

Rehabilitation Research Review

Making Education Easy

Issue 3 – 2008

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Welcome to the third issue of Rehabilitation Research Review.

This month's edition features an interesting array of studies across many aspects of rehabilitation. These range from an analysis of a novel way of assessing and reporting ICF data through to papers that examine cognitive aspects in pain management.

I hope you enjoy the latest edition and welcome your comments and feedback.

Kind regards,

Kath McPherson

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Physiotherapy after traumatic brain injury: A systematic review of the literature

Authors: Hellweg S and Johannes S

Summary: The purpose of this literature review was to develop recommendations for physiotherapy in the post-acute phase after traumatic brain injury (TBI), based on evidence from 14 clinical trials. According to the reviewers, the therapeutic value of sensory stimulation remains unproven, while strong evidence suggests that more intensive rehabilitation programmes lead to earlier functional abilities. The reviewers award a grade B recommendation to casting for the improvement of passive range of motion, but only a C recommendation for tonus reduction. They state that there is strong evidence that intensive task-orientated rehabilitation programmes result in earlier and better functional abilities.

Comment: A number of practitioners have rightly become disenchanted with systematic reviews, given the commonly found conclusion that 'there is insufficient evidence' one way or another as to whether a treatment or strategy is effective. However, times are changing with more rigorous rehabilitation research and with approaches taking into account a broader range of what actually comprises evidence. This paper highlights a number of areas where evidence is now pretty solid in relation to physiotherapy for people with traumatic brain injury. One issue that is emphasised is the notion of 'dose response' – i.e. that intensity of treatment is almost always a crucial factor in efficacy. So – if you previously switched off to reviews, maybe it is worth thinking about switching back on and if you are involved in the management of TBI – it is worth considering whether input is intensive enough to bring about good results.

Reference: *Brain Inj.* 2008;22:365-73

<http://dx.doi.org/10.1080/02699050801998250>



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Use of goal attainment scaling in inpatient rehabilitation for persons with multiple sclerosis

Authors: Khan F et al

Summary: This study assessed the value of goal attainment scaling (GAS) for measuring clinically important functional change and to assess its responsiveness compared with standard measures used to evaluate progress in rehabilitation (the FIM instrument and Barthel Index), in 24 patients with multiple sclerosis (MS). GAS scores were calculated for 5 to 10 priority goals set prospectively by each patient. Of 203 selected goals, 167 were achieved at the predicted level. GAS recorded outcomes for 105 individualised goals not measured by the FIM and Barthel Index. While all 3 measures showed statistically significant change from admission to discharge, only GAS scores correlated strongly with the Clinical Global Impression scale ($\rho = -.86$; $p < 0.001$). GAS discharge scores differed significantly between the responder and nonresponder groups ($p < 0.001$). GAS was consistently more responsive on effect size measures than the FIM and Barthel Index.

Comment: Goals are an integral part of many rehabilitation programmes and yet research continues to identify that both practitioners and patients/clients alike find these difficult. Goal Attainment Scaling has many fans but also a number of critics, particularly in relation to its measurement properties (see Tennant 2007; *Disability & Rehabilitation*, 29: pages 1583-8). This study clearly highlights that functional measures, such as the FIM, are limited in identifying whether a number of changes important to clients have been made in rehabilitation, particularly in chronic and complex conditions where functional changes might be small and yet are still significant steps towards enhancing someone's 'life'. Our group has recently been funded to test whether using the GAS is a helpful tool in goal setting, not as an outcome measure but as a tool for engaging clients in the process. If you would like to know more about this, please feel free to contact me at katmcphe@aut.ac.nz.

