

Rehabilitation Research Review

Making Education Easy

Issue 1 - 2008

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Welcome to first edition of **Rehabilitation Research Review**, a unique New Zealand publication bringing you some of the most important research from around the world every month.

Rehabilitation Research Review has been established to make life easier for you. Every month 10,000 scientific publications are printed worldwide containing a multitude of new studies, many devoted entirely to rehabilitation. In short, keeping up is hard and requires significant time to screen out what is irrelevant to your practice or country.

We aim to save you time by identifying what's important. The Review is a summary of what we think are some of the most significant new papers with commentary by myself on why they are important and how they can potentially affect practice. We also provide website links to the abstract or fully published papers so you can make your own judgements.

The creation of this publication would not be possible without support from our sponsor, ACC. We are grateful for their financial support meaning this is free to users. If you have friends or colleagues within New Zealand who would like to receive our publication, send us their contact email and we will include them for the next issue.

I hope you enjoy this first edition and welcome your comments and feedback.

Kind regards,

Kath McPherson

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Effect of spinal cord injuries on sex in women

Authors: Kreuter M et al

Summary: This study assessed the impact of spinal cord injuries on the sex lives of 545 women. 80% had engaged in sex following their injury. Physical limitations, low sexual desire, low self-esteem and a perception of being unattractive were the main reasons given for avoiding sex or intimacy. Intimacy-based factors were also greater motivators than sexual-based factors for engaging in sexual activity for both women with spinal cord injury and age-matched controls. Respondents also reported that it was important to be 'in the right mood' to become receptive to sexual stimulation both before and during sex. The authors comment that with appropriate information and counselling, it is possible for women to overcome the physical restrictions and mental obstacles associated with spinal cord injuries that can deter an active and positive sex life.

Comment: There is a plenty of research into men's sexual functioning after spinal cord injury. However, this paper is a reminder that it's also relevant for women. Sadly, as professionals we seem not very good at considering sex or talking about it, let alone providing services. It's a hard topic for people to bring up and doing so necessitates a fair degree of trust that it is safe to do so. But given that sexuality is such a key part of life, perhaps we should get better at addressing it.
<http://dx.doi.org/10.2340/16501977-0128>

Reference: *J Rehab Med* 2008; 40:61-69



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Effectiveness of intervention programmes to reduce falls

Authors: Gates S et al

Summary: This systematic review of 19 studies evaluated the effectiveness of multifactorial assessments and intervention programmes designed to minimise the risk of falls among older adults in emergency, primary care or community care settings. There was no clear overall effect of interventions on fall-related injuries (RR 0.90; 95% CI 0.68 to 1.20; 8 trials) or the number of patients who fell during follow-up (0.91; 0.82 to 1.02; 18). Hospital admissions, emergency department attendance, move to institutional care and death did not significantly differ between intervention and control groups. Subgroup analyses indicated that programmes including active treatments could be more effective than those that just provided knowledge and referral, while location, predetermined risk stratification and utilisation of multidisciplinary teams (including a doctor) did not appear to affect effectiveness. The authors conclude that there is currently limited evidence supporting the effectiveness of multifactorial fall prevention programmes.

Comment: Fiona Godlee (editor of the BMJ) wrote an editorial to accompany this where she highlighted how systematic reviews have in the past been rather 'upbeat' about the impact of screening and education for reducing falls. However, this most recent review indicates the effect is less clear cut and that education itself seems insufficient. As an aside – no New Zealand research was included in this review. One of the concerning issues (above and beyond the obvious one of 'what is worth doing') is that as research moves into practice, there is a risk that intervention intensity to be somewhat watered down. Perhaps one thing this review reminds us is that we can't expect things to work if what is being delivered moves far away from what has been shown to be effective. Until the next review, the advice probably should be to ensure the intensity of our programs is sufficient and that they go beyond screening, advice and education to include 'active' components.

