Rehabilitation Research Review™

Making Education Easy

Issue 42 – 2017

In this issue:

Rehabilitation Counsellors are tertiary qualified allied health professionals who work with individuals with disability, injury or social disadvantage, along with their families, organisations and other health professionals, to deliver work, life and career solutions. The core skills and expertise of Rehabilitation Counsellors include: vocational assessment, job placement support, and career development; rehabilitation and return-to-work services; workplace disability prevention and management.

CONGRATULATIONS TO

Janet Wagstaff

who won a $300 Prezzy Card by taking part in our recent Rehabilitation Research Review Subscriber Survey. Janet is a physiotherapist at the Matamata Physiotherapy Clinic.

Welcome

to issue 42 of Rehabilitation Research Review, with guest commentary provided by Dr Bronwyn Thompson, a Clinical Senior Lecturer in the field of Pain Management.

Dr Thompson's first paper describes a novel multidisciplinary tool that helps to foster resilience among clients in rehabilitation services. The exciting aspect of this tool is its ability to facilitate the interdisciplinary rehabilitation process. This emphasis complements psychological approaches such as Acceptance and Commitment Therapy (ACT), which is discussed in Dr Thompson's last paper in this issue.

The first paper in Associate Professor Kayes' selection discusses the perceived effectiveness of behaviour change techniques aiming to increase exercise adherence experienced by people with knee osteoarthritis and used by physical therapists. Both groups considered goal setting related to outcomes to be the most effective at increasing exercise adherence. Another paper discusses what factors are involved in therapists' uptake of virtual reality in brain injury rehabilitation practice.

We thank Bronwyn for her observations on important issues that are associated with successful rehabilitation, which we hope you enjoy.

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

Kind regards,

Associate Professor Nicola Kayes
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Invited expert commentary by Bronwyn Thompson

Ariadne's Thread: A promising new multidisciplinary tool to foster clients' resilience throughout the rehabilitation process

Authors: Royer N et al.

Summary: These researchers conducted semi-structured interviews with 10 health professionals using Ariadne's Thread, an assessment and intervention tool that aims to maximise clients' resilience and spirituality. These health professionals expressed the view that Ariadne's Thread impacts positively upon clients, particularly their sense of resilience, self-knowledge, self-esteem and motivation. Furthermore, the health professionals described this tool as being capable of facilitating the interdisciplinary rehabilitation process, by fostering a common understanding of clients and use of their strengths and interests in interventions.

Comment: There are few rehabilitation instruments that focus on self-identity and ways in which people have previously coped or bounced back from challenges. It's not easy to identify our client's/patient's strengths when much of our clinical assessment process involves identifying deficits and difficulties. Ariadne's Thread involves taking the time to listen to deeper aspects of what it means to be this person: the person's values, capabilities and how they've previously handled life trajectories. This study examines only the health professional's perspectives, an omission that could be seen to violate the spirit of Ariadne's Thread. It does, however, give an insight into why clinicians working in interprofessional rehabilitation teams might want to consider this approach, which promotes important aspects of being human, and fits nicely with psychological approaches such as Acceptance and Commitment Therapy (ACT).

Reference: Disabil Rehabil. 2016;38(15):1454-62
Abstract

Independent commentary by Dr Bronwyn Thompson

Bronnie Lennox Thompson originally trained in occupational therapy, and has worked in persistent pain management most of her clinical career. While raising two children, she undertook postgraduate studies in psychology at University of Canterbury, graduating with an MSc, and later to complete her PhD in Health Sciences examining the process of learning to live well with chronic pain. She has been teaching postgraduate pain and pain management at University of Otago, Christchurch, since 2002 while remaining actively involved in clinical practice. In her spare time she writes the blog http://healthskills.co.nz on research into persistent pain management, and she finds time to go fishing and kayaking in the Canterbury high country, photographing the beautiful scenery there, and more recently learning silversmithing.

Frailty and resilience in an older population. The role of resilience during rehabilitation after orthopedic surgery in geriatric patients with multiple comorbidities

Authors: Rebagliati GA et al.

