

Current Topics in Pain: An Educational Opportunity

Check out this FREE **Current Topics in Pain** webinar sponsored by the PMSIG and led by Kathleen Sluka, PT, PhD, FAPTA. Dr. Sluka's topic of discussion will be "Mechanism Based Approach to Physical Therapy Pain Management." The webinar will be held on Oct. 30, 2018 at noon CST. See more details at: <https://www.orthopt.org/content/special-interest-groups/pain-management/webinar-series> Don't miss this exciting opportunity to learn from one of the leaders in our field!

PMSIG Research: Abstracts, Articles and Reviews

Every other month, the Pain Management Special Interest Group provides updates on new topics, new information and research related topics. Please feel free to submit a topic or research question to DaileyDanaL@sau.edu. All articles referenced this month are free articles from PubMed and a link is supplied under the authors.

September 2018 topic: Recent articles regarding musculoskeletal pain.

Current evidence based interdisciplinary treatment for pediatric musculoskeletal pain¹
Predictors of pain and functional outcomes after treatment of rotator cuff tears²
Prediction of healthcare utilization following physical therapy for musculoskeletal pain³
Levels of participation in internet based physical therapy for knee osteoarthritis⁴

Bibliography

1. Caes L, Fisher E, Clinch J, Eccleston C. Current Evidence-Based Interdisciplinary Treatment Options for Pediatric Musculoskeletal Pain. *Current Treatment Options in Rheumatology* 2018;4:223-34.
2. Jain NB, Ayers GD, Fan R, et al. Predictors of Pain and Functional Outcomes After the Nonoperative Treatment of Rotator Cuff Tears. *Orthopaedic Journal of Sports Medicine* 2018;6:2325967118788531.
3. Lentz TA, Beneciuk JM, George SZ. Prediction of healthcare utilization following an episode of physical therapy for musculoskeletal pain. *BMC health services research* 2018;18:648.
4. Pignato M, Arbeeve L, Schwartz TA, et al. Level of participation in physical therapy or an internet-based exercise training program: associations with outcomes for patients with knee osteoarthritis. *BMC Musculoskeletal Disorders* 2018;19:238.

Current Evidence-Based Interdisciplinary Treatment Options for Pediatric Musculoskeletal Pain.

Caes L, Fisher E, Clinch J, Eccleston C.

Free full text available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6096755/>

Purpose of review:

We review the prevalence of pediatric chronic musculoskeletal pain, the clinical need, the evidence for pharmacological, psychological, physical and, complementary approaches to pain management, and the possible future development of interdisciplinary and distance care.

Recent findings: We summarize the Cochrane Systematic Reviews on pharmacological interventions, which show a lack of evidence to support or refute the use of all classes of medication for the management of pain. The trials for NSAIDs did not show any superiority over comparators, nor did those of anti-depressants, and there are no trials for paracetamol, or of opioid medications. There are studies of psychological interventions which show promise and increasing support for physical therapy. The optimal approach remains an intensive interdisciplinary programmatic treatment, although this service is not available to most.

Summary:

1. Given the absence of evidence, a program of trials is now urgently required to establish the evidence base for analgesics that are widely prescribed for children and adolescents with chronic musculoskeletal pain. 2. Until that evidence becomes available, medicine review is an essential task in this population. 3. We need more examples and efficacy evaluations of intensive interdisciplinary interventions for chronic pain management, described in detail so that researchers and clinicians can unpack possible active treatment components. 4. Online treatments are likely to be critical in the future. We need to determine which aspects of treatment for which children and adolescents can be effectively delivered in this way, which will help reduce the burden of the large number of patients needing support from a small number of experts.

DOI: 10.1007/s40674-018-0101-7, PMCID: PMC6096755, PMID: 30148046

Predictors of Pain and Functional Outcomes After the Nonoperative Treatment of Rotator Cuff Tears.

Jain NB, Ayers GD, Fan R, Kuhn JE, Baumgarten K, Matzkin E, Higgins LD.

Free full text available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6080194/>

Background:

Optimal patient selection is key to the success of nonoperative treatment for rotator cuff tears.

Purpose: To assess the predictors of pain and functional outcomes in a longitudinal cohort of patients undergoing nonoperative treatment.

Study Design: Cohort study; Level of evidence, 2.

Methods:

A multicenter cohort of patients with rotator cuff tears undergoing nonoperative treatment was recruited from March 2011 to February 2015. Patients completed a detailed health questionnaire, completed standardized shoulder questionnaires including the Shoulder Pain and Disability Index (SPADI), and

underwent magnetic resonance imaging. In addition to baseline assessments, patients received follow-up questionnaires at 3, 6, 12, and 18 months. Longitudinal mixed models were used to test predictors of the SPADI score, and interactions with time were assessed.