<http://dx.doi.org/10.1136/bmj.39412.525243.BE>

Reference: *BMJ* 2008; 336:130-133

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Chronicity and treatment response in musculoskeletal pain with depressive symptoms

Authors: Sullivana MJL et al

Summary: The relationship between chronicity and treatment response was examined in 80 individuals with disabling work-related musculoskeletal pain and concomitant depressive symptoms enrolled in a 10-week community-based disability management intervention programme. Participants with early chronicity (absence from work for < 6 months) had greater reductions in pain and depressive symptoms compared with patients with longer chronicity (absence from work > 6 months). Reduction in pain was found to mediate the relationship between chronicity and depressive symptom improvement in regression analyses, but catastrophic thinking and fear of movement or re-injury did not. The authors highlight the importance of early detection and treatment of depressive symptoms, and suggest that reducing depressive symptoms may also be necessary for effective pain management in these patients.

Comment: It is becoming increasingly clear that mood disturbance, for example depression, is far more common than has been thought in the past for people with pain, traumatic brain injury and indeed just about any condition that has chronic consequences. Amongst the many things that this paper points to is that the combined effect of pain + depression complicates someone's recovery, participation in rehabilitation and adaptation to a new life situation. Clearly the best case scenario is to prevent depression contributing to chronicity by determining if it is a factor early on in someone's management. However, it is not easy to pick that this is an issue just by observing someone or asking them. Screening for depression has been shown to improve our ability to determine if it's a problem whether that be in the community or hospital setting and with an increasing number of easy and quick screening questionnaires for this purpose it is arguable that we should do so more often.

<http://dx.doi.org/10.1016/j.pain.2007.05.021>

Reference: *Pain* 2008; 135:151-9

Adherence to guidelines for lower back pain management

Authors: Bishop A et al

Summary: This cross-sectional UK survey of GPs and physiotherapists investigated attitudes, beliefs and clinical practices related to the management of lower back pain. Respondents included 442 GPs and 580 physiotherapists who had answered questions regarding work, activity and bed rest recommendations for a vignette patient with nonspecific lower back pain. While advice that was broadly in line with recommended guidelines was offered by the majority of the respondents, 28% reported that they would give advice to stay away from work. Furthermore, there were significant relationships between advice to remain off work and both higher and lower Pain Attitudes and Beliefs Scale (PABS.PT) scores ($p < 0.0001$ and < 0.001 , respectively).

Comment: There are of course a number of methodological concerns one can point to in just about any study (particularly those that give results we don't agree with or like.) This paper is no different and whilst caution is certainly needed due to the low response rate and potential bias, it is fascinating (if not worrying) to think about just how much our attitudes influence patients and the outcomes they get from our interventions. Can we take solace that this is UK data? Well – probably not. It is likely that a number of NZ'ers with LBP are advised by professionals to have time off work when it isn't necessary or helpful. It seems reasonable (and important) to ensure the rationale for 'time off' or 'at work' rehabilitation is clearly understood, clearly communicated and actively managed (by all involved in the patient's management) if one wishes to reduce the risk of longer term work-disability.

<http://dx.doi.org/10.1016/j.pain.2007.01.028>

Reference: *Pain* 2007; 132:91-101



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.

Research Review publications are intended for New Zealand health professionals.

The role of team training in stroke rehabilitation

Authors: Strasser DC et al

Summary: This cluster randomised trial was designed to investigate whether team training interventions could improve patient outcomes in 31 stroke rehabilitation units. A 6-month multiphase staff-training programme was conducted involving 487 patients with stroke divided into 15 intervention teams with staff participation and 16 control teams in which staff only received information. Gains in functional outcomes in stroke patients, as assessed by motor item Functional Independence Measure scores, were 13.6% ($p = 0.032$) greater in the intervention group than in the control group. A secondary analysis involving all patients also found a greater increase in the intervention group. Length of stay and community discharge rate were not significantly different between the two groups. The authors encourage team-based physicians to examine their own teams.

