

Rehabilitation RESEARCH REVIEW™

Making Education Easy

Issue 53 – 2021

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Abbreviations used in this issue

ABI = acquired brain injury
CI = confidence interval
COVID-19 = coronavirus-19 disease
TBI = traumatic brain injury



Welcome to issue 53 of Rehabilitation Research Review.

First up, a review of reviews on the impact of goal setting on engagement and rehabilitation outcomes following acquired brain injury informs us that goal-directed interventions, particularly in the outpatient setting, may improve occupational performance and engagement. Following on, we discover that regular observed clinical practice in musculoskeletal physiotherapy facilitates the development of clinical expertise by enabling a valued practice-based collaborative learning cycle. Other topics covered in this issue include a smartphone app to facilitate home-based exercise adherence, factors affecting physical therapy during post-traumatic amnesia, rehabilitation following rotator cuff repair, challenges in returning to work after brain injury, and the implementation of telerehabilitation in response to COVID-19.

I hope that you find the information in this issue useful in your practice and I welcome your comments and feedback.
Kind regards,

Professor Nicola Kayes
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Impacts of goal setting on engagement and rehabilitation outcomes following acquired brain injury: A systematic review of reviews

Authors: Knutti K et al.

Summary: This meta-analysis assessed and integrated data identified in 16 previous systematic reviews in individuals with acquired brain injury (ABI) on the impact of goal setting on engagement in rehabilitation and outcomes of participation and occupational performance. Four reviews of moderate-to-high quality used different methodologies, but moderate quality evidence indicated that clients' active participation in goal setting had a positive impact on them and their engagement. Goal-directed interventions, particularly in the outpatient setting, may improve occupational performance and may support adherence to therapeutic exercises, but relevance to rehabilitation outcomes was unclear.

Comment: This was a review of reviews. Essentially this means that existing systematic reviews (rather than individual studies) were synthesised to explore the impact of goal planning on engagement and outcome in ABI. This is an interesting review choice as it is a complex endeavour to undertake a review of reviews in this topic area given: a) there are a limited number of systematic reviews of goal planning specific to ABI, b) reviews that do exist tend to be mixed methods, c) goal planning interventions are often diverse in approach and frequently poorly defined and described, and d) it can be difficult to distinguish the effects of goal planning from other aspects of the rehabilitation process. As such, I urge caution when interpreting these findings, given the conclusions are drawn based on a relatively low level of evidence. Nonetheless, the authors do offer some useful reflections and do a good job of unpacking the diversity of evidence available. Broadly they conclude that goal planning does have the potential to support engagement, particularly when an explicit goal planning process is used and when that process includes active involvement of the client in setting meaningful and challenging goals. The evidence for impact on outcomes is less well developed. I have had the privilege of contributing to a range of research exploring goal planning in rehabilitation. I would argue that there is now sufficient evidence available to suggest that we need to move beyond viewing goal planning as a means to an end and instead recognise it for its own therapeutic potential. In our work, we argue for meaningful goals, operationalised through a process we have called Goal MAP. If you want to know more about this process then check out this presentation (written for a stroke rehabilitation audience, but relevant across rehabilitation contexts and populations): https://cpcr.auckland.ac.nz/_data/assets/pdf_file/0015/321270/Stroke-study-day_Goals_-_Kayes.pdf

Reference: *Disabil Rehabil.* 2020;19:1-10
[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. **For full bio** [CLICK HERE](#).





Developing clinical expertise in musculoskeletal physiotherapy; Using observed practice to create a valued practice-based collaborative learning cycle

Authors: Carr M et al.

Summary: This UK single-centre, qualitative, constructivist, grounded-theory study examined how regular observed clinical practice supported the development of clinical expertise in musculoskeletal physiotherapy. Individual interviews with 8 participants and follow-up secondary interviews with 2 participants indicated that regular observed clinical practice facilitated development of clinical expertise by supporting a practice-based collaborative learning cycle. The elements of successful deployment included: precursory requirements, mentor reflection on their experiences of clinical development and professional responsibility to develop the workforce; learning activity, observed clinical practice can facilitate clinical expertise development and whole-team involvement adds further value; subsequent requirements, mentor and learner engage in collaborative reflection and analysis after the observed practice. The development of an 'educational alliance', sharing fallibilities, adopting a developmental approach and making the learner the 'judge' of the learning experience, supported successful learning outcomes.

