

Rehabilitation Research Review

Making Education Easy

Issue 5 - 2008

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Welcome to the the last issue of Rehabilitation Research Review for 2008.

This month, we introduce two new features: firstly, each issue will have a *vintage* paper. These are papers predating the current year but of particular significance, either by being particularly influential or perhaps because they serve as a useful reminder of how knowledge changes. The second new feature is that from time to time, I'll include a paper our team has been involved in writing. Up till now, I've avoided doing so because it felt a bit weird to refer to our own research. However, some of our work is published in journals you may not routinely read so we'll tell you about it here.

I hope the issue is of interest and wishing you all a safe and Happy Christmas and all the best for 2009.

Kind regards,

Kath McPherson

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Prescription opioid dependence is associated with poorer outcomes in disabling spinal disorders

Authors: Dersh J et al

Summary: This study sought to determine whether prescription opioid dependence, assessed at the beginning of rehabilitation treatment, is associated with poorer treatment outcomes in 1323 patients with chronic disabling occupational spinal disorders attending an interdisciplinary rehabilitation programme, 199 of whom had postinjury opioid-dependence disorder. Patients received intensive physical reactivation and pain/disability management interventions, based on a functional restoration model, including detoxification from opioids. After accounting for relevant demographic factors and comorbid psychiatric disorders, outcomes at 1 year revealed that opioid-dependent patients were 1.7 times less likely to return to work, 2 times less likely to retain work at the 1-year interview, and 1.7 times more likely to engage in healthcare utilisation from new providers, compared with nonopioid-dependent patients.

Comment: Medication is a useful and important tool in the management of back pain, but opioid dependence is a very real problem. Whilst this study found outcomes at 12 months were poorer for those who were dependent at the start of rehabilitation (even if detoxification was successful), a recent paper by Townsend et al. (in *Pain* 2008;140:177-89) found similar outcomes for both those with dependence and those without. Clearly more research is needed but I can't help feeling it might be that 'different rehabilitation' rather than 'none' or even 'more of the same' is needed to improve outcome in this group of clients and others with substance abuse issues complicating the picture.

Reference: *Spine*. 2008;33(20):2219-27

<http://www.spinejournal.com/pt/re/spine/abstract.00007632-200809150-00017.htm>



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Is it time for a population health approach to neck pain?

Authors: Cassidy JD and Côté P

Summary: Using a best evidence synthesis approach, these researchers systematically reviewed population-level approaches to the prevention and control of neck pain and its associated disorders (NPAD). Eight studies met the criteria of a public or population health approach to preventing and controlling the burden of NPAD. For whiplash-associated disorders, active head restraints and seat backs were protective in rear-end collisions; insurance policies affected the incidence and recovery; government funding of multidisciplinary rehabilitation programmes did not benefit recovery; and early intensive health care delayed recovery. In the workplace, 2 randomised trials failed to show any preventive effect for ergonomic interventions or physical training and stress management. One study documented the societal cost of neck pain.

Comment: This is one of a growing number of papers concluding that we still lack good evidential support for policy decisions at population level. NZ has an excellent record of population research in a number of areas (e.g. stroke) and also some laudable public health initiatives exist. However, despite these 'positives', a few pretty big 'negatives' exist. We have remarkably little robust epidemiological data for a number of disabling conditions including but not limited to neck pain. Whilst this sort of issue can feel a long way removed from clinical practice, good data is fundamental to good health planning in so many ways, including appropriate investment in services and workforce capacity building. Ensuring we have good data is in everybody's interests so this is a plea not to ignore such papers or such issues.

Reference: *J Manipulative Physiol Ther.* 2008;31(6):442-6

<http://tinyurl.com/6fwz9>



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Research Review publications are intended for New Zealand health professionals.

Prevalence of sleep disturbance in closed head injury patients in a rehabilitation unit

Authors: Makley MJ et al

Summary: These researchers investigated the prevalence of sleep wake cycle disturbance (SWCD) in 31 patients with closed head injury (CHI) in an inpatient specialised brain injury rehabilitation unit. Twenty-one patients (68%) had aberrations of night-time sleep. There was no significant difference in Glasgow Coma Score on admission to trauma nor was there any significant difference in age between the affected and unaffected groups. Patients with SWCD had longer stays in both the trauma centre ($p < 0.003$) and the rehabilitation centre ($p < 0.03$).