Comment: Whilst most of the papers detailed in Rehabilitation Research Review will focus on injury related rehabilitation, when something comes up that is relevant from outside that scope, we will also raise it here. And 'teams' are relevant across all aspects of rehabilitation and indeed most areas of healthcare where more than one discipline is involved. You are probably right to be suspicious that I am bringing this up for ulterior motives (given I am involved in teaching a rehabilitation masters qualification that addresses some of this!) but it has always struck me as relatively unlikely that our current systems of education and funding best prepare people for working well together. Well – here is some evidence that not only can teamwork be enhanced but that this improved functioning contributes to improved outcome. The corollary is that if we don't do it well, we are limiting the gains our patients /clients can make and that just doesn't make sense.

<http://dx.doi.org/10.1016/j.apmr.2007.08.127>

Reference: *Arch Phys Med Rehab* 2008; 89:10-15

Maximal aerobic capacity in burns patients following a 12-week exercise programme

Authors: de Lateur BJ et al

Summary: The potential of a 12-week, 36-session exercise programme to improve aerobic capacity was investigated in 35 adult burns victims in this randomised, controlled, double-blinded trial. Maximal aerobic capacity was measured amongst 3 groups, those who exercised according to preset quotas or to their own tolerance level and controls. Maximal aerobic capacity increased significantly from baseline following the programme in both exercise groups ($p \leq 0.01$), but not controls ($p = 0.19$). Comparative between-group analyses showed that both exercise groups experienced a significantly greater improvement in maximal aerobic capacity compared with controls ($p \leq 0.05$), but the difference between exercise groups was not significant ($p = 0.907$).

Comment: One of the features that many people find incredibly difficult to manage after experiencing injury or illness is fatigue. A group that perhaps slip under the radar when it comes to management of exercise tolerance and fatigue are those with major burns where other features such as healing, scarring, skin grafting and infection prevention are such obvious sequelae. However this paper indicates that a formal program to improve exercise tolerance is beneficial. It would have been interesting to determine whether functional outcomes were improved in addition to aerobic capacity. But - given the links between the two, and the influence of activity on wellbeing and health this finding is still of interest and relevance to those working with people with burns.

<http://dx.doi.org/10.1016/j.apmr.2007.09.003>

Reference: *Arch Phys Med Rehab* 2007; 88:S18-S23

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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.

Effectiveness of post-acute multidisciplinary rehabilitation programmes

Authors: Prvu Bettger JA

Summary: This review summarised information from 12 systematic reviews, covering 5 populations, on the efficacy of multidisciplinary, therapy-based post-acute rehabilitation. The strongest evidence for efficacy of post-acute rehabilitation services was associated with stroke. Evidence was also strong for multidisciplinary inpatient rehabilitation for rheumatoid arthritis, moderate-to-severe acquired brain injury (including trauma) and for elderly patients. The researchers were not able to establish any benefit, or lack of benefit, for rehabilitation services in other post-acute settings due to either heterogeneity or lack of data. They suggest that data from randomised controlled trials investigating the effectiveness of post-acute rehabilitation could be boosted by additional data from well designed non-randomised trials, thereby strengthening the evidence base available for policy decision making and use of services, ultimately improving patient outcomes.

Comment: It is absolutely true that the earlier rehabilitation services are provided, the more likely there is to be maximum benefit for most people. However, it is increasingly 'true' that focused rehabilitation interventions can be of benefit even after substantial periods of time. At the moment stroke is the best example of this but one suspects that not knowing about other conditions where this is true is more a case of the 'absence of evidence' than anything else. An older person, some time after their injury/illness may just surprise and achieve a better outcome than they otherwise would have. That's not socialist left wing tendencies coming out – it's what the evidence suggests. We still can't accurately predict who will benefit from rehabilitation and who won't – which probably indicates 'if in doubt, check it out'.