Reference: *Arch Phys Med Rehabil.* 2008;89:652-9

<http://dx.doi.org/10.1016/j.apmr.2007.09.049>

Acute stress disorder and posttraumatic stress disorder: A prospective study of prevalence, course, and predictors in a sample with major burn injuries

Authors: McKibben JB et al

Summary: In this study, the utility of self-report measures for detecting acute stress disorder (ASD) and posttraumatic stress disorder (PTSD) and in tracking and predicting PTSD were examined in adult patients admitted for treatment of a major burn injury. ASD symptomatology at discharge ($n=178$) was measured by the Stanford Acute Stress Reaction Questionnaire (SASRQ), and PTSD symptoms were measured by the Davidson Trauma Scale at 1 ($n=151$), 6 ($n=111$), 12 ($n=105$), and 24 ($n=71$) months after burn. The prevalence of in-hospital ASD was 23.6%; PTSD criteria were satisfied at 1, 6, 12, and 24 months by 35.1, 33.3, 28.6, and 25.4% of patients, respectively. SASRQ diagnostic cutoff and total scores were robust predictors for PTSD. A SASRQ empirically-derived cutoff score (≥ 40) yielded moderate-high sensitivities (0.67–0.71) and specificities (0.75–0.80) and predicted PTSD at each follow-up; PTSD symptomatology remained substantially unchanged.

Comment: It is not surprising that anxiety levels for people with major burns are high, but the rate of PTSD development and its persistent nature, once developed, was to me really shocking. Although the response rate in this study dropped to 40% by two years (introducing some questions about the generalisability of results) the fact that over a quarter of those assessed at each time point had PTSD indicates the complexity of rehabilitation needs for people with burns. Indeed – an editorial in the most recent issue of this same journal (May/June) is entitled *A Clarion to Recommit and Reaffirm Burn Rehabilitation* – highlighting that despite higher rates than ever of survival after major burns, 'rehabilitation outcomes are less than optimal and appear to have leveled off'. Clearly, management of psychological consequences of injury is only part of enhancing outcome, but this indicates how important and prevalent such consequences are.

Reference: *J Burn Care Res.* 2008;29:22-35

<http://tinyurl.com/55rahk>

Rate of accidental falls in institutionalised older people with and without cognitive impairment halved as a result of a staff-oriented intervention

Authors: Bouwen A et al

Summary: This evaluation of the impact of a staff-oriented intervention on the number of accidental falls in residents with and without cognitive impairment involved 10 nursing wards from 7 nursing homes. Five wards comprised a control group; nurses from the other 5 wards (intervention group) were trained about the occurrence of accidental falls, risk factors for falls and possible environmental modifications. They recorded relevant risk factors for falls, kept a fall diary and evaluated fall causes and possible preventive actions. After adjustment for pre-intervention results, accidental falls were half as likely for residents in the intervention group versus controls (relative risk 0.46).

Comment: In the previous issue of *Rehabilitation Research Review* we highlighted that staff training was an essential component of helping people from different disciplines to work together in teams (i.e. teamwork doesn't just happen!). In this issue, we see another important impact of staff training in relation to falls reduction. It made me think of two somewhat larger issues: firstly, how important interventions *with health professionals* are, as opposed to interventions always focusing on clients and; secondly, that we mustn't interpret such findings as suggesting there is a quick fix or simple solution i.e. that all this required was 'providing information' to staff. Education for behaviour change in professionals is tricky to get right but if done well, can and does improve practice and outcomes. Updating one's knowledge is not always easy to fit into a busy life, but given that knowledge constantly changes, it is crucial to support (if you are a manager) and engage in (if you are a practitioner) if we want to do the best by our patients/clients.

Reference: *Age Ageing.*2008;37:306-10

<http://dx.doi.org/10.1093/ageing/afn053>



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Committed to improving sustainable rehabilitation outcomes for all clients

Population-based care of depression: Team care approaches to improving outcomes

Authors: Katon WJ and Seelig M

Summary: In this literature review of 37 randomised trials of collaborative care interventions among primary care patients with depression, collaborative care, compared with usual primary care, was associated with 2-fold increases in antidepressant adherence, improvements in depressive outcomes lasting up to 2 to 5 years, increased patient satisfaction with depression care, and improved primary care satisfaction with treating depression. In cost-effectiveness analyses, collaborative care was associated with a modest increase in medical costs, but markedly improved depression and functional outcomes. Studies examining both direct and indirect costs showed that collaborative care led to overall cost savings. For patients with depression and diabetes and depression and panic disorder, increased mental health care costs associated with collaborative care were offset by greater medical cost savings.

