

Rehabilitation RESEARCH REVIEW™

50TH
ISSUE

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Issue 50 – 2020

In this issue:

- Questionnaires for assessing function in lower back disorders
- ABI and experiences of fatigue in daily life
- Framework for rehabilitation after SCI
- Setting meaningful goals in rehabilitation
- Interventions for sedentary behaviour in older adults
- Long-term efficacy of post-acute neuropsychological rehabilitation in ABI
- Service delivery models for community integration after SCI
- Outcome prediction from post-injury resilience after TBI
- Road traffic injury fault attribution and work participation
- Physical activity after inpatient occupational rehabilitation

Abbreviations used in this issue

ABI = acquired brain injury
aOR = adjusted odds ratio
OR = odds ratio
SCI = spinal cord injury
TBI = traumatic brain injury



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All of us at Research Review want to thank you for the part you are playing in the Covid-19 crisis. Our hats go off to you, and we are proud to be associated with you. Our role in all of this is to support you by keeping you informed and up to date as much as we possibly can.



Welcome to issue 50 of Rehabilitation Research Review.

An informative study from the Netherlands discusses a practical approach to goal planning informed by theory and evidence which argues for a hierarchical approach, where specific rehabilitation goals are connected to more personally meaningful goals. The values that underpin this approach are consistent with research we have undertaken in our research centre relevant to goal planning and engagement in rehabilitation. Other topics covered in this issue include interventions for sedentary behaviour in older adults, the long-term efficacy of post-acute neuropsychological rehabilitation in ABI, the association between road traffic injury fault attribution and work participation, and physical activity after inpatient occupational rehabilitation.

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

Kind regards,

Professor Nicola Kayes

nicolakayes@researchreview.co.nz

Content and psychometric evaluations of questionnaires for assessing physical function in people with low back disorders. A systematic review of the literature

Authors: Wiltavaara B and Heiden M

Summary: This systematic review aimed to answer three questions: 1. Which questionnaires are used to assess physical function in people with musculoskeletal disorders in the low back?; 2. What aspects of physical function do those questionnaires measure?; 3. What are the measurement properties of the questionnaires? The International Classification of Function, Disability and Health and the COSMIN checklist were used to categorise the content of the questionnaires. Rather than physical function as such, the questionnaires identified in the review tended to measure disability or ability to cope in everyday life. The questionnaires most often included different aspects of a person's mobility and ability to attend to one's personal care regarding activity and participation. For body functions, items about sleep and pain were most often included. The extent of psychometric evaluations and the items included differed substantially. Adequate psychometric properties in most evaluations were seen in the Oswestry Disability Index and the Quebec Back Pain Disability Scale.

Comment: This is a useful overview and analysis of existing measures of physical function in low back pain. If you work in this space, it is worth a read to inform your decisions over which measures might be most fit for purpose to use with this population. It is important to note that measures need to be both conceptually (i.e., Does the content of the measure make sense in terms of the concept I am trying to capture?) and psychometrically (i.e., Can I trust the measure is valid and reliable and able to detect meaningful change?) sound. The authors of this review address both. I encourage all clinicians to critically reflect on the measures they use in practice in a similar way. The data derived through our measurement processes can be used to monitor progress, inform treatment plans, assess service performance, impact funding decisions, and so on. Given this, it is crucial that the measures we use to make these formative decisions are robust and can be meaningfully interpreted.

Reference: *Disabil Rehabil.* 2020;42(2):163–172

[Abstract](#)

DATES	Abstract submissions	Now open
	Concurrent Workshops Deadline	22 April 2020
	Free Paper and Poster Deadline	20 May 2020
	Online Registration opens	28 May 2020

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Experiences of fatigue in daily life of people with acquired brain injury: A qualitative study

Authors: Ezekiel L et al.

Summary: Semi-structured in-depth interviews in 16 adults with acquired brain injury (ABI) fatigue, recruited from support groups in South East UK, were undertaken in order to develop an in-depth understanding of how survivors of ABI experience fatigue and how fatigue affects everyday life. Four themes were identified: experiencing fatigue in the context of everyday activities, struggling to make sense of fatigue, coping with fatigue, and adjusting social participation in the context of fatigue. Analysis revealed that fatigue was comprised of physical, mental, generalised, and motivational fatigue, and that coping strategies and social support influenced balancing fatigue against participation in daily activities. Participants experienced incentives to push through their fatigue when they had opportunities to socialise or participate in meaningful activities.

