# Rehabilitation Research Review

Making Education Easy

Issue 45 - 2018

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#### Abbreviations used in this issue

ACC = Accident Compensation Corporation

ACL = anterior cruciate ligament

**AMSTAR** = assessment of multiple systematic reviews **GRADE** = Grading of Recommendations Assessment,

Development and Evaluation

**LBP** = low back pain

MVCE = movement control exercise

MVCI = movement control impairment

**NSLBP** = non-specific low back pain **OR** = odds ratio

**PEDro** = Physiotherapy Evidence Database

PIP = psychologically-informed practice

RCT = randomised clinical trial RTP = return to play

**SMD** = standardised mean difference

STarT Back = Subgrouping for Targeted Treatment





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### Welcome to issue 45 of Rehabilitation Research Review.

In this issue we have a focus on musculoskeletal conditions including low back pain and chronic pain. The term non-specific low back pain has been used for years to describe all those patients that have low back pain that is not identified by a specific serious pathology such as facture, tumour and congenital conditions. However, clinicians treating low back pain do recognise subgroups who respond to more targeted treatment, and in this issue we explore the issues of classification and stratification of patients into these groups.

Guest commentary is provided for this issue by Dr Duncan Reid, Associate Dean of Health and Professor Physiotherapy at AUT. I hope that you find the research in this issue useful in your practice and I welcome your comments and feedback.

Kind regards

**Associate Professor Nicola Kayes** 

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### Effective treatment options for musculoskeletal pain in primary care: A systematic overview of current evidence

Authors: Babatunde 00 et al.

**Summary:** This systematic review of the literature included articles published up to August 2016 as clinical guidelines, clinical pathways, or systematic reviews of currently available treatments for the five most common musculoskeletal pain presentations: back, neck, shoulder, knee and multi-site pain (i.e. musculoskeletal pain in more than one area of the body) in primary care. The investigators rated the quality of systematic reviews using AMSTAR and summaries of the overall evidence for the effectiveness of treatment options and strength of recommendations for each pain site were rated using a modified GRADE approach. They found moderate-to-strong evidence for the effectiveness of exercise therapy and psychosocial interventions for relieving pain and improving function for musculoskeletal pain. While NSAIDs and opioids reduce pain in the short-term, the effect size was small and clinicians need to bear in mind the potential for adverse effects with these agents. Corticosteroid injections provided short-term pain relief for patients with knee and shoulder pain. For most treatments, the current evidence is equivocal as to optimal dose, intensity and frequency, and also mode of application.

Comment (DR): This is a comprehensive review of reviews, RCTs and meta-analyses of interventions for musculoskeletal pain in primary care. The clear findings of this paper are that there is strong evidence for exercise and psychological interventions in the management of neck, back, shoulder, knee and multi-site pain. The evidence for manual therapy is not so strong, but equally, there were a smaller number of studies available that met the inclusion criteria (exercise 32 vs 21 for manual therapy). More research is needed here and particularly around dosage of treatment. There were short-term benefits for medication use in these conditions. There is more and more evidence that exercise is key to managing a range of conditions. Even as recently as the last fortnight, the news described strong evidence that exercise should be a key part of the recovery of patients who have undergone cancer treatment and that exercise is even preventative for cancer. The conditions in this review are in the top three for ACC in NZ. Getting patients to engage in exercise is a challenge, but the evidence is growing and overwhelmingly strong that patients need to get on board. Coupling this with dealing with any psychological barriers is even more powerful.

Reference: PLoS One. 2017;12(6):e0178621

<u>Abstract</u>

#### **Independent commentary by Dr Duncan Reid**

Duncan Reid is Associate Dean of Health and Professor of Physiotherapy at AUT. He has 37 years of clinical experience in Musculoskeletal and Sports Physiotherapy. He is past President and a life member of the New Zealand Manipulative Physiotherapists Association (NZMPA), past President of the International Federation of Orthopaedic Manipulative Therapists (IFOMT), and a Life Member of Physiotherapy NZ. He has been involved in ACC Guideline development for Shoulder, Knee and Forearm Disorders. He is the Director of Rehabilitation for High Performance Sport NZ monitoring the services of physiotherapists to over 150 elite athletes. He has published over 150 peer reviewed journal articles and book chapters.

**Disclaimer:** This publication is not intended as a replacement for regular medical education but to assist in the process. The reviews are a summarised interpretation of the published study and reflect the opinion of the writer rather than those of the research group or scientific journal. It is suggested readers review the full trial data before forming a final conclusion on its merits.

