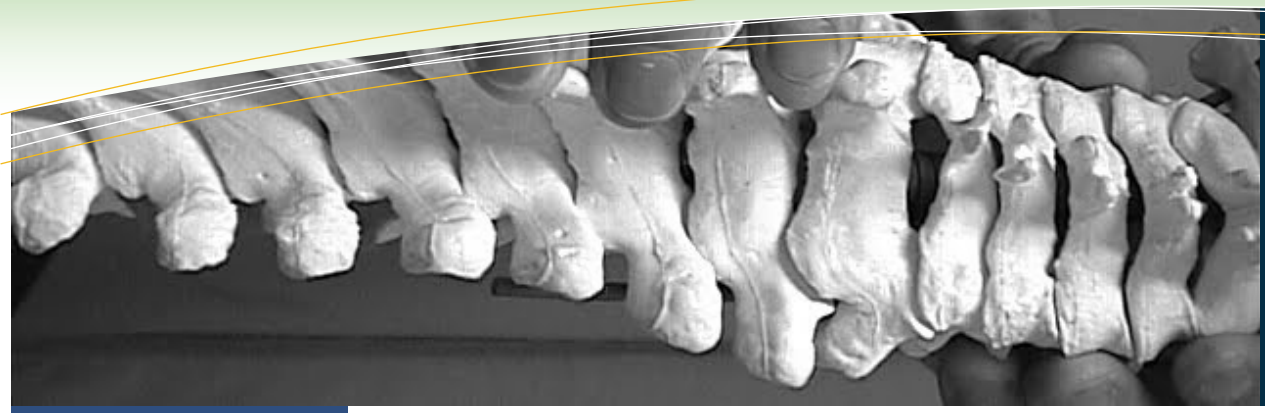
# Manual Therapy Research Review



ISSUE 11
June 2016

## This issue:

What Influences Patient-Therapist Interactions in Musculoskeletal Physical Therapy? Qualitative Systematic Review and Meta-Synthesis - P1

Effect of Early Intensive Care on Recovery From Whiplash-Associated Disorders: Results of a Population-Based Cohort Study - P2

Are Pulley Exercises Initiated 6 Weeks After Rotator Cuff Repair a Safe and Effective Rehabilitative Treatment? A Randomised Controlled Trial - P2

Does Kinesio Taping of the Knee Improve Pain and Functionality in Patients with Knee Osteoarthritis?: A Randomised Controlled Clinical Trial - P3

## Welcome

*Welcome to the 11th edition of Research Review. This will be the last review before we all meet up at the IFOMPT conference in Glasgow. It will be up to the new executive appointed after the conference to decide if they want to continue with this Research Review but for my part, I am keen to keep this going. I am also keen to grow the number of people who contribute to the commentaries so don't be shy and feel free to get involved. All you need to do is select an abstract from the papers listed in the Evidence Release, read the paper and make a comment that clinicians would enjoy. In this edition there are a range of papers reviewed; one looks at therapist and patient factors that influence our interactions, and another paper demonstrated that early and intense intervention in whiplash patients is actually not that helpful! Enjoy and see you all in Glasgow! Duncan*

## Paper One

**O'Keeffe M, Cullinane P, Hurley J, Leahy I, Bunzli S, O'Sullivan PB, O'Sullivan K. What Influences Patient-Therapist Interactions in Musculoskeletal Physical Therapy? Qualitative Systematic Review and Meta-Synthesis. Phys Ther. 2016 May;96(5):609-22.**

**Abstract**
**Background:** Musculoskeletal physical therapy involves both specific and nonspecific effects. Nonspecific variables associated with the patient, therapist, and setting may influence clinical outcomes. Recent quantitative research has shown that nonspecific factors, including patient-therapist interactions, can influence treatment outcomes. It remains unclear, however, what factors influence patient-therapist interaction.
**Methods:** This qualitative systematic review and meta-synthesis investigated patients' and physical therapists' perceptions of factors that influence patient-therapist interactions. Eleven databases were searched independently. Qualitative studies examining physical therapists' and patients' perceptions of factors that influence patient-therapist interactions in musculoskeletal settings were included. Two reviewers independently selected articles, assessed methodological quality using the Critical Appraisal Skills Programme (CASP), and performed the 3 stages of analysis: extraction of findings, grouping of findings (codes), and abstraction of findings.
**Results:** Thirteen studies were included. Four themes were perceived to influence patient-therapist interactions: (1) physical therapist interpersonal and communication skills (i.e. presence of skills such as listening, encouragement, confidence, being empathetic and friendly, and nonverbal communication), (2) physical therapist practical skills (i.e. physical therapist expertise and level of training, although the ability to provide good education was considered as important only by patients), (3) individualised patient-centered care (i.e. individualising the treatment to the patient and taking patient's opinions into account), and (4) organisational and environmental factors (i.e. time and flexibility with care and appointments).

