article complements the one about non-opioid treatment of back pain in our Winter 2016 issue by Dr. Tony Ton-That, medical director of the Spine and Low Back Pain Program at LGH.¹ That article focused on the many effective modalities of physical therapy for back pain, and pointed out the importance of addressing its psychological and social aspects, without providing specific recommendations. This article provides a detailed and comprehensive discussion of that crucial aspect of pain management.*

THE PROBLEM OF PAIN

Chronic pain comes with a great cost to individuals and society. In the United States alone, the Institute of Medicine estimates that 100 million adults are affected by chronic pain, at an estimated cost of up to \$635 billion annually.² Over the past decade, both the rates of prescribing opioid medication, and the amount prescribed, have dramatically increased. These trends have resulted in an increase in opioid-related deaths, which has resulted in a national imperative to decrease the number and size of opioid prescriptions. This tendency has left many providers and patients searching for alternative treatments for chronic pain. Unfortunately, many providers have received minimal or no formal training in pain management, and have few options to offer patients. On the other side, patients who relied solely on medication may experience greater suffering and dissatisfaction with their care.

THE CASE FOR BEHAVIORAL MEDICINE

Although behavioral services often pay for themselves in health care cost savings, they are frequently underutilized. In the context of the current discussion, targeted behavioral services such as pain psychology tend to produce even greater cost savings than general outpatient counseling.³ Colorado has looked at the results of integrating psychological services into pain treatment, and has adopted a biopsychosocial approach to treating injured workers. In a 2012 study, psychological

evaluations were used to select appropriate patients for surgery vs. conservative care, resulting in savings of \$859 million in one year, and shorter periods of disability.⁴

The American Hospital Association found that among individuals with medical conditions, comorbid psychological disorders are associated with increased health care utilization and readmissions, decreased adherence to treatment, and lost productivity.⁵ Despite the dichotomy between biomedical and psychosocial treatments in how health care is provided and covered by insurance, pain is both a sensory and an emotional experience, and it requires interdisciplinary treatment. Chronic pain commonly has comorbidities such as depression, anxiety, PTSD, sleep disorders, alcohol use disorders, and/or opioid misuse.

In addition, the way a person thinks about pain can impact how they react to it. Pain catastrophizing and fear avoidance are examples of attitudes that can impact behavior (i.e. functioning) and affect the pain experience. Pain catastrophizing is a tendency to worry about and feel helpless to cope with pain that may result in negativistic anticipation of a perceived painful event, such as an injection or surgery, or an exaggerated reaction to it. Fear avoidance is a reduction in activity due to fear of exacerbating pain, which can lead to disuse, depression, and disability as well as to increased pain with less activity. Both of these factors can impact pain, and both psychological and physical function.⁶

Certain psychological risk factors, such as personality disorders, impulsivity, poor coping, and unrealistic expectations have also been shown to negatively impact the outcome of various medical procedures, including spine surgery and implantation of pain devices.⁷ Environmental factors, such as reduced social support; pain-related issues of litigation and worker's compensation; and a history of abuse, can also affect the outcome of pain treatment. Thus, to successfully treat an individual with pain, one must treat the whole person, including their cognitive, emotional, social, and behavioral needs. This approach

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to managing pain is where behavioral interventions can be most helpful, and is one reason there has been an increase in the demand for behavioral health providers in medical practices over the past few years.

Overall, research has demonstrated that interdisciplinary chronic pain management is beneficial and cost effective, and Cognitive Behavioral Therapy (CBT) is a central feature of these programs.⁸ Integrated care involving both physical and behavioral health treatments improves the quality of care while decreasing cost and health care utilization.⁹ Turk (2002) concluded that pain rehabilitation programs were more cost-effective than implantable pain devices, conservative care, or surgery, despite comparable pain reduction.¹⁰

WHAT IS A PAIN PSYCHOLOGIST?

A pain psychologist is typically a licensed clinical psychologist or health psychologist who has specialized education and training in pain management. They may have completed internship and/or fellowship rotations in pain management and may be involved in conducting research. Psychologists who specialize in pain management are unfortunately scarce in certain parts of the country, as they tend to be employed through academic medical centers and specialized pain management clinics or programs. Consequently, many hospitals and Veterans Affairs facilities across the country have now developed internship and fellowship training programs, as the demand for psychologists to treat individuals with chronic pain has increased.