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#### Rehabilitation Research Review

### Predictive validity of the STarT Back Tool for risk of persistent disabling back pain in a U.S. primary care setting

Authors: Suri P et al.

**Summary:** Outcomes are reported from this secondary analysis of RCT data involving 1,109 US adults aged ≥18 years who received usual care for back pain in primary care. At study entry, the patients were stratified by the 9-item version of the Subgrouping for Targeted Treatment (STarT Back) tool into categories of low, medium, and high risk of persistent disabling back pain (STarT Back risk group). Persistent disabling back pain was defined as Roland-Morris Disability Questionnaire scores of ≥7 at 6 months of follow-up. The STarT Back risk group successfully predicted persistent disabling back pain (p<0.0001) at the 6-month follow-up: the proportions of patients with persistent disabling back pain were 22% in the low-risk category, 62% in the medium-risk category, and 80% in the high-risk category. The relative risk of persistent disabling back pain was 2.9 in the medium-risk group and 3.7 in the high-risk group when compared to the low-risk group.

Comment (DR): The STarT Back Tool was developed by researchers in the UK. The tool is a nine-item questionnaire that stratifies patients with LBP into low, moderate and high risk of developing more chronic symptoms (Hill et al. Lancet. 2011;378(9802):1560-71). The original study by Hill and colleagues undertaken in the UK National Health Service demonstrated improved clinical and cost outcomes in the management of LBP when compared to usual care from GP and physiotherapists. It is known that outcomes of treatment are improved when patients with LBP are classified or in this case stratified and then the care is matched to the classification. The STarT Back Tool and subsequent programme does this very well. The above study also shows that the tool has a predictive capacity and that those participants who were stratified into the high-risk groups were the ones that remained more at risk of developing chronic pain than those in the low- and moderate-risk groups. The study replicated the original study results in the UK but was found to be equally true in the USA. I believe primary care physicians, physiotherapists and clinicians in other disciplines who manage LBP should use this well-validated tool and match the treatments to improve the journey of those with LBP.

Reference: Arch Phys Med Rehabil. 2018 Apr 3. [Epub ahead of print]

<u>Abstract</u>

### Physiotherapists' views of implementing a stratified treatment approach for patients with low back pain in Germany: a qualitative study

Authors: Karstens S et al.

**Summary:** This qualitative analysis explored the views and perceptions of 19 German physiotherapists about implementing the STarT-Back-Approach. They participated in three 2-h workshops and focus groups incorporating semi-structured interviews, following a presentation of the STarT-Back-Approach. Content analysis of the interview material revealed 3 key themes, each of which had multiple subthemes: 1) the intervention (15 subthemes); 2) the healthcare context (26 subthemes); and 3) individual characteristics (8 subthemes). Therapists' perceptions of the extent to which the STarT-Back intervention would require changes to their normal clinical practice varied considerably. In their opinion, significant financial disincentives within their current healthcare context would discourage physiotherapists from providing the STarT-Back treatment pathways, such as the early discharge of low-risk patients with supported self-management materials. They also discussed the need for appropriate standardised graduate and postgraduate skills training for German physiotherapists to treat high-risk patients using combined physical and psychological approaches (e.g. communication skills).

Comment (DR): Following the investigation of the STarT Back Tool above, this qualitative study investigated the views of the tool in a German setting. The researchers found that German physiotherapists were positive about the STarT-Back-Approach, but there were a number of barriers to implementing the matched treatment, including financial disincentives within the healthcare system to early discharge of low-risk patients. This is an interesting finding and may well be a similar issue if the tool was used more widely in NZ. In the UK, when the original study was implemented, the NHS GP was the gatekeeper to the programme and once the patient had completed the questionnaire they were matched to the relevant treatment. In the low-risk group, the treatment matched the ACC low back pain guidelines (1997) and recommended advice to stay active, low-level pain medication and exercise. In the current ACC system there is no real way of telling if the people being compensated for or treated for LBP and are of low risk are truly being managed this way, as there is no reporting against outcomes of care, just a broad categorisation of return-to-work. There could also be a view similar to the German therapists in this study, that this is not good for business to reduce the amount of care in the low-risk group, as the STarT Back programme encourages less interaction for the low-risk group and therefore potentially fewer visits are required for care. However, I believe the more challenging work should be seen in the moderate-to-high risk groups, to ensure they make better progress and do not move into more chronic presentations that cost the system even more money.

Reference: BMC Health Serv Res. 2018;18(1):214

Ahetract











# Effectiveness of movement control exercise on patients with non-specific low back pain and movement control impairment: A systematic review and meta-analysis

Authors: Luomajoki HA et al.