Comment: This paper offers some useful insights into a somewhat taken-for-granted process, ongoing practice development. This paper is limited in scope, focusing only on musculoskeletal physiotherapists, in one organisation and drawing on experiences of one approach to practice development, observed clinical practice with formal graded feedback. However, the findings resonate with (and indeed add to) the growing body of theory and evidence trying to unpack how we integrate new ways of working into practice more generally. This paper is worth a read, particularly if you own your own practice or are working in a clinical lead role and are keen to optimise the practice development processes within your own organisation or team. There are a few points in this paper worthy of further discussion or consideration. However, some take homes from my perspective include: a) the critical role that observed practice and situated learning can have on practice development, particularly where that process is set up to be developmental and formative (versus critical and summative); b) the power of a whole-of-team approach to practice development and the extent to which that creates a culture of ongoing learning and critical self-reflection; and c) how the reciprocal sharing of vulnerabilities and fallibilities supported the development process. This last point is particularly pertinent given the strong professional pull that exists to present oneself as a credible expert – see the paper by Laura Holder on physiotherapist engagement in professional supervision in New Zealand ([Holder L et al., 2020](#)) for an example of how this has the potential to get in the way of practice development. It highlights the importance of having a safe learning context where vulnerabilities are normalised and can be shared without judgement.

Reference: *Musculoskelet Sci Pract.* 2020;50:102278

[Abstract](#)

A smartphone application to facilitate adherence to home-based exercise after flexor tendon repair: A randomised controlled trial

Authors: Svengen J et al.

Summary: This Swedish prospective, multicentre, randomised controlled trial examined the effect of a smartphone app (n = 52) versus standard rehabilitation (n = 49) on exercise adherence (Sport Injury Rehabilitation Adherence Scale [SIRAS] at 2 and 6 weeks), range of motion (12 weeks) and self-efficacy (Athlete Injury Self-Efficacy Questionnaire) in 101 patients (25 lost to follow-up) after repair of the flexor digitorum profundus tendon. There was no difference between the intervention and control groups in mean SIRAS scores at 2 (12.5 [95% CI 11.8-13.3] vs 13.3 [95% CI 12.6-14.0]) or 6 (11.8 [95% CI 11.0-12.8] vs 12.8 [95% CI 12.0-13.7]) weeks. Self-reported adherence at 6 weeks was better with the app (93.2% [95% CI 86.9-99.5] vs 82.9% [CI 76.9-88.8]; p = 0.02), but there were no differences in range of motion, self-efficacy or satisfaction.

Comment: Smartphone applications are increasingly drawn on as a mechanism to support adherence to prescribed exercise regimes. It is argued that smartphone apps are a potentially accessible and cheap way to deliver a discrete intervention aiming to optimise adherence. However, this research found there was no difference between intervention and control groups on adherence, self-efficacy, or active range of movement. It is rare to see trials with negative findings published (a publication bias) so I found it refreshing to read this paper. Publishing negative findings are useful as they allow us to reflect on and unpack the *why* – Why did the smartphone app not impact adherence as hypothesised? In this case I would argue a key explanation could be related to the nature of the app itself. The app did not appear to be underpinned by theory and evidence relevant to adherence, and the behavioural strategies that might optimally impact adherence. The primary behavioural tools embedded in the app were push notifications (or reminders) and an exercise diary (though it was not clear if this was pre-populated with the prescribed exercise programme or if the user interacted with this as a monitoring tool). I would suggest that an app developed based on sound theory and robust evidence may have been more likely to lead to positive results. In other words, not just any app will do. If you are seeking an app that your clients could use to supplement your face-to-face sessions, I would strongly recommend you look carefully at how the app was developed and the extent to which the app features are underpinned by evidence to inform app selection.

Reference: *Clinic Rehabil.* 2021;35(2):266-275

[Abstract](#)

Satisfaction of basic psychological needs following a mild traumatic brain injury and relationships with post-concussion symptoms, anxiety, and depression

Authors: Auclair-Pilote J et al.

