

The Journal of Pain

Table of Contents

Volume 11, Number 11, November 2010

Critical Review

1027 Systematic Review of Family Functioning in Families of Children and Adolescents With Chronic Pain

Amy S. Lewandowski, Tonya M. Palermo, Jennifer Stinson, Susannah Handley, and Christine T. Chambers

This critical review highlights the importance of family factors in pain-related disability in youth with chronic pain. Results suggest that family-level variables may be an important target for intervention. Family functioning measures showed significant variation and researchers should consider this when selecting instruments for use in research and clinical settings.

Original Reports

1039 The Impact of Adolescent Chronic Pain on Functioning: Disentangling the Complex Role of Anxiety

Lindsey L. Cohen, Kevin E. Vowles, and Christopher Eccleston

This study evaluates pain, anxiety, and functioning in 222 adolescents with chronic pain. Findings show that pain was consistently related to disability across measures of physical and social functioning, school attendance, and physician visits. The moderating role of anxiety highlights a number of research and clinical possibilities to explore for adolescents with chronic pain-related disability.

The Journal of Pain will publish appropriate images on the journal cover. Selected figures may accompany a submitted manuscript (authors should make a note in the covering letter), or images may be submitted individually. Please present your art for consideration. Visit <http://ees.elsevier.com/jpain> to upload your materials.

ON THE COVER

Individuals with temporomandibular disorder suffer from persistent facial pain and exhibit abnormal sensitivity to tactile stimulation. Cortical correlates of this abnormal sensitivity to touch were examined, using functional magnetic resonance imaging to record cortical responses evoked by low frequency vibration of the index finger in patients and in healthy controls. See Nebel, et al, page 1083.

1047

Clinical Factors Associated With Prescription Drug Use Disorder in Urban Primary Care Patients with Chronic Pain

Jane M. Liebschutz, Richard Saitz, Roger D. Weiss, Tali Averbuch, Sonia Schwartz, Ellen C. Meltzer, Elizabeth Claggett-Borne, Howard Cabral, and Jeffrey H. Samet

Risk factors for prescription drug use disorder among a sample of primary care patients with chronic pain at an urban, academic, safety-net hospital are examined. The conclusions may help clinicians identify those most at risk for developing this disorder when developing appropriate treatment plans.

1056

Peripheral Formalin Injury Induces 2 Stages of Microglial Activation in the Spinal Cord

Kai Li, Ting Lin, Ye Cao, Alan R. Light, and Kai-Yuan Fu

The unique properties of spinal microglial activation in a pain animal model are presented. The authors report that peripheral formalin injection induces 2 stages of microglial activation, and p38 activation in spinal microglia plays a key role in central pain modulation in formalin test respectively for the early acute phases and the late secondary long-term pain state as well.

1066

Skin Incision Induces Expression of Axonal Regeneration-Related Genes in Adult Rat Spinal Sensory Neurons

Caitlin E. Hill, Benjamin J. Harrison, Kris K. Rau, M. Tyler Houglund, Mary Bartlett Bunge, Lorne M. Mendell, and Jeffrey C. Petruska

Incisional and post-surgical pain is believed to arise from inflammation of tissue and the subsequent sensitization of peripheral and central neurons. The role of axonal regeneration-related processes has only been considered when there has been injury to the peripheral nerve itself, even though tissue damage likely induces injury of resident axons. This report finds that skin injury can induce expression of neuronal injury/regeneration-associated genes; this may impact how clinical post-surgical pain is investigated and treated.

1074 **Preference, Expectation, and Satisfaction in a Clinical Trial of Behavioral Interventions for Acute and Sub-Acute Low Back Pain**

Steven Z. George and Michael E. Robinson

This analysis aims to determine if treatment preference and patient expectation are predictors of trial outcomes and if selected patient satisfaction items were appropriate as measures. Higher expectation was associated with higher perceived effectiveness ratings for all treatments. These data support assessment of treatment preference and patient expectation as predictors and patient satisfaction as an outcome measure in clinical trials.

1083 **Temporomandibular Disorder Modifies Cortical Response to Tactile Stimulation**

Mary Beth Nebel, Stephen Folger, Mark Tommerdahl, Mark Hollins, Francis McGlone, and Gregory Essick

Individuals with temporomandibular disorder suffer from persistent facial pain and exhibit abnormal sensitivity to tactile stimulation. This work investigates cortical correlates of this abnormal sensitivity to touch. Understanding the complexity of sensory disruption in chronic pain could lead to improved methods for assessing cerebral cortical function in these patients.

