

Rehabilitation RESEARCH REVIEW™

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Issue 61 – 2022

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Abbreviations used in this issue

CI = confidence interval

COVID-19 = coronavirus disease 2019

DSM-5 = Diagnostic and Statistical Manual for Mental Disorders Fifth Edition

FABQ-PA = Fear-Avoidance Beliefs Questionnaire evaluating physical activity

OR = odds ratio

SF-36 = 36-item Short Form Health Survey

VAS = visual analogue scale

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Welcome to issue 61 of Rehabilitation Research Review.

A multi-component digital rehabilitation intervention designed to overcome access barriers such as limited healthcare resources, treatment time and travel for patients with hand and wrist pain has shown positive findings. A larger nationwide New Zealand study using ACC data on traumatic rotator cuff injury has identified socio-demographic disparities which need to be addressed. Other topics covered in this issue include perspectives on concussion recovery and return-to-work, return-to-work following occupational rehabilitation for long COVID, assessment and rehabilitation of pelvic floor dysfunction, early versus delayed evaluation and persisting concussion symptoms, and building bespoke exercise for persons with musculoskeletal disorders.

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

Digital rehabilitation for hand and wrist pain: A single-arm prospective longitudinal cohort study

Authors: Costa F et al.

Summary: This single-arm interventional study examined the use of a fully remote digital care programme in 189 patients with hand and wrist pain. Overall, 149 (78.8%) patients completed the 8-week trial, with a 51.3 % mean improvement in pain on the Numerical Pain Rating Scale (2.26; 95% CI 1.73-2.78) and 70.4% of participants achieving a minimum clinically important change (30% improvement), which correlated with improvements in disability of 52.1%, fear-avoidance beliefs (FABQ-PA) of 32.2%, and activities impairment recovery of 65.4%. Improvements also occurred in willingness to pursue surgery (-76.1%), mental health (anxiety -67.0%; depression -72.7%), and overall productivity (68.2%). Use of analgesics decreased from 22.5% of patients to 7.1% of patients; mean patient satisfaction score was 8.5 of 10.0.

Comment: "Telerehabilitation" is an umbrella term for a diverse range of interventions. So, when I read papers like this, I am always particularly interested to learn more details about the intervention. In this case, the intervention included an 8-week programme combining exercise, education, and cognitive behavioural therapy. A 'digital therapist' was used which includes a purpose-built tablet with mobile app, motion trackers and a cloud-based portal. A physiotherapist was assigned to each person and engaged both asynchronously (monitoring data and tailoring the exercise programme as it progressed) and synchronously (via a built-in chat feature and video calls at least once every 4 weeks). So, this was a relatively sophisticated multi-component digital intervention designed to overcome access barriers such as limited healthcare resources, treatment time and travel. The findings are encouraging and would suggest that it is certainly worth moving to a more definitive trial. When interpreting the findings, it is important to remember it was a single-arm study. Without a control group we cannot necessarily attribute observed change in outcomes to the intervention itself. Just over 20% of participants did not complete the full programme. Usefully, the researchers compared completers to non-completers to help unpack this. Non-completers were more likely to be female, had a more acute presentation, and reported less disability. This is useful as it helps us to get a sense of who may be more likely to engage and benefit from an intervention of this nature.

Reference: *Pain Rep.* 2022;7(5):e1026

[Abstract](#)

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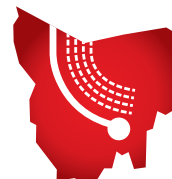


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Ethnicity, sex, and socio-economic disparities in the treatment of traumatic rotator cuff injuries in Aotearoa/New Zealand

Authors: Bolam SM et al.

Summary: This retrospective (2010-18) New Zealand study used Accident Compensation Corporation (ACC) data to assess evidence of socio-demographic disparities in traumatic rotator cuff injuries. During a 9-year period, 351,554 claims for traumatic rotator cuff injury were accepted totalling over NZ\$960 million. The majority of costs were related to vocational support (49.8%), surgery (26.3%), rehabilitation (13.1%), and radiology (8.1%). Asian, Māori, and Pacific peoples were under-represented in age-standardised claims and experienced lower rates of surgery than European patients. Māori patients had more spent on vocational support and less on radiology, rehabilitation and surgery than Europeans. More males than females had traumatic rotator cuff injuries, had higher costs and were more likely to have surgery. There were fewer claims from high socio-economic deprivation areas.