Summary: This Canadian study examined the acute impact of a mild TBI (mTBI) on the perception of basic psychological need satisfaction (competence, autonomy, relatedness; measured with the Basic Psychological Needs Satisfaction [BPNS] scale) and what variables among post-concussion symptoms and mood are associated with the satisfaction of these needs among 179 adults. Retrospective BPNS assessment to assess need satisfaction pre- and post-injury suggested difference in perception of need satisfaction, with lower post-injury scores (less satisfaction). Higher levels of depression and anxiety were associated with less satisfaction.

Comment: This study draws on Self-Determination Theory (SDT) to explore the extent to which basic psychological needs are impacted following mTBI. I have referred to SDT in previous issues of Research Review, but as a reminder, the basic premise is that optimal well-being and human flourishing is conditional upon humans having three basic psychological needs met (namely autonomy, competence and relatedness). The findings from this paper are perhaps not ground-breaking, in that it is somewhat intuitive that they report a significant change in all three BPNS scores from pre- to post-injury, and that higher rates of anxiety and depression were associated with less satisfaction on BPNS (although we cannot be certain on the direction of this relationship i.e. does anxiety and depression lead to lower BPNS or does lower BPNS contribute to anxiety and depression?). However, the finding I found of most interest is that there was a relationship between post-concussion symptoms and one's sense of competence. This is an important finding given the role that perceived competence may have on key outcomes such as community reintegration, participation in meaningful activities, or return to work. It is also a useful finding as there are numerous mechanisms via which we can build competence through our rehabilitation processes, for example in our goal planning processes, in how we monitor progress and provide feedback and encouragement, and through our therapeutic relationships. If you want to learn more about the role of therapeutic relationship in building sense of competence, I highly recommend exploring the Tripartite Efficacy Model ([Jackson B et al., 2012](#)) which has been applied in a rehabilitation context previously. Ultimately, while the findings of this paper may be somewhat intuitive, I hope it prompts some self-reflection on the extent to which we routinely account for and explicitly address BPNS in our rehabilitation processes, not only for people with mTBI, but also more generally.

Reference: *Disabil Rehabil* 2021;43(4):507-515

[Abstract](#)



Factors affecting participation in physical therapy during posttraumatic amnesia

Authors: Spiteri C et al.

Summary: This Australian prospective longitudinal study assessed the effect of agitation, cognitive impairment, fatigue and pain on participation in physical therapy and outcomes during post-traumatic amnesia (PTA; measured using the Westmead Post-Traumatic Amnesia Scale) in 77 patients after moderate-to-severe TBI. The presence of agitation was associated with reduced therapy participation, while agitation and pain both predicted lower Functional Independence Measure (FIM)-motor change at emergence from PTA. High cognitive impairment and fatigue levels were associated with reduced participation and therapy.

Comment: People with PTA are routinely excluded from research seeking to understand engagement or test the effectiveness of interventions. Yet, in practice, working with someone still in PTA has its own unique challenges. As such, it is good to see work explicitly seeking to understand this inherent complexity. The findings offer some useful insights for practice, particularly with respect to when and in what context therapy is delivered. For example: a) ensuring that therapy is timed to take place when a person is least impacted by fatigue (in this study, scheduling therapy in the morning was more productive), and b) considering the role that the environment and ways of working may have in exacerbating agitation and modifying those factors to optimise participation.

Reference: *Arch Phys Med Rehabil.* 2021;102(3):378-385

[Abstract](#)

Rehabilitation following rotator cuff repair: A nested qualitative study exploring the perceptions and experiences of participants in a randomised controlled trial

Authors: Stephens G et al.

Summary: This English, multicentre, nested, qualitative, feasibility trial study examined the acceptability, barriers to adherence, and outcome measures that reflect rehabilitation goals in a evaluating early patient-directed versus standard rehabilitation (including 4-week sling immobilisation) in 19 patients and 10 clinicians after surgical rotator cuff repair. Individual semi-structured interviews identified 4 themes: 1) some participants motivation to enter the trial was to get early sling removal and mobilisation; 2) some felt sling use and movement restrictions for 4 weeks was unacceptable and contributed to, rather than relieved pain; 3) clinical tensions regarding early mobilisation and perceived risk to the surgical repair; 4) participants found the trial processes appropriate and acceptable, but withholding post-operative research ultrasound scan results was contentious.