Comment: It seems incredible that this could be, as the authors claim, the first study looking at how common sleep disturbance is in inpatient brain injury rehabilitation. Well... not a whole lot of robust data exist detailing the prevalence of sleep disturbance either in hospital or in the wider TBI population. There are a number of similarly small studies out there (some names to look out for are Clinchot et al 1998, Baumann et al 2007, Rao et al 2008 and Parcell et al 2008). However, could it be that despite the comprehensive literature about *fatigue* and TBI, we have given the related but different concept of *sleep disturbance* inadequate attention? At the very least, we need to know whether the rates in these small studies are accurate. Who knows, perhaps better management of sleep disturbance in the acute and post acute phases of recovery after TBI could contribute to a reduction in the rates of chronic fatigue this population experiences.

Reference: *Neurorehabil Neural Repair.* 2008;22(4):341-7

<http://nnr.sagepub.com/cgi/content/abstract/22/4/341>

Spinal cord injury and co-occurring traumatic brain injury: assessment and incidence

Authors: Macciocchi S et al

Summary: This study prospectively examined the incidence and severity of co-occurring traumatic brain injury (TBI) in 198 patients with traumatic spinal cord injury (SCI), and sought to describe a TBI assessment process for SCI rehabilitation professionals. According to participants' presence and duration of post-traumatic amnesia, initial Glasgow Coma Scale total score, and presence of cerebral lesion documented by neuroimaging, 118 patients (60%) met criteria for a co-occurring TBI; classified as mild (34%), mild complicated (10%), moderate (6%), and severe TBI (10%). Those with traumatic SCI who were injured in motor vehicle collisions and falls were more likely to sustain a co-occurring TBI. Cervical level traumatic SCI was associated with greater rates of TBI but not more severe injuries. Using tree analyses, a practical algorithm was developed for classifying TBI severity associated with traumatic SCI and validated by analysis of variance.

Comment: You could be forgiven for thinking you were reading *Epidemiological Research Review* (hmm... not a bad idea actually) as I seem to be fixated here on papers calling for, or providing, better data to inform policy at a population level. This is one such paper and raises a major concern that we could (and I would say should) do something about right now. Routinely screening for TBI in those with 'high risk' injuries such as SCI (and whiplash), multiple trauma and facial fractures just seems to make sense given that we know early treatment of mild to moderate TBI can make such a big difference. Whilst screening does indeed happen in some places, this paper suggests more widespread efforts are needed.

Reference: *Arch Phys Med Rehabil.* 2008;89(7):1350-7

[http://linkinghub.elsevier.com/retrieve/pii/S0003-9993\(08\)00281-5](http://linkinghub.elsevier.com/retrieve/pii/S0003-9993(08)00281-5)



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.



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Committed to improving sustainable rehabilitation outcomes for all clients

A systematic review of disability management interventions with economic evaluations

Authors: Tompa E et al

Summary: This systematic literature review of disability management interventions sought evidence in support of the financial benefits of disability management interventions. Eight studies were stratified across several dimensions for evidence synthesis, with industry as the core stratification criterion. Strong evidence was found in support of the economic merits of multi-sector disability management interventions. Stratification by intervention components yielded moderate evidence for interventions including an education component, moderate evidence for those with physiotherapy, limited evidence for those with a behavioural component, and moderate evidence for those with a work/vocational rehabilitation component. Stratification by intervention features revealed moderate evidence for interventions including a work accommodation offer, contact between health care provider and workplace, early contact with worker by workplace, ergonomic work site visits, and interventions with a return-to-work coordinator.