Comment: It is tricky to interpret data like this without digging into what sits behind that data. Nonetheless, I was left pondering three things. First, the rate of claims with surgery increased 17% over the nine-year period. However, this did not appear to be matched with a reduction in costs for vocational support. Given the high cost of surgery, we need to better understand the circumstances under which surgery, versus more conservative approaches, is the most optimal pathway. Second, Māori, Pacific, Asian, and those living in areas with high socio-economic deprivation were underrepresented in claims. There were 68% less claims from the most deprived areas (NZ Dep 1) compared to least deprived areas (NZ Dep 10)! This is an access issue that we need to urgently unpack and address. Third, the proportion of costs spent on rehabilitation, surgery and radiology was lower for Māori and for claims from the most deprived areas. So, even when they do claim, what they ultimately get access to is different. The costs per claim for these populations was also higher due to increased costs associated with vocational support so the lower costs associated with rehabilitation, surgery and radiology do not appear to be a reflection of lower levels of work disability. Rather, it potentially signals a systematic bias in referral and treatment patterns. Clearly, what sits behind their numbers needs to be further explored. However, the findings do offer some insights into claim and referral patterns that we should interrogate further.

Reference: *J Shoulder Elbow Surg.* 2022;Aug 1 [Epub ahead of print]
[Abstract](#)

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Outlining the invisible: Experiences and perspectives regarding concussion recovery, return-to-work, and resource gaps

Authors: Karmali S et al.

Summary: This Canadian study assessed barriers and facilitators to concussion recovery and return-to-work, and resource gaps reported by 31 concussed workers and 16 workplace and healthcare professionals. Facilitators included treatment, social support, and workplace and lifestyle modifications. Recommendations included: (1) extensive concussion and return-to-work education and training; (2) standardised recovery guidelines; (3) a change in attitudes toward concussion; (4) mental health support during recovery; (5) increased awareness that each concussion experience is unique.

Comment: The findings of this paper provide a detailed account of barriers and facilitators to return-to-work following concussion so it is worth engaging with the full paper. The findings resonate with what we hear from people in Aotearoa. The invisible nature of concussion and assumptions around the acuity of symptoms persist and impact the extent to which the challenges of return-to-work are proactively managed. It is worth checking out this resource that has been developed off the back of this research: <https://cattonline.com/workers-workplaces/>. I haven't dived deep enough into the resources to know how relevant they might be in Aotearoa. However, resources designed to increase awareness of concussion symptoms, return-to-work experiences, and strategies to address barriers tailored to the multiple stakeholders (employers, managers, co-workers, case managers, whānau) would be well worth investing in.

Reference: *Int J Environ Res Public Health* 2022;19(13):8204
[Abstract](#)

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Return-to-work following occupational rehabilitation for long COVID: Descriptive cohort study

Authors: Brehon K et al.

Summary: This cohort study assessed the characteristics and outcomes of 81 workers (64% Female; 53% Health-related occupations) who participated in a long COVID occupational rehabilitation programme. Only 53% of patients had returned to work at programme discharge, with 93% of these on modified duties. Improvements were observed in pain VAS (mean 11.1; $p = 0.02$), Pain Disability Index (PDI; mean 9.4; $p < 0.001$), Fatigue Severity Scale (FSS; mean 3.9; $p = 0.01$), SF-36 physical component summary (mean 4.8; $p = 0.001$), 9-item Patient Health Questionnaire (PHQ-9; mean 3.7; $p < 0.001$), and 7-item Generalized Anxiety Disorder Questionnaire (GAD-7; mean 1.8; $p = 0.03$). No improvements occurred in the Post-COVID Functional Scale, the overall mental component score of the SF-36, or the DSM-5 post-traumatic stress disorder checklist (PCL-5). Return-to-work was predicted by the availability of modified duties (OR 3.38; 95% CI 1.26-9.10) and shorter time to admission for rehabilitation (OR 0.99; 95% CI 0.99-1.00).

