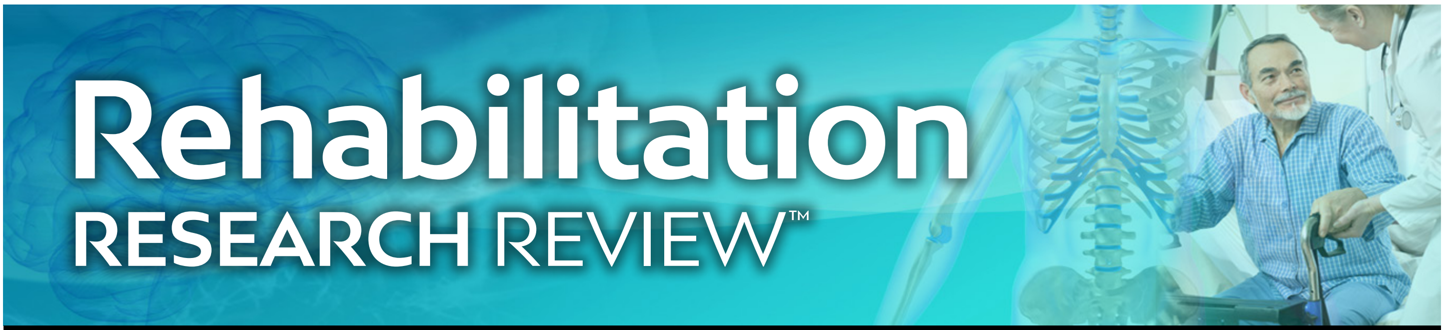

Rehabilitation
RESEARCH REVIEW™

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Issue 73 – 2025

In this issue:

Abbreviations used in this issue

CLBP = chronic low back pain
SCI = spinal cord injury
TBI = traumatic brain injury

Welcome to issue 73 of Rehabilitation Research Review.

We begin this issue with a cross-sectional study from Aotearoa New Zealand investigating telerehabilitation for patients with mild TBI and discover that such patients prefer telerehabilitation sessions and longer telerehabilitation sessions over shorter sessions. In a second local study, semi-structured interviews explored the experiences of transgender, gender-diverse or non-binary patients who accessed a gender-affirming physiotherapy service, the findings of which offer several tangible ways to embed gender-affirming practices into rehabilitation. We conclude this issue with another local study providing much-needed insight into Māori experiences of hand therapy.

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
nicolakayes@researchreview.co.nz

Telerehabilitation for mild traumatic brain injury patients: Patients' preferences in Aotearoa New Zealand

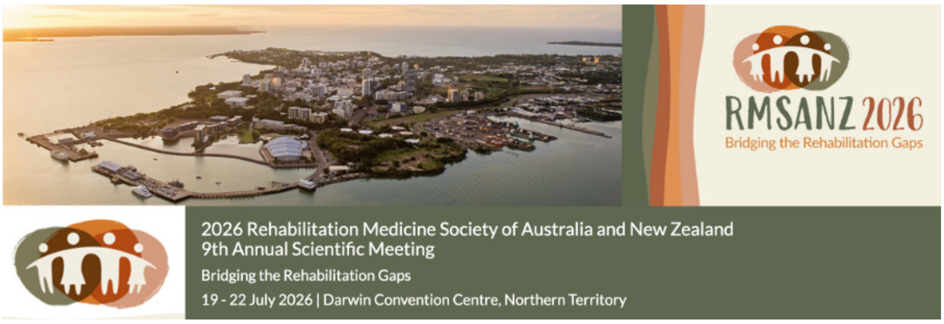
Authors: Lam Q et al.

Summary: This Aotearoa New Zealand cross-sectional study aimed to help Healthcare practitioners and government agencies develop effective and patient-centred telerehabilitation services for patients with mild TBI. Mild TBI survivors (n = 30) or close acquaintances (n = 38) undertook a survey where they were asked to choose between hypothetical rehabilitation scenarios with varying attributes, including the session location (clinic-based vs telerehabilitation), duration (long or short), therapist involvement, inclusion of online resources, associated cost, and community COVID-19 threats. The findings of the survey were consistent with the proposition that individuals prefer telerehabilitation appointments and there was an overall preference for long telerehabilitation sessions. Individuals living with a mild TBI were more positive towards clinic-based sessions and they were less impacted by the threat of COVID-19. While some differences were seen between groups, time and cost considerations associated with in-person visits were a driver towards the preference for telerehabilitation.