Summary: These researchers undertook multidisciplinary assessments with 81 patients aged >60 years prior to and then again after completing rehabilitation following orthopaedic surgery to the lower limb. Assessment measures included the Resilience Scale, the Multidimensional Prognostic Index (as a measure of frailty), the WHO Quality of Life-BRIEF, the Geriatric Depression Scale, and the Functional Independence Measure (as a measure of the rehabilitation outcome). The researchers were particularly interested in determining associations between resilience, frailty and quality of life in this cohort, and whether these factors impact upon rehabilitation outcome. They found that low resilience and a condition of frailty were associated with a poorer functional status at onset, whereas high resilience was associated with higher functional status on admission and at discharge. They also identified a positive association between level of resilience, quality of life, type of surgery, and functional status: the level of resilience, quality of life and admission functional status predict functional outcomes at discharge.

Comment: New Zealand is like so many other countries in the world: we have a growing elderly population, many of whom could be considered frail. Frailty, along with depression, is known to increase the risk of adverse outcomes for people needing orthopaedic surgery, whether it be acute (hip fracture) or elective (major joint replacement). Resilience, or the ability for people to maintain or regain mental wellbeing despite adversity, has rarely been studied in orthopaedic surgical outcomes, and this study used a brief measure of resilience to examine the relationships between frailty, depression, resilience and functional status at discharge. Resilience, along with quality of life and functional status at admission, proved to be a useful predictor of functional status at discharge. The authors argue for screening for low resilience and frailty at initial assessment to identify those patients with a higher risk of poor recovery. Major joint surgery is a common intervention, and as we continue to struggle to meet the demand for surgery, we will increasingly need to rehabilitate people with increasing frailty. By triaging at or before admission those who need more input for their rehabilitation we may be able to improve outcomes, while feeling confident that those who are more resilient will recover satisfactorily.

Reference: Funct Neurol. 2016;31(3):171-7
Abstract

Mental toughness as a moderator of the intention-behaviour gap in the rehabilitation of knee pain

Author: Gucciardi DF

Summary: Responses are reported from an online survey completed by 193 individuals aged 18–69 years with knee pain who were prescribed rehabilitative exercises to perform at home. The survey sought to determine the severity of problems associated with the knee (e.g. pain, symptoms), past behaviour, mental toughness, and the theory of planned behaviour constructs (TPB; attitudes, subjective norms, perceived behavioural, intentions). Two weeks later, the cohort was surveyed again and asked to report on their exercise behaviour since the first survey. Responses were evaluable from 136 participants at both assessment points. Analyses indicated that mental toughness increases the likelihood that intention is translated into action (exercise behaviour) by an additional 4%. Past behaviour, attitudes, and mental toughness were found to all directly affect behaviour. There was a meaningful interaction between intentions and mental toughness: people with high mental toughness were more likely to follow through on their intentions and do the exercise, as compared with those with low mental toughness.

Comment: One of the mysteries of the world is whether people who are given exercises to do at home, in their own time, actually do them. Without surveillance, we'll never know, but much of healthcare relies on people taking on their own self-management, and while "motivation" is one thing, there can be a big gap between "I'm thinking about doing it" to actually carrying it out. Mental toughness is about perseverance despite obstacles, and it implies being able to keep an eye on the end goal while navigating those obstacles. Gucciardi and colleagues conceptualise mental toughness on a continuum where a set of capabilities is possessed by people to help them maintain consistently high levels of performance. The importance in rehabilitation can't be over-stated, because engaging in new behaviours while at the same time dealing with the effects of disability must be one of the most demanding situations for anyone. Gucciardi and colleagues ask useful questions about mental toughness – do people just try harder and persevere? Or are they less affected by the goings-on of everyday life? I'm left with the question of how do we as health professionals help people develop this capability – do we point out the experiential benefits of exercise so people focus on this as they encounter the inevitable challenges we face when forming a new habit? Or do we use motivational interviewing to help people generate intrinsic motivation to tip them from intending to exercise to actually engaging in exercise?

Reference: J Sci Med Sport. 2016;19(6):454-8
Abstract

The influence of multisite pain and psychological comorbidity on prognosis of chronic low back pain: longitudinal data from the Norwegian HUNT Study

Authors: Nordstoga AL et al.

