

# Manual Therapy Research Review



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## Welcome

Welcome to the 15th edition of Research Review.

The year seems to be flying by, hence the need to get another version of the Research Review out to you. In this issue there is a great systematic review and meta-analysis from Hannu Luomajoki and his team on the benefits of targeted exercise in LBP. There are papers on the use of Ultrasound (US) in teaching and US usage in general practice, and a paper on the benefits of specialist physiotherapists in the management of Whiplash.

Enjoy!

Duncan



## Paper One

**Luomajoki, H., Bonet Beltran, M., Careddu, S. and Bauer, C. Effectiveness of movement control exercise on patients with non-specific low back pain and movement control impairment: A systematic review and meta-analysis. Musculoskeletal Science and Practice 36 (2018) 1-11**

**Background:** Patients with low back pain (LBP) and movement control impairment (MVCI) show altered spinal movement patterns. Treatment that aims to change movement behaviour could benefit these patients.

**Objective:** To assess the effectiveness of movement control exercise (MVCE) in terms of clinically relevant measures (disability and pain) on patients with NSLBP.

**Methods:** A systematic review and meta-analysis were conducted. CINAHL, MEDLINE, PUBMED and PEDro databases were searched for RCT's evaluating MVCE treatment in patients with NSLBP from review inception to April 2017. Authors were contacted to obtain missing data and outcomes. PEDro was used to assess methodological quality of the studies and the GRADE approach was used to assess the overall quality of evidence Data were combined using a random effects meta-analysis and reported as standardized mean differences (SMD).

**Results:** Eleven eligible RCT's including a total of 781 patients were found. Results show 'very low to moderate quality' evidence of a positive effect of MVCE on disability, both at the end of treatment and after 12 months (SMD -0.38 95%CI -0.68, -0.09 respectively 0.37 95%CI -0.61, -0.04). Pain intensity was significantly reduced after MVCE at the end of treatment (SMD -0.39 95%CI -0.69, -0.04), but not after 12 months (SMD -0.27, 95%CI -0.62, 0.09).

**Conclusions:** MVCE intervention for people with NSLBP and MVCI appears to be more effective in improving disability compared to other interventions, both over the short and long term. Pain was reduced only in the short term. An important factor is the initial identification of patients with MVCI.

## Commentary

This systematic review is useful for strengthening the work in this area of management of patients with NSLBP. Whilst the quality of the studies was low to moderate and very mixed in their findings and methodologies, the review does demonstrate effectiveness over other modalities for treating movement control in people with LBP. The ability to consistently classify the patients into the movement impairment groups and then match the treatment is still a challenge as demonstrated in the heterogeneity of the studies. It is often frustrating that exercise interventions into LBP show good short-term results and are not often as strong in the longer term. For a large number of people LBP is a frequent and recurrent condition and so episodic acute care is often required and therefore pain and disability reduce accordingly. In the case of this systematic review disability was reduced in the short and long term and that is positive in the attempt to reduce recurrence rates.

### Paper Two

**Bandong A., Leaver A., Mackey, M., Sterling M., Kelly J., Ritchie C. and Rebbeck T. Referral to specialist physiotherapists in the management of whiplash associated disorders: Perspectives of healthcare practitioners. *Musculoskeletal Science and Practice* 34 (2018) 14 -26**

**Background:** Guidelines for whiplash associated disorders (WAD) recommend early referral to specialists (e.g. specialist physiotherapists) of people who are not recovering. This recommendation is a key component of a proposed clinical pathway of care for WAD.

**Objective:** To explore healthcare practitioners' opinions about referral to specialist physiotherapists of people with WAD at high risk of non-recovery.

**Design:** Qualitative descriptive study.

**Methods:** Six focus groups were conducted among primary care allied-health practitioners (n = 16) and specialist physiotherapists (n = 12) in New South Wales and Queensland, Australia. Discussions were audio recorded and transcribed for thematic analysis.

**Results:** Ten themes were generated from analysis. Practitioners appeared to have good knowledge of indicators for referral; however, referrals were often made to the medical practitioner, less commonly to specialist physiotherapists. There was general support for referral to specialist physiotherapists, which was deemed as a viable alternative for people who are not recovering. Practitioners, however, had differing views about the attributes of a specialist physiotherapist and referral timeframe. A number of factors have been identified to influence the referral process and practitioners expressed specific expectations of the desired outcomes of referral as well as considerations for specialist management approaches. There was strong support for a collaborative approach in management that involved the referring practitioner.

**Conclusion:** Results support the feasibility of referral to specialist physiotherapists despite limited uptake in practice and recognised barriers to referral. These findings have implications for further study and adopting strategies to facilitate effective implementation and translation of the proposed pathway into primary care practice.