WHAT DOES A PSYCHOLOGIST DO TO HELP MY PATIENTS COPE WITH PAIN?

The focus of psychological interventions for chronic pain is to change the relationship patients have with pain. Pain can be demoralizing. Individuals experiencing chronic pain have tried multiple interventions and numerous medications, some of which may cause hyperalgesia, constipation, sedation, weight gain, or worse. Too often, the focus has been on finding an external source that can “fix” the pain problem, even though for chronic pain there is often no way to completely eliminate pain. The focus of treatment should be to empower patients to actively manage their pain and to function better with it, which involves enhancing internal resources and skills. This strategy may involve gradually increasing physical activity, improving diet or sleep, confronting catastrophizing thoughts, dealing with anxiety or depression, or – more likely – some combination of these tactics.

Pain psychologists may work with patients on a variety

of different issues. Goals may also focus on improving the patient’s autonomy, motivation in treatment, and communication with providers. Treatment can address unhealthy beliefs or thoughts about pain, which can affect the outcome of pain treatment. Training in coping skills may involve diaphragmatic breathing, progressive relaxation, pain suppression imagery, or hypnosis. Other common interventions focus on training in problem-solving skills, stress management, and activity-rest cycling. Treatment could also include addressing medication-related issues such as adherence, as well as preventing relapses and advance planning for setbacks when appropriate.

COGNITIVE BEHAVIORAL THERAPY AND CHRONIC PAIN

Cognitive behavioral therapy (CBT) is a term that is often used, yet many physicians may not fully understand all the techniques it encompasses that facilitate actively coping with chronic pain (CP). These may include addressing problematic thinking, coping with difficult emotional or sensory experiences, learning new techniques such as goal-setting or relaxation strategies, and preparing for setbacks. CBT has been the gold standard in behavioral pain management treatments for good reason, because it can address a variety of issues such as pain catastrophizing, acceptance, kinesiophobia, coping, pain behaviors, and social functioning.¹¹ One study of patients with subacute and chronic low back pain found that improvements in physical symptoms and pain self-efficacy, and reduction of fear avoidance, were sustained at one year. The cost of CBT was less than half that of other interventions in the study.¹² In addition, CBT with exercise has been found more effective than exercise alone for chronic low back pain.¹³

ACCEPTANCE AND COMMITMENT THERAPY (ACT)

Although CBT has been widely accepted and implemented into pain treatment programs for many years, a newer therapeutic technique has been gaining traction. Acceptance and Commitment Therapy (ACT) and other mindfulness-based therapies are promising alternatives to CBT. Whereas CBT focuses on *changing* unhealthy thoughts, feelings, and behaviors, ACT focuses on *accepting* thoughts, feelings, and sensations. ACT “is based on the idea that psychological rigidity is a root cause” of suffering and focuses on increasing psychological flexibility and value-based living.¹⁴ In layman’s terms, this involves acknowledging that it may not be possible to eliminate pain, and placing one’s energy into behaviors that promote positive experiences or improved functioning in another area of one’s life. One study that used ACT

for individuals with chronic pain found that 75% of patients reported improvement in at least one of the following domains: acceptance, pain catastrophizing, depression, anxiety, quality of life, and pain-related anxiety.¹⁵

MINDFULNESS

Mindfulness, which is rapidly becoming a familiar term, has some similarities to ACT; it is the practice of purposeful, nonjudgmental, moment-to-moment awareness. Mindfulness-based stress reduction (MBSR), a mind/body intervention developed by Jon Kabat-Zinn, has been used for a variety of medical conditions including chronic pain. One study found that mindfulness-based interventions and CBT have different positive effects on aspects of pain in individuals with rheumatoid arthritis. Mindfulness results in greater reductions in fatigue, pain catastrophizing, morning disability, and symptoms of anxiety.¹⁶ Mindfulness-based cognitive therapy is a technique that combines mindfulness techniques with cognitive interventions from CBT.