**Conclusion:** A mix of interpersonal, clinical, and organisational factors are perceived to influence patient-therapist interactions, although research is needed to identify which of these factors actually influence patient-therapist interactions. Physical therapists' awareness of these factors could enhance patient interactions and treatment outcomes. Mechanisms to best enhance these factors in clinical practice warrant further study.

**Commentary.** This is a great paper as I feel it outlines the key interactions required for a successful treatment. Patients want to be listened to and feel that you are with them on their journey. As educators we often spend a lot to time developing manual skills in our students but they are of little use if the patient is not part of the process. Patient centeredness is now recognised as a key component in an effective health care intervention along with the ability to work well with other providers. The last area mentioned in the study is the environment and the ability to be more flexible in the care and timing of visits. People are busy and appreciate that we can offer therapy that fits around their lives.

## Paper Two

**Skillgate E, Côté P, Cassidy JD, Boyle E, Carroll L, Holm LW. Effect of Early Intensive Care on Recovery From Whiplash-Associated Disorders: Results of a Population-Based Cohort Study. Arch Phys Med Rehabil. 2016 May;97(5):739-46. doi: 10.1016/j.apmr.2015.12.028. Epub 2016 Jan 22.**


**Abstract**

**Aim:** To determine whether the results from previous research suggesting that early intensive health care delays recovery from whiplash-associated disorders (WADs) were confounded by expectations of recovery and whether the association between early health care intensity and time to recovery varies across patterns of health care.

**Study design:** Population-based inception cohort.

**Methods:** Setting: All adults (≥18y) injured in motor vehicle collisions who received treatment from a regulated health professional or reported their injuries to the single provincially administered motor vehicle insurer. Population Participants with WAD (N=5204). Self-report visits to physicians, chiropractors, physiotherapists, massage therapists, and other professionals during the first 42 days post collision were used to define health care intensity. Main outcome measure Self-perceived recovery.

**Results:** Individuals with high utilisation health care had slower recovery independent of expectation of recovery and other confounders. Compared with individuals who reported low utilisation of physician services, recovery was slower for those with high health care utilisation, regardless of the type of profession. For instance, those with high physician (hazard rate ratio [HRR]=.56; 95% confidence interval [CI], .42-.75), physician and high physiotherapy utilisation (HRR=.68; 95% CI, .61-.77), physician and high chiropractor utilisation (HRR=.74; 95% CI, .64-.85), and physician and high massage therapy utilisation (HRR=.78; 95% CI, .68-.90) had significantly slower recovery.

**Conclusion:** Our study adds to the existing evidence that early intensive care is associated with slower recovery from WAD, independent of expectation of recovery. The results have policy implications and suggest that the optimal management of WADs focuses on reassurance and education instead of intensive care.


**Commentary:**

Often the findings of this type of study is seen as a negative when in other areas early intervention seems to be a useful treatment approach. In the case of whiplash though it seems that too much too soon is associated with a poorer outcome. These results still support the original findings and recommendations of the Quebec Taskforce on Whiplash Associated Disorders, Spitzer (1995), where the guidelines suggested reassurance about good prognosis is important. Self exercise, having a positive attitude and beliefs are also helpful in regaining activity levels. Sterling et al (2005) have also shown that both physical and psychological factors play a role in recovery or non-recovery from whiplash injury.

**References:**


W. Spitzer, M. Skovron, L. Salmi, J. Cassidy, J. Duranceau, S. Suissa, E. Zeiss
Scientific monograph of Quebec Task Force on whiplash associated disorders: redefining "whiplash" and its management Spine, 20 (1995), pp. 1–73

Sterling, M Jull, G Vincenzino, B. Kenardy, J and Darnell, R Physical and psychological factors predict outcome following whiplash injury Pain Volume 114, Issues 1–2, March 2005, Pages 141–148


## Paper Three

**Baumgarten KM, Osborn R, Schweinle WE Jr, Zens MJ, Helsper EA. Are Pulley Exercises Initiated 6 Weeks After Rotator Cuff Repair a Safe and Effective Rehabilitative Treatment? A Randomised Controlled Trial. Am J Sports Med. 2016 Apr 26. pii: 0363546516640763. [Epub ahead of print]**


**Abstract**

**Background:** There are few level 1 or 2 evidence studies that examine rehabilitation after rotator cuff repair. Pulleys have been used in postoperative shoulder rehabilitation with the intention of improving range of motion and developing strength. There is a concern that the use of pulleys in rehabilitation of rotator cuff repairs may contribute to excessive scapular motion (scapular substitution) and potentially inferior outcomes.