Summary: This systematic review of the literature up to April 2017 identified 11 RCTs including 781 patients with non-specific low back pain (NSLBP) and movement control impairment (MVCI) affecting their spinal movement patterns. All RCTs assessed the effectiveness of movement control exercise (MVCE) treatment in these patients. Methodological quality of the studies was evaluated by PEDro and the overall quality of evidence was assessed with GRADE. The evidence for a positive effect of MVCE on disability, both at the end of treatment and after 12 months, was of very low to moderate quality (SMD -0.38; 95% CI, -0.68 to -0.09, and SMD 0.37; 95% CI, -0.61 to -0.04). Pain intensity was significantly reduced after MVCE at the end of treatment (SMD -0.39; 95% CI, -0.69 to -0.04), but not in the long-term, after 12 months (SMD -0.27; 95% CI, -0.62 to 0.09).

Comment (DR): NSLBP has been used for years to describe all those patients that have LBP that is not identified by a specific serious pathology such as facture, tumour, or congenital conditions. This classification has been used to recruit patients into studies and the results of interventions have often been mixed. This is due to the fact that NSLBP is not a homogenous group, so the results have often frustrated clinicians. Those treating LBP do recognise subgroups who respond to more targeted treatment. The MVCI group is one such subgroup that shows altered spinal movement patterns. Treatment then aims to change movement behaviour. This review summarises the literature for this approach and indicates that when compared to other approaches for this group, the targeted approach had improved outcomes for longterm disability and short-term pain relief. These types of reviews are useful to support the clinician's ability to subgroup patients and treat accordingly.

Reference: Musculoskelet Sci Pract. 2018;36:1-11
Abstract

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#### Rehabilitation Research Review

# Factors affecting subjective and objective outcomes and return to play in anterior cruciate ligament reconstruction: a retrospective cohort study

Authors: Rosso F et al

**Summary:** This Italian group of researchers examined data from 176 primary anterior cruciate ligament (ACL) reconstruction cases to determine the prognostic factors influencing subjective and objective outcomes and return to play (RTP) after reconstruction. All cases were performed between 2008 and 2012 using a transtibial technique and followed-up for an average 44.1 months. Results from the International Knee Documentation Committee (IKDC) evaluation forms rated 92.2% of patients as normal or nearly normal. As many as 90.1% of the patients returned to sport; 57.6% returned to the same pre-injury level. Objective outcomes were negatively influenced by late rehabilitation (OR 2.75). Performing on-field rehabilitation during the rehabilitation was associated with better subjective outcomes (OR 2.71). The rate of RTP was strongly influenced by duration of rehabilitation (OR 13.16), whereas higher ACL-return to sport after injury (RSI) scores were inversely related to RTP. Objective IKDC score was inversely related to the ACL-RSI (OR 0.31), whereas subjective score was correlated with both the total ACL-RSI score (OR 0.15) and the level of activity (OR 0.20).

**Comment (DR):** ACL is a significant knee injury. NZ ACC data shows that 80% of all knee ligament surgery involves the ACL; 65% of all ACL injuries resulting in surgery occurred during sporting and recreational activities and 47% of ACL injuries required surgery (Gianotti et al. J Sci Med Sport. 2009;12(6):622-7). There is also a strong body of research that indicates those who have had surgery to do not always return to their pre-injury status. This study also shows that, with only 56% regaining pre-injury status. The nice part about this study is that improved RTP is more likely if the rehabilitation phase takes place on field and that any psychological issues, commonly fear of re-injury, are addressed. This, coupled with other research indicating that good strength of the muscles that support the knee must also be achieved, will increase the chances of more complete rehabilitation and less recurrent injury.

Reference: Joints. 2018;6(1):23-32

**Abstract** 

#### What works and does not work in a selfmanagement intervention for people with chronic pain? Qualitative systematic review and metasynthesis

Authors: Devan H et al.

Summary: While it is recognised that self-management interventions fostering self-efficacy improve the well-being of people with chronic pain, it is not clear as to what factors facilitate ongoing self-management after completion of a pain self-management intervention. These researchers examined the literature up to July 2016 for qualitative evidence on enablers (what works) and barriers (what does not) surrounding the incorporation of self-management strategies after people complete a pain self-management intervention. The analysis included 33 qualitative and mixed-method studies involving 512 individuals; all studies explored how individuals with chronic pain sustain the effort to self-manage chronic pain in everyday life. A thematic analysis of the findings identified that enablers to self-management included self-discovery and the ability to distinguish self (i.e. body, thoughts, and feelings) from pain; feeling empowered by incorporating self-management strategies into practice; and supportive ambience via collaborative relationships with clinicians and support from family and friends. Barriers to self-management included difficulty with sustaining motivation for pain self-management; distress experienced from ongoing pain, anxiety, and depression; and unsupportive relationships with clinicians, family, and friends.

