Rehabilitation
RESEARCH REVIEW™

Making Education Easy
Issue 70 – 2025

In this issue:

Abbreviations used in this issue
ECHO = Extension for Community Healthcare Outcomes
MDT = multidisciplinary team
TBI = traumatic brain injury

Welcome to issue 70 of Rehabilitation Research Review.

First up we review a qualitative case study from New Zealand exploring a community-based pain management programme co-designed with Māori whānau to address inequities to pain management. This study demonstrates an excellent example of a Māori-centred co-creation process to develop a culturally safe pain management programme. Following on, a scoping review and qualitative analysis provides an excellent review of evidence regarding factors likely to help or hinder uptake of rehabilitation technologies. We conclude this issue with a study investigating patient perspectives of process variables in musculoskeletal care pathways.

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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"When you're in pain you do go into your shell" A community-based pain management programme co-designed with Māori whānau to address inequities to pain management – A qualitative case study

Authors: Davies C et al.

Summary: This community-based, participatory action, qualitative case study, guided by a Māori-centred research approach, assessed a community-based, whānau-focused pain management programme (PMP) using Whānau Ora principles (care focusing on an individual's wellbeing and that of their significant others as a collective) in eight whānau living with persistent pain. The programme was led by a Māori community partner and a pain management physiotherapist and included a session on Rongoā Māori (Māori traditional treatment). The programme as assessed by whānau provided enhanced confidence in managing pain with more tools available to manage pain. Key aspects for implementation included the role of meaningful relationships, codesign, use of metaphors, and inclusion of traditional treatments.

Comment: This is an excellent example of a Māori-centred co-creation process to develop a culturally safe PMP. The paper has only limited data, but is rich in its description of the development process and I highly recommend everyone (not just those working in pain management) take the time to engage with it. Some interesting learnings I took away included: a) The need for a highly reflexive approach – this team had worked collaboratively to co-design a culturally safe iSelf-help online PMP. However, despite taking a Māori-centred approach to its development, it was clear it did not address equity in access to PMP for Māori. The team did not let that deter them and the insights produced in their efforts to unpack this finding led to the development of the whānau-centred, in-person PMP delivered in the community discussed in this paper. b) The multitude of ways the in-person programme responded to the needs of Māori – including incorporating Rongoa, the active involvement of whānau, the use of metaphor and visual representations of the pain experience, and so on. c) The transdisciplinary input – including Māori community partners, health literacy experts and illustrators, Māori and non-Māori pain researchers, and pain management clinicians. The development process provides an excellent example for others seeking to authentically engage with Māori-centred service design.

Reference: J Pain 2024;Dec 25 [Epub ahead of print]
Abstract

Factors influencing adoption and sustained use of rehabilitation technologies: A scoping review and qualitative analysis

Authors: Olsen S et al.

Summary: This scoping review and qualitative analysis examined, from the perspectives of patients and therapists, the evidence base and factors that influence adoption and sustained use of rehabilitation technology in clinical practice based on 42 research papers. Most papers explored the adoption of rehabilitation technology. Thematic analysis identified five themes, four of which influenced adoption: "Knowledge" about rehabilitation technology; "Design" of rehabilitation technology; "Circumstances and Characteristics"; and the "Person-centred" approach. These themes were confirmed and refined in an analysis of sustained use along with a fifth theme "Healthcare Ecosystem".

Comment: The review provides an excellent review of evidence regarding factors likely to help or hinder uptake of rehabilitation technologies. Each theme is multifactorial. "Knowledge" includes knowledge about what is available and what the benefits are (including for who and in what circumstances, and extending beyond clinical outcomes to include the role that rehab technologies may have in supporting engagement), technical competency, and how to manage and access support when experiencing tech issues or malfunction. Aspects important to "Design" included ease of use, the extent to which the tech can be incorporated into workflow, whether the design aesthetics made a user stand out as different, and features of user experience that supported sustained engagement. "Circumstances and Characteristics" broadly refers to the context in which rehab tech is being implemented as helping or hindering successful uptake such as access to tech, user demography, attitudes and beliefs, and support networks. A "Person-centred" approach has the potential to mitigate barriers to uptake and was centred around adapting the tech for users, incorporation design features which enable personalisation, and responding to user needs and characteristics. The fifth and final theme highlighted the role that the "Healthcare Ecosystem" plays in helping or hindering sustained use with factors such as operational support, funding, institutional strategy and the policy and regulatory context all exerting influence. The findings are relevant for tech developers, health organisations and rehabilitation practitioners.

