

# Rehabilitation Research Review™

Making Education Easy

Issue 29 – 2014

## In this issue:

- > *Peer-led fall prevention classes reduce falls*
- > *Utility of functional capacity evaluations*
- > *Predicting psychosocial outcomes after lower limb amputation*
- > *Psychological distress among family caregivers*
- > *Self-management interventions for physically disabled youth*
- > *Development of a rehabilitation treatment taxonomy*
- > *Assistive technology policy reformulation in Australia*
- > *Significant long-term morbidity post-TBI*
- > *Stressful claims and claimant recovery*
- > *CBT attenuates disability and pain after skeletal trauma*

## Welcome to the twenty-ninth issue of Rehabilitation Research Review.

One of the papers in this month's selection presents good evidence demonstrating significant morbidity and mortality at 5 years following a traumatic brain injury (TBI) among adult patients. Furthermore, there was a marked deterioration in global outcome during the study period, regardless of age. These findings have important implications for post-acute inpatient rehabilitation, as well as primary care and public health.

An Australian study that investigated the relationship between stressful claims experiences among claimants to transport accident and workers' compensation schemes shows that these experiences are positively correlated with poorer long-term recovery. The study findings point to two main strategies that may improve claimant recovery and save money: Intervene early to boost resilience among those at risk of stressful claims experiences and redesign compensation processes to reduce their stressfulness.

I hope you find these papers useful to you in your practice and I look forward to your comments and feedback.

Kind regards,

**Kath McPherson**

Professor of Rehabilitation (Laura Fergusson Chair),  
The Health and Rehabilitation Institute, AUT University  
[kathmcpherson@researchreview.co.nz](mailto:kathmcpherson@researchreview.co.nz)

## Long-term participation in peer-led fall prevention classes predicts lower fall incidence

**Authors:** Wurzer B et al.

**Summary:** This paper investigated fall incidence among 207 older adults ( $\geq 65$  years; 189 females, 18 males) actively participating in Steady As You Go (SAYGO) peer-led fall prevention exercise classes held in community settings in the Otago region, New Zealand. Mean SAYGO participation was 4.3 years. Class attendance rates were high, averaging 69%. The crude fall rate was 0.75 per person year. A strong, positive correlation was seen between fall incidence at 12 and 24 months ( $r=0.897$ ;  $p<0.001$ ). Compared with short-term SAYGO participation (1–2 years), participating in these exercise programmes for longer ( $\geq 3$  years) was associated with a significantly lower 12-month fall incidence (incidence rate ratio 0.90; 95%CI 0.82 to 0.99;  $p=0.03$ ).

**Comment:** A number of things made this paper of interest. Firstly, it's written by colleagues at the University of Otago (and I always like seeing NZ rehabilitation work out there to inspire us). Secondly, it explores the impact of peers rather than professionals in delivering effective rehabilitation (challenging some of our assumptions about who can do what). And thirdly – it offers some interesting data concerning longer duration interventions – i.e., a move away from the short sharp duration interventions. Of course, being peer-led, affordability is not the key issue that it is for professionally-led services but I think it's interesting to consider where and how to deliver ongoing support rather than short-duration interventions.

**Reference:** *Arch Phys Med Rehabil.* 2014 Feb 4. [Epub ahead of print]

[Abstract](#)



## Rehabilitation Research Review

### Independent commentary by Professor Kath McPherson.

Kath McPherson is Professor of Rehabilitation (Laura Fergusson Chair) at the Health and Rehabilitation Research Centre, AUT University in Auckland. She completed a PhD at the University of Edinburgh exploring how individuals and their families recover and adapt after moderate to severe brain injury. From 1997-2001, Kath worked at the Rehabilitation Teaching and Research Unit at University of Otago - Wellington, then taking up a post as Reader in Rehabilitation at the University of Southampton.



For full bio [CLICK HERE](#).

## Are performance-based functional assessments superior to semi-structured interviews for enhancing return-to-work outcomes?