RELAXATION TRAINING

Relaxation training is a technique often used in CBT or biofeedback training. It typically involves helping the individual to be more cognizant of emotional or physical tension, and to learn skills that calm the mind and body. It often involves educating the patient about the autonomic nervous system. One type of relaxation training is guided imagery, which involves rehearsing an imaginary scene such as a pleasant memory or favorite vacation, which can be used to divert attention during a painful procedure.

There have been many studies of relaxation training for a variety of pain conditions. In one such study, relaxation training prior to abdominal surgery reduced pain intensity and levels of anxiety following surgery, as well as decreased need for opioid analgesics, and improved patient autonomy in managing pain.¹⁷ Diaphragmatic breathing and progressive muscle relaxation can help lower levels of arousal, thereby moderating anticipation anxiety.¹⁸ Relaxation training has also been effective for migraine, musculoskeletal pain, and low back pain.¹⁹

BIOFEEDBACK

Biofeedback training is a method of using sensors to provide instant feedback to a person about various aspects of their physiology, in order to increase their bodily awareness and teach them how to control their

physiological responses. There are several methods of biofeedback training, including thermal, electromyographic, respiration, skin conductance, and heart rate variability biofeedback as well as neurofeedback.

Biofeedback training of tension-type headache and migraine has been shown to be an efficacious treatment.²⁰ It has also been empirically supported for Raynaud's disease, chronic pain, and temporomandibular disorders, and is possibly efficacious for fibromyalgia.²⁰

HYPNOSIS

Much like biofeedback, the use of hypnosis is a specialized skill. The American Society for Clinical Hypnosis defines hypnosis as "a state of consciousness involving focused attention and reduced peripheral awareness characterized by an enhanced capacity for response to suggestion." The altered state of consciousness can be used to mediate pain perception. Hypnotic analgesia can effectively reduce patient-rated pain severity in children and adults,²¹ and has been effective in the management of acute pain such as treatment of burns, invasive medical procedures, dental work, and labor pain during childbirth. Although there have been a limited number of randomized control trials, hypnosis has also been used for various chronic pain conditions including cancer pain, fibromyalgia, low back pain, arthritis, temporomandibular pain, and pain from sickle cell disease.²¹

VIRTUAL REALITY

Virtual reality has been studied as both an independent treatment and in conjunction with other behavioral treatments, such as hypnosis. However, virtual reality does not require the same level of specialized skill as hypnosis, making it an appealing alternative.²² Virtual reality technology frequently uses head-mounted displays to immerse the patient in a virtual world but may also incorporate auditory or tactile stimulation. Compared with distraction, virtual reality is statistically more effective in reducing reported pain in hospitalized patients.²² Much of the research to date has focused on acute pain during medical procedures, but it has also been found effective for managing burn care and cancer pain. A few of the chronic pain disorders studied with VR treatment are CRPS (Complex Regional Pain Syndrome) and chronic neck pain.²³ Unfortunately, access to virtual reality treatment is limited, due to the high cost of the technology and equipment.

INDIVIDUALS WHO ARE APPROPRIATE FOR REFERRAL FOR BEHAVIORAL PAIN TREATMENT:

- Are interested and motivated to learn self-management skills
- Have at least low average intelligence
- Are willing to complete homework assignments
- Have had a prolonged recovery from surgery, injury, etc.
- Have not exhausted all of their treatment options
- May be a member of a special population, such as children, pregnant women, and the elderly

SUMMARY

Behavioral pain treatment, including pain psychology can offer effective options for patients with chronic pain. Behavioral interventions can improve patient care,

but do not take the place of good medical care. Treatment of chronic pain is most effective using a patient-centered team approach with medical and behavioral providers working together to improve patient self-management and functioning. There are many problems inherent in separating behavioral health from medical care, including, but not limited to, stigma and communication barriers. Integrated medical and behavioral care can facilitate cohesion among providers, improve communication among the treatment team and with the patient, enhance continuity of care, increase adherence, and ultimately result in better care for the patient. Overall, there are many efficacious psychological and behavioral treatment options for patients that can help patients improve their ability to manage chronic pain, improve functioning, and change their relationship with pain.

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