Comment: It is important to read this paper in the context of the study's purpose, that is, to unpack feasibility issues relevant to a future clinical trial. The explicit aim of this paper was to share findings from a nested qualitative study seeking to explore issues relevant to intervention acceptability and adherence. However, the findings uncover some of the benefits, tensions and complexities associated with the implementation of patient-directed rehabilitation following surgical repair of the rotator cuff. In this case, standard rehabilitation included sling immobilisation for 4 weeks, while patient-directed rehabilitation included advice to remove the sling as pain allows and for patients to gradually begin to use their arm guided by their symptoms. Interestingly, only one surgeon of those approached supported their patients to take part in this pilot trial as they were worried that premature removal of the sling would compromise the repair, this is despite recent evidence that re-tear rates are similar between early and delayed mobilisation groups. This tension was also expressed by some of the other health professional participants, for similar reasons, but also due to preconceptions around which patients would be more likely to benefit from patient-directed rehabilitation. It was also clear that these preconceptions were in some cases transmitted to patients, exerting influence over patients experience and perceived acceptability. However, most patients were positive, they were keen to mobilise early and liked being able to trust in their own experience and having permission to be guided by their symptoms. Importantly, only 4% of participants (from both control and intervention groups) expressed a preference for sling use! This suggests that even if professionals insist on sling use, patients are unlikely to sustain use as recommended. Indeed one participant in this study highlighted a benefit of patient-directed rehab was that they didn't have to sneak behind their health professionals back! There are so many things about these findings that give me pause for thought. I hope they do the same for you.

Reference: *Clin Rehabil.* 2020;Dec 27 [Epub ahead of print]

[Abstract](#)

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Common challenges in returning to work after brain injury

Authors: Yeates G et al.

Summary: This editorial discussed the benefits and challenges, both for individuals and organisations, of returning to work (RTW) following ABI (traumatic brain injury, stroke, infection, hypoxia). They identify key challenges that are myths or assumptions held by those supporting survivors back to work. A phased return-to-work after ABI is dependent on the degree of post-injury recovery of function, which is itself dependent on the type of brain injury, post-injury physical and cognitive disabilities and the interaction of these factors with the unique work environment in the organisation and the role.

Comment: This was an editorial, versus reporting the findings of primary research. However, it provides a useful overview of some of the challenges of RTW unique to brain injury. A summary of key take homes include: a) graduated RTW processes should move away from a steady increase in hours of work, and instead be tailored to account for the complex interaction between people, task and environment; b) workplace adjustments need to address the unique cognitive and sensory sequelae inherent in brain injury (not just focus on physical adjustments); c) it is important to recognise that RTW is not in itself an endpoint, but rather that successfully sustaining RTW requires a delicate balance which can be easily undermined if there are changes to role, environment or personnel. In this sense, successful RTW is an enduring process which requires active and ongoing monitoring and management; d) successful reintegration into the workplace relies not only on job performance, but also on one's ability to interact in socially appropriate ways. In other words, it is an inherently social and relational process which can be tricky in the context of impairment to ones executive functioning. This is an aspect that could be more explicitly addressed and managed in our vocational rehabilitation processes; and e) setting up processes for feedback to help the person with brain injury to develop insight into what is working and what is not working is useful, but it needs to account for the social complexity associated with involving peers, supervisors, and subordinates in that process.

Reference: *Occup Med (Lond).* 2020;70(8):550-552

[Abstract](#)

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Work disability negotiations between supervisors and occupational health services: Factors that support supervisors in work disability management

Authors: Lappalainen L et al.

Summary: This Finish survey aimed to define factors involved in work disability negotiations with the occupational health service (OHS) that support or hinder supervisors in their task/role in work disability management with their employees. Among a total of 254 supervisors surveyed, 133 had participated in ≥1 work disability negotiation. Four key elements were identified that supervisors considered major factors for success: First, supervisors must understand the employee's health restrictions and issues relating to their work disability; second, all parties must aim for solutions through collaboration; third, all parties must be active participants; finally, supervisors appreciated a constructive atmosphere in collaborations.