**Comment (NK):** This review provides a useful synthesis of evidence regarding what helps or hinders use of self-management strategies following participation in a self-management programme for people with chronic pain. Frequently, self-management programmes are limited in their long-term effectiveness, as they often consist of a discrete, time-limited programme without explicit focus on supporting long-term and ongoing engagement in self-management strategies beyond the life of the programme. As such, understanding factors that contribute to ongoing use of self-management tools may be critical to inform the design of self-management programmes in the future. The findings also have relevance for providers working with people with chronic pain in terms of their role for supporting self-management processes. For example, findings suggest that providers may foster the process of self-discovery (argued as central to ongoing use of self-management strategies) through the development of non-judgemental therapeutic relationships; supporting persons to engage in a process of trial and error; and by acknowledging and normalising the personal tensions people may experience in accepting the ongoing presence of pain, as well as the cumulative impact of the emotional burden of pain.

Reference: Phys Ther. 2018;98(5):381-97

Abstract

# Advancing psychologically informed practice for patients with persistent musculoskeletal pain: Promise, pitfalls, and solutions

Authors: Keefe FJ et al.

**Summary:** This article discusses psychologically-informed practice (PIP) techniques that could be used in routine clinical practice for management of patients with LBP, which the authors argue requires a broader focus than the traditional biomechanical and pathology-based approaches used to manage musculoskeletal pain. It goes on to suggest future directions that can be incorporated into practice to advance understanding of PIP as a useful treatment approach for musculoskeletal pain conditions.

Comment (NK): This paper provides a useful overview of the state of play regarding PIP for people with persistent musculoskeletal pain, including practical recommendations for future practice. The authors define PIP as being when providers incorporate into practice a person-centred approach that considers beliefs, expectations and emotional concerns to inform the treatment strategy. It is argued to be a mechanism for combining physical, impairment-based treatment with psychological intervention, and may have the added advantage of overcoming the stigma associated with psychological interventions. Opportunities for PIP discussed include taking a person-centred approach to patient interviews, therapist reinforcement to support behavioural adaptation, and integration of evidence-based psychological techniques (such as those drawing on cognitive behavioural and acceptance and commitment therapies). However, while significant advance has been noted in the evidence and adoption of PIP in the last decade, routine integration into practice remains a challenge. The authors propose a number of strategies for overcoming the challenges relevant to professional education and professional development, clinical pathways and policy, which are worthy of consideration. The development of proactive strategies across all these levels is necessary to move beyond PIP as the exception to the rule.

Reference: Phys Ther. 2018;98(5):398-407

<u>Abstract</u>



#### Rehabilitation Research Review

# Patient-identified information and communication needs in the context of major trauma

Authors: Braaf S et al.

Summary: Outcomes are reported from data gathered in semi-structured, telephone interviews conducted with 65 adults following major trauma, which explored their experiences communicating with health professionals during the multiple phases of recovery and what information was provided by health professionals in the first 3 years following injury. At the time of injury, the study participants were aged ≥17 years. A detailed thematic analysis of the interview data identified that many of the patients faced barriers to communication with health professionals in the hospital, rehabilitation and in the community settings. Key themes that emerged related to limited contact with health professionals, insufficient information provision, and challenges with information coordination. The patients reported that communication difficulties became obvious when there were many health professionals involved in patient care, or when patients transitioned from hospital to rehabilitation or to the community. Unfavourable communication between patients and health professionals compromised exchange of information particularly at transitions of care, e.g. discharge from hospital. Effective communication was facilitated by positive attributes displayed by health professionals such as active discussion, clear language, listening and an empathetic manner. Most patients preferred communication that was patient-centred, and they liked the idea of multimodal . communication strategies.

Comment (NK): This research explored seriously injured patients' perceptions of communication and information provided by providers across the continuum of care, from acute hospital to communitybased rehabilitation settings. Participants were purposefully sampled from the Victorian State Trauma Registry at three years post-injury. The findings highlight the need for timely, targeted, accessible, digestible, consistent, proactive, responsive and coordinated information delivered in a person-centred way that does not minimise personal concerns. Participants cited a number of unmet information needs with regards to what was happening and why (particularly in the acute setting), what they could expect in terms of their recovery trajectory to help them make sense of and contextualise their recovery experiences, what psychological support was available to them and how to access that, and how to manage ongoing information needs outside formal healthcare encounters. The findings are consistent with research we have carried out in the NZ setting. There are a number of very practical implications for communication practices across the continuum of care. While this research was carried out in the context of recovery following severe trauma, the findings likely have broader relevance for information provision across a range of settings and populations.