Comment: Fatigue is a complex phenomenon, frequently experienced as one of the most significant and disabling symptoms for people following ABI. It can be tempting to interpret people's experience of fatigue through our own personal frames of reference, for example, our own experiences of feeling tired or fatigued. However, this can be frustrating for people with ABI who recognise their experience to be markedly different to their premorbid experiences of tiredness or fatigue. It can risk minimising their experience and may lead to the use of fatigue management strategies which may miss the mark for people with ABI. This research found the experience of fatigue following ABI to be complex, dynamic (within any given day and from day to day), and individual (depending on person and context). It was experienced by participants as both predictable, yet unpredictable, and had wide-ranging impact. This highlights the importance of getting to know and understand the personal experience of fatigue for any given person, and then tailoring strategies to meet the person where they are at.

Reference: *Disabil Rehabil.* 2020;1–9
[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. **For full bio** [CLICK HERE](#).

Rehabilitation for participation in life after spinal cord injury - clinician responses to a preliminary conceptual framework

Authors: Amsters D et al.

Summary: The HEAR Framework is a preliminary conceptual framework for rehabilitation grounded in the narratives of people with spinal cord injury (SCI). These authors explored face validity of this framework using a quantitative online survey administered to 34 experienced SCI rehabilitation practitioners, who were asked to compare the overall Framework and its three components and nine elements, against usual practice. The participants gave a median rating of congruence of the Framework with usual practice of 6 out of 10 and a median rating of the potential helpfulness to practice of all the elements of 5 out of 5. The Help component of the Framework was rated as more like usual practice than the Encourage and Accept components, and participants rated the elements within the Help component of the Framework as the easiest to implement. The highest rated training topics related to implementation of the Framework were teaching assertiveness, promoting flexible thinking and fostering responsive communication. The authors concluded that the HEAR Framework shows promise as a basis for SCI rehabilitation theory and may be useful to individual rehabilitation practitioners as a basis for clinical reflection and as a practice development tool for teams of rehabilitation practitioners.

Comment: The HEAR framework is a conceptual framework for supporting participation following SCI. It is underpinned by the lived experiences of people experiencing the ongoing impact of SCI and provides a framework for practice marked by three key processes (Help, Encourage, Accept) enacted through Responsive communication. There is a video presentation which provides a useful overview of the framework for rehabilitation professionals working in SCI (see <https://vimeo.com/226692550>). In this specific study, the researchers explored professional perspectives of the framework – both in terms of the extent to which the framework resonated for them given their experience of working in SCI rehabilitation, as well as their perspective on the ease (or not) of implementing it in practice. Overall, there was support for the framework as a tool for practice. However, there were some interesting reflections on possible challenges that could arise when implementing the framework into routine practice. For example, when the personal response and approach by the person with SCI sat in tension with service- or clinician-centred perspectives. I recommend reviewing the video presentation and critically reflecting on the extent to which your current practice is consistent with, or departs from, the HEAR framework, and what it would take for you to embed this way of working into your practice in a more fulsome way.

Reference: *Disabil Rehabil.* 2020;1–9
[Abstract](#)

Setting meaningful goals in rehabilitation: rationale and practical tool

Authors: Dekker J et al.

Summary: These authors posit that the client's fundamental beliefs, goals and attitudes ("global meaning") need to be explored before setting any rehabilitation goal, and that goals need to be meaningful and of importance to the client. They set out a three-stage process to set goals: (1) exploring the client's global meaning (i.e., fundamental beliefs, goals and attitudes); (2) deriving a meaningful overall rehabilitation goal from the client's global meaning; and (3) setting specific rehabilitation goals that serve to achieve the meaningful overall rehabilitation goal. The authors point out this approach is an extension of current practice in many rehabilitation teams, and that such an approach may help counter the drive toward exclusively functional goals based around independence.

Comment: This paper proposes a practical approach to goal planning informed by theory and evidence which argues for a hierarchical approach, where specific rehabilitation goals are connected to more personally meaningful goals. Those of you who know me, will know that I fully support this approach to goal planning! The authors argue that while there is general agreement in the literature regarding the need for meaningful goals, there is less guidance on how to elicit meaningful goals. They suggest we can draw on the concept of global meaning to support this in practice. Global meaning includes the 'general orienting systems that guide people in living their lives' (p.5) – their fundamental beliefs, goals and attitudes. The authors prior work exploring global meaning for people following stroke and SCI identified five core aspects including: core values, relationships, worldview, identity, and inner posture (see Box 1 in the paper for an overview). They propose a set of questions you could ask to explore these five aspects with people to tap into their global meaning as the first step in the goal planning process. From there, you can derive an overall meaningful rehabilitation goal, and finally, more specific goals that serve to achieve that. I think this approach is worth a shot! The values that underpin it are certainly consistent with research we have undertaken in our research centre relevant to goal planning and engagement in rehabilitation.