Comment: This paper provides a really useful summary of collaborative chronic care approaches and their effectiveness in managing depression, for which people with a number of disabling conditions are at high risk. Collaborative care is not just having multiple rather than single practitioners involved – rather, it is about ensuring all those involved in patient management work in partnership with one another, and with the patient. This paper identifies this to be particularly important when depression is a co-morbidity with other injuries/illnesses. Of note (particularly if you are involved in vocational rehabilitation or occupational medicine) is that this whole issue of this journal addresses the issues related to depression and return to work.

Reference: *J Occup Environ Med.* 2008;50:459-67

<http://dx.doi.org/10.1097/JOM.0b013e318168efb7>

A longitudinal evaluation of persons with disabilities: Does a longitudinal definition help define who receives necessary care?

Authors: Chan L et al

Summary: These researchers used a longitudinal definition of disability and objective health quality indicators to determine the impact of disability on receipt of quality healthcare in a national survey (1992–2001) of 29,074 Medicare beneficiaries with no, increasing, decreasing, and stable disability status in activities of daily living (ADLs). For most indicators, less than 75% of eligible beneficiaries received necessary care, regardless of disability status. For 5 indicators, less than 50% of patients received appropriate treatment. In logistic regression analyses, ADL disability was statistically associated with 7 quality measures (3 underuse of necessary care indicators, 1 avoidable outcome, 3 preventive care measures).

Comment: Another piece of the jigsaw identifying just what sort of rough deal disabled people get when it comes to equitable access to healthcare is emphasised in this paper. When you get a study of nearly 30,000 people showing worse outcomes in relation to the incidence of diseases that are major killers (heart disease, breast cancer, diabetes and COPD), what may seem to some to be political rhetoric becomes very real. Of course, this study was in the US with a different healthcare system than that in NZ. But – I can't think of anything that should give us confidence that we are doing any better. We know that disabled people have inadequate access to a number of health services in NZ and 'access' is very directly related to outcome.

Reference: *Arch Phys Med Rehabil.* 2008;89:1023-30

<http://dx.doi.org/10.1016/j.apmr.2007.10.045>



Independent commentary by Professor Kath McPherson, Professor of Rehabilitation (Laura Fergusson Chair) at the Health and Rehabilitation Research Centre, AUT University in Auckland.

Kath has been at AUT since 2004 and has been building a research, teaching and consultancy programme focused on improving interventions and outcomes for people experiencing disability.

Achieving meaningful measurements of ICF concepts

Authors: Jette AM et al

Summary: These researchers review three approaches to assessing and reporting ICF data: coding versus quantitative scales, and an alternative, integrative approach – *functional staging*, illustrated by an analysis of data collected from 516 adult patients in the Rehabilitation Outcome Study, in response to a fixed-form version of the Activity Measure for Post Acute Care (AM-PAC). The study researchers developed hierarchical functional stages for the AM-PAC, covering the entire range of the functional continuum being measured. The researchers propose that a functional staging approach combines the attractive features of ICF coding and quantitative scaling strategies and retains measurement reliability, validity and precision.

Comment: One of the criticisms of the World Health Organisation's classification systems used in rehabilitation (first the ICDH and now the ICF) is that some of the concepts are difficult to operationalise, i.e. develop measures in relation to. This paper provides a very useful review of the strengths and limits of the ICF as a basis for measurement. To that end, whether the ICF is new to you, or if you are an avid fan of it, it makes interesting reading. However, what it also does is suggest a novel way of using ICF codes in order to monitor progress that rehabilitation services/providers may find of interest.

Reference: *Disabil Rehabil.* 2008;30:963-9

<http://dx.doi.org/10.1080/09638280701800426>

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Parent-child interactions during the initial weeks following brain injury in young children

Authors: Wade SL et al

Summary: This study sought to understand the effects of paediatric traumatic brain injury (TBI; n=80) on parent-child interactions during the initial weeks of hospitalisation following injury, including children with orthopaedic injuries (OI; n=113) as a comparison group. Videotapes of parent-child interactions were coded with a combination of global ratings and behavioural counts. Parents of children with TBI exhibited less warm responsiveness and made more directive statements during a structured task than parents in the OI group. Children with TBI displayed less behaviour regulation than children with OI. Parental warm responsiveness was more strongly related to child cooperativeness in the OI group than in the TBI group. Child behaviour also mediated group differences in parental responsiveness and directiveness. TBI accounted for as much variance in parental behaviours as or more than did sociodemographic factors.

