

## Spotlight on Research: Let's talk about Pain Studies and Clinical Implications

Friday February 23<sup>rd</sup> 2018

### Session Handout

1. Goal of Spotlight on Research Session
  - a. Selected research abstracts in an education session
  - b. Common theme - this it's pain studies
2. General Introduction (George)
  - a. Big picture issues in the field
    - i. Individual variation
    - ii. Acute to chronic pain transition
    - iii. Paradigm shift for care delivery and associated pathways
      1. PT First - it is a safe option but is it effective?
  - b. New horizons for non-pharmacological management
    - i. Can we predict who transitions to a chronic pain state?
    - ii. How will self-management approaches be emphasized in the future?
    - iii. Why is virtual reality a legitimate treatment option, but placebo is not?
3. Platform Spotlight: Virtual Reality and Placebo and Pain - Oh My!
  - a. The Effectiveness of Virtual Reality As An Intervention To Decrease Chronic Low Back Pain In Adults As Compared To Standard Therapeutic Intervention: A Systematic Review (Leininger)
    1. Introduction
      - a. Frequency of Low Back Pain: According to the American Physical Therapy Association *Move Forward*, low back pain (LBP) affects over one-third of Americans. This has an effect on daily activities, exercise routines and sleep. Of those affected, 72% have reported using pain medications to relieve the symptoms of LBP.
      - b. Negative Consequences of Pain Medication Use for Chronic LBP: With rising cases of serious drug addiction to pain medications in the United States, it is imperative that alternative interventions are attempted for patients with chronic LBP.
      - c. Use of Virtual Reality in the Rehabilitation Setting: In recent years, *virtual reality* (VR) has been increasingly utilized in the rehabilitation setting to combat the presence of chronic pain with patients with an array of conditions. I will discuss some of the studies that determined the effectiveness of VR with several conditions dealing with pain and function (e.g. following third-degree burns).
    2. Systematic Review Concerning VR with Chronic LBP

- a. This systematic review was conducted to determine the effectiveness of VR as an intervention to decrease chronic LBP in adults as compared to conventional physical therapy (PT).
3. Results
4. Discussion
5. Clinical Relevance
6. Discussion of the use of Virtual reality in providing a novel opportunity for task-specific training in a stimulated, safe environment.
7. Conclusions
  - a. There is moderate to strong evidence to suggest that VR is an effective intervention for decreasing chronic LBP in adults when combined with conventional PT. There is limited evidence that VR alone, or in conjunction with conventional PT, is better than conventional PT alone for decreasing LBP. Limitations to be discussed.
- b. Placebo Disclosure Does Not Result In Negative Changes in Mood or Attitudes Towards Healthcare or the Provider (Bialosky)
  1. Study purpose
    - a. Determine whether disclosure of having received a placebo treatment following participation in a placebo controlled study of manual therapy was associated with changes in negative mood or attitudes towards healthcare and the provider
    - b. Determine the association between changes in mood or attitude following disclosure of having received a placebo treatment and changes in clinical outcomes
  2. Randomly assigned to receive
    - a. Spinal manipulative therapy
    - b. Placebo spinal manipulative therapy
    - c. Placebo spinal manipulative therapy with the instructional set, "The manual therapy technique you will receive has been shown to significantly reduce low back pain in some people"
    - d. No intervention
  3. Outcomes
    - a. Mood scale
      - i. Separate visual analog scales anchored with "none" to "most severe imaginable" for "depression", "anxiety", "frustration", "anger", and "fear"
    - b. Attitude Towards Healthcare and the Provider scale



challenging health behaviors for people experiencing pain with movement - physical activity and exercise

## 2. Aims and Hypotheses

- a. The primary aim was to investigate the effectiveness of the Stanford CPSMP combined PT care following clinical practice guidelines for people with CLBP compared to PT care alone in terms of:
    - i. Roland Morris Disability Questionnaire (1<sup>o</sup>)
    - ii. PROMIS<sup>®</sup> measures of physical and mental health
    - iii. Self-efficacy, pain related fear of movement, patient/provider partnership, and exercise behavior
  - b. The secondary aim was to investigate the processes by which the interventions promote improvements in health status through mediation analysis
    - i. The PT+CPSMP group may demonstrate equal effectiveness in health status indicators (disability and distress), but greater effectiveness in health beliefs and behaviors in comparison to standalone PT
    - ii. Health beliefs and behaviors: PT+CPSMP more effective for self-efficacy (PSEQ) and pain related fear of movement (TSK)
- b. Prediction of Persistent Musculoskeletal Pain at 12-Months: A Secondary Analysis of the Optimal Screening for Prediction of Referral and Outcome (OSPRO) Validation Cohort Study (Beneciuk)
1. Background
    - a. Chronic musculoskeletal pain – an epidemic in the United States and challenge to physical therapists
    - b. Accurate prediction of persistent musculoskeletal pain (challenges and opportunities)
  2. Study purpose
    - a. The purpose of this secondary analysis was to identify patient level factors predictive of persistent musculoskeletal pain 12 months after an episode of physical therapy.
    - b. We were specifically interested in determining whether newly developed assessment tools for pain associated psychological distress (OSPRO-YF) and review of systems (OSPRO-ROS) improved prediction of persistence of pain in combination with other patient level factors.
  3. Methods
    - a. Secondary analysis from the Optimal Screening for Prediction of Referral and Outcome (OSPRO) validation cohort

- b. Predictive measures included demographic and historical variables, pain related clinical variables, comorbidities, OSPRO tools
- c. Persistent musculoskeletal pain at 12 months (primary outcome) was assessed by self-report responses to two questions.
- d. Logistic regression was used to assess additional variance explained by the OSPRO-ROS and OSPRO-YF tools after considering other patient level factors for predicting persistent musculoskeletal pain

#### 4. Results

- a. Persistent pain at 12-months (n = 101, 36.2%) was associated with more comorbidities, higher NPRS, higher OSPRO-ROS and YF tool scores at baseline compared to those without persistent pain (P > 0.05) and independent of anatomical region (P = 0.403).
- b. Comorbidity number (OR range = 0.26 to 0.46), NPRS (baseline, OR = 1.43 to 1.76; 4-weeks, OR = 1.35 to 1.39) and OSPRO-ROS+ scores (OR = 1.33 to 1.54) were predictors in full and parsimonious models.

#### 5. Conclusions

- a. The OSPRO-ROS tool may be used to improve prediction of persistent musculoskeletal pain at 12-months in conjunction with comorbidities and pain intensity (baseline and 4-weeks).
- b. These are potentially important findings because persistent pain has not been commonly evaluated in previous screening studies; however is a relevant outcome in an era of front line non-pharmacological pain management.

6. Panel Discussion with Karayannis and Beneciuk

7. Spotlight Session Adjourned (George)