Rehabilitation RESEARCH REVIEW™

Making Education Easy

Issue 71 – 2025

In this issue:

Abbreviations used in this issue

COVID-19 = coronavirus disease 2019
LBP = low back pain
TBI = traumatic brain injury

Welcome to issue 71 of Rehabilitation Research Review.

A retrospective Australian study investigating the use of telehealth for delivering rehabilitation services at a regional hospital during the COVID-19 pandemic, found that telehealth use increased 11% from the pre-pandemic period to after restrictions were eased, driven primarily by increased phone consultations. In a qualitative study from Germany, health literacy was found to play an important role in the physical activity of patients in an acute care hospital setting. A local study involving older Māori adults emphasises the need for injury care and rehabilitation that addresses holistic well-being, provides a clear route to accessing timely care that meets the person where they are at, and delivers culturally safe care that values the role of whānau as a partner in care. We conclude this issue with a study emphasising the integral role that non-surgical clinicians play in the assessment and management of degenerative cervical myelopathy across the care continuum.

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

Maintaining the use of telehealth for delivering rehabilitation services in a regional hospital post-COVID19: Learning from telehealth delivery rates and staff experiences

Authors: Howlett O et al.

Summary: This Australian retrospective audit and thematic analysis of semi-structured focus groups of clinicians at a large regional hospital assessed delivery formats used to facilitate rehabilitation services and identified barriers and enablers to the use of telehealth. In the pre-COVID-19 pandemic period, 82% of rehabilitation services were delivered in-person; during the period of peak COVID-19 restrictions, in-person delivery occurred in 54% of cases, while after the easing of restrictions, 71% of rehabilitation services were delivered in-person, 28% via phone, and 1% via video. Telehealth use increased 11% from the pre-pandemic period to after restrictions were eased, driven primarily by increased phone consultations. Thematic analysis identified six barrier-related themes and four enabler-related themes, while interventions recommended to facilitate telehealth use included education, training, environmental restructure, modelling and enablement.

Comment: It is interesting to see the pattern of telehealth use from pre, during and post pandemic. The findings are consistent with what we might know anecdotally, and I would suggest resonates with what we have seen in Aotearoa. I was a little surprised by the dominance of phone over video delivery, but suspect this is an artefact of the rapid implementation of telehealth in response to COVID-19 with phone delivery able to be stood up quicker. However, the dominance of phone delivery perhaps signals that the way in which delivery via telehealth is being used is somewhat limited when one considers what is possible if telerehabilitation is being delivered to its true potential. This research drew on the COM-B model to consider enablers and barriers and found factors relevant to capability, opportunity and motivation all appear to contribute to sustained delivery via telehealth. The findings resonate with research I have been engaged in recently. In general, I would argue for a more nuanced consideration of telerehabilitation as an integrated part of routine care alongside in-person care (versus instead of) and as part of a tailored pathway of care that meets people and whānau where they are at.

References: Clin Rehabil. 2025;39(5):679-689
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. **For full bio CLICK HERE.**

Facilitators and barriers to physical activity in patients in an acute care hospital setting from an interprofessional perspective: A qualitative study

Authors: Gertz G et al.

Summary: This qualitative focus group study explored perceptions of 30 physiotherapists, nurses and physicians engaged through semi-structured focus groups about facilitators and barriers to physical activity of hospitalised patients. Themes influencing physical activity included "patient" physical and psychosocial factors, pooled "organisation" factors regarding facilities and processes, and "health literacy" which impacted both other themes. In the "health literacy" theme, inductive codes identified included self-efficacy, handling of health literacy/knowledge, communication and cooperation.

Comment: This research tackles an important topic. The long-term success of rehabilitation often relies on people being actively engaged in rehabilitation tasks and activities outside of formal service provision. Yet, in the inpatient setting, people are routinely positioned as passive recipients of care, and a range of person-environment factors combine to create a context of inactivity for hospitalised patients. The authors of this paper conceptualise this as largely related to health literacy. They offer some interesting insights into the role of health literacy expanding to reflect on the health literacy of patients, staff and organisation. They stopped short of drawing on existing literature which refers to organisational health literacy and emphasises the role of organisations in enabling patients to access, understand and use health information. There is always risk in reverting to a focus on health literacy as an individual trait without explicit attention to the contexts in which those individuals are situated. The findings of this research highlight a more complex interplay of factors, including structural and environmental factors, contribute to current state. A particularly interesting discussion in this paper was on "bed as centrepiece" in the hospital setting. This is symbolic of some long-standing historically and socially produced discourses associated with hospital settings that need to be disrupted if we are to create the context for physical activity to be normalised in inpatient settings.