Summary: These researchers analysed data from the second (1995–1997) and third (2006–2008) waves of Norway's Nord-Trøndelag Health Study (HUNT), which enrolled 4484 women and 3039 men who reported chronic low back pain (LBP) at baseline in 1995–1997. The analysis sought to determine how multisite pain, depression, anxiety, self-rated health and pain-related disability impact upon recovery from chronic LBP. At the 11-year follow-up, 40.6% of the women and 51.9% of the men reported recovery from chronic LBP, defined as absence of pain and/or stiffness for ≥3 consecutive months during the last year. The probability of recovery was inversely associated with number of pain sites (p-trend<0.001). In Poisson regression analysis, compared with reporting 2–3 pain sites, persons with only LBP were slightly more likely to experience recovery (women: RR 1.10; 95% CI, 0.98 to 1.22; men: RR 1.10; 95% CI, 1.01 to 1.21), whereas people reporting 6–9 pain sites were markedly less likely (women: RR 0.58; 95% CI 0.52 to 0.63; men: RR 0.70, 95% CI 0.63 to 0.79). Factors that reduced the likelihood of recovery from chronic LBP included poor/not so good self-rated general health, symptoms of anxiety and depression, and pain-related disability in work and leisure.

Comment: Globally, low back pain accounts for the most years lived with disability of all musculoskeletal disorders, second only to mental health problems and substance use/abuse. Numerous strategies exist for identifying those at greatest risk of poor outcomes for recovering from low back pain, some of which are implemented in New Zealand. This study concludes that a simple count of the number of pain sites can predict who is least likely to recover. My reading of this result is that people with multiple pain sites perhaps represent a group of individuals who have an underlying primary pain disorder of which lower back pain is yet another manifestation. The implications of this are profound for compensation systems around the world. If people develop low back pain that then persists because they have an underlying primary pain disorder, should back pain then be compensable? More importantly though, if someone has multiple pain sites, should they be strongly encouraged to develop skills to self-manage what is likely to be a persisting problem with pain?

Reference: BMJ Open. 2017;7(5):e015312
Abstract

Acceptance and Commitment Therapy (ACT) for chronic pain: A systematic review and meta-analyses

Authors: Hughes LS et al.

Summary: This systematic review included 11 trials that compared the clinical effectiveness of Acceptance and Commitment Therapy (ACT) with control conditions (no alternative intervention or treatment as usual) and other active treatments for chronic pain in adults. ACT seeks to increase valued action in the presence of pain; some suggest that ACT may be a viable, alternative approach to cognitive behavioural therapy. ACT was associated with greater clinical effects compared with controls on a number of outcomes. Significant, medium to large effect sizes were found for measures of pain acceptance and psychological flexibility. Significant small to medium effect sizes were found for measures of functioning, anxiety, and depression. Measures of pain intensity and quality of life did not differ significantly from zero. Generally, effect sizes were smaller at follow-up.

Comment: I have worked in persistent pain management for most of my clinical career. I have seen many different physiotherapy approaches implemented, but rather fewer psychological ones, and overall our ability to help those with persistent pain is fairly modest. The most recent psychological development has been Acceptance and Commitment Therapy (ACT), which is a "third wave" cognitive behavioural therapy. As an occupational therapist, I'm encouraged that ACT is seen by the original developers to be an approach that can be (and is) adopted by many different professions. Part of the appeal of ACT is that it is less "cognitive" – instead of rationally disputing unhelpful thoughts and beliefs, which is typically difficult for people who don't like pen and paper tasks, an ACT approach argues for people to notice their thoughts and then decide on a values-coherent choice of action. As an experiential therapy, ACT is useful for supporting people to do things differently rather than being stuck in their thoughts. It is early days for ACT in managing persistent pain, and this systematic review and meta-analysis acknowledges that most studies have not compared ACT with other active treatments, yet the results are promising. Patients appear to accept ACT readily and while outcomes are modest – so are all our treatments for persistent pain.

Reference: Clin J Pain. 2017;33(6):552-68
Abstract

Expert commentary by Nicola Kayes

Improving adherence to exercise: Do people with knee osteoarthritis and physical therapists agree on the behavioural approaches likely to succeed?

Authors: Nicolson PJA et al.

Summary: These researchers administered two versions of a custom-designed survey in Australia and New Zealand; one was completed by 230 adults with symptomatic knee osteoarthritis (OA) and the second by 143 physical therapists who had treated people with knee OA in the past 6 months. The surveys explored the frequency of receiving/prescribing exercise for knee OA; which behaviour change techniques (BCTs) to promote adherence to exercise have been received by people with knee OA or used by physical therapists; and perceived effectiveness of 36 BCTs derived from behavioural therapy. Both groups reported that education about the benefits of exercise was the most commonly employed technique. There was a considerable mismatch between the groups as to the perceived effectiveness of BCTs, which were rated significantly lower by people with knee OA compared with ratings among the physical therapists. When ranked by group mean agreement score, goal setting techniques related to outcomes were considered by both groups to be the most effective strategies.

