

TABLE:
Results of One-Way Repeated Measures ANOVA

Population	df	F	Sig.	Partial Eta Squared
Males R Hand	2.49, 725.21	87.68	p<.001	.23
Females R Hand	2.15, 670.21	47.49	p<.001	.13
Males L Hand	2.38, 692.99	37.08	p<.001	.11
Females L Hand	2.04, 636.56	20.74	p<.001	.06

Three Way Interaction: Age, Pinch Span/Level, Sex

Hand	df	F	Sig.	Partial Eta Squared
R Hand	14.22, 1400.65	.91	p=.552	.009
L Hand	13.53, 1332.74	.55	p=.551	.002

A non-significant three way interaction was noted bilaterally.

32

Rehabilitation Interventions for Acute Pain Management After Hand Injury or Surgery: An Evidence Synthesis Overview

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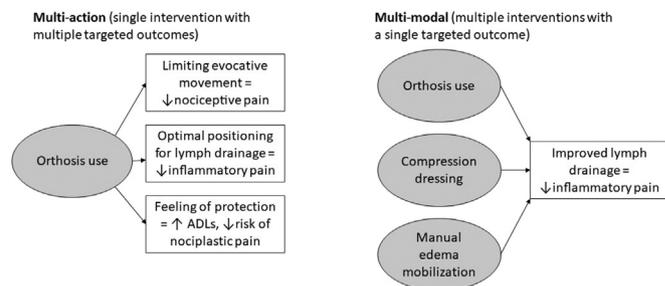
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Purpose: Management of acute pain is an early goal in hand rehabilitation, where conditions include fractures, soft tissue trauma, and post-operative treatment of emergent injuries and planned surgeries. Effective pain management promotes rehabilitation participation, and develops therapeutic alliance. Occupational therapists and physiotherapists develop treatment plans using evidence, client presentation, preferences, and available resources. To inform these decisions, we undertook evidence synthesis to provide an overview of research evaluating available interventions.

Methods: We conducted a systematic literature search, data screening and extraction, quality appraisal and narrative synthesis of systematic reviews and randomized controlled trials (RCTs) addressing acute pain after hand or wrist injury.

Results: Thirteen systematic reviews and 16 RCTs met our inclusion criteria, reporting pain reduction or self-reported composite measures including pain appraisal (e.g. pain subscale of Patient-Rated Wrist Evaluation). Interventions were categorized as a) mobilization/ immobilization interventions (splinting, casting, exercise), b) non-prescription medications (e.g. NSAIDs, arnica, vitamin C) or c) modalities and supervised therapy (for example, thermal modalities). Even high quality reviews (our mode AMSTAR rating was 100%) generally contained low quality trials (our Jadad RCT mean rating of 2.1/5 was representative of the overall literature) with modest effects reflecting heterogeneity in intervention frequency and duration, and pain representation.

Conclusion: Therapists often combine multi-action and multi-modal approaches: there is little evidence to recommend any single management strategy for acute pain after hand injury or surgery. Future research to advance patient care would benefit from explicit linkages between an intervention's anticipated mechanism of action, and pain outcomes.



Multi-action vs. multi-modal approaches to pain management interventions

33

The Relationship Between Patient Reported Outcomes Measurement Information System (PROMIS) Measures With Therapy Referral And Utilization

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Purpose: Patients seeking treatment for an upper extremity condition are at risk for experiencing symptoms of depression, anxiety, and pain which limits functional abilities. These symptoms can negatively impact their treatment, and functional outcomes. A newly available series of measures, Patient Reported Outcomes Measurement Information System (PROMIS), have been previously validated to measures of depression, (Patient Health Questionnaire (PHQ-9)), anxiety (Generalized Anxiety Disorder (GAD-7)), and pain (Brief Pain Inventory). This study aims to examine the impact of patient reported symptoms of depression, anxiety, and pain interference at presentation to a hand surgeon on referral rates to hand therapy services and utilization of therapy services, using PROMIS measures.

Methods: This cross-sectional retrospective study analyzed electronic medical records of patients with at least one of seven common upper extremity diagnoses, treated at a tertiary orthopedic center. At each visit, patients were asked to complete PROMIS Depression, Anxiety, and Pain Interference measures preloaded on an iPad at each appointment with a hand surgeon. A data query and electronic medical record review provided data on demographics, ICD-10 diagnoses, PROMIS scores, and therapy referral for patient visits between April 2016 and November 2017. The number of therapy visits attended by a patient was obtained for a subsample of patients who attended therapy at the orthopedic center. All PROMIS scores were standardized to a general population distribution with a mean of 50 (SD: 10). Higher PROMIS scores indicate higher levels of the health domain (greater depression, anxiety, and pain). Descriptive statistics, Pearson chi-square and t-test analyses were performed to show differences in patient referral status to therapy.

Results: The sample of 351 patients is predominantly Caucasian (84.1%), female (59.5%), with an average age of 52.7 (±16.6) years. At baseline, 17.7% self-reported depression and 10.3% reported taking depression medications on intake questionnaires. Baseline PROMIS scores were close to the norm or lower for anxiety (51.7±11.0) and depression (46.4±10.3) but poorer for pain interference (60.5±7.4) modules. Forty-nine percent of patients were referred to hand therapy (n=172), though t-test analysis showed no difference in mean baseline PROMIS scores in all measures between patients referred and not referred. Overall, 11.0% of patients had PROMIS scores meeting or exceeding the clinically relevant threshold for depression (59.9) and 17.4% for