Reference: *Clin Rehabil.* 2020;34(1):3–12
[Abstract](#)

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Interventions to address sedentary behaviour for older adults: A scoping review

Authors: Petrusovski C et al.

Summary: This scoping review was conducted to broadly determine what is known about sedentary behaviour interventions for older adults. A total of 32 articles were identified with eligibility criteria including: (1) interventions containing strategies to decrease sedentary behaviour, (2) adults ≥ 60 years of age, and (3) reported outcome measures related to sedentary behaviour. The majority of interventions used a multi-component approach, however, the methodological quality and intervention characteristics varied among the studies. A variety of behavioural change strategies were identified, with goal setting, information and self-monitoring the most frequently used. Among the 20 studies reporting results, 16 (80%) identified at least one significant change in sedentary behaviour. The findings suggest that multi-component targeted interventions, such as education, physical activity and activity monitoring, can reduce sedentary behaviour in community-dwelling older adults.

Comment: Oftentimes, sedentary behaviour can be mistaken for being the same thing as low levels of physical activity. However, evidence shows that sedentary behaviour and physical activity can both independently predict health outcomes, and so both should be a target of intervention. As noted in this review, older adults are at particularly high risk of sedentary behaviour particularly in the context of frailty, multimorbidity, sensory loss and loss of confidence. In rehabilitation, while the focus is often on addressing function, balance, and fear of falling through tailored therapeutic exercise, it may be equally important to incorporate targeted strategies to reduce sedentary behaviour. This scoping review offers a useful overview of the current evidence for sedentary behaviour interventions for older adults. It should be noted that all the interventions reported in this review targeted relatively healthy older adults and almost all were carried out in the community. So, there is a gap in evidence for those with pre-existing conditions or mobility impairments and interventions which might be fit for purpose in a hospital setting. That said, there are some useful hints that could be formative to rehabilitation programmes targeting sedentary behaviour including the importance of multi-component interventions incorporating tailored education, behaviour change techniques (with goal setting, self-monitoring, health coaching and action planning being the most integral), and a diversity of contact points (e.g., in-person, email and phone). Interestingly, only three studies involved a physiotherapist in the design or delivery of the intervention, and occupational therapists were not mentioned. I would argue there is justification for both these professions to have a more active and explicit role in interventions of this nature, particularly for older adults with existing conditions or mobility impairment.

Reference: *Disabil Rehabil.* 2020;1–12

[Abstract](#)

Efficacy of postacute neuropsychological rehabilitation for patients with acquired brain injuries is maintained in the long-term

Authors: Shany-Ur T et al.

Summary: This prospective, within-subject, longitudinal, partial double-blind cohort study examined the long-term maintenance of treatment outcomes in patients with ABI who participated in community-based neuropsychological rehabilitation programs. A total of 143 patients (39 females, mean age 33.5 years) who had experienced an ABI (mean time since injury 3.95 years) were referred to a post-acute community-based neuropsychological rehabilitation institute and participated in one of the three programs aimed at improving their functional outcome: comprehensive-holistic neuropsychological rehabilitation, vocational-focused neuropsychological rehabilitation, and individual neuropsychological rehabilitation. Significant improvements in employment status and stability, community integration, and perceived quality of life were seen following program completion and over 3-years' follow-up.