1095 **Importance of Side Effects in Opioid Treatment: A Trade-Off Analysis With Patients and Physicians**

Razmic S. Gregorian, Jr., Alexander Gasik, Winghan Jacqueline Kwong, Simon Voeller, and Shane Kavanagh

This Internet survey was completed by 618 patients and focused on the impact of pain relief and opioid side effects on patients' and physicians' preferences for medication. Almost all patients reported at least 1 side effect, but physician estimated rates of side effects were much lower than those reported by patients. This study provides insight into patient and physician preferences of the risk and benefit balance of opioid therapy and could improve the understanding of patient needs and preferences.

1109

PROMIS Pediatric Pain Interference Scale: An Item Response Theory Analysis of the Pediatric Pain Item Bank

James W. Varni, Brian D. Stucky, David Thissen, Esi Morgan DeWitt, Debra E. Irwin, Jin-Shei Lai, Karin Yeatts, and Darren A. DeWalt

This study provides initial calibrations of the National Institutes of Health Patient Reported Outcomes Measurement Information System (PROMIS) pediatric pain item bank, and the PROMIS Pediatric Pain Interference Scale. It is anticipated that this new scale will have application in pediatric chronic and recurrent pain.

1120

Motor Training of the Lumbar Paraspinal Muscles Induces Immediate Changes in Motor Coordination in Patients With Recurrent Low Back Pain

Henry Tsao, Thomas R. Drutt, Tracie M. Schollum, and Paul W. Hodges

Recurrent low back pain is associated with altered motor coordination of the lumbar paraspinal muscles. Whether these changes can be modified with motor training remains unclear. Volunteers with low back pain were randomly assigned to activate cognitively the lumbar multifidus independently from other back muscles or to activate all paraspinal muscles with no attention to any specific muscles. These findings show the potential to alter motor coordination with motor training of the lumbar paraspinal muscles in recurrent low back pain.

1129

A Comparison of the DN4 and LANSS Questionnaires in the Assessment of Neuropathic Pain: Validity and Reliability of the Turkish Version of DN4

Isin Unal-Cevik, Saime Sarioglu-Ay, and Deniz Evcik

A screening tool that differentiates neuropathic pain from non-neuropathic pain is essential. Although there are many screening tools in the assessment of neuropathic pain, many physicians still have the problem of being unable to identify neuropathic pain patients easily. The authors report that the reliability and validity of Turkish version of DN4 were found to be useful for this purpose.

- 1136** **Attentional Biases Toward Sensory Pain Words in Acute and Chronic Pain Patients**
Sonia P. Haggman, Louise A. Sharpe, Michael K. Nicholas, and Kathryn M. Refshauge
Attentional biases are present in chronic and acute pain. Biases toward pain-related words of chronic and acute low back pain patients were compared with healthy pain-free controls. Results suggest that the experience of pain, rather than duration, is the primary indicator of the presence of pain-related biases.
- 1146** **Minocycline Attenuates Mechanical Allodynia and Central Sensitization Following Peripheral Second-Degree Burn Injury**
Yu-Wen Chang and Stephen G. Waxman
Burn injury induces severe pain that can be refractory to existing pharmacotherapies. In a rodent model of burn-associated pain, the authors demonstrate that the microglial inhibitor minocycline, delivered at the time of burn injury and for one week thereafter, has long-lasting effects, ameliorating allodynia for at least 1 month.
- 1155** **The Effect of Fibromyalgia and Widespread Pain on the Clinically Significant Temporomandibular Muscle and Joint Pain Disorders—A Prospective 18-Month Cohort Study**
Ana Miriam Velly, John O. Look, Eric Schiffman, Patricia A. Lenton, Wenjun Kang, Ronald P. Messner, Christina A. Holcroft, and James R. Friction
Most cases of temporomandibular muscle and joint disorders (TMJDs) are mild, but about 10% of patients develop disorders associated with chronic pain and disability. It has been suggested that fibromyalgia and widespread pain play a role in TMJD. This article assesses the possible connection and the authors conclude that fibromyalgia and widespread pain should receive important consideration when evaluating and developing a treatment plan for TMJD patients.
- 1165** **Dispositional Optimism Predicts Placebo Analgesia**
Andrew L. Geers, Justin A. Wellman, Stephanie L. Fowler, Suzanne G. Helfer, and Christopher R. France
Based upon prior research identifying dispositional optimism as a predictor of placebo responding, the hypothesis that individuals high in optimism would be more likely to respond to a placebo analgesic is tested. Results confirm that optimism was related to less cold pressor pain in the placebo condition compared with the control condition.

1172

Revised American Pain Society Patient Outcome Questionnaire (APS-POQ-R) for Quality Improvement of Pain Management in Hospitalized Adults: Preliminary Psychometric Evaluation

Debra B. Gordon, Rosemary C. Polomano, Teresa A. Pellino, Dennis C. Turk, Lance M. McCracken, Gwen Sherwood, Judith A. Paice, Mark S. Wallace, Scott A. Strassels, and John T. Farrar

The purpose of this article is to describe the evolution of the American Pain Society (APS) Patient Outcome Questionnaire for quality improvement purposes and present a revised version that includes instrument psychometrics. An interdisciplinary task force of the APS used a step-wise, empiric approach to revise, test, and examine psychometric properties of the Society's original patient outcome questionnaire.