Comment: I found this article interesting for two reasons. First, the researchers used a method called Discrete Choice Experiments. In this approach, survey respondents are asked to indicate their preference between two (or more) hypothetical scenarios presented side by side. Each scenario is described by a set of attributes – in this case cost, session length, mode of delivery, and so on. Across the experiment, these attributes are systematically varied to reveal which aspects matter most to participants and how they trade off one feature against another. It occurred to me that services considering changes to key aspects of their delivery model, or exploring the value of adding new options, could use similar methods to gauge client preferences. This could help estimate the perceived value and likely uptake of proposed changes before implementation. Second, while the authors rightly caution against overinterpreting the findings due to a relatively small sample size (for this method), it is notable that telerehabilitation was preferred over in-clinic appointments. I often speak with clinicians who remain adamant that in-person rehabilitation is both preferred by patients and inherently superior to telerehabilitation. I suspect this finding will challenge some of those long-held views. That said, I advocate for a future where we move beyond framing these options as an either/or choice. Instead, we should aim for an integrated care pathway that combines in-person and telerehabilitation in ways that meet people where they are at along the continuum of care.

Reference: J Prim Health Care 2025;17(3):214-223

Abstract



Using the Theoretical Domains Framework to identify strategies to support the implementation of the guidelines for the physiotherapy management of people with spinal cord injury: A qualitative study

Authors: Tranter KE et al.

Summary: This study investigated the perspectives of therapists and people with SCI on the recently developed Australian and New Zealand Clinical Practice Guidelines for the physiotherapy management of individuals with this condition, and aimed to understand the barriers and facilitators to the rollout of the guidelines, identifying implementation strategies to support their uptake. A total of 21 therapists and 10 people with SCI were identified from Hospital and community SCI services in Australia and were interviewed one-on-one or in focus groups. The Theoretical Domains Framework guided interviews with therapists. Therapists reported the following barriers to implementation of the guidelines: lack of knowledge and skill, lack of resources, and challenges associated with working within large organisations. Facilitators to the uptake of the guidelines were: providing education, skill training, guideline champions, awareness, and two-way communication between patient and therapist; a total of 14 implementation strategies were identified. The guidelines were considered by both therapists and people with SCI to be a useful tool to improve the quality of care provided to people with SCI across various health settings.

Comment: This paper illustrates how the Theoretical Domains Framework can effectively support implementation processes. The research focused on identifying factors that facilitate or hinder the integration of guidelines into practice, with the aim of informing tailored implementation strategies. This approach could be applied more broadly to support implementation in rehabilitation. Importantly, it does not need to be embedded within a formal research process; it can be used practically by any service seeking to implement new ways of working, interventions, or initiatives. The Theoretical Domains Framework is a valuable tool for this purpose, though other frameworks may be equally useful depending on the intervention, stakeholders, and context. For example, Normalisation Process Theory has also been widely used to guide implementation efforts (see: https://normalization-process-theory.northumbria.ac.uk/).

Reference: Spinal Cord Ser Cases 2025;11(1):25
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. Nicola actively contributes to postgraduate teaching in rehabilitation in the School of Clinical Sciences at Auckland University of Technology.

Effectiveness of a m-Health-delivered home-based exercise program for self-management of chronic low back pain: PainReApp randomized controlled trial

Authors: Moreno-Ligero M et al.

Summary: This single-blinded randomised controlled trial involving 99 adults (≥18 years) with chronic low back pain compared the effectiveness of a mobile health (m-Health) application versus the booklet-based modality for delivering a self-managed home exercise programme (HEP) in terms of pain, health-related quality of life (HRQL), and biopsychosocial outcomes. Significant ($p < 0.05$) within-group improvements from baseline to 3 and 6 months were seen for body mass index and physical functioning tests in m-Health recipients, and for physical functioning tests in HEP recipients, and at 3 months in HEP recipients for the physical component of HRQL and sleep quality. There was a significant between-group difference for 30-second arm curl ($p = 0.038$) at 3 months, favouring m-Health recipients.

Comment: I found this paper somewhat disappointing. Except for the arm curl (which does not feel like a particularly meaningful outcome for people with chronic low back pain), there were no significant between-group differences. That said, it is not the null findings themselves that are disappointing. In fact, I strongly support the transparent publication of null results – we can learn as much from these as from studies that demonstrate an effect. Historically, publishing practices have privileged positive findings, which is problematic. What I did find disappointing, however, is that the proposed intervention seemed to overlook a substantial existing evidence base. At its core, the intervention was essentially an exercise prescription programme. Yet, we know from a wealth of research that exercise prescription alone is not sufficient. To their credit, the authors did a good job of unpacking their findings, highlighting issues such as: 1) the evidence supporting multidimensional interventions that combine exercise with cognitive behavioural strategies; 2) the importance of moving beyond pain intensity as a primary outcome and instead focusing on reducing pain-related disability; 3) the need to embed features that support sustained engagement. These are all critical points, but they are not new. They have been repeatedly emphasised in prior research and ideally should have informed intervention development from the outset.

