

Rehabilitation RESEARCH REVIEW™

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Issue 57 – 2022

In this issue:

- Person-centred rehabilitation model
- Overuse of SMART goals for physical activity promotion
- Balance training effects on chronic ankle instability
- Māori experiences of meaningful connection in neurorehabilitation
- Early physical therapy after breast cancer surgery
- Uncertainty in low back pain care
- Interventions to enhance return-to-work for cancer patients
- Development of Aboriginal Brain Injury Coordinator positions
- Multidisciplinary rehabilitation for low back pain in patients ≥65 years
- Inpatient multimodal occupational rehabilitation for sick-listed workers

Abbreviations used in this issue

CI = confidence interval

LBP = low back pain

RTW = return to work

SMART = specific, measurable, achievable, realistic, timebound

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Welcome to issue 57 of Rehabilitation Research Review.

An international study highlights the importance of moving beyond what happens in the therapeutic encounter, to include the role of structures and processes that may constrain or make possible person-centered rehabilitation. A narrative review and critique of the use of SMART goals for physical activity provides great food for thought. Other topics covered in this issue include balance training effects on chronic ankle instability, Māori experiences of meaningful connection in neurorehabilitation, early physical therapy after breast cancer surgery, uncertainty in low back pain care, and inpatient multimodal occupational rehabilitation for sick-listed workers.

I hope that you find the information in this issue useful in your practice and I welcome your comments and feedback.

Kind regards,

Professor Nicola Kayes

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Person-centered rehabilitation model: Framing the concept and practice of person-centered adult physical rehabilitation based on a scoping review and thematic analysis of the literature

Authors: Jesus TS et al.

Summary: This study sought to develop a cross-professional model using person-centred rehabilitation (PCR) in adult populations following on from a previous scoping review and thematic analysis. A total of 147 references were included in the analysis of which 26 were conceptual articles. Thematic analysis identified categories that were combined into an emergent PCR model reviewed by 5 external experts. PCR is a way of thinking of and providing rehabilitation services "with" the person and is embedded in rehabilitation structures and practice across 3 levels, a person-professional dyad; at a microsystem level involving an interprofessional team including significant others; and at a macrosystem level within the organisation where rehabilitation is delivered.

Comment: I had the opportunity to collaborate with international colleagues on this paper. It builds on an early scoping review ([Jesus TS et al., Disabil Rehab. 2021](#)) and presents a thematic synthesis of existing research on PCR. In our findings, we conceptualise PCR as a way of thinking about, organising, and delivering rehabilitation that can be enabled and enacted across multiple layers (person-professional dyad, microsystem, and macrosystem), each with its own set of attributes. These findings highlight the importance of moving beyond what happens in the therapeutic encounter, to include the role of structures and processes that may constrain or make possible PCR. While there has been an extraordinary amount of research relevant to PCR, there has been limited theory development specific to rehabilitation that is not derived from other fields (e.g., psychotherapy) or tied to specific disciplinary perspectives (e.g., nursing) or populations (e.g., stroke). This paper is one of the first to draw together evidence to present a cross-professional perspective of PCR. It also presents a more nuanced perspective of the concept and practice of PCR that does not reduce PCR down to a set of fixed behaviours, but rather recognises that PCR may mean different things for different people. I am biased of course, but I highly recommend that rehabilitation funders, providers and services engage with this paper and consider how they might apply the findings in their context.

Reference: *Arch Phys Med Rehabil.* 2022;103(1):106-120

[Abstract](#)

Independent commentary by Professor Nicola Kayes

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.



The (over)use of SMART goals for physical activity promotion: A narrative review and critique

Authors: Swann C et al.

Summary: SMART goals are widely used to set physical activity goals, this narrative review critically examined the scientific underpinnings of SMART and its use in physical activity promotion. The review suggests that SMART is not based on scientific theory, does not comply with empirical evidence, does not consider the type of goal, is not consistently applied, lacks detailed guidance, has redundant criteria, is not used as originally intended, and risks potentially harmful effects.