Comment: Traumatic brain injury (TBI) is a very real problem in New Zealand. We have a high incidence of TBI and at times scarily high costs in relation to care, rehabilitation and support. But this paper identifies one of those 'un-costed' and relatively 'un-costable' impacts of TBI in children – that the very essence of the parent-child relationship (warmth and responsiveness) is vulnerable. Although it is not possible to say how this altered responsiveness might impact on longer-term outcomes, helping families maintain or re-establish a sense of family life should probably be very high on our agendas.

Reference: *Rehabil Psychol.* 2008;53:180-90

<http://dx.doi.org/10.1037/0090-5550.53.2.180>

Disclaimer: This publication is not intended as a replacement for regular medical education but to assist in the process. The reviews are a summarised interpretation of the published study and reflect the opinion of the writer rather than those of the research group or scientific journal. It is suggested readers review the full trial data before forming a final conclusion on its merits.

Self-management strategies to reduce pain and improve function among older adults in community settings: A review of the evidence

Authors: Reid MC et al

Summary: Evidence was reviewed from 27 articles evaluating self-management interventions for chronic pain due to musculoskeletal disorders among older adults; interventions comprised programmes sponsored by the Arthritis Foundation and other programmes/strategies including yoga, massage therapy, Tai Chi, and music therapy. Positive outcomes in pain and disability scores were reported by 96% of the studies.

Comment: Self-management is a buzz word (or possibly buzz-phrase) that health policy is increasingly embracing in relation to diabetes, asthma and other chronic conditions. At times, self-management seems to be interpreted as 'how to enhance the individual's adherence to drug regimes'. This paper makes clear that real self-management is a bigger concept, particularly in light of the fact that pharmacological management of pain for many older people is ineffective. Self-management here is about enhancing older people's engagement in community programmes that support activity, relaxation and wellbeing – the fundamental key being to ensure people continue to use the strategies over time. This paper very usefully summarises current knowledge by clearly stating both a) the evidence that exists (good for providers and funders) and b) where the gaps are (great for researchers!).

Reference: *Pain Med.* 2008;9:409-24

<http://dx.doi.org/10.1111/j.1526-4637.2008.00428.x>

Outcome following a physiotherapist-led intervention for chronic low back pain: the important role of cognitive processes

Authors: Woby SR et al

Summary: This study examined whether patients with chronic low back pain exhibit changes in cognitive factors following Interactive Behavioural Modification Therapy (IBMT), a physiotherapist-led intervention underpinned by cognitive-behavioural principles, and also assessed the association between pre- to post-treatment changes in cognitive factors (cognitive processes) and pre- to post-treatment changes in pain, disability and depression. Patients demonstrated significant favourable changes for a range of cognitive factors. Furthermore, pre- to post-treatment changes in these cognitive factors explained an additional 22%, 17% and 15% of the variance in changes in pain, disability and depression, respectively, after controlling for other important factors.

Comment: It would probably be totally reasonable for readers to think I am a bit fixated on the relationship between 'physical injury and associated symptoms' and the 'behavioural responses to injury and those associated symptoms'. Each issue of *Rehabilitation Research Review* has had at least one paper examining a related aspect whether in relation to better assessment or management of depression or, as in this case, better physiotherapy management of pain. Of course, I think my fixation is reasonable – not considering someone's wider response to their physical condition (cognitive, behavioural and social) just doesn't make any sense to me. This is not to say all patients have maladaptive responses. Indeed – there is much to learn from people's adaptive approaches and positive strategies. Whilst there are limits to the design of this pragmatic evaluation, it joins an increasing number of papers that are pointing to some very real benefits of 'psychologically informed' physiotherapy.

Reference: *Physiotherapy.* 2008;94:115-24

<http://dx.doi.org/10.1016/j.physio.2007.08.008>

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