***Reference:** Disabil Rehabil Assist Technol. 2024; Dec 13 [Epub ahead of print]*
Abstract

The efficacy of an interdisciplinary pain management program for complex regional pain syndrome compared to low back pain and chronic widespread pain: An observational study

Authors: Bean DJ et al.

Summary: This study assessed outcomes after an interdisciplinary pain management programme (IPMP) in 66 people with complex regional pain syndrome (CRPS) compared to 66 people with low back pain (LBP) and 66 people with chronic widespread pain (CWP) and sought to determine whether IPMP outcomes could be predicted based on baseline characteristics. Machine learning models using pain intensity, pain interference and psychological measures pre- and post-programme, and at 1, 6 and 12 months identified two recovery trajectories for each dependent variable (pain interference, pain intensity). After IPMPs, 37% of people had a good responder recovery trajectory for pain interference, and 11% had a good responder recovery trajectory for pain intensity. These recovery trajectories did not differ among the three diagnostic groups (CRPS, LBP, CWP) for pain interference or pain intensity. Modelling to predict outcomes using baseline scores correctly classified 69% of pain interference and 88% of pain intensity recovery trajectories.

Comment: It is important to highlight that this research was a retrospective study drawing on data from patients who had taken part in an IPMP at Auckland Regional Pain Service between 2014 and 2022. The IPMP was a 3-week, 35 hours per week, outpatient, group programme. One of the initial drivers for this research was to address a gap in evidence regarding the effectiveness of IPMP for CRPS. The finding that recovery trajectories did not differ among the three diagnostic groups (CRPS, LBP, CWP) and that outcomes for CRPS were comparable to these other groups highlights IPMP as a legitimate referral pathway for people experiencing CRPS. To aid interpretation of findings: for pain interference, a "good responder" showed sustained decline in interference from baseline scores, while "a poorer responder" showed a slight initial reduction in pain inference followed by a return to baseline; for pain intensity a "good responder" presented with a decline in pain over time, while a "poorer responder" had consistent pain intensity scores over time. Baseline predictors of a positive trajectory for pain inference included lower scores on stress, anxiety, depression, pain interference, pain intensity, and pain catastrophising. Baseline predictors of a positive trajectory for pain intensity included gender (women), lower pain intensity, longer pain duration, lower anxiety, higher pain catastrophising, and older age. The finding that a modest 37% of people had a good responder recovery trajectory for pain interference, and 11% had a good responder recovery trajectory for pain intensity is interesting. Understanding for who, and under what circumstances, people are more likely to respond with a positive recovery trajectory can inform more targeted referral. It can also identify those who are not well served by these programmes so we can consider alternate strategies to better meet their needs. Further, given reduction in pain intensity is not a common outcome, we need to reconsider the purpose of IPMP and reframe what might constitute a good outcome when making referrals.

***Reference:** Pain Med. 2024;Dec 12 [Epub ahead of print]*
Abstract

Enhancing the reporting quality of rehabilitation interventions through an extension of the Template for Intervention Description and Replication (TIDieR): The TIDieR-Rehab checklist and supplementary manual

Authors: Signal N et al.

Summary: This report outlines the development, using a modified Delphi process, of an extension of the Template for Intervention Description and Replication (TIDieR), TIDieR-Rehab, intended to enhance the reporting of rehabilitation interventions. TIDieR-Rehab provides a checklist and supplementary manual that present seven original, three adapted and 12 new items for reporting of rehabilitation interventions. The new items promote fuller descriptions of rehabilitation interventions, including intended study populations and intervention timing, intervention dosage, person-centred care and undesired effects.