Comment: Adherence to home-based exercise programmes is related to physiotherapy outcome. Yet, research reports rates of non-adherence are as high as 70% for general musculoskeletal conditions. While I don't necessarily support the language of 'adherence' per se – after all, the focus on prescribing and providing may be part of the problem! – it is clear that active and explicit strategies to support engagement are necessary. I would argue that behaviour change is a core rehabilitation process. As such, understanding human behaviour and being able to identify and apply behaviour change theory in practice, should be recognised as foundational skills and knowledge for all rehabilitation practitioners. This research found that education and supplying written instructions remain the most commonly adopted behaviour change techniques (BCTs) in practice. This is despite evidence that information alone is not sufficient to support behaviour change. I agree with the suggestion in this paper that we need to develop competencies in a range of BCTs to expand our toolbox, and enable a more tailored approach in practice.

Reference: Arthritis Care Res (Hoboken). 2017 Jun 2. [Epub ahead of print]
Abstract

Professionals' perceptions of factors affecting implementation and continuation of a physical activity promotion programme in rehabilitation: A qualitative study

Authors: Hoekstra F et al.

Summary: This qualitative investigation from the Netherlands explored professionals' perceptions of factors that facilitate or hamper the implementation and continuation of a physical activity promotion programme in rehabilitation. Twenty-two semi-structured interviews were held with 28 rehabilitation professionals involved in the implementation of a physical activity promotion programme. Additional interviews were conducted with two national programme coordinators. The study involved 18 rehabilitation organisations implementing the programme that targets people with disabilities or chronic diseases. A range of factors were commonly cited as facilitating the implementation of such a programme: involvement of committed and enthusiastic professionals; agreement with their organisations' vision/wishes; the perceived additional value of the programme; and opportunities to share knowledge and experience with professionals from other organizations. Commonly perceived factors that hamper such programmes included: uncertainty about continuing the programme; limited flexibility; and lack of support from physicians and therapists to implement the programme.

Comment: I highly recommend an in-depth read of this paper if you are intending to implement a new approach in practice in the near future. Even if the substantive nature of the programme being implemented here is not relevant, the complexity of the factors perceived to influence successful uptake will resonate. The findings are reminiscent of Damschroder's Consolidated Framework for the Implementation Research (CFIR), which suggests influencing factors cluster into five domains (the people, the intervention, the implementation process, and the internal and external structures) – see http://implementationscience.biomedcentral.com/track/pdf/10.1186/1748-5908-4-50?site=implementationscience.biomedcentral.com. Indeed, I would recommend the CFIR as a useful tool for critically reflecting what factors may help or hinder implementation, so that one can actively address those in the implementation phase. The current paper also posits that the implementation and continuation phases should be viewed as independent phases, with potentially different influencing factors at play. I agree and would suggest we frequently fail to give explicit attention to sustaining change following early implementation efforts.

Reference: J Rehabil Med. 2017;49(5):385-94
Abstract

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Characteristics of therapeutic alliance in musculoskeletal physiotherapy and occupational therapy practice: a scoping review of the literature

Authors: Babatunde F et al.

Summary: This systematic review of the therapeutic alliance literature examined the evidence on the relationship between therapeutic alliance and rehabilitation of different musculoskeletal conditions. As the study authors explain, therapeutic alliance refers to those relational processes involved in treatment that can act in combination or independently of specific interventions. The study inclusion criteria specified articles describing therapeutic alliance conceptual frameworks, themes, measures and determinants in musculoskeletal rehabilitation across physiotherapy and occupational therapy disciplines. Of the 130 articles meeting the inclusion criteria, the most commonly reported condition was low back pain (22%) and the most common rehabilitation setting was primary care (30.7%). Of the 26 therapeutic alliance measures that were identified, the Working Alliance Inventory (WAI) was used most often (13%). Most of the therapeutic alliance themes were from patients' perspectives. Of 26 articles that examined the relationship between adherence and therapeutic alliance, 57% showed some correlation between therapeutic alliance and adherence. Age moderated the relationship between therapeutic alliance and adherence; younger individuals and an autonomy support environment were associated with improved adherence. Prioritised goals, autonomy support and motivation all facilitated therapeutic alliance.