Comment: The findings of this study are consistent with the broader vocational rehabilitation literature. That is, provision of modified duties and less time between symptom onset and programme admission was associated with better return-to-work outcomes. The authors highlight an important tension; people were required to meet the clinical case definition of long COVID (persisting symptoms for >3 months) to get access to the programme. So, the waiting period may contribute to poorer return-to-work outcomes. Vocational rehabilitation research has consistently argued that people that lose touch with their workplace while off sick find it harder to return-to-work. If people are not able to work during this waiting period, then they are more likely to become disconnected from their workplace and colleagues which may also be a factor in these findings. Approximately one in five people who get COVID experience persisting symptoms and research estimates that between 29% and 47% of those employed at the time of contracting COVID are unable to return-to-work. This is not a small problem. In Aotearoa, we are yet to fully understand the scale of this. We are still grappling with how best to meet the health care needs of people with long COVID, with the clinical rehabilitation guideline for people living with long COVID only just published by the Ministry of Health in September 2022: <https://www.health.govt.nz/publication/clinical-rehabilitation-guideline-people-long-covid-aotearoa-new-zealand>. This guideline only has a fleeting reference to vocational outcomes and people's ability to maintain employment. It does not make any recommendations regarding vocational rehabilitation processes or related strategies that might support people to gain, or sustain, work in the context of long COVID. My fantastic colleagues from the University of Otago, responsible for bringing you the *Journeying Through the Fog symposium* in May this year (<https://events.otago.ac.nz/longcovid2022/>) are in the process of putting together a Work and COVID symposium scheduled for early 2023. Watch this space!

Reference: *JMIR Rehabil Assist Technol.* 2022;9(3):e39883

[Abstract](#)

Recent advances in the pelvic floor assessment and rehabilitation of women with pelvic floor dysfunction

Authors: Riaz H et al.

Summary: This review examined pelvic floor dysfunctions, a group of disorders characterised by inter-related symptoms of urologic, gynaecologic, colorectal or general pelvic pain, that mainly cause voiding or defecation disorders, pelvic organ prolapses, sexual dysfunctions and pelvic pain, and adversely impact psychological, physical, social and sexual well-being. Pelvic floor rehabilitation (PFR) forms part of a multidisciplinary approach for evaluation and management as an effective first-line treatment approach. However, research to test standardised assessment and physical therapy treatment protocols is required with further assessment of long-term efficacy. This review discusses impairment-based classification, recent updates, advances in evaluation, physical therapy tools and techniques for treatment.

Comment: With the recent extension to ACC to cover certain maternal birth injuries (<https://www.acc.co.nz/for-providers/maternal-birth-injuries/>), I was keen to look at some of the up-to-date evidence in related areas of rehabilitation. There was not as much current research as I was hoping for. I did find this paper but admit to being a little underwhelmed by it once I found the full text (sorry!). There are no details of the review methods used and no details of the included papers or the quality of evidence. As such, it is hard to say how robust the synthesis is. So, if you do want to dive into this paper, then I would read with caution and do your homework by exploring the papers cited in more detail to make your own assessment of the evidence. In the meantime, I will keep on the lookout for some papers in this space for the next issue of Rehabilitation Research Review.

Reference: *J Pak Med Assoc.* 2022;72(7):1456-1459

[Abstract](#)



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The determinants and effects of chronic pain stigma: A mixed methods study and the development of a model

Authors: Bean DJ et al.

Summary: This mixed-methods study assessed factors that contribute to stigma associated with chronic pain, the effects of this stigma, and the experiences of stigma among 215 people with chronic pain. Greater stigma was experienced by patients who used more opioids, had a mental health condition, who viewed their pain as organic, and who were unemployed. Greater disability, depression and lower social support was associated with chronic pain stigma. Three themes were identified: (1) "Faking it" pain attributed by others as drug seeking, laziness, or mental health problems; (2) A spectrum of stigma with experiences varying from none to widespread; (3) "I hide it well" where the concealment of pain and avoidance of stigmatising situations lead to isolation and disability.