Comment: The TIDieR framework has been adopted as a gold standard framework for the reporting of interventions. Detailed and comprehensive reporting of interventions is important for several reasons including that it enables: a) critical engagement with the content and key features of an intervention; b) consideration of the transferability of content and features to other populations and settings; c) identification of key effective intervention components; d) replication of intervention during implementation in real-world clinical settings, and so on. However, it is tricky when the gold standard framework for intervention reporting does not incorporate key intervention parameters which are important for rehabilitation delivery. As such, this research which has produced the TIDieR-Rehab checklist is an important advance which can aid more robust reporting of rehabilitation interventions, as well as serve as a tool for clinicians seeking to replicate interventions in clinical practice. Tools such as TIDieR-Rehab may also go some way to reducing the gap that often exists between intervention efficacy (performance of an intervention in controlled conditions) and intervention effectiveness (performance of an intervention in real-world conditions).

***Reference:** BMJ Open 2024;14(11):e084320*
Abstract

Understanding 'fit for selected work' medical certificates

A 'fit for selected work' medical certificate means there are still some things your patient can do safely at work while recovering from an injury.

Most patients with low complexity injuries should be certified as 'fit for selected work'.

A safe and timely return to work has many benefits for your patient including:

- Improved physical and mental wellbeing
- Maintaining social and vocational connections
- Improved likelihood they'll return to their pre-injury employment
- Ability to earn up to 100% of their usual income while they recover.

ACC can provide equipment and support to help your patient work safely and recover at work.

Find out more:

- *www.acc.co.nz/helping-your-patient-recover-at-work*
- *https://bpac.org.nz/b-quick/recovery.aspx*
- *https://bpac.org.nz/2024/recovery.aspx*

ACC He Kaupare. He Manaaki. He Whakaora.
Prevention. Care. Recovery.

The role of an inpatient aphasia-friendly choir for people with post-stroke communication impairment from the perspective of the multidisciplinary team: An exploratory study

Authors: Goodhew E et al.

Summary: This Welsh study used semi-structured interviews to explore the experiences and views of a stroke multidisciplinary team (MDT) on the role of an established inpatient aphasia-friendly choir in the rehabilitation of eight people with post-stroke communication impairment. Thematic analysis identified four main themes: breaking down social isolation; the collective well-being and engagement; the patient voice and patient choice; and the therapeutic benefits across the MDT.

Comment: The authors make a compelling case for the role of singing-based rehabilitation citing evidence for the relationship between language stimulation, neuroplasticity, and singing; and impact on functional communication outcomes and psychosocial well-being. While it appears that most evidence referred to was from community-based settings, this research is focused on MDT experiences and perspectives of an inpatient aphasia-friendly choir. For context, the choir met weekly for 45 minutes. The weekly routine remained consistent to aid familiarity and to support enjoyment and engagement. The first theme talks to the inclusive and accessible nature of the choir which appeared to create the context for communication through shared experience and familiarity. The choir was perceived to create opportunities for social interaction, family involvement, and for patients to express themselves, as well as help patients to build confidence in their communicative ability. This was made possible through a person-centred approach where patient choice was embedded into the routine. The choir had the effect of normalising therapy in the context of an everyday activity. The last two themes – "collective well-being and engagement" and "therapeutic benefits across the MDT" are powerful. Not just because of the perceived positive outcome for patients, but because the experience also had a positive effect on staff well-being and engagement, and because the choir was perceived as a key mechanism for achieving the shared goals of the MDT. To me, this is an excellent example of how a person-centred culture of care can have transformative effects for both patients and the rehabilitation team.

Reference: Int J Lang Commun Disord. 2025;60(1):e13143
Abstract

Game-based telerehabilitation in neurological disorders: A systematic review of features, opportunities and challenges

Authors: Asgharzadeh Chamleh MR et al.

Summary: This study explores the integration of game-based telerehabilitation and virtual reality technologies to address physical disabilities among patients with stroke, Parkinson's disease, and multiple sclerosis undergoing home-based rehabilitation based on 31 studies. The study identified key opportunities including the effectiveness of telerehabilitation and use of new, engaging, user-friendly and affordable technologies. Challenges were identified including motivation, usability, exercise adherence, and technical barriers. The most commonly used telerehabilitation device was the Wii gaming console.