References: Clin Rehabil. 2025;39(5):668-678
Abstract

Experiences of accessing injury prevention, treatment and rehabilitation services for older Māori

Authors: Hikaka J et al.

Summary: This study used convenience sampling to explore perceptions and experiences of injury-related care and access in 23 older Māori adults (aged ≥55 years) and their families, and 21 stakeholders. Thematic analysis identified four themes: that quality of care impacts on holistic well-being; the need for informed advocacy to access and connect injury-related care; the need for culturally safe and Māori-led care; and the role of family and self in injury-related care.

Comment: The findings from this research resonate with other research exploring Māori experiences of healthcare. They call for injury care and rehabilitation that addresses holistic well-being (over an exclusive focus on the physical realm), provides a clear route to accessing timely care that meets the person where they are at (rather than opaque systems of care that rely on inside knowledge), and delivers culturally safe care that values the role of whānau as a partner in care (versus a taken-for-granted resource that will pick up short-falls in care). It strikes me that these are characteristics of injury care and rehabilitation that we can all benefit from – the ask is not extraordinary. Culturally unsafe care has been argued to be an intermediary determinant of health (see Palmer et al., Int J Equity Health 2019) and yet we have a growing body of research that communicates that we still fall short of delivering culturally safe care for Māori in most health settings and contexts. Perhaps that is (one reason!) why I had an allergic reaction to the recent discussion document released by the government which promises to "modernise health workforce regulation" and calls for "patient-centred regulation" to ensure a focus on "quality", and in the same breath questions the role of regulation in mandating culturally safe practice. This embeds some damaging assumptions around what constitutes quality and for whom, and will continue to perpetuate inequity in access, experience and outcomes for Māori. We each have a sphere of influence we are working in – lets each take steps within our sphere towards delivering the aspirations outlined in this paper in our injury care and rehabilitation systems.

References: Australas J Ageing 2025;44(1):e13413
Abstract

A clinical examination of OPTIMAL theory application in people with multiple sclerosis: A proof-of-concept study and implications for rehabilitation practice

Authors: Khalaji Z et al.

Summary: This randomised controlled study examined the potential of a novel motor-cognitive task of rapid square-stepping (a sequence of forward, backward, lateral, and diagonal steps) to memorised patterns to improve motor learning and performance in 30 people with multiple sclerosis with mild-to-moderate disability (Expanded Disability Status Scale 2.0-5.0) using OPTIMAL theory conditions based on three main factors (i.e., enhanced expectancies, autonomy support, and external focus to facilitate performance and learning). Optimised group participants trained in three conditions (feedback after good trials; choice of mat colour; and external focus to the mat), while control participants had neutral conditions. Optimised participants exhibited shorter total movement time to complete the 40 steps of a trial than the control group in a practice phase (174.7 vs 236.8 seconds; $p < 0.0001$), after a 24-hour delay (retention test; 69.3 vs 159.7 seconds; $p < 0.0001$), and in a 24-hour transfer test (new pattern; 146.1 vs 223.1 seconds; $p < 0.0001$), but not in a pre-practice test (291.4 vs 292.2 seconds).