Comment: The authors provide some useful context at the beginning of the paper regarding the different ways in which health-related stigma may be experienced and hypotheses about what may contribute to stigma materialising in the context of chronic pain. The strength of this paper is in its mixed methods approach where the quantitative findings helped to build a picture of the predictors and effects of pain stigma, while the qualitative findings reflect the experiences that sit behind that data. Collectively they informed the development of an integrated model of chronic pain stigma presented in this paper. If you work in chronic pain, I recommend reading this paper. It provides useful insights into pain stigma and the psychosocial context that surrounds it. This may have implications for how people present themselves and how they think, feel, and behave in the context of their chronic pain. Indeed, as the qualitative findings of this research indicate, health professional themselves may (sometimes inadvertently) perpetuate stigma, and the negative effects that arise from that. It is important to note that most participants were female (91%), European (88%) and mean pain duration was 11 years. So, I recommend interpreting findings with caution when considering the generalisability of findings to other populations.

Reference: *J Pain* 2022;23(10):1749-1764

[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.



Pilot of a dog-walking program to foster and support community inclusion for people with cognitive disabilities

Authors: Bould E et al.

Summary: This Australian study examined whether a dog-walking programme to create opportunities for people with cognitive disabilities would increase social interaction in mainstream society. Semi-structured interviews performed with four individuals (three with intellectual disability; one with acquired brain injury), indicated that the programme increased the frequency of encounters between the person with disability and community members and that the presence of the dog helped to foster convivial encounters. Community members were more welcoming, and some participants were recognised or acknowledged by name over time.

Comment: I selected this paper to review as I had just seen this stuff article (<https://www.stuff.co.nz/life-style/cutestuff/130309608/the-golden-retriever-helping-rehabilitate-brain-injury-patients>). So, when I saw this paper shared on Twitter I was compelled to look further. There are several ways in which we could involve animals in our rehabilitation processes. In this paper the focus is on the potential for dog-walking to foster opportunities for social interaction. People routinely experience loss of social connections, greater social isolation, and struggle to reintegrate into the community when grappling with the enduring effects of injury and illness. This has been associated with poorer long-term outcomes. Despite this, interventions which explicitly attend to this are often lacking in rehabilitation. This is a great example of an intervention that has the potential to address multiple barriers to social and community interactions. In this case, the presence of a dog appeared to give the participants more confidence to initiate interactions with other people in the community and invited more interactions from others. There was increased familiarity over repeat encounters which has the potential to mitigate some of the attitudinal barriers associated with disability. Finally, the encounter with the dog itself was something to look forward to which had a positive effect on well-being for some participants and which they said endured beyond the session itself. This research drew on single case experimental design where the individual acts as their own control. However, there were some weaknesses in the design which mean there is more work to be done to develop the evidence base for this. However, I can't help but think that this kind of thing feels like a no brainer.

Reference: *Disabil Rehabil.* 2022;Feb 10 [Epub ahead of print]

[Abstract](#)

Tino rangatiratanga – a rural Māori community's response to stroke: 'I'm an invalid but I'm not invalid'

Authors: Brewer KM et al.

Summary: This community-led kaupapa Māori research project involving members of the Whakatoheā iwi and neighbouring rohe (areas) arose from a moemoeā (dream or vision) of a stroke survivor who wanted to help fellow stroke survivors. The aim was to facilitate Māori stroke survivors and whānau to support recent stroke survivors. A survey of stroke survivors, community members and service providers in the Ōpōtiki area revealed an isolated community with very little knowledge of stroke and poor access to stroke services. However, it also revealed a community determined to look after their own, improve outcomes, and with the support of local health and social service providers. Community discussions created *He Whare Oranga Tonutanga*, a place for Māori stroke survivors and whānau to contribute what they can and take what they need, with an opportunity for sustainable employment for Māori stroke survivors to provide mentoring and run the centre.

