

The Journal of Pain

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Critical Reviews

1153 Predictors of Treatment Outcome in Contextual Cognitive and Behavioral Therapies for Chronic Pain: A Systematic Review

Helen R. Gilpin, Alexandra Keyes, Daniel R. Stahl, Riannon Greig, and Lance M. McCracken

There is increasing evidence that Contextual forms of Cognitive Behavioural Therapy (CBT) are effective in the management of chronic pain, yet little is understood about the factors that moderate or predict outcomes in these treatments. This systematic review aimed to identify pre-treatment participant characteristics associated with positive treatment responses in Contextual CBT for chronic pain. Substantive findings were inconclusive but important methodological limitations and a lack of theoretical guidance were found. These included treatment heterogeneity and a lack of theoretical, a priori guidance in examining potential predictors. Future research should explicitly plan relevant methods and follow clear theoretical models.

1165 The Relationship Between Pacing and Avoidance in Chronic Pain: A Systematic Review and Meta-Analysis

Renata Hadzic, Louise Sharpe, and Bradley M. Wood

Activity pacing is ubiquitous in chronic pain management and aims to reduce pain-contingent avoidance of activity. This study systematically reviews the evidence regarding the relationship between measures of pacing and avoidance. This evaluation has linked pacing with higher levels of pain and disability. One explanation is an overlap between existing measures of pacing and avoidance, leading to links with poorer outcomes that are typically associated with avoidance. Directions for future research are proposed to ensure that an adequate measure of pacing exists in order to evaluate its impact on key outcomes in chronic pain.

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ON THE COVER

Tissue and nerve injury leads to the development of facilitated pain states in which the afferent traffic generated by otherwise innocuous or mildly aversive thermal and mechanical stimuli evokes a behavioral response consistent with a more intense stimulus. A variety of convergent preclinical studies have emphasized the importance of the role played by the spinal NMDA/glutamate-gated channel in the development of this facilitated state. This study examined the analgesic and behavioral profile of systemically delivered pro-drug L-4- chlorokynurenine (4-Cl-KYN) and two standard compounds used in the field (MK-801 and gabapentin). Compared to other drugs tested, 4-Cl-KYN has robust anti-nociceptive effects with a better side effect profile, highlighting its potential for treating hyperpathic pain states. See Yaksh et al, Page 1184.

Focus Article

1174

Examining Affective-Motivational Dynamics and Behavioral Implications Within The Interpersonal Context of Pain

Tine Vervoort and Zina Trost

Emotional, motivational, and interpersonal dimensions are considered integral to pain experience but have largely been examined separately. In this focus article, the authors argue that an integrative theoretical account that acknowledges each of these elements is a critical next step to capture the complexity and nuance of interpersonal pain dynamics and to shape future research. The authors describe the role of emotion regulation and strategies that may facilitate optimal interpersonal pain dynamics and caregiving within a multiple goal context, and outline a foundation for an integrative theoretical model and directions for future research.

Original Reports

1184

Characterization of the Effects of L-4-Chlorokynurenine on Nociception in Rodents

Tony L. Yaksh, Robert Schwarcz, and H. Ralph Snodgrass

Tissue and nerve injury leads to the development of facilitated pain states in which the afferent traffic generated by otherwise innocuous or mildly aversive thermal and mechanical stimuli evokes a behavioral response consistent with a more intense stimulus. A variety of convergent preclinical studies have emphasized the importance of the role played by the spinal NMDA/glutamate-gated channel in the development of this facilitated state. This study examined the analgesic and behavioral profile of systemically delivered prodrug L-4-chlorokynurenine (4-Cl-KYN) and two standard compounds used in the field (MK-801 and gabapentin). Compared to other drugs tested, 4-Cl-KYN has robust antinociceptive effects with a better side effect profile, highlighting its potential for treating hyperpathic pain states.

1197

Biased Intensity Judgements of Visceral Sensations After Learning to Fear Visceral Stimuli: A Drift Diffusion Approach

Jonas Zaman, Victoria J. Madden, Julie Iven, Katja Wiech, Nathalie Weltens, Huynh Giao Ly, Johan W. S. Vlaeyen, Lukas Van Oudenhove, and Ilse Van Diest

A growing body of research has identified fear of visceral sensations as a potential mechanism in the development and maintenance of visceral pain disorders. However, the extent to which such learned fear affects visceroreception remains unclear. To examine this, the authors used a differential fear conditioning paradigm with non-painful esophageal balloon distensions of two varied intensities as conditioning stimuli (CSs). The experiment comprised pre-acquisition, acquisition and postacquisition phases during which participants categorized the CSs with respect to their intensity. The results suggest that associative learning might indeed contribute to visceral hypersensitivity in functional gastro-intestinal disorders.