Comment: As a long-standing and self-confessed critic of SMART goals, I loved this paper! My biases aside, this paper provides a robust critical review of the SMART heuristic as a tool for setting physical activity goals with reference back to goal setting theory, empirical evidence, and practice utility. The findings challenge key assumptions of the SMART heuristic. For example, that goals need to be specific, achievable, and realistic. Empirical evidence counters these assumptions in the context of physical activity, highlighting a) goals don't need to be specific to be effective, and b) that goals need to in fact be challenging (not necessarily achievable or realistic) to optimise outcomes. The authors make visible several inconsistencies in what SMART stands for, how each component is operationalised in practice and the extent to which SMART has been implemented as originally intended. They also present a compelling argument against the blanket use of the SMART heuristic for all types of goals, in all circumstances. They call for a more nuanced and theory-based approach to the use of SMART which might include knowing when to abandon SMART in favour of something else. They make a strong call to scientific and professional organisations "to cease the wholesale, uncritical dissemination of the SMART acronym, in favour of more sophisticated, defensible, and evidence-based guidance on goal-setting". I couldn't have said it better myself!

Reference: *Health Psychol Rev.* 2022;1-16

[Abstract](#)

Effects of balance training on functionality, ankle instability, and dynamic balance outcomes in people with chronic ankle instability: Systematic review and meta-analysis

Authors: Mollà-Casanova S et al.

Summary: This systematic review and meta-analysis examined effects of balance and strength training in people with chronic ankle instability based on 15 randomised controlled trials including 457 participants. Balance training was more effective in improving functionality (standardised mean difference [SMD] 0.81; 95% CI 0.48-1.14), ankle instability (SMD 0.77; 95% CI 0.27-1.26), and dynamic balance (SMD 0.83; 95% CI 0.57-1.10) outcomes than regular exercise. Balance training was more effective than strength training only for functionality (SMD 0.49; 95% CI 0.06-0.92), but there was no difference in instability (SMD 0.43; 95% CI 0.00-0.85) or dynamic balance (SMD 0.21; 95% CI -0.15 to 0.58).

Comment: Chronic ankle instability is often associated with recurrent injury. As such, better understanding how we can most effectively manage ankle instability may support injury prevention efforts, as well as mitigate other associated risks. This systematic review is a robust review of evidence regarding the effectiveness of balance and strength training on 3 key outcomes: functionality, instability, and dynamic balance. Balance training was more effective at improving functionality than strength training and regular exercise (control). However, balance and strength training were comparable in their effect on instability and dynamic balance and were both superior to regular exercise. As such, while the evidence is marginally in favour of balance training, both balance and strength training may be effective in the management of chronic ankle instability. The authors examined the intervention protocols in detail and tentatively suggested a hop-to-stabilisation training protocol was more effective than other balance training protocols. However, research is needed to explore this further.

Reference: *Clin Rehabil.* 2021;35(12):1694-1709

[Abstract](#)

'The wairua first brings you together': Māori experiences of meaningful connection in neurorehabilitation

Authors: Wilson B-J et al.

Summary: This study used a bicultural approach underpinned by kaupapa Māori research principles to explore the perspectives of 5 Māori brain injury survivors and 11 whānau (extended family) members, through wānanga (focus groups) analysed using Māori methods of noho puku (self-reflection), whānaungatanga (relational linkage) and kaitiakitanga (guardianship). People spoke of developing meaningful connections requiring 3 layers of connection: an elemental layer features wairua (spirit) and hononga (connection) that both underpinned and surrounded interactions; a relational layer reflecting the importance of whānau identity and collectivism and being valued, known, and interactively engaged; and an experiential layer including relational aspects important within the experience and reciprocal relationships that are mana-enhancing and grounded in trust.