Comment: I was drawn to look at this paper as I was interested in learning more about OPTIMAL theory and how motivational and attentional concepts are being applied to motor learning and performance (in this paper) and rehabilitation more generally (my real interest). However, the authors did not dive deeply into the theory itself, so I had to do my own (albeit high-level) digging. Essentially OPTIMAL theory draws heavily on existing psychological theory. I didn't see a direct reference to Self-Determination Theory in the articles I read, but the concepts resonate with that theory. The three main factors include enhanced expectancies, autonomy support, and external focus of attention. Here is my high-level take on these three concepts. Enhanced expectancies are developed from past experiences. Outcome expectancies more generally refer to one's beliefs about the outcomes that will arise from a given task or activity. Enhanced expectancies arise when one has a positive experience which leads to them feeling more hopeful and positive about the likelihood of future success. This highlights the importance of creating opportunities for people to have mastery experiences, and to providing positive feedback on performance given that helps to build belief in one's capability to successfully navigate future rehabilitation tasks and activities. Autonomy support is built on the premise that performance is optimised when people have some control over their environment. An autonomy supportive environment is where one provides people with the opportunity to make choices. The choices can be minor (such as what task to start with, or which side to exercise first) or more substantive (when and where rehab is accessed). Even minor choices appear to have important positive affective consequences. External focus of attention refers to the focus on the effect of an action, rather than on the action (or bodily movement) itself. It is said that an external focus uses more automatic processes, with less conscious control of the action, which can support retention and transfer of learning. The findings of this paper highlight the combined effect of strategies underpinned by these concepts in a highly specific area of rehabilitation. However, I would argue it is likely these concepts are generalisable to a range of rehabilitation environments and populations.

References: Int J Rehabil Res. 2025;48(1):18-24
Abstract

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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.

A virtual rehabilitation tool for cognitive rehabilitation after traumatic brain injury

Authors: Nunnerley JL et al.

Summary: This mixed cohort study tested a virtual reality (VR) rehabilitation tool in 10 patients with traumatic brain injury (TBI), four family/whānau members and 13 clinicians to determine whether two sessions of VR per week for 6 weeks integrated into usual rehabilitation could be used in standard clinical practice. The study suggested that the tool could be successfully integrated into usual clinical care. The TBI participants had a trend for reduced fatigue and increased fatigue awareness. Participant interviews and focus groups identified an overarching theme of 'Learn Reflect and Apply in Real Life'.

Comment: The VR tool being applied in practice in this research was designed with experienced clinicians and people with lived experience of TBI. It engages patients in an immersive virtual café environment curated by their clinician to expose them to different simulated experiences to support learning and practice. A café environment is a setting people with TBI find challenging when seeking to reintegrate into the community and so likely resonates with their real-world experience. Clinicians can modify the café environment to change the number and type of interactions, the level of noise and distractions, etc. The findings were positive. The device enabled clinicians to simulate a range of experiences with the intention of building insight and awareness into impairments, and developing skills and strategies for memory, attention, information processing, and conversation. The tool was versatile, with a range of clinicians using the tool for different therapeutic purposes. The tool appeared to provide a safe environment for learning and practice, and supported transfer of skills and strategies to real-world settings. In essence, the findings are promising and I suspect reflect the collaborative approach taken in the development of this technology.

References: Disabil Rehabil. 2025;Apr 23 [Epub ahead of print]
Abstract

Early intervention vocational rehabilitation for return to work following traumatic injury: A randomized controlled trial

Authors: Ponsford J et al.

Summary: This randomised, parallel group, controlled trial evaluated the impact of Early Intervention Vocational Rehabilitation Service (EIVRS; n = 88) versus a control group (n = 82) receiving usual rehabilitation after traumatic injury on employment outcomes, mental health and quality of life. There were no differences in employment outcomes at 1 year; however, EIVRS recipients reported lower anxiety. Median quartile regressions suggested that at 2-years, EIVRS recipients worked more hours and took less time to return to work (RTW) than controls ($p = 0.02$), but there was no interaction between group and diagnosis (Multi-Trauma Orthopaedic [MTO], TBI, and spinal cord injury). At 2 years, trends for a shorter time to RTW were strongest in MTO and TBI patients, but there were no differences in anxiety, depression or quality of life.

Comment: Early vocational rehabilitation has long been advocated for, but the authors of this paper highlight the lack of evidence from controlled trials – an evidence gap they hoped to address. The full intervention manual for the EIVRS tested in this paper is available here. I highly recommend engaging with these materials to get a full sense of the intervention – it is a rich resource and the contents resonate with evidence regarding the key characteristics of vocational support following traumatic injury. After engaging with these materials, I was feeling hopeful about the potential of this intervention. I was a little surprised therefore to see no difference between treatment and control groups in the proportion of participants working at 1 and 2 years. It is important to note that most people in both treatment and control groups had access to vocational support post discharge from rehabilitation as part of usual care, which may contribute to this finding. So, what then is the added value of EIVRS alongside this usual care? The key could be in the 2-year findings i.e., that EIVRS recipients worked more hours and took less time to return to work than controls. This is an important finding which is worth examining in more depth i.e., to what extent does earlier return to work and working more hours contribute to other outcomes important for people living with traumatic injury e.g., sense of self and identity, social and emotional factors, participation in other meaningful activities and life roles, etc? What are the broader social and economic cost benefits of an earlier return to work? The authors signal future papers examining associated qualitative data which may offer additional insights.