Comment: Rehabilitation is, by its very nature, comparatively costly. We often rely on ongoing human interaction, unlike more discreet health interventions i.e. there is no such thing as a 'rehabilitation pill'. The cost of the services we provide clearly matters given the limited resources and choices to be made. But – cost on its own tells us little. A cheap service that achieves nothing is certainly not 'better' value than a more expensive service that achieves good outcomes. That this paper found 'strong evidence' for multi-sector disability management interventions is interesting, given that so few systematic reviews in rehabilitation reach such strong conclusions. But – it's not alone. Another interesting paper regarding cost and rehabilitation is by Lynne Turner-Stokes from last year (*Brain Injury*. 2007;21(10):1015-21), concluding that rehabilitation for those with complex disability is extremely cost efficient. Could the tide be changing and rehabilitation (at least effective rehabilitation) increasingly be found to be more costly to ignore than to provide?

Reference: *J Occup Rehabil*. 2008;18(1):16-26

<http://www.springerlink.com/content/v0266q2634408671/>

Metaphoric identity mapping: Facilitating goal setting and engagement in rehabilitation after traumatic brain injury

Authors: Ylvisaker M et al

Summary: Theory and procedures associated with metaphoric identity mapping are discussed in relation to goal setting in traumatic brain injury (TBI) rehabilitation. Outcomes are presented from an exploration of metaphoric identity mapping as a facilitator of personally meaningful goal setting with five individuals with significant disability many years after their injury. Grounded theory analysis of data from semi-structured interviews with clients and clinicians, from focus groups with the clinicians, and from observation of client-clinician interaction yielded five general themes concerning metaphoric identity mapping: all clients and clinicians found this approach to be an acceptable process and also useful for deriving meaningful rehabilitation goals. Both clients and clinicians saw client-centred goals as important. Obstacles to this goal-setting intervention posed by cognitive impairments necessitated creative compensations. Identity-related goal setting appeared to require a "mind shift" for some clinicians and demanded clinical skills not uniformly distributed among rehabilitation professionals.

Comment: This paper is one of a number examining The Self and Identity in Rehabilitation in the December special issue of *Neuropsychological Rehabilitation*. It is selected from amongst the papers our team has produced for a couple of reasons. Firstly, it (along with others in the special issue) tackles something increasingly of interest in neurorehabilitation, not just in neuropsychology. Our experience (and our research) suggests it is certainly of interest to individuals who experience injury/illness as well as for their family/whānau. There are some big questions around all of this such as how central to 'recovery/adaptation' is discovering or rediscovering a sense of self and how one fits in the world? Could we do better at promoting integrated psychological/social 'reconnection'? And even bigger questions like – is it the stuff of rehabilitation to even go there? I'm not suggesting all the answers are in this paper (if only!) but maybe some food for thought.

Reference: *Neuropsychol Rehabil*. 2008;18(5):713-41

<http://www.informaworld.com/smp/content-db=all?content=10.1080/09602010802201832>

A randomized trial of behavioral physical therapy interventions for acute and sub-acute low back pain

Authors: George SZ et al

Summary: This study compared the effectiveness of treatment-based classification (TBC) physical therapy alone or in combination with a fear-avoidance-based physical therapy intervention, graded activity or graded exposure, in 108 patients with acute and sub-acute chronic low back pain (LBP). Outcomes at 4 weeks and 6 months were not significantly different between the treatment groups with regard to reduction of disability, pain intensity, pain catastrophising, and physical impairment. Graded exposure and TBC were associated with larger reductions in fear-avoidance beliefs at 6 months only. Six-month reduction in disability was associated with reduction in pain intensity, while 6-month reduction in pain intensity was associated with reductions in fear-avoidance beliefs and pain catastrophising.

Comment: It seems only fair that given the number of papers I've mentioned in RRR that indicate positive findings for psychologically informed physiotherapy, that I 'fess up' about this one that is less sure. Having read the full paper, my 'fess' is going to be pretty limited. Firstly – not all physiotherapy is 'treatment-based classification (TBC)' as was the core physical therapy here. Secondly, the authors themselves acknowledge methodological differences between their study and others (in relation to a mix of acute and sub-acute patients, some of the measures used, the power of the study and, the nature of the interventions). Whilst we absolutely should continue to question just what is needed for whom, I'll need more evidence to discard my *belief* on this one just yet.