Comment: I am really excited to share this paper led by Bobbie-Jo Wilson and am grateful to have had the opportunity to work with this team to bring this project to fruition. Research mapping Māori experiences to the WHO Commission for Social Determinants of Health framework have found services and interventions that lack cultural fit are an intermediary determinant of health (Palmer SC et al., *Int J Equity Health* 2019). Despite this, there is an absence of research that has explicitly sought to understand Māori experiences of rehabilitation. In this research, we explored Māori perspectives of what constitutes meaningful interactions for people and whānau when engaged in rehabilitation. We found a sense of wairua and hononga are fundamental for meaningful interactions for Māori, and that hononga is enabled and enhanced through whakapapa, whānaungatanga, tikanga (cultural protocols), and in an environment which invites whānau to engage as Māori. I strongly encourage all involved in the design and delivery of rehabilitation to actively engage with these findings and draw on them to challenge, extend and enrich our rehabilitation structures and practices. Doing so will better position us to address (rather than perpetuate) existing inequities in access, experience and outcome experienced by Māori impacted by injury and illness.

Reference: *Brain Impairment.* 2021:1-15

[Abstract](#)

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Forging Alliances, New Horizons



A pilot study evaluating the effect of early physical therapy on pain and disabilities after breast cancer surgery: Prospective randomized control trial

Authors: Klein I et al.

Summary: This prospective, single-centre, randomised controlled clinical trial assessed the effect of early physical therapy and patient education on morbidity of the shoulders after breast cancer surgery in 157 women (mean age 52.2 years). Compared with controls, patients receiving early physical therapy reduced pain levels at 1 (Numeric Pain Rating Scale [NPRS] 2.1 vs 1.5; $p = 0.019$) and 6 (NPRS 1.4 vs 0.5; $p = 0.011$) months. Functional disabilities after 6 months also favoured early physical therapy in subgroups receiving small ($p = 0.004$) or extensive surgeries ($p = 0.032$).

Comment: Evidence highlights the potential of post-operative physiotherapy (PT) following breast cancer surgery for addressing pain and function. However, there remains a lack of consistent referral for PT early post-surgery due to concerns about the risk of post-operative complications. This research aimed to examine the effect of early PT and patient education. The intervention group received PT treatment on the day after surgery, with recommendations to perform prescribed exercises three times a day until maximum function without pain is restored. They also received patient education around pain control and monitoring symptoms associated with post-operative pain. The findings are a little tricky to unpick. For example, the control group received usual care, which included the possibility of PT referral if warranted by the surgeon, the participants were not blinded, and there is no information about the extent to which participants followed exercise recommendations. As such, the findings should be interpreted with caution. Nonetheless, the findings provide enough information in support of PT early post-surgery to warrant further investigation. Importantly, contrary to popular belief, there were no complications attributable to the intervention.

Reference: *Breast. 2021;59:286-293*

[Abstract](#)

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Uncertainty in low back pain care – insights from an ethnographic study

Authors: Costa N et al.

Summary: Australian researchers conducted ethnographic observations of clinical encounters in a private physiotherapy practice and a public multidisciplinary pain clinic in order to explore how uncertainty plays out in low back pain (LBP) care and to understand how clinicians manage accompanying tensions and emotions. They identified 3 themes: (1) Sources of uncertainty: both patients and clinicians expressed uncertainty during clinical encounters (e.g., causes of LBP, mismatch between imaging findings and presentation). Emotions (anger, tiredness, frustration) often accompanied the uncertainty. (2) Neglecting complexity: clinicians often attempted to decrease uncertainty and associated emotions by providing narrow answers to questions about LBP. Clinicians' denial of uncertainty also appeared to deny patients the right to make informed decisions about treatments at times. (3) Attending to uncertainty?: clinicians attended to uncertainty through logical reasoning, acknowledgement, reassurance, personalising care, adjusting language, shifting power, and disclosing risks. The authors emphasised the need for recognition of the emotional dimensions of patient-clinician interactions and a healthcare culture that prepares clinicians and patients to be more accepting of, and clearly communicate about, uncertainty.