- 1209** **Validation of the Youth Acute Pain Functional Ability Questionnaire in Children and Adolescents Undergoing Inpatient Surgery**
- Jennifer A. Rabbitts, Rachel V. Aaron, William T. Zempsky, and Tonya M. Palermo
- Half of children admitted after surgery experience intense pain while hospitalized, and many experience continued pain and delayed functional recovery at home. However, there is a gap in tools available to measure acute functional ability in pediatric postsurgical settings. The authors sought to validate the Youth Acute Pain Functional Ability Questionnaire (YAPFAQ) in a large inpatient pediatric surgical population, evaluate its responsiveness to expected functional recovery, and develop a short form for broad clinical implementation. The measure showed good reliability and construct validity, with expected relationships with physical health-related quality of life and pain intensity. Early detection of problems with recovery may enable targeted therapies to improve postsurgical outcomes.
- 1216** **Psychological Characteristics and Pain Frequency Are Associated With Experimental Pain Sensitivity in Pediatric Patients With Sickle Cell Disease**
- Nitya Bakshi, Ines Lukombo, Helen Shnol, Inna Belfer, and Lakshmanan Krishnamurti
- Sickle Cell Disease (SCD) is associated with episodes of severe vasocclusive pain beginning in infancy with a subset of patients transitioning to chronic pain. Response to experimental pain using Quantitative Sensory Testing suggests altered pain processing. The objectives of this study were to characterize sensitivity to multiple modalities of experimental pain stimuli and to interrogate the relationship of psychological covariates. Anxiety, depressive symptoms, catastrophizing and somatization were found to be associated with increased sensitivity to experimental pain stimuli. These data suggest that careful consideration be given to psychological factors, age, sex and clinical burden of pain when studying response to experimental pain in SCD.
- 1229** **Depression and Pain in Asian and White Americans With Knee Osteoarthritis**
- Hyochol Ahn, Michael Weaver, Debra Lyon, Eunyoung Choi, and Roger B. Fillingim
- Few studies have examined the underlying psychosocial mechanisms of pain in Asian Americans. Using the biopsychosocial model, the authors sought to determine whether variations in depression contribute to racial group differences in symptomatic knee osteoarthritis pain between Asian Americans and non-Hispanic whites. The results of this study suggest that Asian Americans have higher levels of depressive symptoms and that depression plays a relevant role in greater clinical pain and experimental pain sensitivity in Asian Americans. This research adds to the growing literature regarding ethnic and racial differences in pain and its associated psychological conditions, and additional research is warranted to strengthen these findings.

1237

Postoperative Pain Management in Spanish Hospitals: A Cohort Study Using the PAIN-OUT Registry

Mauricio Polanco-García, Jaume García-Lopez, Neus Fàbregas, Windfried Meissner, and Margarita M. Puig, on behalf of the PAIN-OUT-Spain Consortium

The authors analyzed postoperative outcomes and analgesic-management in patients from tertiary care Spanish Hospitals. The study serves as a point of comparison with other Western countries and shows that pain intensity outcomes and opioid consumption were slightly better in the Spanish population. Chronic pain before surgery, and/or chronic opioid consumption, were associated with worsened pain-outcomes. This indicates that rigorous control of chronic pain before surgery, and that combining opioids with adjuvants and other analgesics perioperatively, might improve outcomes. Patients' pain participation in decision-making was inadequate and should be improved in Spanish hospitals, the authors report.

1253

Evidence for a Role of Nerve Injury in Painful Intervertebral Disc Degeneration: A Cross-Sectional Proteomic Analysis of Human Cerebrospinal Fluid

Tony K. Y. Lim, Kathleen M. Anderson, Pawan Hari, Marcos Di Falco, Troy E. Reihsen, George L. Wilcox, Kumar G. Belani, Sylvie LaBoissiere, Manuel R. Pinto, David S. Beebe, Lois J. Kehl, and Laura S. Stone

Chronic low back pain (LBP) is a highly prevalent, costly, and disabling condition which is undertreated. In some individuals, LBP arises from the intervertebral discs which may undergo degeneration, resulting in alterations in volume, shape, structure and composition. However, the link between intervertebral disc degeneration and chronic LBP is unclear. Cerebrospinal fluid was examined for differential protein expression in healthy controls, pain-free adults with asymptomatic intervertebral disc degeneration, and LBP patients with painful intervertebral disc degeneration. While disc degeneration was related to inflammation regardless of pain status, painful degeneration was associated with markers linked to nerve injury.

1270

Opioid Analgesics Administered for Pain in the Inpatient Pediatric Setting

Gary A. Walco, Nancy Gove, Jennifer Phillips, and Steven J. Weisman

This research aimed to describe utilization of opioid medications among infants, children, and adolescents on the inpatient setting. A retrospective chart review was conducted covering a span of one year, with a special focus on the prescription of opioids for long-term treatment of chronic pain. Results indicate that models of chronic pain that may be utilized in clinical trials of longer-term opioid usage in pediatrics are exceedingly limited. In addition, the patterns of utilization indicate that opioid administration among pediatric inpatients is not a likely contributory factor to concerns about opioid misuse in the United States. These data can help guide clinical trials and improve research methodologies.

1277 Development of the Parent Responses to School Functioning Questionnaire

Brittany N. Barber Garcia, Laura S. Gray, Laura E. Simons, and Deirdre E. Logan

Parents play an important role in supporting school functioning in youth with chronic pain, but no validated tools exist to assess parental responses to pain behaviors in the school context. This study aimed to develop and preliminarily validate the Parent Response to School Function, a parent self-report measure. The measure was administered to 418 parents of children treated for pain issues. Three subscales emerged capturing parents' personal distress, parents' level of distrust of the school, and parents' expectations and behaviors related to their child's ability to manage challenging school situations. The clinically-useful measure can inform interventions aimed at reducing functional disability in children by enhancing parents' ability to respond adaptively to child pain behaviors.

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