Reference: Am J Phys Med Rehabil. 2025;Aug 12 [Epub ahead of print]
Abstract

Scalability evaluation of a complex community-based falls prevention intervention in Australian stroke rehabilitation

Authors: Lin I et al.

Summary: In a mixed-methods formative evaluation of a multi-component Falls After Stroke Trial (FAST) individually tailored home safety and functional exercise programme, Australian researchers examined data on 50 community-dwelling adults at risk of falling up to 5 years after a stroke. The FAST intervention was delivered by 22 therapists (physiotherapists and occupational therapists) trained in the FAST intervention. Adoption, Implementation and Maintenance dimensions of the RE-AIM framework identified high implementation fidelity with 90% of the participants receiving FAST dose and content. Strategies found to support implementation included standardised resources, and comprehensive training, feedback and mentoring among the therapists.

Comment: So often, interventions that demonstrate efficacy in randomised clinical trials fail to translate into scalable solutions in real-world settings. The authors of this paper argue that considerations of scalability and implementation should be built into trial design from the outset to address this persistent translation gap – and I would agree. If you are an intervention researcher, I recommend engaging with this paper, as there is much to learn from the systematic approach taken. If you are a service provider or rehabilitation clinician, there are also valuable insights here, including: 1) A detailed description of the intervention and, importantly, the key component parts identified as mechanisms of change – elements that should be foregrounded in any implementation efforts; 2) Practical insights into implementation processes that supported clinicians to deliver the intervention, including characteristics of the clinicians involved and details of training and support strategies; 3) Suggestions for scaling up implementation processes, such as reducing reliance on expert facilitators by embedding self-reflection tools, developing online communities of practice, and other innovative approaches.

Reference: BMJ Open 2025;15(9):e093487
Abstract

Understanding the importance of causation

Do you lodge claims with us?

Understanding causation will help you provide the right information, so we can make quick cover decisions.

Before deciding on cover, we need to be confident it's more likely than not the person's injury was caused by their accident.

What is causation?

Causation is a medico-legal concept which we use to determine whether we can cover a claim and fund the right treatment and support.

It means the accident the person experienced meets the legislative description and that the accident has caused an identifiable injury.

A temporal association between an injury and an accident is often necessary, but not sufficient evidence of causation. If a patient has symptoms following an accident, this doesn't automatically mean the accident caused an injury.

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Prevention. Care. Recovery.

Supporting self-continuity during the hospital to community transition after acquired brain injury: A qualitative study of priorities, expectations and experiences of rehabilitation

Authors: Brough R et al.

Summary: This Australian study examined 28 individuals' post-acquired brain injury rehabilitation priorities and expectations at discharge and their experiences 3 months after discharge (n = 24). Thematical analysis identified an overarching theme of "*Supporting self-continuity,*" including three interrelated themes: "*Life's getting back on track*" (a priority for accessing contextualised rehabilitation to enable return to valued activities and roles), "*My life on pause*" (uncertainty over processes for resuming occupations and feeling constrained by limitations and gaps in support), and "*Collaborative fit: Matching my needs*" (alignment between mindset and life expectations after acquired brain injury and personalised rehabilitation).

Comment: The findings of this paper were interesting, though they largely reinforced what has been communicated in previous research. I picked up on a few tensions in the experiences shared and thought I would offer some reflections on those specific examples. First, the paper highlighted the invisibility of handover practices between inpatient and community teams. When clients were unaware whether handover had occurred, and to what extent, they often assumed it had not, and that critical information essential for quality rehabilitation had not been exchanged. Question: *How might we invite our clients and whānau into handover processes to improve transparency and trust?* Second, there was reference to "*unrealistic*" expectations impacting self-continuity, with return to driving often being a key pinch point. Question: *Instead of attributing the issue to unrealistic expectations, how might we unpack why return to driving matters so deeply?* I would argue that it is often not the act of driving itself, but what it represents – freedom, autonomy, relief from feeling like a burden, and access to meaningful activities. Question: *How might we support a focus on these underlying reasons and progress toward them, even if driving itself is not immediately possible?* Third, clients expressed a desire for more information about expected timeframes for regaining function. This is challenging – it calls for certainty in an inherently uncertain context. While predictive algorithms (such as those developed in stroke research) could be deployed, these carry risks. They often focus narrowly on impairment-level recovery, and delivering such prognostic information could inadvertently harm hope and sense of possibility for the future. Question: *How might we help clients engage with and accept uncertainty, while still fostering a sense of progress toward what matters most to them?* If you read this paper, I suspect you too will be prompted to consider other equally important questions for our interactions with people in acquired brain injury rehabilitation contexts.