**Commentary:**

Often the pathway from further higher education is advanced practice or specialisation. Manual Therapy Specialists have often been graduates of IFOMPT accredited OMT programmes. This qualitative paper explores some of the issues of being an OMT specialist and relationships with the generalist physiotherapists. It was pleasing to see in the results that the specialists were considered to have high levels of clinical reasoning and problem solving, and had good referral networks. They also provided good feedback to the generalists. However, access to specialists was a challenge and ensuring a collaborative approach was facilitated was important. In NZ we only have a small number of recognised physiotherapy specialists and these therapists are in high demand not only to see challenging patients but to influence care pathways. One of the challenges all specialists face is government support and funding. Whilst the physiotherapy profession and the public they serve often see value in the role, overcoming more traditional models of medical care and the subsequent funding models still provide significant barriers to advancement.

### Paper Three

**Markowski, A., Watkins, M., Burnett, T., Ho, M. and Ling, M. Using real-time ultrasound imaging as adjunct teaching tools to enhance physical therapist students' ability and confidence to perform traction of the knee joint. *Musculoskeletal Science and Practice* 34 (2018) 83–88**

**Background:** Often, physical therapy students struggle with the skill and the confidence to perform manual techniques for musculoskeletal examination. Current teaching methods lack concurrent objective feedback. Real-time ultrasound imaging (RTUI) has the advantage of generating visualization of anatomical structures in real-time in an efficient and safe manner. We hypothesize that the use of RTUI to augment teaching with concurrent objective visual feedback will result in students' improved ability to create a change in joint space when performing a manual knee traction and higher confidence scores.

Eighty-six students were randomly allocated to a control or an experimental group. All participants received baseline instructions on how to perform knee traction. The control group received standardised lab instruction (visual, video, and instructor/partner feedback). The experimental group received standardised lab instruction augmented with RTUI feedback. Pre-data and post-data collection consisted of measuring participants' ability to create changes in joint space when performing knee traction, a confidence survey evaluating perceived ability and a reflection paper. Joint space changes between groups were compared using a paired t-test. Surveys were analysed with descriptive statistics and compared using Wilcoxon Rank Sum and for the reflection papers, themes were identified and descriptive statistics reported. Although there were no statistically significant differences between the control and the experimental group, overall scores improved. Qualitative data suggests students found the use of ultrasound imaging beneficial and would like more exposure. This novel approach to teaching knee traction with RTUI has potential and may be a basis for further studies.

#### **Commentary**

As an educator of manual therapy techniques, I liked this innovative approach to teaching a manual therapy technique in this case knee traction. Whilst the result shows no difference between the traditional approach and the new approach, I think we are obliged as educators to look for new ways of getting the messages across. Teaching manual therapy concepts in joints that move only a few millimetres is clearly a challenge to students and teachers alike. Anything like the use of real time ultrasound that can improve this must be welcomed into teaching practice

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#### **Paper Four**

**Ellis, R., De Jong, R., Bassett, S., Helsby, J., Stokes and M., Cairns, M. Exploring the clinical use of ultrasound imaging: A survey of physiotherapists in New Zealand. *Musculoskeletal Science and Practice* 34 (2018) 27-37**

**Background:** In New Zealand ultrasound imaging (USI) is being used increasingly by physiotherapists. To fully understand the extent to which physiotherapists in New Zealand are using USI, it is necessary to evaluate not only the context of its clinical use but also the barriers preventing its uptake.

**Objectives:** To examine the field and scope of use of USI, the type and content of training and the barriers restricting physiotherapists from using the technique.

**Design:** Cross-sectional observational design utilising an Internet-based electronic survey. **Method:** An electronic survey built on the design of previous research with guidance from an expert review panel. Participants were included if they were New Zealand registered physiotherapists.

**Results:** Of the 465 participants who responded, 433 were eligible to complete the survey. There were 415 participants who completed the survey, 24% who said they used USI whilst 76% did not. For those using USI, the uses were varied including those within a rehabilitative paradigm (i.e. biofeedback; 52%) and also diagnostic (49%). USI training was also varied ranging from formal to informal. The main barriers preventing physiotherapists from using USI were lack of training, access to equipment, and equipment expense.

**Conclusions:** The participants reported a variety of clinical uses of USI and levels of training. A better understanding of the clinical uses and benefits of USI would enhance both training and clinical uptake. With the identification of barriers limiting physiotherapists' use of USI, ways to overcome these in New Zealand can now be explored further.

#### **Commentary**

It is somewhat an ironic contrast with the paper above that shows a good use of RTUS, this survey shows that NZ physiotherapists are not using RTUS as much in clinical practice as perhaps one would hope. Clearly cost and training are key barriers to increasing use. Perhaps more exposure to this technology in the undergraduate training programmes in NZ would see a greater transition into clinical practice.