**Hypothesis:** Rotator cuff repair patients treated with pulley exercises would have increased scapular substitution and inferior patient-determined outcome scores, range of motion, and strength compared with patients treated with an alternative rehabilitation program without pulleys.
**Study design:** Randomised controlled trial; Level of evidence, 1.
**Methods:** A total of 27 patients who underwent rotator cuff repair were randomised to a rehabilitation group that used pulleys initiated 6 weeks postoperatively, and 26 patients followed a rehabilitation protocol without pulleys. Inclusion criteria were patients undergoing arthroscopic rotator cuff repair. Exclusion criteria were large to massive rotator cuff tears, revision rotator cuff repair, glenohumeral osteoarthritis, adhesive capsulitis, and a symptomatic contralateral shoulder. Outcomes of intervention were patient-determined outcome scores (Western Ontario Rotator Cuff Index [WORC], American Shoulder and Elbow Surgeons [ASES] Shoulder Score, Single Assessment Numeric Evaluation [SANE], Shoulder Activity Level, and Simple Shoulder Test [SST]), range of motion, scapular substitution, and strength. Outcomes were determined at 6, 12, 18, 26, and 52 weeks. A power analysis determined that 22 patients were needed per group to have a power of 0.80, $\alpha = 0.05$, and effect size of $f = 0.5$.
**Results:** Both groups had statistically significant improvements in WORC, ASES Shoulder Score, SST, and SANE scores over time after rotator cuff repair ($P < .0001$). There were no differences between the interventions for WORC ($P = .18$), ASES Shoulder Score ($P = .73$), SANE ($P = .5$), Shoulder Activity Level ($P = .39$), or SST ($P = .36$). Both interventions demonstrated improvements in shoulder flexion ($P = .002$), abduction ($P = .0001$), external rotation ($P = .02$), strength ($P \leq .0002$), and scapular substitution ($P \leq .07$) over time after rotator cuff repair. However, there was no difference in range of motion ($P \geq .26$), strength ($P \geq .20$), or scapular substitution ($P \geq .17$) between interventions.
**Conclusion:** A rotator cuff repair rehabilitation program that uses pulleys does not result in inferior outcomes, as determined by patient-determined outcome scores, measurements of scapular substitution, range of motion, and scaption strength.

**Commentary**
I found this a useful paper as often surgeons are comfortable with patients using pulleys in the post- operative rehabilitation of rotator cuff repairs but we as therapist often feel there is a need to do more to restore normal range of motion and scapula control in these patients. The results of this study demonstrate that in fact over the time of the rehabilitation, the addition of the pulley did not create any abnormal movement patterns and all the main variables of range of motion, scapular substitution and strength were equally restored in both treatment groups.

## Paper Four

**Kaya Mutlu E, Mustafaoglu R, Birinci T, Razak Ozdincler A. Does Kinesio Taping of the Knee Improve Pain and Functionality in Patients with Knee Osteoarthritis?: A Randomised Controlled Clinical Trial. Am J Phys Med Rehabil. 2016 May 4. [Epub ahead of print]**

**Abstract**
**Objective:** This study investigated the effect of Kinesio taping on the functionality, pain, range of motion (ROM), and muscle strength in patients with knee osteoarthritis compared with a placebo Kinesio tape (KT) application.
**Design:** Forty-two consecutive patients were randomised to a KT group and a placebo taping group. The assessments were performed at baseline, after the initial KT application, the third KT application, and 1 month later. The functional status of patients was evaluated using the Aggregated Locomotor Function score and the Western Ontario and McMaster Universities Osteoarthritis scale. Pain level, muscle strength, and active ROM were measured using the Visual Analog Scale (VAS), a handheld dynamometer, and digital goniometer, respectively.
**Results:** Patients receiving the KT application demonstrated large decrease in VAS activity and walking task scores compared with the placebo taping group from the initial taping application to after the third taping application ($P = 0.009$ and $P < 0.001$, respectively) to the 1-month follow-up ($P = 0.007$ and $P < 0.001$, respectively). The KT group exhibited short-term improvement in VAS night and knee-flexion ROM after the 1-month follow-up ($P < 0.05$). There was no statistically significant difference in outcome measures in ROM and muscle strength between 2 groups.
**Conclusion:** This study demonstrates that Kinesio taping resulted in superior short-term effects on walking task, pain, and knee-flexion ROM compared with placebo taping in patients with knee osteoarthritis.

**Commentary**
Whilst I have often been a little sceptical of the use of kinesio tape and certainly other reviews have not supported this approach (Parreira et al 2014), this study does show a very positive effect of the kinesio tape in people with OA of the knee. The flexibility of the tape application I think is useful in the knee joint where range of motion is large. Patients often state there is less skin irritation with the Kinesio tape which also must help with compliance. Further studies of this type will help build the evidence for the effectiveness of Kinesio tape.
**Reference**
Parreira Pdo C, Costa Lda C, Hespanhol LC Jr, Lopes AD, Costa LO. Current evidence does not support the use of Kinesio Taping in clinical practice: a systematic review. J Physiother. 2014 Mar; 60(1):31-9. Epub 2014 Apr 24.