Comment: I was a little disappointed in this review. I am not convinced that the findings add to what we already know from existing evidence around the uptake of new rehab technologies. The findings are somewhat crude and, in my opinion, fail to really dig beneath the surface. The Olsen et al., review (also included in this issue of Research Review) offers a more in-depth analysis of existing evidence, albeit not specific to gaming technologies. The focus of this research was on "game-based telerehabilitation". This sparked my interest as I was anticipating a more nuanced focus on the integration of game-based technology alongside telerehabilitation through remote interaction with a rehabilitation professional. However, many of the included studies seemed to be focused on a more conventional self-guided home-based rehabilitation programme incorporating gaming technology (such as Nintendo Wii).

Reference: Disabil Rehabil Assist Technol. 2025;Jan 16 [Epub ahead of print]
Abstract

To read previous issues of
Rehabilitation Research Review **CLICK HERE**

Project ECHO occupational and environmental medicine: A qualitative study of healthcare providers supporting workers with work-related injuries and illnesses

Authors: Nowrouzi-Kia B et al.

Summary: This qualitative study assessed factors that affect primary care providers' support of patients' stay at work and return to work (RTW) following injury or illness and the use of the Extension for Community Healthcare Outcomes training program for Occupational and Environmental Medicine (ECHO OEM). There were six themes discussed: challenges with engaging with workers' compensation boards; return to work practices; workplace perspectives; health and well-being; communication; and ECHO OEM feedback.

Comment: The authors of this paper point to the lack of training regarding occupational health, vocational rehabilitation and RTW processes for primary care practitioners. I would suggest the same knowledge gap exists in Aotearoa New Zealand. I would add that this knowledge gap is not limited to primary care practitioners but extends to other health professionals unless embedded in specialist vocational rehabilitation services. The ECHO OEM seeks to address this knowledge gap through a 12-week interactive programme that includes case-based discussion via video conference and presentation and discussion of key topics relevant to managing injured workers led by occupational health experts. The goal is to build capacity to facilitate safe and healthy RTW practices. This initiative makes a lot of sense to me. In this research, interviews were carried out both before the launch of ECHO OEM and post-implementation. The pre-interviews probed for ideas, practice challenges and learning needs and functioned as a needs assessment. Findings from these interviews conveyed a complex landscape, a frustration with insurance board processes, trust erosion, delays, uncertainty and a mismatch in expectations regarding readiness to RTW between employers and health professionals. The post-interviews explored experiences of ECHO OEM. The ECHO OEM was perceived to address a range of knowledge gaps including with respect to relevant legislation and regulatory frameworks. It also helped participants to have a more nuanced understanding of the complexities of navigating RTW processes, including improving communications with insurance boards. Recommended topics to include going forward included managing employer expectations, managing comorbidities, the involvement of family in RTW processes, and working with allied health professionals to support RTW.

Reference: J Occup Rehabil. 2025;Jan 18 [Epub ahead of print]
Abstract

INDEPENDENT COMMENTARY BY

Professor Nicola Kayes

Professor Nicola Kayes is Associate Dean of Research in the Faculty of Health and Environmental Sciences and Co-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.

For full bio CLICK HERE.

Return to sports after pediatric traumatic brain injury: An expert panel survey

Authors: Hansen C et al.

Summary: This cross-sectional online survey examined practice patterns of 30 experts (rehabilitation, neurology, neurosurgery, sports medicine, neuropsychology) in paediatric traumatic brain injury (TBI) used in severity assessment and return to play (RTP) decisions in patients with complicated mild, moderate, or severe TBI. RTP recommendations varied based on risk of activity across all levels of TBI severity ($p < 0.05$). There was high variability for RTP timeline at any level of injury severity. No association was observed between medical specialty and RTP recommendations and experts noted a variety of factors which inform their RTP decision making.

Comment: It was noted that existing RTP guidelines focus primarily on mild paediatric TBI with a gap in research informing RTP recommendations for children (≤18 years old) with complicated mild, moderate, or severe TBI. I was struck by the variability in practice evident in the survey responses. While injury severity and risk of activity were key factors in the decision (i.e., longer RTP for high-risk activities particularly in the context of higher severity), it was clear that a multitude of factors contributed to RTP decisions and that more work is needed to aid clinical decision making.