Comment: Notwithstanding the limitations inherent in a non-randomised controlled design, this study contributes robust evidence in favour of post-acute neuropsychological rehabilitation for people living with the enduring impact of ABI. Participants were in a chronic phase of brain injury (more than one year following acute neurological event) and people with both traumatic and non-traumatic injury were included. Significant and positive changes in employment status, vocational stability, community integration and perceived quality of life were evident and remained stable over three years follow-up. There are a few interesting take homes in my reading of this paper. I am going to focus on two. First, participants were allocated to one of three neuropsychological rehabilitation programmes depending on current employment status, patient capability, potential for vocational integration, and programme characteristics. This was a clinical decision made by senior members of the clinical team. While analyses did not attempt to test the assumptions that underpinned programme placement, having a diversity of programmes available rather than a one size fits all approach was likely a critical factor in the positive outcomes observed. Second, the findings confirm the value of neuropsychological rehabilitation and the potential for continued improvement in key outcomes in the chronic phase of injury. Across the three neuropsychological rehabilitation programmes, the mean time since injury ranged from 3.2-4.5 years (range 1-33 years). Routine access to neuropsychological rehabilitation beyond the acute or subacute phase of injury tends to be limited in the NZ context. While this research did not present any economic analysis, the cost-benefit of an injection of intensive neuropsychological rehabilitation in the chronic phase is likely to have a good return on investment based on the findings of this study.

Reference: *J Int Neuropsychol Soc.* 2020;26(1):130–141

[Abstract](#)

A comparative examination of models of service delivery intended to support community integration in the immediate period following inpatient rehabilitation for spinal cord injury

Authors: Barclay L et al.

Summary: This qualitative analysis used semi-structured interviews with 12 participants from 10 services supporting community integration following inpatient rehabilitation for SCI to compare service delivery models. Three themes were identified: models of service delivery (staffing, peer mentors, facilitating integration during inpatient rehabilitation); services provided (telehealth, vocational services, groups); facilitating self-efficacy and self-management. Use of multi-disciplinary staffing and involvement of peer mentors was common. Vocational rehabilitation was important to all participants, although approaches varied.

Comment: This research explores service delivery models for community integration used in 10 spinal services from around the world including NZ, Australia, Canada, USA, UK, Sweden and Norway. While I don't agree with the authors claim that they used thematic analysis (the findings as presented are more consistent with a descriptive content analysis), their data provides a useful overview of a range of different approaches to supporting community integration following SCI. There were a range of approaches evident, with the two most common models being; a) community reintegration embedded into inpatient rehabilitation programmes, or b) an explicit transitional rehabilitation or community integration service following on from inpatient rehabilitation. The model adopted by each service was heavily influenced by policy and funding structures and what was logistically viable given geographical spread of the service catchment area. A range of services were incorporated into each service including, for example, telehealth, vocational services and group work. What was interesting to me was that there was no explicit mention of services targeting the psychosocial impact and experience of injury and re-integrating back into the community. This has been routinely identified as an unmet need in our NZ-based research exploring experiences of recovery and adaptation following severe trauma and something that needs to be more explicitly addressed in service provision.

Reference: *Spinal Cord.* 2019;Dec 11 [Epub ahead of print]

[Abstract](#)



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Outcome prediction from post-injury resilience in patients with TBI

Authors: Sima AP et al.

Summary: This observational, longitudinal study in 158 people with moderate or severe TBI evaluated resilience-based (Connor-Davidson Resilience Scale) predictions of 1- and 2-year outcomes. Both adjusted and unadjusted models indicated that greater resilience was predictive of lower anxiety (Generalized Anxiety Disorder-7), depression (Patient Health Questionnaire-9), and substance use, and better satisfaction with life (Satisfaction with Life Scale) and return to work 1 year after injury. Trends were weaker 2 years after injury.

Comment: The findings of this study are perhaps not surprising, resilience 3-6 months post injury was associated with greater satisfaction with life, decreased anxiety, depression and substance use, and better return to work outcomes. However, the tricky thing about this kind of research is that it conceptualises resilience as something that sits within the individual. When viewed as an individual-level psychological factor, there is a tendency to position responsibility with the individual, rather than consider what our role is as health practitioners in creating the context for resilience. There is some excellent research which extends how we understand resilience as something that is inherently social and relational, generated through person-environment interactions, and built within communities. I highly recommend, for example, engaging with some of the work undertaken by Professor Angie Hart from the University of Brighton (see <https://research.brighton.ac.uk/en/persons/angie-hart>) whose work examines resilience from a social justice perspective. Professor Hart puts her research into practice through Boing Boing (see <https://www.boingboing.org.uk/>), a social enterprise working to build resilience within communities. They refer for example to 'resilient moves' and 'resilient practice' to capture strategies and ways of working that can help to create the conditions for resilience. So, if resilience is an important predictor of outcome as the findings of this research suggest, then I would argue we need to invest in structures and processes that help to embed resilient practices.

Reference: *Rehabil Psychol.* 2019;64(3):320–327
[Abstract](#)

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Research Review publications are intended for New Zealand health professionals.