**Authors:** Gross DP et al.

**Summary:** This study was conducted at a workers' compensation rehabilitation facility in Edmonton, Canada. It sought to determine whether functional capacity evaluations (FCE) improve outcomes for injured workers. The study authors explain that FCE are commonly used to identify work abilities and to inform return-to-work (RTW) decisions. Of 203 claimants recruited for the study, most were employed (59%) and male (73%); all were undergoing RTW assessment at the facility for chronic musculoskeletal conditions (median duration 496 days). Clinicians who were trained and experienced in performing FCE were divided into two groups: one group conducted a semi-structured functional interview (100 claimants) and the control group continued to use standard FCE procedures (103 claimants). Outcomes included RTW recommendations following assessment, functional work level at time of assessment and 1, 3, and 6 months after assessment, as well as compensation outcomes. Outcomes did not differ between groups.

**Comment:** Ok – I have a conflict of interest on this one, having been part of a team who have developed an interview-based, multi-source assessment of workability (see <http://www.ncbi.nlm.nih.gov/pubmed/24338285>) and having struggled with the predictive validity of FCE over the years. Really listening to what people say about the match between their abilities and their work (or desired work) seems to make intuitive sense and Doug Gross and team indicate it makes practical sense.

**Reference:** *Arch Phys Med Rehabil.* 2014 Feb 3. [Epub ahead of print]

[Abstract](#)

**CLICK HERE**

to read previous issues of  
Rehabilitation Research Review

## A prospective study of the importance of life goal characteristics and goal adjustment capacities in longer term psychosocial adjustment to lower limb amputation

**Authors:** Coffey L et al.

**Summary:** These researchers explored the life goal characteristics and goal adjustment capacities of 64 patients with lower limb amputation on admission to inpatient rehabilitation facilities in Ireland, and examined their efficacy as predictors of psychosocial outcomes 6 months post-discharge. Upon admission, the patients were assessed on life goal characteristics (goal importance, goal disturbance) using the Goal Facilitation Index. Goal adjustment capacities (goal disengagement, goal re-engagement) were also measured, using the Goal Adjustment Scale. The highest average importance ratings were assigned to goals associated with interpersonal relationships, independence and subjective well-being. Goals related to physical limitations and disruptions in daily activities received the highest hindrance ratings. Goal importance ( $\beta = -0.33$ ) and goal disengagement ( $\beta = -0.29$ ) on admission significantly predicted depressive symptomatology as assessed by the Beck Depression Inventory-II at 6 months post-discharge ( $p \leq 0.05$ ). Goal importance ( $\beta = 0.32$ ), goal disturbance ( $\beta = -0.26$ ), and goal re-engagement ( $\beta = -0.21$ ) on admission significantly predicted general adjustment to lower limb amputation at 6 months post-discharge ( $p \leq 0.05$ ), while goal importance ( $\beta = -0.32$ ) and goal disturbance ( $\beta = 0.30$ ) significantly predicted social adjustment measured with the Trinity Amputation and Prosthesis Experience Scales-Revised ( $p \leq 0.05$ ).

**Comment:** This is an interesting paper with regard to the purpose of goals, what sort of goals matter most, outcomes like adjustment in relation to goals, and how people manage when they do not achieve their goals in rehabilitation. I seem to move between thinking 'goals' in rehabilitation are overrated (how dare I say such a thing I hear you say – especially when I do such a lot of work in relation to goals myself!) and thinking they have huge potential, not just to be ancillary to rehabilitation interventions but as the intervention. Truth be told – just using the word 'goals' does not tell one much about what is going on. This paper helps highlight that for sure.

**Reference:** *Clin Rehabil.* 2014;28(2):196-205

[Abstract](#)

## A study of the psychological distress in family caregivers of patients with prolonged disorders of consciousness during in-hospital rehabilitation

**Authors:** Moretta P et al.

**Summary:** This study was conducted in Italy and involved 24 caregivers of 22 patients affected by prolonged disorders of consciousness admitted to a post-acute rehabilitation centre. At admission, then again after 4 and 8 months, caregivers underwent assessments of depressive symptoms, state and trait anxiety, psychophysiological disturbances, prolonged grief disorder, psychological coping strategies, quality of perceived needs, perceived social support, and caregiver burden. At admission, 20 caregivers were diagnosed with depressive symptoms, 16 had high levels of anxiety and 10 had relevant psychophysiological disturbances; 8 caregivers (32%) met criteria for prolonged grief disorder. These findings did not differ as a function of relatives' diagnosis (vegetative state vs minimally conscious state). Levels of psychological distress tended to remain constant over time, while "emotional burden" was progressively and significantly increased during the hospital stay.