Reference: *Pain*. 2008;140(1):145-57

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Improving the reporting of pragmatic trials: an extension of the CONSORT statement

Authors: Zwarenstein M

Summary: Updated guidance to the CONSORT statement is given for the reporting of cluster randomised controlled trials, which require extra information on their special features. The CONSORT checklist has been extended by 8 items to accommodate these features (the background, participants, interventions, outcomes, sample size, blinding, participant flow, and generalisability of the findings). Each of these extensions is explained and illustrated by examples of reporting. It is noted that empirical evidence is needed to ascertain the usefulness and comprehensiveness of these extensions.

Comment: One of the frustrations for putting evidence into practice is that randomised control trials are often so tightly controlled (by definition of course) that the findings can sometimes have limited connection to the reality of clinical practice, or indeed the reality of individual patients/clients. The flip side is that poorly performed pragmatic trials (sadly not uncommon in rehabilitation) provide at best – no advance, or at worst – harm. This extension to the CONSORT statement (the gold standard of the RCT) could be useful for researchers undertaking more applied trials, but also for readers of research, ensuring they are guided to key aspects of pragmatic trial quality.

Reference: *BMJ* 2008;337:a2390

<http://tinyurl.com/5mgm64>

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.

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Listen to their answers! Response behaviour in the measurement of physical and role functioning

Authors: Westerman MJ et al

Summary: This qualitative investigation into the response behaviour over time of 23 small-cell lung cancer patients to questions on the European Organization for Research and Treatment of Cancer Core Quality of Life Questionnaire (EORTC QLQ-C30) sought to account for counterintuitive findings in QoL measurement. Patients were interviewed at the start of the chemotherapy, 4 weeks later, at the end, and 6 weeks after the end of chemotherapy. They were asked to 'think aloud' when filling in the questionnaire. By using various response strategies when answering questions about problems and limitations in functioning, patients' answers affected the accuracy of the scale. Scores indicated less patient limitations than the reality, due to patients interpreting the wording of questions literally, guessing their functioning in activities that they did not perform, and ignoring or excluding certain activities that they could not perform.

Comment: Whilst questionnaires tell us something, they don't tell us everything. I really liked the notion of asking people to think aloud whilst rating their QoL and it certainly seems a lot of things are influencing how people rate themselves. The idea that ratings change over time with adaptation to one's condition and its consequences is not new. However – what this paper suggests is that all sorts of other things come into play such as excluding or guessing levels of performance. In these days where QoL measures are becoming a gold standard for rehabilitation, these findings are pretty interesting!

Reference: *Qual Life Res.* 2008;17(4):549-58

<http://www.springerlink.com/content/q02350780580806q/>

VINTAGE PAPER

Neurological Disorders: Public Health Challenges

Authors: World Health Organisation

Summary: This World Health Organisation document, released in 2006, provides the public health perspective for neurological disorders in general and presents estimates and predictions of the global burden borne by them. Separate sections discuss some of the most important disorders in detail: dementia, epilepsy, headache disorders, multiple sclerosis, neuroinfections, neurological disorders associated with malnutrition, pain associated with neurological disorders, Parkinson's disease, stroke and traumatic brain injuries. The document provides information and advice on public health interventions that may be applied to reduce the occurrence and consequences of neurological disorders. It offers health professionals and planners the opportunity to assess the burden caused by these disorders in their country and to take appropriate action.

Comment: Did you know that 20% of the world's population has a neurological condition of some sort? And did you know that the global burden from neurological disorders (in Disability Adjusted Life Years – DALYs) is greater than for cancer, respiratory disease or ischaemic heart disease? These data warrant a coordinated response and, whilst rehabilitation services are available for some diagnostic subgroups and in some places, access for many is limited both here in NZ and elsewhere. Although this report was published in 2006, I came across it very recently. We mention it here as it provides some very persuasive arguments for enhancing disability prevention and management services in neurology. OK – perhaps it's not quite *vintage* but All 232 pages of this document can be downloaded from the website given below.

http://www.who.int/mental_health/neurology/neurodiso/en/index.html



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