The association between fault attribution and work participation after road traffic injury: A registry-based observational study

Authors: Lau G et al.

Summary: This Australian analysis of registry data (n = 2942), adjusted for demographic, clinical and injury covariates, sought to determine associations between fault attribution after road traffic injury, from linked compensation claims, and return to work and work capacity (Glasgow outcome scale-extended). The risk of not returning to work was greater if another person was at fault (adjusted relative risk ratio (aRRR) 1.67; 95% CI 1.29-2.17) or claimed to be at fault (aRRR 1.58; 95% CI 1.04-2.41), and lower in those who denied that another person was at fault (aRRR 0.51; 95% CI 0.29-0.91) versus those where no other person was at fault. Odds of work capacity limitations were also greater if another person was at fault (12 month aOR 1.49; 95% CI 1.24-1.80; 24 month aOR 1.63; 95% CI 1.35-1.97) or was claimed to be at fault (12 month aOR 1.54; 95% CI 1.16-2.05; 24 month aOR 1.80; 95% CI 1.34-2.41), and lower if the participant denied that another person was at fault (6 month aOR 0.67; 95% CI 0.48-0.95) versus cases with no other person at fault.

Comment: This paper is worth downloading just for the graphic abstract which appears directly after the more conventional written abstract! This is a great way of communicating the findings of this research in a digestible and engaging way. This research adds to the current body of evidence in two ways: a) it looks at the relationship between fault attribution and work participation and capacity over time (rather than at a single follow-up point), and b) it conceptualises return to work in a more nuanced way, capturing for example delayed or failed attempts to return to work. A key finding was that perceiving someone else to be at fault was associated with poorer work outcomes. Those that dismissed the responsibility of others (even when someone else was at fault) was associated with better outcomes. The authors discussed a range of explanations for this finding arguing that harbouring bad feelings towards those perceived to be at fault, feelings of blame, and a heightened sense of injustice could detract from the rehabilitation process. People may also be more likely to be enmeshed in a litigious process. Understanding and making sense of why and how fault attribution is linked to work outcomes will enable the development of early and targeted strategies to mitigate against the potentially negative effects of external fault or blame. The authors suggest that restorative and psychosocial interventions hold promise.

Reference: *J Occup Rehabil.* 2019; Dec 9 [Epub ahead of print]
[Abstract](#)

Physical activity after inpatient occupational rehabilitation: Secondary outcomes of two randomized controlled trials

Authors: Skagseth M et al.

Summary: In a pooled analysis of two randomised clinical trials (n = 265), researchers examined the use of inpatient multicomponent occupational rehabilitation with physical activity (questionnaire measurement) versus an outpatient program without physical activity, on overall physical activity level and future work outcome. Over 12 months of follow-up, there was no difference between inpatient and outpatient programs in change in physical activity, nor was there any association between the physical activity and future work outcome. Intensity of physical activity was positively associated with return to work; increased vigorous physical activity OR 4.1 (95% CI 1.1-15.7) and consistent high intensity physical activity OR 3.1 (95% CI 1.0-9.7) versus low-intensity physical activity.

Comment: This research attempted to synthesise data from two randomised trials to explore if changes in physical activity were associated with future work outcomes. It is interesting to note that both trials were testing inpatient occupational rehabilitation for people with long-term sickness absence (mean time off work in the year prior was 218 days). I am not aware of an inpatient programme of this nature in NZ. It is interesting to consider the cost-benefit of high-intensity programmes like these and whether reductions in sickness absence would outweigh the cost of delivery. Regardless of this, there are a few things one should keep in mind when interpreting the research outcomes. First, it is important to note that only 5% of those invited to take part enrolled in the inpatient rehabilitation programmes – 168/3318 for the short trial and 166/3808 for the long trial. As such, there is likely a high level of selection bias in the sample. Second, even if findings are positive, it would be tricky to identify what the key mechanisms of action were. The inpatient programmes differed in intensity, but also were multicomponent interventions incorporating Acceptance Commitment Therapy, physical activity and exercise, mindfulness, individual and group-based sessions and so on. In this instance, it is hard to make sense of which components were most important to outcome. The finding that participants who reported increased intensity in physical activity had better return to work outcomes is interesting. However, this needs to be further explored as a primary hypothesis with robust study design in future research.

Reference: *Scand J Med Sci Sports.* 2020;30(2):339–348
[Abstract](#)

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