**Comment:** Right enough, this is a small study and therefore incidence and prevalence for total populations of carers in this situation is not possible to determine. But – the figures are worryingly high and indicate a need to reflect on how we do actually care for carers. The uncertainty and concerns for the future that these people are having to deal with on a daily basis, for what must be unbearably long periods of time for many, must be exhausting and wearying.

**Reference:** *Clin Rehabil.* 2014 Feb 11. [Epub ahead of print]

[Abstract](#)

## Self Management Pilot: A new way of funding seriously injured clients

### A small number of ACC serious injury clients are currently taking part in a unique pilot trial.

Clients whose injury related needs haven't changed in the last two years and who are in stable living situations, are given control of the supports they need for everyday living, including managing their own funds. This approach to providing services to the long-term injured is in line with both international practice as well as initiatives such as the New Zealand Disability Strategy (NZDS) and promotes independence, flexibility and control.

This innovative staged pilot has been developed in consultation with serious injury clients and includes a comprehensive evaluation component the learnings of which inform each successive stage. So far the feedback from clients has been overwhelmingly positive.

The pilot will be completed in mid-2014.

For more information, see [www.acc.co.nz](http://www.acc.co.nz)

ACC are proud to sponsor Rehabilitation Research Review.



### A systematic review of self-management interventions for children and youth with physical disabilities

**Authors:** Lindsay S et al.

**Summary:** These researchers systematically reviewed the literature on self-management interventions (i.e. programmes that help with managing symptoms, treatment, physical and psychological consequences) for children and youth between 6 and 18 years of age with congenital or acquired physical disabilities. Six studies that were published between 1980 and January 2012 met the inclusion criteria; 2 involved youth with spina bifida and 4 with juvenile arthritis. All studies examined the effectiveness of self-management interventions. The majority of interventions consisted of several sessions conducted by a trained interventionist or clinician for  $\geq 3$  months, involved one-to-one sessions and meetings, homework activities and parental involvement. Although outcomes varied between the studies, all of the interventions reported at least 1 significant improvement in either overall self-management skills or a specific health behaviour.

**Comment:** Self-management is an essential component of rehabilitation – i.e., we are not with everybody always and much of the variance in most outcomes is down to what people do when we are not there. And yet the time we spend learning the skills we might need as clinicians, or teaching the skills patients might need as effective self-managers is negligible or non-existent. It's complicated enough in adult rehabilitation (and knowledge and action are still lacking), so perhaps these results are not too surprising. Arguably, we need to do better if health services are to be sustainable... and if rehabilitation is to make the contribution that it could.

**Reference:** *Disabil Rehabil.* 2014;36(4):276-88

[Abstract](#)

### Development of a theory-driven rehabilitation treatment taxonomy: conceptual issues

**Authors:** Whyte J et al.

**Summary:** This paper describes the development of a rehabilitation treatment taxonomy, with the aim of developing a system of classification of rehabilitation treatments and services that is based on their active ingredients. A range of published descriptions of rehabilitation treatments that were familiar to the authors from their clinical and research experience were used to develop preliminary rules for defining discrete treatments, identifying the area of function they directly treat, and identifying their active ingredients. These preliminary rules were tested against additional treatment examples, and problems in their application were used to revise the rules in an iterative fashion. A series of concepts emerged from this process and are defined and discussed in regard to the development of a rehabilitation treatment taxonomy: rehabilitation treatment taxonomy; treatment and enablement theory; recipient (of treatment); essential, active and inactive ingredients; mechanism of action; targets and aims of treatment; session; progression; dosing parameters; and social and physical environment.