Comment: This is a super interesting paper. The authors present a methodologically robust and thoughtful analysis of uncertainty in LBP care. I would really encourage clinicians working in LBP to read and engage with this paper. I suspect that the analysis will resonate and that clinicians will be able to recognise themselves in some of the examples presented. The authors argue that "patients seem to want certainty and clinicians seem to comply". In other words, when faced with uncertainty and emotions relating to uncertainty, clinicians are driven to reduce uncertainty, to alleviate negative emotions associated with uncertainty, and to foster hope. Their intentions may be honourable and may (temporarily) have the intended effects. However, the authors proposed that this "well-intended deception" has a number of unintended effects, including undermining trust in the relationship and impacting the clients ability to make informed choices. They suggest that clinicians would be better disclosing uncertainty up front, being transparent about the nature of evidence, and attending to emotions relating to uncertainty. This is relevant to the idea of "intellectual candour", a concept discussed in another of my favourite papers (Molloy E and Bearman M. *Med Educ.* 2019). The authors also call for training in emotionally reflexive approaches. I would agree, and suggest this type of training would be equally valuable for addressing complexity in other rehabilitation populations and contexts.

Reference: *Disabil Rehabil. 2022:1-12*

[Abstract](#)

Exploration of interventions to enhance return-to-work for cancer patients: A scoping review

Authors: Guo Y-J et al.

Summary: This scoping review examined the return-to-work (RTW) interventions for cancer patients based on 32 studies including 1916 patients. Interventions included physical interventions ($n = 6$; high-intensity or low-to-moderate intensity exercise, yoga, and upper limb functional training), psychological interventions ($n = 2$; early active individualised psychosocial support and mindfulness-based recovery), vocational interventions ($n = 14$; work plans, educational leaflets, vocational consultations, electronic health interventions, and employer interventions), and multidisciplinary interventions ($n = 10$; any combination of interventions). Positive results in enhancing cancer patient RTW were identified for physical exercises, making working plans, vocational consultations, educational leaflets, and two combinations of vocational and physical interventions.

Comment: This paper provides a useful overview of the current state of evidence regarding RTW interventions for cancer survivors. A scoping review focuses on summarising evidence, rather than synthesising and analysing evidence. In this case, scoping did uncover a relatively wide evidence base exploring RTW interventions for cancer survivors including a mix of physical, psychological, vocational, and multidisciplinary approaches. However, this included several protocol papers that did not report findings, limiting definitive conclusions regarding which interventions, or which mix of interventions, are most effective.

Reference: *Clin Rehabil. 2021;35(12):1674-1693*

[Abstract](#)



The development of Aboriginal Brain Injury Coordinator positions: A culturally secure rehabilitation service initiative as part of a clinical trial

Authors: Armstrong E et al.

Summary: This Western Australian paper reports on the development of the Healing Right Way clinical trial, developed based on recommendations from Aboriginal brain injury survivors and their families. The trial includes the role of an Aboriginal Brain Injury Coordinator to assist with navigating information and services, particularly after hospital discharge. The goal is to enhance rehabilitation services and improve quality of life for Aboriginal Australians after brain injury by providing education, support, liaison and advocacy services over 6-months commencing soon after stroke or injury. The paper outlines the development of the role, partnerships involved, experiences to date and facilitators and barriers to the role.

Comment: This is an interesting and practical paper providing an overview of the development and implementation of an Aboriginal Brain Injury Coordinator (ABIC) role in Western Australia. These roles are being implemented in eight hospitals. The role is planned to commence in parallel with a cultural security training programme for hospital staff. I admit that I had not heard of the idea of 'cultural security' before, or at least not as something that is distinct from cultural safety. Previously it has been argued that cultural awareness and cultural safety provide the foundations for cultural security. In the current paper, cultural security is described as 'a state of service delivery in which Aboriginal cultural values and world view are respected, and hospital processes ensure that cultural rights, values, and expectations of Aboriginal patients and their families are not compromised'. This absolutely sounds like something we should be striving for. The preliminary findings to date suggest the ABIC role shows lots of promise, particularly if there are structures in place to support connection between ABICs working in different sites to share experience and provide cultural support to each other. This is a great initiative. I will be looking out for trial findings so watch this space for more.