Reference: Neuropsychol Rehabil. 2025;Sep 25 [Epub ahead of print]
Abstract

Feasibility of a home-based perianesthesia nurse-led remote multimodal prehabilitation program using smartphone applications for older adults undergoing surgery

Authors: Sato M et al.

Summary: This Japanese single-arm, prospective study examined the feasibility of a remote, nurse-led, home-based, multimodal prehabilitation programme using smartphone apps in 100 patients aged ≥65 years scheduled for surgery under general anaesthesia. Overall, the participation rate was 50%, with a 92% completion rate. Adherence rate was 67.4% for nutritional therapy. In exercise training, adherence rates were 19.6% for 5000 steps/day and 56.5% for 2000 steps/day, 78.3% for squats, 78.3% for heel raises, and 60.9% for front lunges. In cognitive training, 2.1% of participant undertook training games for ≥30 min/day, and 34.8% undertook 15 min/day.

Comment: There is growing interest in how we might support prehabilitation prior to surgery given it may serve as a key mechanism for improving post-operative outcomes. The authors of this paper highlighted several factors that make implementation challenging, particularly for older adults scheduled for surgery. These include the short window between the decision to undergo surgery and the procedure itself, limited availability of surgeons and other staff to prioritise prehabilitation, resource constraints, and the practical difficulties for frail older adults in attending multiple hospital appointments. To address these barriers, the authors tested a remote, nurse-led, home-based, multimodal prehabilitation programme. This study primarily focused on feasibility, with a specific emphasis on adherence to the programme's core components. Adherence was variable across components, but the approach warrants further exploration. I was particularly struck by the finding that half of those approached declined participation, with the most common reason being a perceived lack of necessity. I would argue that regardless of the format or delivery model, addressing necessity beliefs will be critical to the success of prehabilitation and deserves more explicit consideration in future research, and in practice.

Reference: J Anesth. 2025;Sep 30 [Epub ahead of print]
Abstract

Mild traumatic brain injury and concussion and persisting post-concussion symptoms: New guidelines to support evidence-based assessment and management in Australia and Aotearoa New Zealand

Authors: Barlow KM et al.

Summary: This paper discusses the Australian and Aotearoa New Zealand Guidelines for the management of concussion, mild TBI and persisting post-concussion symptoms, which have been developed to provide evidence-based, locally applicable, clinical practice recommendations for the care of adults and children throughout their recovery journey.

Comment: This paper begins by highlighting the scale of the problem and makes a compelling case for the importance of these newly developed guidelines. The authors emphasise that "*between 25% and 48% of people with concussion have symptoms that last weeks, months or even years*" but that "*50% of people with concussion do not receive appropriate care*" and that clinicians "*report a lack of knowledge and confidence in managing these conditions*". In response, the paper directs readers to the guidelines, which also include links to a suite of complementary tools. I strongly encourage anyone working with individuals with concussion, mild TBI, or persisting post-concussion symptoms to take the time to engage with these guidelines. Services should also consider what steps they can take to embed these recommendations into routine practice. Tranter et al., also reviewed in this issue, offers a valuable case example of methods used to develop targeted implementation strategies which might be helpful for efforts seeking to support uptake.

Reference: Med J Aust. 2025;223(9):446-449
Abstract

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Diagnostic and surgical decision-making for degenerative cervical myelopathy: A survey with post-stratification analysis

Authors: Chauhan RV et al.

Summary: This online survey of 72 orthopaedic spine surgeons and neurosurgeons in secondary care across New Zealand and Australia assessed factors influencing diagnostic and surgical decision-making in patients with degenerative cervical myelopathy. In diagnosis, the most common symptoms selected were gait clumsiness (86.1%), hand clumsiness (76.4%) and reduced hand dexterity (75.0%), while the most common clinical signs selected were hyperreflexia (83.3%) and ankle clonus sign (68.1%). For >70% of surgeons, the top variables influencing surgical decision-making were symptom severity, myelomalacia, and extent of cord compression. In clinical vignettes, 72.2% of surgeons chose serial observation for asymptomatic cord compression, but if there was accompanying myelomalacia the chance of offering surgery increased from 5.6% to 34.7%.