Results:

In our cohort of 70 patients, being married as compared with being single/divorced/widowed ($P = .02$), a shorter duration of symptoms ($P = .02$), daily shoulder use at work that included light or no manual labor versus moderate or heavy manual labor ($P = .04$), alcohol use of 1 to 2 times per week or more as compared with 2 to 3 times per month or less ($P = .007$), and absence of fatty infiltration ($P = .0009$) were significantly associated with decreased SPADI scores (improved shoulder pain and disability) over time. When interactions with time were assessed, having a college level of education or higher compared with less than a college education showed a differential effect over time, with those with a college level of education or more having lower SPADI scores ($P = .004$). Partial-thickness tear versus full-thickness tear also had an interaction with follow-up duration, such that those with a partial-thickness tear had lower SPADI scores ($P = .0002$).

Conclusion:

Longitudinal predictors of better outcomes of the nonoperative treatment of rotator cuff tears included being married, having at least a college education, shorter duration of symptoms, light or manual labor in daily work, alcohol use of 1 to 2 times per week or more, partial-thickness tear, and absence of fatty infiltration of the rotator cuff. Our results suggest that nonoperative treatment should be performed early for optimal outcomes. These data can be used to select optimal candidates for the nonoperative treatment of rotator cuff tears and to assist with patient education and expectations before treatment.

DOI: 10.1177/2325967118788531, PMID: 30094270

Prediction of healthcare utilization following an episode of physical therapy for musculoskeletal pain.

Lentz TA, Beneciuk JM, George SZ.

Free full text available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6102917/>

Background

In the United States, value-based purchasing has created the need for healthcare systems to prospectively identify patients at risk for high healthcare utilization beyond a physical therapy episode for musculoskeletal pain. The purpose of this study was to determine predictors of pain-related healthcare utilization subsequent to an index episode of physical therapy for musculoskeletal pain.

Methods

This study assessed data from the Optimal Screening for Prediction of

Referral and Outcome (OSPRO) longitudinal cohort study that recruited individuals with a primary complaint of neck, low back, knee or shoulder pain in physical therapy (n = 440). Demographics, health-related information, review of systems, comorbidity and pain-related psychological distress measures were collected at baseline evaluation. Baseline to 4-week changes in pain intensity, disability, and pain-related psychological distress were measured as treatment response variables. At 6-months and 1-year after baseline evaluation, individuals reported use of opioids, injection, surgery, diagnostic tests or imaging, and emergency room visits for their pain condition over the follow-up period. Separate prediction models were developed for any subsequent care and service-specific utilization.

Results

Subsequent pain-related healthcare utilization was reported by 43% (n = 106) of the study sample that completed the 12-month follow-up (n = 246). Baseline disability and 4-week change in pain intensity were important global predictors of subsequent healthcare utilization. Age, insurance status, comorbidity burden, baseline pain, and 4-week changes in pain intensity, disability and pain-related psychological distress predicted specific service utilization.

Conclusion

In those completing follow up measures, risk of additional pain-related healthcare utilization after physical therapy was best predicted by baseline characteristics and 4-week treatment response variables for pain intensity, disability and pain-related psychological distress. These findings suggest treatment monitoring of specific response variables could enhance identification of those at risk for future healthcare utilization in addition to baseline assessment. Further study is required to determine how specific characteristics of the clinical encounter influence future utilization.

DOI: 10.1186/s12913-018-3470-6 , PMCID: PMC6102917, PMID: 30126409

Level of participation in physical therapy or an internet-based exercise training program: associations with outcomes for patients with knee osteoarthritis.

Pignato M, Arbeeva L, Schwartz TA, Callahan LF, Cooke J, Golightly YM, Goode AP, Heiderscheit BC, Hill C, Huffman KM, Severson HH, Allen KD.

Free full text available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6053740/>

Background

To examine whether number of physical therapy (PT) visits or amount of use of an internet-based exercise training (IBET) program is associated with differential improvement in outcomes for participants with knee osteoarthritis (OA).

Methods

A secondary analysis was performed using data from participants in 2

arms of a randomized control trial for individuals with symptomatic knee OA: PT (N = 135) or IBET (N = 124). We examined associations of number of PT visits attended (up to 8) or number of days the IBET website was accessed during the initial 4-month study period with changes in Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) total, pain and function subscales, as well as a 2-min Step Test, at 4-month and 12-month follow-up.

Results

Participants with more PT visits experienced greater improvement in WOMAC total score (estimate per additional visit = - 1.18, CI 95% = - 1.91, 0.46, $p < 0.001$) and function subscore (estimate = - 0.80, CI 95% = - 1.33, - 0.28, $p < 0.001$) across follow-up periods. For WOMAC pain subscale, the association with number of PT visits varied significantly between 4- and 12-month follow-up, with a stronger relationship at 4-months. There was a non-significant trend for more PT visits to be associated with greater improvement in 2-min Step Test. More frequent use of the IBET website was not associated with greater improvement for any outcome, at either time point.

Conclusion

Increased number of PT visits was associated with improved outcomes, and some of this benefit persisted 8 months after PT ended. This provides guidance for PT clinical practice and policies.

TRIAL REGISTRATION: NCT02312713, posted 9/25/2015.

DOI: 10.1186/s12891-018-2139-y, PMCID: PMC6053740, PMID: 30025540