Reference: PM R. 2025;Jan 13 [Epub ahead of print]

Abstract

‘Obviously, because it’s a tear it won’t necessarily mend itself’: A qualitative study of patient experiences and expectations of treatment for a meniscal tear

Authors: Ahmed I et al.

Summary: This English qualitative study used semi-structured interviews to explore treatment experiences and expectations in 10 patients aged 18-55 years with a knee meniscal tear. Thematic analysis identified key patient experiences related to symptoms, clinical consultation and treatment experience. There was a significant effect on pain and other physical symptoms, but many patients experienced additional effects on family and financial life. Participants expected management to be conducted mostly in secondary care and thought surgery would be a definitive treatment, while physiotherapy could not guarantee to be effective because it would not fix the tear.

Comment: In the context of equivocal evidence regarding the superiority of operative versus non-operative pathways for treatment of meniscal tear, this research was particularly interested in understanding why patients cross over to operative treatment. I found the findings interesting, but I admit I also found the level of analysis to be somewhat superficial. I found myself reading between the lines and drawing additional interpretations from the data. Severe pain and enduring impact on key aspects of work and family life appeared to be a trigger for seeking treatment. This is consistent with broader help seeking literature which often points to an inability to retain status quo serving as a trigger to seek help. Patient experiences and expectations of the initial examination and diagnostic process was interesting. There was an expectation from patients that they would follow a medico-centric pathway of physical examination, imaging, and referral to secondary care. When the pathway did not progress as expected this appeared to erode trust (my interpretation!). Many participants considered surgery to be the most definitive treatment given the physical tear and believed physiotherapy delays the inevitable. This is consistent with other research exploring reasoning around conservative versus non-conservative treatment decisions and highlights that the biomedical discourse continues to dominate health and treatment beliefs. The question remains – How might we generate alternate discourses and open minds to the possibilities of more conservative treatment pathways?

Reference: BMJ Open 2025;15(1):e088656

Abstract

Patient perspectives of process variables in musculoskeletal care pathways

Authors: Harvey D et al.

Summary: This qualitative study investigated which process variables (modifiable factors in a pathway that can be quantified and measured and that if varied may achieve a different operational or patient outcome) are important to patients and what their experiences of these processes are during musculoskeletal rehabilitation. A reflexive thematic analytical approach was undertaken with four focus groups (12 participants). Thematic analysis identified four key themes: process matters; quantifying progress facilitated patient engagement; benefits of equitable access of care; and recovery made easier with navigation.

Comment: It is great to see research focused on the musculoskeletal escalated care pathways (ECP) commissioned by the Accident Compensation Corporation. The ECP’s provide an excellent site for research to examine a range of questions relevant to musculoskeletal care pathways and this research is a good example of that. We often take a cause-effect view of intervention effectiveness. However, it is well recognised that we need to unpack the ‘black box’ of rehabilitation given the likelihood that there are a range of (often invisible) mechanisms at play which impact outcome. Given this, examining the role and experience of process variables is important given these have the potential to exert influence on outcome alongside therapeutic inputs. Key process variables valued by patients included timeliness, coordination of care, interprofessional collaboration and communication, and a general sense that they were accessing the right care, at the right time, which was tailored to their individual needs. Some might say this is a no brainer. However, these core processes of care are ones we routinely fail to deliver on, so it is great to see that it is something the ECP appears to have gotten right. The second theme “quantifying progress facilitated patient engagement” is consistent with other research which has highlighted that personalised goal planning and experiencing a sense of progress towards things that matter can support engagement. In this case, it is important to note that regular outcome assessment was not just a tool for clinicians – it was an important mechanism for patients to see their own progress. Other aspects of ECP discussed include perceived equity in access to treatment that was tailored to the person, and the role that the physiotherapist played in supporting them to navigate the care pathway and access other supports and entitlements. While research is needed to explore the extent to which these process variables are associated with outcome, these findings offer useful insight into process variables which are clearly important to the patient experience and which are likely transferable to other populations and settings.

Reference: Musculoskelet Sci Pract. 2025;76:103287

Abstract