<http://dx.doi.org/10.1016/j.apmr.2007.06.768>

Reference: *Arch Phys Med Rehab* 2007; 88:1526-34



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Factors affecting fatigue in post-traumatic brain injury

Authors: Cantor JB et al

Summary: The relationships between post-traumatic brain injury (post-TBI) fatigue and other variables were examined in this study of 223 community-dwelling patients with mild-to-severe TBI and 85 controls without brain injuries. Results indicated that fatigue was more prevalent and severe in patients with TBI, particularly women. There was no evidence of a correlation between fatigue and any other demographic parameter or injury variable. Less variance in fatigue was accounted for by pain, depression and sleep problems among patients with TBI compared with control patients (~23% vs. 58%). Despite no correlation between post-TBI fatigue and participation in major life activities, there were correlations with overall and health-related quality of life. The authors conclude that the negative impact of post-TBI fatigue on these quality of life parameters is primarily the result of the TBI and not comorbidities.

Comment: This paper is just one in a whole issue of papers about fatigue in traumatic brain injury (TBI), all of which raise interesting issues. There is no doubt that the fatigue related to brain injury is different to that of other conditions and yet management strategies often draw upon those found effective in non-TBI conditions and are based around pacing of activities and planning. It is probably the best we can do just now but the good news is that a systematic review of interventions is planned and the protocol is on the Cochrane database. Even better, it's a New Zealand review and we will profile findings here when they are available.

<http://www.headtraumarehab.com/pt/re/jhtr/abstract.00001199-200801000-00008.htm;jsessionid=HF8hkKBmNypNvvKyvQRq4S9xLPccQLhLvk2PdIrc6TG81n4y1v4!1253064403!18119562818091!-1>

Reference: *J Head Trauma Rehab* 2008; 23:41-51

Impact of traumatic brain injury on the lives of patients' siblings

Authors: Sambuco M et al

Summary: This review critically evaluated and identified the primary findings of studies investigating the impact of traumatic brain injury (TBI) on patient's siblings. The main areas of interest were the effects on emotional and behavioural responses of siblings, changes in their relationships, subjective post-injury lived experiences and predictors of the siblings' outcomes. Despite many methodological limitations in the included studies, siblings of children who had experienced a severe TBI and had residual behavioural difficulties appeared to be more likely to experience many qualitative changes in their lives and adverse psychological outcomes. The authors conclude that more theoretically driven, prospective, longitudinal research investigating outcomes associated with siblings of children who experience TBI should be a priority.

Comment: In recent years we have learned some concerning things about the impact of injury or illness on the person's family and friends. We now know that carer's have a higher incidence of mortality than their age matched controls and are more at risk of depression, frequently finding it hard to locate the supports they need to cope. It makes intuitive sense that to be a child in a family where a brother or sister has had a major health crisis will be difficult. Whilst this paper highlights the limits to what we know, there is clearly a case to have an eye to siblings at home and at school. One suspects this happens when problems arise for that sibling but perhaps a more proactive response is required.

<http://dx.doi.org/10.1080/02699050701822022>

Reference: *Brain Injury* 2008; 22:7-17

Estimating prevalence of mild traumatic brain injury from workers compensation data

Authors: Kristman VL et al

Summary: The value of using four database code groups to improve the measurement of prevalent mild traumatic brain injury (TBI) among workers was tested in a random sample of 210 lost-time claims from an Ontario workers compensation database. Proportions of mild TBI in each code group were 19%, 29% and 32% for the cranial, head and brain regions, respectively, and 92% for the concussion code group. The prevalence of mild TBI depended on the code used and ranged from 39/10,000 (95% CI 35 to 44) concussion to 58/10,000 (50 to 65) for all included codes. The data suggest that around 6 in every 1,000 claims for lost time are associated with mild TBI. Restricting analysis to specific concussion codes may under-estimate the prevalence of mild TBI; this type of injury may be more important in the workplace than previously realised.

Comment: How common is brain injury in New Zealand? Well the answer is that we don't know and this paper gives a clue as to why not. It all comes down to classification and like Canada, our systems contribute to the uncertainty and we are likely to 'miss' quite a few people, where this paper comes from particularly those diagnosed with facial injuries, whiplash and so on. Data regarding the classification of injury reported on documentation to and from ACC is a key source and getting it right is key to ensuring the right services are considered for individual and are developed for the population.

<http://dx.doi.org/10.1080/02699050701849991>

Reference: *Brain Injury* 2008; 22:51-59

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