Psychological Interventions for the Treatment of Chronic Pain in Adults

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Some people experience pain that persists for an extended time or even for their entire lives. Chronic pain has negative consequences beyond physical suffering, also affecting well-being, emotional functioning, and overall quality of life. The high prevalence of chronic pain, its undertreatment, and its societal burden make chronic pain a serious public-health concern.

In this issue of *Psychological Science in the Public Interest* (Volume 22, Issue 2), Mary A. Driscoll, Robert R. Edwards, William C. Becker, Ted J. Kaptchuk, and Robert D. Kerns examine psychological interventions for the treatment of chronic pain. Specifically, they address the gap between the evidence of the effectiveness of several psychological interventions and their availability and use in treatment.

Defining chronic pain

According to the International Association for the Study of Pain, chronic pain is “ongoing or recurrent pain that lasts beyond the usual course of acute illness or injury or for more than 3 to 6 months and adversely affects an individual’s well-being.” The U.S. Centers for Disease Control defines chronic pain as “pain that is persistent on most days or every day during the past 6 months.” Although chronic pain is commonly viewed as a symptom of an underlying condition, it can also be seen as a disease (e.g., nonspecific back pain). In many cases, the biological mechanisms underlying chronic pain are unknown, and the use of medical interventions (e.g., use of analgesics, surgery) might not be beneficial, Driscoll and colleagues explained. Moreover, people with chronic pain often report frustrations with health-care systems and health insurance, which tend to be unsympathetic or unsuccessful in addressing their complaints.

Driscoll and colleagues use the biopsychosocial model of chronic pain to explain its complexities. This model, proposed in 1978 by Engel, highlights the interrelatedness of biological factors (e.g., tissue damage, physical health, genetic vulnerabilities), psychological factors (e.g., attention, attitudes, catastrophizing), and social factors (e.g., cultural influences, social learning) in the context of health and illness, including pain and its management. The biopsychosocial model is currently recognized as the principal model that informs the study of pain and the clinical practice of pain management.

Psychological treatments

Research has indicated that several psychological factors play a role in the onset, maintenance, and exacerbation of chronic pain. Thus, several psychological interventions have been used in the treatment of chronic pain. Driscoll and colleagues describe the interventions that are most widely accepted within the pain-care community, discuss the interventions' underlying theories and mechanisms, and review the evidence for each intervention, including a description of the outcomes each is intended to affect (e.g., reduction in the use of analgesics; effects on mood; distress reduction). The authors review the following treatments:

- Supportive psychotherapy: Emphasizes unconditional acceptance and empathic understanding.
- Relaxation training: Uses breathing, muscle relaxation, and visual imagery to counteract the body's stress response.
- Biofeedback: Uses biofeedback equipment to monitor physiological responses to stress and pain (e.g., heart rate, sweating) and teaches how to down-regulate the body's physiological responses.
- Hypnosis: Involves a clinician's hypnotic suggestion to reduce pain and incorporates relaxation training.
- Operant-behavioral therapy: Seeks to replace maladaptive behaviors consistent with the "sick" role with healthier "well" behaviors.
- Cognitive-behavioral therapy: Identifies and seeks to change maladaptive thoughts about pain that cause distress and unhelpful behaviors, such as isolation and withdrawal; promotes the development of helpful behavioral coping strategies (e.g., relaxation).
- Acceptance and commitment therapy: Encourages acceptance of chronic pain and focuses on strategies for identifying and reinforcing behaviors consistent with the desired goals.
- Mindfulness-based interventions: Aims to disentangle physical pain from emotional pain via increased awareness of the body, the breath, and activity.
- Emotional-awareness and expression therapy: Highlights the interconnectivity of brain regions responsible for processing physical pain and emotions; encourages confronting avoided emotions to reduce the connection between emotions and pain.
- Psychologically informed physical therapy: Integrates physical therapy and cognitive behavioral therapy.

Although researchers and practitioners have widely studied (a) interventions to alleviate the effects of chronic pain and (b) the psychological factors that influence chronic pain outcomes, individual differences in pain outcomes and management also play a significant role. Driscoll and colleagues suggested that sex, gender, and sociocultural factors, such as race and ethnicity, appear to convey differential risk for pain, suboptimal treatment, and poorer pain outcomes. For example, chronic socioeconomic strain and racism can lead to greater activation of the sympathetic nervous system and physiological exhaustion, which can make individuals more sensitive to pain.

Integrated pain care

In 2016, the U.S. Department of Health and Human Services published its National Pain Strategy, which highlighted inadequacies and gaps in current approaches to chronic-pain care, often limited to medication or invasive medical procedures. To address these gaps, and consistent with the biopsychosocial model, the NPS recommended “integrated, evidence-based, patient-centered, multimodal, and interdisciplinary treatment as the standard of chronic-pain care,” and it defined integrated pain care as “the systematic coordination of medical, psychological, and social aspects of health care”.

The models of pain-care delivery that comply with these recommendations all suggest a critical role for psychology in treating chronic pain. However, and because pain-management practices are being reconsidered in the wake of long-term opioid therapy and the resultant opioid crisis in the United States, it is also critical to elaborate how psychological interventions may factor into opioid policy changes and the treatment of opioid-use disorder, Driscoll and colleagues suggested. Thus, “given the move away from risky pharmacologic and interventional (e.g., surgical) strategies, coupled with increasing recognition of the effectiveness of psychological interventions for the treatment of pain, the latter should be expected to grow, though the feasibility of that growth will largely depend on dismantling barriers,” concluded Driscoll and colleagues. These barriers operate at the patient, provider, and organizational or system levels and include patients not recognizing the benefit of psychological treatments, stigma toward mental health treatments, providers misunderstanding psychological treatments’ rationale and mechanisms, and inadequate insurance coverage to ensure timely and equitable access to treatments.

How Psychological Treatment for Chronic Pain: Improving Access and Integration

By Beth D. Darnall,
Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University School of Medicine

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The future of pain treatment

To address barriers to the use of psychological treatments of chronic pain, Driscoll and colleagues suggested addressing several gaps between research and clinical practice. These gaps include the need to research broader implementation and dissemination of treatments that already appear to be effective; the need to address comorbidities (e.g., co-occurrence of chronic pain and depression); demand for optimizing the effectiveness of interventions, given their interindividual variability; the need for establishing effectiveness of interventions in diverse populations with unique needs; and the expansion of mobile-health technology.

In addition, “efforts to optimize the effectiveness of such [psychological] interventions, to educate persons with pain and their providers about their utility, to broaden their reach, and to tailor them for unique populations remain important avenues for continued research.”

Improving access and integration

In an accompanying commentary, Beth D. Darnall (Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University School of Medicine) expands on future directions for pain treatment, emphasizing the importance of access to treatment, especially in the United States, where many accessibility and equity issues persist in pain care. Darnall argues that psychological treatments should be first-line treatments, applied early, and not just recommended after pharmacological and/or physical treatments have failed. Also, “rather than describing psychological treatment as ‘pain coping skills,’ which patients hear as ‘learning to cope with pain,’ psychological treatment may be described more accurately as directly reducing the intensity of pain and favorably shaping the nervous system toward relief,” she writes. Darnall also highlights the need to understand the heterogeneity of pain, the benefits of patient-centered approaches and efficient and scalable treatments, and how technology may be leveraged to support patients and clinicians. In addition, and as Driscoll and colleagues also suggested, Darnall calls for more integration of patients’ voices in clinical data by using real-world studies.

About the Authors (PDF, HTML)