Reference: BMC Health Serv Res. 2018;18(1):163 Abstract

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# "The acceptance" of living with chronic pain – an ongoing process: A qualitative study of patient experiences of multimodal rehabilitation in primary care

Authors: Pietilä Holmner E et al.

**Summary:** This exploration of patient experiences of participating in multimodal pain rehabilitation in primary care interviewed 12 former patients (7 women and 5 men). Qualitative content analysis of the interview content revealed four main categories: (i) from discredited towards obtaining redress; (ii) from uncertainty towards knowledge; (iii) from loneliness towards togetherness; and (iv) "acceptance of pain": an ongoing process.

Comment (NK): This research set out to explore patient experiences of participating in multimodal pain rehabilitation (MMR) delivered in a primary care setting. MMR is similar to what is better known in NZ as a multidisciplinary pain rehabilitation programme, such as that delivered by the Auckland Regional Pain Service. Participants reflected that they entered the service feeling they lacked legitimacy and that their pain was minimised and misunderstood by others. They lived with uncertainty and fear about the future and felt isolated and alone with this experience. Through their engagement in MMR they felt believed and validated, they developed personal strategies for managing life in the context of pain, and the group process allowed for a sense of a shared experience. These findings are encouraging. However, the challenge I put to professionals working with people living with persistent pain is to consider whether this experience should be unique to a multidisciplinary pain service. What is our role in creating the context for this experience through delivery of all routine health care for this population? The authors of this paper also highlight some important points regarding 'acceptance', which they argue is an ongoing, dynamic process and that we are frequently at risk of over-simplifying acceptance as something that is static and dichotomous (one has either accepted or not). Participants in this research expressed a reticence to moving towards acceptance as it might be understood by health professionals (e.g. that they must accept their pain), referring instead to acceptance as learning to control the impact of pain on their lives.

Reference: J Rehabil Med. 2018;50(1):73-9

**Abstract** 

### Experiences and attitudes about physical activity and exercise in patients with chronic pain: a qualitative interview study

Authors: Karlsson L et al.

**Summary:** These researchers conducted semi-structured interviews with 16 women and 2 men with chronic pain (pain duration more than 3–6 months) and referred to a multimodal pain rehabilitation programme in Sweden. The researchers sought to understand how patients with chronic pain experience physical activity and exercise. Qualitative content analysis of the interviews revealed one key theme: "To overcome obstacles and to seize opportunities to be physically active despite chronic pain." This main theme emerged from five themes: "Valuing a life with physical activity"; "Physical activity and exercise — before and after pain"; "A struggle — difficulties and challenges"; "The enabling of physical activity"; and "In need of continuous and active support."

Comment (NK): Routine and ongoing engagement in physical activity and exercise is important for managing the enduring impact of chronic pain. However, research highlights that people with chronic pain engage in low levels of physical activity and exercise and frequently fail to follow physical activity-related recommendations from health professionals. This research set out to explore how people with chronic pain experience physical activity and exercise, to inform the development of strategies better tailored to supporting people with chronic pain to engage in physical activity. Participants reported valuing physical activity and exercise for the associated physical and mental health benefits, and due to the sense of freedom and autonomy it allowed. Despite this, they experienced a number of challenges in translating the desire to be physically active into reality. Engaging in physical activity in the context of pain was less satisfying than it was before onset of pain. Further, they were concerned with the potential to exacerbate the pain, were rarely able to engage in their preferred activities, and frequently experienced a sense of failure. Participants cited a need for active and ongoing support from health professionals. The findings of this paper are a useful reminder that often patients have the desire to engage in physical activity and exercise (contrary to our assumptions) and can see the value they would derive from it. Health professionals need to find more effective ways of harnessing that and supporting people to develop the knowledge, skill and capability to translate that into action.

Reference: J Pain Res. 2018;11:133-44

<u>Abstract</u>

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#### Independent commentary by Associate Professor Nicola Kayes

Associate Professor Nicola Kayes is Director of the Centre for Person Centred Research at Auckland University of Technology. Nicola has a background in health psychology and as such her research predominantly explores the intersection between health psychology and rehabilitation. She is interested in exploring the role of the rehabilitation practitioner and their way of working as an influencing factor in rehabilitation and whether shifting practice and the way we work with people can optimise rehabilitation outcomes. Nicola actively contributes to undergraduate and postgraduate teaching in rehabilitation at the School of Clinical Sciences at Auckland University of Technology.











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