**Comment:** To build a taxonomy of all possible rehabilitation interventions is no small undertaking. This issue of Archives was devoted to a series of papers and commentaries about the strengths and weaknesses of the taxonomy building process and results to date. Definitely worth a read and beyond the scope of a brief commentary other than to say that as I read the papers, I was intermittently challenged, variably irritated and occasionally stimulated to reconsider what the big questions are in rehabilitation and whether a taxonomy is going to help answer them. My hunch is that it will not, but I guess time will tell. What I absolutely agreed with in Whyte's paper is that a greater focus on treatment theory (i.e., why x might lead to y) in research and practice is overdue. I wonder how many things we would stop (or start) doing if we thought that way.

**Reference:** *Arch Phys Med Rehabil.* 2014;95(1 Suppl):S24-32.e2

[Abstract](#)

### Problems, policies and politics: making the case for better assistive technology provision in Australia

**Author:** Layton N

**Summary:** This paper urges assistive technology (AT) practitioners to make sure that they comprehend and consider political factors in working towards effective policies to support their practice. It considers theories of policy formation, as a means of clarifying the complexities of Australia's recent disability and aged care reforms. John Kingdon's (2003) theory of multiple streams, a convergence model of problem identification, policy formulation and political will, is identified as an applicable construct with which AT practitioners may evaluate contemporary policy changes, understand government actions, develop therapeutically valid solutions into public policy and have policies prioritised and funded.

**Comment:** The statement that hit me in this paper was 'AT research will not be influential in improving AT policy without consideration of political drivers'. Whilst we'd all like to think that patient need and therapeutic gain or potential drives how we work and what we do (in AT but also more generally), Layton highlights how the macro political structures dominate, direct and distinguish what is provided and what is not. We remain naïve to that at our patient/client's peril, methinks.

**Reference:** *Disabil Rehabil Assist Technol.* 2014 Feb 14. [Epub ahead of print]

[Abstract](#)

Subscribe at  
no cost to any  
Research Review

NZ Health professionals can  
subscribe to or download previous  
editions of Research Review  
publications at

[WWW.RESEARCHREVIEW.CO.NZ](http://WWW.RESEARCHREVIEW.CO.NZ)

ACC are proud to sponsor  
Rehabilitation Research Review.



## US population estimates of health and social outcomes 5 years after rehabilitation for traumatic brain injury

**Authors:** Corrigan JD et al.

**Summary:** This US-based study analysed data from adults receiving acute inpatient rehabilitation for a primary diagnosis of traumatic brain injury (TBI) between 2006 and 2012. On average, from 2001 to 2007, 13,700 patients each year aged  $\geq 16$  years with a primary diagnosis of TBI received acute inpatient rehabilitation in the US. At the 5-year post-injury assessment, approximately 1 in 5 patients had died, 12% of survivors were institutionalised and 50% had been rehospitalised at least once. Health and social outcome assessments revealed that approximately one-third of patients were not independent in everyday activities. Twenty-nine percent were dissatisfied with life; 8% reported markedly depressed mood. Fifty-seven percent were moderately or severely disabled overall and 39% had deteriorated from a global outcome attained 1 or 2 years post-injury. Of those employed pre-injury, 55% were unemployed. Poorer medical, functional, and participation outcomes were associated with, but not limited to, older age. Mental and emotional outcomes were worse in younger age groups. Deterioration in global outcomes was commonly observed regardless of age.

**Comment:** Long-term outcome in TBI for many looks pretty ghastly according to this paper. The fact that things deteriorate for so many is a real challenge for rehabilitation but also for primary care and public health. My own sense is that if deterioration is demonstrated, identifying opportunities to halt that deterioration is warranted and should be a priority. We are no doubt hopeful of a more optimistic scenario in NZ but I'm not sure that is the case, given recent data about the high incidence of TBI in our BIONIC study – time for concerted (and politically informed) action to reduce the burden of TBI.