References: Ann Phys Rehabil Med. 2025;68(5):101972
Abstract

Relationship between the timing of physical therapy commencement and the duration of work disability: A retrospective cohort analysis of work-related low back pain claims

Authors: Mekonnen TH et al.

Summary: This Australian, retrospective, cohort analysis examined the relationship between the timing of initiation of physical therapy and duration of work disability after low back pain (LBP) onset among 9160 workers with accepted compensation claims for LBP. The shortest duration of disability was observed among patients who did not see a physical therapist (median 4.1 weeks). Among those who did see a physical therapist, the median duration of work disability was related to the timing of initiation of physical therapy, from 8.0 weeks (≤7 days after onset of injury) to 34.7 weeks (>30 days after the onset of injury). Compared to physical therapy ≤7 days after onset of injury, increased likelihood of longer disability duration was associated with initiation of physical therapy between 8-14 days (37.0%; time ratio [TR] 1.37; 95% CI 1.23-1.52), 15-30 days (119%; TR 2.19; 95% CI 1.96-2.44), and greater than >30 days (315%; TR 4.51; 95% CI 4.06-5.02).

Comment: This was a super interesting paper. I particularly enjoyed reading the discussion which provided insightful commentary on how the findings might be explained and interpreted and put the data and findings into context. The authors point to research which argues that value-based physiotherapy is not just about treatment content, but also when and how it is accessed. They note increasing evidence for early commencement of physiotherapy for individuals with LBP but highlight a gap in evidence regarding the relationship between timing and return to work as a key outcome of interest. The findings highlight that early access to physiotherapy (within 7 days of injury) was associated with significantly less work disability (8 weeks off work) compared to those accessing physiotherapy between 8-14 days (11 weeks), 15-30 days (16 weeks), and >30 days (35 weeks). The anomaly was that those who received no physiotherapy had the shortest duration of work disability (4 weeks). The authors offer a range of explanations for this including limitations in the data set which relied only on workers compensation data, the potential for this group to have had less severe injury, greater coping self-efficacy, or access to alternate or modified duties in the workplace – these are all nuances that warrant more in-depth examination to fully explain the finding and make sense of the different injury and return to work trajectories. Nonetheless, the findings highlight that initiatives that promote timely initiation of physiotherapy post injury (including via direct access to physiotherapy) have the potential to reduce the burden of work-related disability.

References: BMC Public Health 2025;25(1):1329
Abstract

“We do not stop being Indigenous when we are in pain”: An integrative review of the lived experiences of chronic pain among Indigenous peoples

Authors: Gaspar Fernandes L et al.

Summary: This integrative literature review used critical theory approaches privileging indigenous perspectives through a western intellectual framework (Two-Eyed Seeing epistemology) to examine how indigenous peoples make sense of pain when experiencing chronic non-cancer pain based on 29 studies and three dissertations/theses reporting lived experiences of chronic pain from Oceania, North America, and South America. Thematic analysis identified four main themes that suggested pain is intertwined with nature, indigenous identity, historic trauma, and the collective.

Comment: I think this was my favourite paper of the issue. While there are other reviews synthesising research exploring lived experience of pain, it is fair to say that those reviews have been largely dominated by non-indigenous and western perspectives. In contrast, this review sought to explicitly focus on indigenous experiences and perspectives. The authors do a beautiful job of synthesising the evidence in a respectful way – not to cast a net which homogenises diverse communities, histories, identities, and socio-cultural contexts, but rather to shine a light on the interconnected ways of embodying pain that become evident when we step outside of a western worldview. If you are working in pain management, I would encourage you to read the paper in full. The findings are provocative – they should promote reflection and reflexivity. The authors call for pain management approaches that are “attentive to the elements encompassed by this review”. They also “endorse curiosity to understand the particularities of each context, community and person with chronic pain, recognising the complexities of every situation”. What might this look like for you, and the contexts of care in which you are working?