Comment: Successful RTW relies on a number of key stakeholders (including the client, their family, the funder, health provider, employer, etc.), all whom have competing interests, motives and goals. As such, developing an in-depth understanding of the unique perspective of each of these stakeholders can be an important resource in vocational rehabilitation. This paper focuses on the perspective of the supervisor, and in particular their experiences of taking part in RTW negotiations and processes. There is a reasonable amount of detail embedded in this paper and so it is worth reading the paper in full to get a more comprehensive sense of the findings. However, the key thing that strikes me in the findings is that a lot of the factors perceived to contribute to success or failure come back to having open and transparent communication processes which enable meaningful and active knowledge exchange and collaboration across stakeholders. For example, having access to health professional knowledge and understanding of the injured persons functional performance is important for the supervisor to be able to effectively support the RTW process. Likewise, valuing the unique perspective supervisors offer given their in-depth understanding of the work environment and tasks and how that may intersect with functional performance may be important for optimising the RTW plan.

Reference: *Int Arch Occup Environ Health* 2021;Jan 3 [Epub ahead of print]

[Abstract](#)

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Social media and people with traumatic brain injury: A metasynthesis of research informing a framework for rehabilitation clinical practice, policy, and training

Authors: Brunner M et al.

Summary: This qualitative meta-synthesis of a multilevel mixed-methods research study assessed: 1) literature evidence of communication technology and social media use after TBI; 2) Twitter data and network analysis; 3) interviews with 13 people with TBI; 4) focus groups with 11 TBI rehabilitation professionals, 5) a review of current guidance on safe use of social media to determine the experiences of people with TBI and rehabilitation professionals in the use of social media. TBI patients adopted a trial-and-error approach to using social media – their meaningful use and sense of connection enabled them to develop social media mastery. TBI rehabilitation professionals' concerns about risks associated with using social media may lead them to restrict social media use during rehabilitation.

Comment: Social media has become part of the fabric of our society, and consequently it has become something that has been made to matter in rehabilitation. Clients may rely on social media for social connection, re-engaging in social media may be a client goal, and/or supporting the use of social media may itself be a therapeutic activity. However, there are some inherent risks in engaging with social media that may inadvertently become foregrounded in therapy. Alongside that, the sheer speed of development and the number of social media platforms available can be overwhelming. Collectively, these things may lead to a reticence, or certainly lack of confidence, to support social media use as part of rehabilitation. Given this complexity, this paper is timely and relevant and serves as a practical resource for clinicians. The appendix includes a protocol that provides clear guidance for clinicians, structured around 5 core concepts including: purpose, knowledge and experience, caution, networks and supports; with examples of suggested tasks alongside each. This paper is dense. That is, there is a lot of detail and information to take in. However, I highly recommend taking the time to read it. While the focus of this paper is on social media use in brain injury rehabilitation, I would suggest there is much learning one could transfer to other rehab settings and contexts. One of the things I was heartened by in the narratives of both clients and clinicians, is the sense that both clients and clinicians were learning together, through trial and error. This paper gives us a head start in that learning, but that principle seems a good place to start as we all get to grips with some of the complexities of our cyber worlds.

Reference: *Am J Speech Lang Pathol.* 2021;30(1):19-33

[Abstract](#)

Implementation of telerehabilitation in response to COVID-19: Lessons learnt from neurorehabilitation clinical practice and education

Authors: Signal S et al.

Summary: This New Zealand study examining the experience of delivering telerehabilitation for neurorehabilitation in a COVID-19 environment, reflected on the process of practice change and using these experiences to inform future practice development. The authors suggest that rehabilitation organisations and physiotherapists should continue to develop telerehabilitation capability and that the profession focus on translating communication, relational and clinical skills to the digital space. In addition, the profession should focus on what constitutes "best practice" and how in-person and telerehabilitation can be integrated to provide engaging, evidence- and person-centred rehabilitation.

Comment: This paper provides a timely reflection on the rapid introduction of telerehabilitation into routine practice in New Zealand due to COVID-related restrictions on face-to-face delivery. It reflects on lessons learnt in terms of organisational readiness, getting the patient set up, communication and relational practices and the translation of key assessment and treatment processes to online delivery. Each section includes a set of tips for the future, which are a useful starting point for providers and practitioners. The authors rightly make the point, however, that there is more work to be done to really unpack what quality, best-practice telerehabilitation might look like, including how, when and for whom to embed telerehabilitation more routinely into practice (versus as something we only adopt when face-to-face is not possible).

Reference: *NZ J Physiother.* 2020;48(3):117-126

[Abstract](#)



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