**Reference:** *J Head Trauma Rehabil.* 2014 Feb 3. [Epub ahead of print]

[Abstract](#)

## Relationship between stressfulness of claiming for injury compensation and long-term recovery

**Authors:** Grant GM et al.

**Summary:** These researchers investigated the relationship between stressful claims experiences and long-term recovery after injury among claimants to transport accident and workers' compensation schemes. The study recruited 1010 patients hospitalised in 3 Australian states for injuries from 2004 through 2006. At 6-year follow-up, 332 participants who had claimed compensation from transport accident and workers' compensation schemes ("claimants") participated in interviews exploring which aspects of the claiming experience they found stressful. High levels of stress were reported by 33.9% of claimants in relation to understanding what they needed to do for their claim, by 30.4% in regard to claim delays, by 26.9% in regard to the number of medical assessments, and by 26.1% in regard to the amount of compensation they received. At 6 years post-injury, claimants who reported high levels of stress had significantly higher levels of disability (+6.94 points, World Health Organization Disability Assessment Schedule sum score), anxiety and depression (+1.89 points and +2.61 points, respectively, on the Hospital Anxiety and Depression Scale), and lower quality of life (-0.73 points, World Health Organization Quality of Life instrument, overall item), compared with other claimants. Multivariable regression analysis that adjusted for baseline determinants of long-term health status and predisposition to stressful experiences (via propensity scores) attenuated the strength of these associations, although most remained strong and statistically significant.

**Comment:** I feel very fortunate that we have a no-fault compensation system here in NZ, having worked in the UK where insurance settlements for injured people took years (trying to live a life whilst waiting is surely not a good place to be). That said – there is no doubt that NZ'ers find our system variably frustrating and/or difficult. Realistic expectations of the system and how one fits with it when things are complex seem key to helping people build resilience to recover.

**Reference:** *JAMA Psychiatry.* 2014 Feb 12. [Epub ahead of print]

[Abstract](#)

## Psychological factors predict disability and pain intensity after skeletal trauma

**Authors:** Vranceanu AM et al.

**Summary:** This US-based study estimated the prevalence of clinical depression and posttraumatic stress disorder (PTSD) at 1 to 2 months (Time 1) and 5 to 8 months (Time 2) after musculoskeletal trauma among patients with  $\geq 1$  fractures that had been treated operatively. It also sought to determine the relationship between psychological variables (depression, PTSD, catastrophic thinking, and pain anxiety) at Time 1 with musculoskeletal disability and pain intensity at Time 1 and Time 2. Patients completed measures of depression, PTSD, pain anxiety, catastrophic thinking, musculoskeletal disability (the Short Musculoskeletal Function Assessment [SMFA]), and pain (the Numerical Rating Scale) at rest and during activity at Time 1 (152 patients) and at Time 2 (136 patients). Screening criteria for an estimated diagnosis of clinical depression were met by 35 patients at Time 1, and by 29 patients at Time 2; corresponding numbers of patients meeting screening criteria for an estimated diagnosis of PTSD were 43 and 25, respectively. In cross-sectional hierarchical linear regression models that included multiple injuries, scores of the Abbreviated Injury Scale and self-reported opioid pain medication explained between 24% and 29% of the variance in pain and disability, respectively, at Time 1. After including psychological variables, the model explained between 49% and 55% of the variance. Catastrophic thinking (as measured with use of the Pain Catastrophizing Scale) at Time 1 was the sole significant predictor of pain at rest, pain during activity, and disability (as measured with use of the SMFA) at Time 2.

**Comment:** Three lessons for me in here: yet again, psychological factors are clearly related to outcome in pain-related conditions (no new news but important to be reminded of); people with multiple injuries are at higher risk of pain and disability, and; the psychological issues that predispose people to risk are amenable to CBT. It's a good news story, if we can respond appropriately.

**Reference:** *J Bone Joint Surg Am.* 2014;96(3):e20

[Abstract](#)

**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.

**Privacy Policy:** Research Review will record your email details on a secure database and will not release them to anyone without your prior approval. Research Review and you have the right to inspect, update or delete your details at any time.

**Research Review publications are intended for New Zealand health professionals.**

RESEARCH REVIEW is proud to be a new Accor Hotels affiliate partner

If you are attending the NZ Pain Society Conference 2014 in Dunedin soon and still need somewhere to stay we recommend staying at:

> [Mercure Dunedin Leisure Lodge](#)

CLICK ON HOTEL TO BOOK

 ACCORHOTELS.COM