Comment: I love this paper. For so many reasons. First, because the mahi was seeded by the vision of a Māori stroke survivor, Tawhai. So often the work we do (in research and in practice) is initiated by researchers and professionals and what we think people and communities need. We routinely fail to harness the knowledge and experience of people who are experts by experience to set the direction and therefore we routinely miss the mark. Second, because the focus was on learning from the community about their needs, and about the ways in which those needs might be met, and by whom. Third, the community was a remote and rurally isolated community where existing service provision is not fit for purpose and which demands a creative response to meet the needs of the community of Māori stroke survivors and their whānau. Finally, these foundations produced a blueprint for a community-generated and led response to stroke in their community - *He Whare Oranga Tonutanga*. This kind of community-based initiative is a perfect fit with the transformative goals of the *Te Pae Tata Interim New Zealand Health Plan 2022* recently published (<https://www.tewhātuora.govt.nz/whats-happening/what-to-expect/nz-health-plan/>). What can we do to realise the aspirations of Tawhai, and his community? What can you do to understand and realise the aspirations of the communities you work with?

Reference: *J R Soc NZ.* 2022;Oct 17 [Epub ahead of print]

[Abstract](#)

Early vs. delayed evaluation and persisting concussion symptoms during recovery in adults

Authors: Bunt SC et al.

Summary: This US study compared 205 adults who were evaluated <30 versus ≥30 days after concussion at the North Texas Concussion Registry (ConTex) clinic to determine if delayed initial evaluation was associated with persisting symptoms at 3-month follow-up. Number and severity of concussion symptoms did not differ between groups at initial evaluation; however, linear regression models suggested delayed evaluation was associated with a greater number and severity of concussion symptoms and greater aggravation of symptoms by physical and cognitive activity at 3-month follow-up.

Comment: These findings suggest that access to evaluation at a specialist concussion clinic earlier post injury (<30 days post-injury) has the potential to support recovery and reduce persisting concussion symptoms compared to delayed evaluation (≥30 days post injury). It is interesting to consider two things in relation to these findings. 1) What are the factors that impede early referral and access to specialist concussion services? I suspect a mix of systemic, environmental, social, and personal factors contribute to this in the Aotearoa context. We need to understand this to know what levers might make the most meaningful difference in supporting early evaluation. 2) When early evaluation is implemented, what does this make possible that contributes to the improved outcomes reported in this paper (reduced number and severity of concussion symptoms)? In other words, how to we ensure that early evaluation triggers the most effective pathway of care to support recovery?

Reference: *Clin Neuropsychol.* 2022;Sep 9 [Epub ahead of print]

[Abstract](#)

Building bespoke exercise: The clinical reasoning processes of physiotherapists when prescribing exercise for persons with musculoskeletal disorders

Authors: Grimus J et al.

Summary: This constructivist, grounded-theory inspired qualitative study examined the clinical reasoning of six UK physiotherapists when prescribing exercise for people with musculoskeletal disorders. The assessment used semi-structured interviews, memo writing, coding, and a constant comparative method to develop a concept of 'building bespoke exercise' when co-designing and co-constructing exercise programmes in collaboration with persons receiving care when prescribing exercise.

Comment: This was an interesting paper offering insights into clinical reasoning processes of physiotherapists when prescribing exercise. The findings reflect a process where therapeutic alliance provides the foundation for the co-design and co-construction of an exercise programme that is relevant and meaningful to the individual. Physiotherapists described drawing on a range of information relevant to the persons lived experience, their psychosocial context, and their biomechanical presentation in a collaborative process. The authors touch on an interesting point in their discussion. That is, the difference between building therapeutic alliance to secure compliance (a more clinician-centred approach) versus building therapeutic alliance to scaffold a collaborative process (a more person-centred approach). The physiotherapists in this study acknowledged that their own view and preferences regarding exercise prescription meant there was sometimes a risk of defaulting to a clinician-centred approach. I would encourage all rehabilitation professionals to routinely reflect on their own clinical reasoning processes and to remain reflexive about the extent which their processes may be clinician- versus person-centred. It is not to say there are not times when being clinician-centred may be appropriate. But it is important that we recognise that for what it is, rather than doing that under the guise of person-centredness.

Reference: *Musculoskeletal Care* 2022;Oct 25 [Epub ahead of print]

[Abstract](#)

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