Reference: *Primary Health Care Research & Development.* 2021;22:e49

[Abstract](#)

Is multidisciplinary rehabilitation for low back pain effective in patients above 65 years? An observational cohort study with 12-month follow-up

Authors: Proetzel S and Weigl MB

Summary: This single-centre, observational, prospective cohort study assessed short-term and 12-month effects of a 3-week chronic LBP-specific multidisciplinary biopsychosocial rehabilitation (MBR) programme in 104 patients ≥ 65 years of age (mean 70.7 years) and 99 patients < 65 years (mean 56.4 years). Older patients had more comorbidities (≥ 2 comorbidities 49.5% vs 23.5%; $p < 0.001$). Both groups had improved pain and disability at discharge (all $p < 0.001$) and at 12-month follow-up (old $p < 0.001$; young $p < 0.039$) with slightly greater effects in older versus younger patients (discharge effect size 0.67 vs 0.53; 12-month effect size 0.42 vs 0.29). SF-36 Physical Component Summary improved in both groups (all $p < 0.025$) with slightly lesser effects in older patients (discharge effect size 0.31 vs 0.43; 12-month effect size 0.27 vs 0.39).

Comment: The authors of this paper highlight a really important limitation of existing literature, that older adults, ≥ 65 years old, are underrepresented or excluded from the majority of clinical trials in LBP. So, while there is robust evidence, including a Cochrane review, supporting the effectiveness of MBR, we cannot be certain that these findings are generalisable to this older group. This is a good example of why it is important to keep an eye on inclusion/exclusion criteria and sample demographics when you are interpreting and making sense of evidence. The authors address this gap by exploring the effectiveness of MBR in patients ≥ 65 years old. There are a couple of design features to keep in mind when interpreting these findings including a) there was an especially high dropout rate between discharge and 12-month follow-up (41%), and b) there was no control group. Nevertheless, their findings suggest MBR has comparable effects for ≥ 65 year olds as it does in < 65 year olds.

Reference: *Eur J Phys Rehabil Med.* 2021;57(5):783-792

[Abstract](#)

Two-year follow-up of a randomized clinical trial of inpatient multimodal occupational rehabilitation vs outpatient acceptance and commitment therapy for sick listed workers with musculoskeletal or common mental disorders

Authors: Aasdahl L et al.

Summary: This report provides 2-year outcome data from a parallel group, randomised clinical trial of a 3.5 week inpatient multimodal occupational rehabilitation program (I-MORE; Acceptance and Commitment Therapy [ACT], physical training and work-related problem solving) for reducing sickness absence and facilitating RTW in 166 workers with musculoskeletal or common mental disorders compared to an outpatient program of 6 weekly sessions of ACT (O-ACT). Median number of days on medical benefits was 159 for I-MORE versus 249 days for O-ACT ($p = 0.07$). At 2 years, 40% of I-MORE recipients received long-term benefits (work assessment allowance) versus 51% of O-ACT recipients. Crude hazard ratio (HR) favoured I-MORE for sustained RTW (HR 1.59; 95% CI 1.04-2.42; $p = 0.03$) as did the adjusted HR (1.77; 95% CI 1.14-2.75; $p = 0.01$).

Comment: The primary purpose of this paper was to report on the two-year outcome data for a previously published trial comparing I-MORE with a less comprehensive outpatient intervention (O-ACT) for individuals on sick leave due to musculoskeletal or common mental disorders. I-MORE was an intensive programme including a mix of group-based and individual sessions, and a mix of physical training, ACT, cognitive behavioural therapy, mindfulness, education, and work-related problem solving. O-ACT primarily comprised of group-based ACT. The findings were in favour of I-MORE. However, I am not sure this is so surprising given the intensive nature of the I-MORE intervention. Given the substantive differences between groups in terms of length, intensity, and context of the intervention it is hard to decipher what mechanisms of action might be at play. This needs further exploration. I can also imagine the I-MORE intervention would be costly to implement so it would also be interesting to undertake a cost-benefit analysis to explore the relative benefits of such an intensive intervention.

Reference: *J Occup Rehabil.* 2021;31(4):721-728

[Abstract](#)

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