Comment: I was excited to find this paper! Research exploring therapeutic alliance in musculoskeletal populations is quite hard to find! This scoping review puts a stake in the ground regarding the current state of evidence for therapeutic alliance in a musculoskeletal setting including conceptual understandings, key components, and available measures. Eight key themes are proposed including congruence, connectedness, communication, expectation, influencing factors, individualised therapy, partnership, roles and responsibilities. The tricky thing about synthesising research in this field is that a) most research to date does not set out to explicitly explore therapeutic alliance per se – rather, it tends to be a by-product of the research; and b) there is a lack of distinction between what *constitutes* the therapeutic alliance, versus what *influences* the therapeutic alliance. The former is problematic as we likely have an incomplete picture. The latter is problematic, as this blurring gets in the way of having a clear conceptualisation, therefore hindering application in practice. Those of you who know me will know that advancing knowledge and practice in this space is a passion of mine. Watch this space!

Reference: BMC Health Serv Res. 2017;17(1):375
Abstract

Evaluating change in virtual reality adoption for brain injury rehabilitation following knowledge translation

Authors: Glegg SMN et al.

Summary: These researchers sought to determine the impact of knowledge translation on factors influencing the adoption of virtual reality (VR) and to identify what support rehabilitation therapists need to integrate VR into practice. The study recruited 37 physical, occupational and rehabilitation therapists (n=37) from two brain injury rehabilitation centres. All participants were tested on the ADOPT-VR measure, administered at study entry and again after the therapists took part in a knowledge translation programme consisting of interactive education, clinical manual, technical and clinical support. After completing the programme, the ADOPT-VR testing revealed significant increases from baseline in perceived ease of use and self-efficacy, but not behavioural intention to use VR. The testing also revealed fewer perceived barriers following participation in the programme. Additional support needs were related to clinical reasoning, treatment programme development, technology selection and troubleshooting.

Comment: Rehabilitation technologies, and in particular virtual reality (VR), are increasingly promoted in rehabilitation. However, uptake into routine practice has proven less straightforward. This project explicitly aimed to address this through a theoretically-informed, multicomponent knowledge translation (KT) intervention. The findings were encouraging, with the intervention positively impacting upon self-efficacy and perceived ease of use. On-site clinical support (or mentoring) appeared key. However, a critical factor not well addressed by the intervention was the need to be able to contextualise VR for current practice. For example, identifying appropriate candidates, being able to influence clinical parameters and tailor levels of difficulty to individual persons, and having a system that can be responsive to the diversity of impairments and comorbidities that present. Developing KT strategies that help to establish fit with current practice and support integration into usual workflow and clinical reasoning appears an important next step.

Reference: Disabil Rehabil Assist Technol. 2017;12(3):217-26
Abstract

Independent commentary by Associate Professor Nicola Kayes

Associate 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.

Timing of rehabilitation on length of stay and cost in patients with hip or knee joint arthroplasty: A systematic review with meta-analysis

Authors: Masaracchio M et al.

Summary: This review of the literature included 17 studies involving 26,614 patients who had undergone total hip arthroplasty, total knee arthroplasty, or unicompartmental knee arthroplasty. The aim of this review was to elucidate the role of early initiation of rehabilitation on length of stay (LOS) and cost following each of the three procedures. When compared with standard care, early initiation of physical therapy was associated with a shorter length of stay, a lower overall cost, with no evidence of an increased number of adverse reactions.

Comment: Determining the right treatment, for the right person, at the right time is complex, but may be critical if we are to optimise rehabilitation outcomes. This review asks a question of timing. The findings favour early rehabilitation post-joint arthroplasty, with the majority of the included studies commencing mobilisation activities on the day of surgery without adverse reactions. The primary outcomes of the current research were length of stay and cost. As such, research exploring whether this translates into better functional outcomes in the long term is necessary. Further, the heterogeneity of the interventions in the included studies makes it difficult to pinpoint exactly which parameters might be most-effective to guide design of early rehabilitation programmes.

Reference: PLoS One. 2017;12(6):e0178295
Abstract