Comment: If you have an interest in the diagnosis and management of degenerative cervical myelopathy, this paper is well worth a full read. The study highlights that while certain symptoms and signs are commonly used to inform diagnosis, there is significant heterogeneity in the combinations and weightings applied by different clinicians. The findings reveal a potential time lag between the onset of early symptoms and the clinical features that ultimately prompt referral and diagnosis, highlighting the challenge of early detection and therefore timely surgical intervention. There also appeared to be a difference between the signs and symptoms that guide diagnosis versus those that influence decisions regarding candidacy for surgery, potentially highlighting the complex interplay of factors informing these decisions. The authors argue that the observed variability reinforces the urgent need for standardised diagnostic criteria and referral pathways to support timely and consistent care for individuals with degenerative cervical myelopathy.

Reference: Global Spine J. 2025;Oct 23 [Epub ahead of print]
Abstract

Trans, gender-diverse and non-binary individuals experienced safe and positive care within a gender-affirming physiotherapy service: A qualitative study

Authors: Neish C et al.

Summary: This New Zealand study using semi-structured interviews examined the experiences of 20 transgender, gender-diverse or non-binary (TGDNB) patients aged 18-38 years who accessed a gender-affirming physiotherapy service. An inductive approach to reflexive thematic analysis identified four key themes: *"Binding and my health"*, *"My choice in holistic and person-centred care"*, *"Experiencing safe and inclusive care with knowledgeable physiotherapists"*, and *"Inclusive environments help me feel safe"*. Overall, TGDNB patients valued gender-affirming physiotherapy with inclusive, knowledgeable practitioners, who emphasised holistic and person-centred care.

Comment: This is an excellent paper – possibly one of my favourite papers from all the Rehabilitation Research Review issues published in 2025. I would love for every rehabilitation professional to engage with this paper and critically reflect on one or two things they could take forward into their practice. The findings offer several tangible ways to embed gender-affirming practices into rehabilitation. Examples offered included: 1) Rather than simply asking about pronouns, sharing your own pronouns first as an invitation that feels less othering; 2) Including multiple gender options on intake forms; 3) Acknowledging potential body discomfort and offering alternatives such as keeping clothes on, removing mirrors, or teaching self-palpation; 4) Instead of recommending clients stop binding due to health risks, supporting them to do so in ways that minimise harm; and 5) Taking the time to get to know and understand TGDNB health. Beyond the practical examples, the findings invite deeper reflection on our ways of working. For instance, the paper explored the complex relationship that TGDNB individuals often have with their bodies and the potential for disconnect. Rehabilitation, which inherently involves significant body work, can either exacerbate this disconnect or create a safe space for clients to develop self-awareness and embody their gender identities. Similarly, many participants cited negative experiences in past health interactions and carried trauma from these encounters. In this sense, gender-affirming practices strongly align with the principles of trauma-informed care and hold the potential to be truly transformative. One quote that stayed with me was: *"That particular physio opened my mind to the way in which…there is capacity for me to be treated like everybody else, or to a high standard."* This paper emphasises the critical role of gender-affirming practices in ensuring rehabilitation is inclusive, person-centred and can meet people where they are.

Reference: Int J Trans Health 2025;Oct 22 [Epub ahead of print]
Abstract

"You're the touch point": Indigenous Māori solutions for culturally safe hand therapy

Authors: Sheehy B et al.

Summary: This qualitative study used exploratory, semi-structured interviews and reflexive thematic analysis to examine experiences of 15 Māori hand therapy patients and evaluated their proposed solutions for culturally safe hand therapy services. Five themes were identified: strong initial connections with staff, a positive atmosphere, the value of therapeutic relationships, integration of Māori practices and culturally appropriate interventions, and holistic care.

Comment: This qualitative study provides much-needed insight into Māori experiences of hand therapy and offers practical solutions for enhancing cultural safety in rehabilitation. The theme names, such as *"Building a bridge to hīkoi hand in hand"* and *"Cultural connections are straight up magic!"*, beautifully capture the essence of culturally safe practice as defined by Māori whānau accessing hand therapy. Many points raised by the authors resonate strongly. For example, the observation that "*culturally safe care does not depend on having more time, but on how that time is used*" challenges the common perception that time constraints are a barrier to people-centred and culturally safe rehabilitation. The paper highlights numerous micro-practices and moments of care that foster meaningful and culturally safe connections. As the authors note, "*The bar appears to be low for what Māori expect to experience in rehabilitation settings*". Throughout the discussion, notions of self-awareness, humility, curiosity, flexibility, and clinician positioning are emphasised, communicating that culturally safe practice requires a deeply reflexive approach. Importantly, this research demonstrates that individual clinicians have significant power to redress inequities and create positive, culturally safe experiences, even within broader systemic constraints.

Reference: Disabil Rehabil. 2025;Oct 27 [Epub ahead of print]
Abstract