References: Soc Sci Med. 2025;373:117991
Abstract

Co-design and co-production of ‘Tools for ageing well with traumatic brain injury’

Authors: Ekegren CL et al.

Summary: This report on a five-stage, design-thinking process (health priorities/information needs; ideating the content, structure, and design; prototyping; testing) described the co-design and co-production of a tailored resource for older people with TBI, families and/or carers, and health professionals. ‘Tools for ageing well with traumatic brain injury’ was launched in September 2024 as a printed manual and online with downloadable text and video resources that included information for older adults with TBI and their families/carers to help them engage with health services, self-manage health, navigate healthcare and funding systems, and proactively advocate for healthcare and support.

Comment: This research focused on a topic that is somewhat invisible and not well addressed or acknowledged by current health service delivery – ageing with TBI. The authors argued for the unique and distinctive needs of two groups of older adults with TBI: 1) those who were younger when they sustained their TBI for whom age-related challenges (such as dementia, falls risk and deteriorating physical function) are compounded by TBI; and 2) those who sustained their injury as an older adult for whom the impacts of TBI are complicated by age-related challenges (such as social isolation, reduced functional independence and comorbidity). The authors argue that targeted health information designed with and for older adults with brain injury is one (though not the only) mechanism for supporting older adults with brain injury to navigate these challenges. This paper provides a detailed overview of their co-design process to produce a resource to address this gap. It is an excellent example of a process which meaningfully engages people with lived experience, their family, and health providers to develop a resource which is relevant, accessible, usable, and meets the needs of its target audience. I selected to share this paper in this Research Review issue for three reasons: 1) It shines a light on a key group (older adults with TBI) who may be living with unmet needs in our communities; 2) It provides a detailed overview of a co-design process which offers useful insights for anyone (not just researchers) seeking to design health resources or services; and 3) To direct you to the resources produced through this research which are freely available here.

References: Brain Impair. 2025;26:IB24125
Abstract

What is the role of non-surgical clinicians in the assessment and management of degenerative cervical myelopathy? – Insights from the RECODE-DCM peri-operative rehabilitation incubator

Authors: Chauhan RV et al., for the RECODE-DCM Peri-Operative Rehabilitation Incubator

Summary: This narrative review examined the role of non-surgical clinicians in the assessment and management of degenerative cervical myelopathy (DCM) based on a literature review and an expert working group (RECODE-DCM Peri-Operative Rehabilitation Incubator). Timely diagnosis requires first-contact clinicians to recognise hallmark symptoms; the modified Japanese Orthopaedic Association score can support early identification in the absence of standardised screening criteria. Education of patients with mild or non-myelopathic spinal cord compression to recognise DCM progression can ensure timely surgical consultation. Clinicians play a multidisciplinary role in biopsychosocial pain management, using pharmacological and non-pharmacological strategies to relieve nociceptive and neuropathic pain. Predictors of postoperative outcomes (disease severity, gait dysfunction and smoking), but evidence of preoperative optimisation and pre-habilitation is limited. Emerging research indicates benefits of early postoperative rehabilitation, including cervical range of motion and stabilisation, for improving postoperative outcomes.

Comment: This pragmatic review provides a useful overview of evidence relevant to the non-surgical management of DCM. While the evidence specific to DCM was limited in some areas, the authors also drew on evidence from related spine conditions to consider the role of non-surgical clinicians. I support this approach. While we would ideally draw on evidence specific to DCM, in the absence of that there is value in looking at patterns cross-diagnostically to inform practice while the evidence base matures. The synthesis provides insights into the role of non-surgical clinicians across five areas including: 1) Early recognition and referral; 2) Patient education; 3) Pain management; 4) Preoperative management; and 5) Postoperative rehabilitation. The recommendations are not controversial and clearly highlight that non-surgical clinicians have the potential to play a critical role in the recognition and physical and psychosocial management of DCM. I was left pondering two things: 1) How might we increase awareness of DCM for the wide range of clinicians likely to engage with people experiencing symptoms pre-diagnosis who may have an important role in recognising DCM, monitoring symptom progression and timely referral?; 2) How might we build DCM pathways of care and rehabilitation that legitimise and embed the role of non-surgical clinicians in the long-term management of DCM?

References: Brain Spine 2025;5:104275
Abstract