1187

Comparisons of Catastrophizing, Pain Attitudes, and Cold-Pressor Pain Experience Between Chinese and European Canadian Young Adults

Annie Y. Hsieh, Dean A. Tripp, Li-Jun Ji, and Michael J. L. Sullivan

Experimental pain research indicates ethnic differences in pain experience. Most of the cross-cultural pain research studied African Americans and Hispanics with little data available for Asian groups. This study examines differences in pain catastrophizing, pain attitudes, and pain responses between Chinese and European Canadian young adults.

1195

Salivary Cortisol Release and Hypothalamic Pituitary Adrenal Axis Feedback Sensitivity in Fibromyalgia Is Associated With Depression But Not With Pain

Katja Wingenfeld, Detlev Nutzinger, Joachim Kauth, Dirk. H. Hellhammer, and Stefan Lautenbacher

Results on hypothalamic pituitary adrenal axis function in fibromyalgia are heterogeneous, and studies that integrate psychological and biological mechanisms in the search for pathways to fibromyalgia are rare. This work evaluates cortisol release and feedback regulation in fibromyalgia and its association with psychopathology and pain. Hypothalamic-pituitary-adrenal (HPA) axis-related alterations are associated with affective disturbances—such as depression—in patients with fibromyalgia, this work shows. The data suggest depression to be an important factor in HPA axis-related dysfunction in fibromyalgia. This may be an explanation for equivocal findings in the literature.

1203

Repetitive Transcranial Magnetic Stimulation Is Efficacious as an Add-On to Pharmacological Therapy in Complex Regional Pain Syndrome (CRPS) Type I

Helder Picarelli, Manoel Jacobsen Teixeira, Daniel Ciampi de Andrade, Martin Luiz Myczkowski, Tatiana Barreira Luvisotto, Lin Tchia Yeng, Erich Talamoni Fonoff, Saxby Pridmore, and Marco Antonio Marcolin

Single-session repetitive transcranial magnetic stimulation of the motor cortex is effective in the treatment of chronic pain patients, but the analgesic effect of repeated sessions is still unknown. This study shows an efficacy of repetitive sessions of high-frequency repetitive transcranial magnetic stimulation as an add-on therapy to refractory Complex Regional Pain Syndrome type I patients, showing a positive effect in different aspects of pain (sensory-discriminative and emotional-affective). This widens the perspective for the clinical use of this technique.

1211

Predictors of Postherpetic Neuralgia Among Patients With Herpes Zoster: A Prospective Study

Mélanie Drolet, Marc Brisson, Kenneth Schmader, Myron Levin, Robert Johnson, Michael Oxman, David Patrick, Stéphanie Camden, and James A. Mansi

Older age and greater acute pain severity are robust predictors of postherpetic neuralgia, this study notes, while functional status emerged as a novel predictor. Despite the high proportion of subjects treated with antivirals, the burden of postherpetic neuralgia remains considerable, suggesting that prevention and additional early interventions are needed to reduce the burden of herpes zoster.

1222

The Antinociceptive Effect of (-)-Linalool in Models of Chronic Inflammatory and Neuropathic Hypersensitivity in Mice

Patricia Aparecida Batista, Maria Fernanda de Paula Werner, Erica Carvalho Oliveira, Leonel Burgos, Patricia Pereira, Lucimar Filot da Silva Brum, Gina M. Story, and Adair R. S. Santos

This research provides information about antinociceptive properties of (-)-linalool, a monoterpene alcohol present in the essential oil of plants, in chronic inflammatory, and in neuropathic hypersensitivity. It also indicates that (-)-linalool might be potentially interesting in the development of new clinically relevant drugs for the management of persistent pain.

1230 The Prevalence of Chronic Pain in United States Adults: Results of an Internet-Based Survey

Catherine B. Johannes, T. Kim Le, Xiaolei Zhou,
Joseph A. Johnston, and Robert H. Dworkin

An Internet-based survey was conducted in the US to estimate prevalence of chronic pain and to describe sociodemographic correlates and characteristics. Analysis identified low household income and unemployment as significant correlates of chronic pain. Chronic pain is prevalent among US adults and is related to indicators of poorer socioeconomic status, this work concludes.

Instructions to Authors is available online at <http://www.jpain.org/authorinfo>. A **Mandatory Submission Form** (http://www.elsevier.com/framework_products/promis_misc/jpaincopyright.pdf) **must accompany all submissions**. This form should be downloaded, signed and faxed to (312) 275-7776.