

# Rehabilitation Research Review

Making Education Easy

Issue 10 - 2009

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## Welcome to the tenth issue of Rehabilitation Research Review.

This issue begins with a review of the many available acute stroke process indicators. It concludes that few of these are in alignment with current clinical guidelines and recommends the development of process indicators that reflect the evidence base, including rehabilitation interventions.

Other papers included in this issue concern a range of topics such as the prevalence, characteristics, and associations with functioning of chronic pain associated with upper limb loss; the validity of monitoring long-term functional recovery throughout rehabilitation using FIM data collected by a single interviewer; a study demonstrating that virtual reality augments the effects of conventional therapy on balance and associated locomotor recovery in patients with hemiparetic stroke; and the psychosocial needs of patients in chronic pain.

I hope the issue is of interest and I welcome your comments and feedback.

Kind regards,

### Kath McPherson

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## Systematic review of process indicators: including early rehabilitation interventions used to measure quality of acute stroke care

**Authors:** Purvis T et al

**Summary:** These researchers systematically reviewed publications from between 1985 to 2006 describing acute stroke process indicators used to evaluate acute stroke services, including early rehabilitation interventions, and assessed whether those published indicators conform to clinical guidelines. Publications describing process indicators relating to the first 2 weeks of in-patient stroke care were included. Among the 32 publications included in the review, 161 process indicators were identified and categorised according to six clinical process domains covering the acute stroke admission. Forty-three of the process indicators were commonly cited ( $\geq 6$  publications) and 79% of these were mapped to the 2003 Australian clinical guidelines. The level of evidence underpinning each indicator ranged from low 'expert opinion' (59%), to high, 'level 1' (12%) evidence. There was scant evidence of indicators related to rehabilitation.

**Comment:** The authors of this paper note that despite the breadth and variability of 'quality' indicators in stroke, what is advocated, and what is used has not been comprehensively synthesised until now. The first thing that hit me was that many of the indicators used remain based on limited evidence with 'expert' opinion still featuring. The second thing was that early rehabilitation indicators were rarely addressed, early mobilisation being the only specific intervention noted and this found on only two of the 32 publications included in the review. Time for co-ordination and consistency?

**Reference:** *Int J Stroke*. 2009;4(2):72-80.

<http://www.ingentaconnect.com/content/bsc/ijst/2009/00000004/00000002/art00006>

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## Chronic pain associated with upper-limb loss

**Authors:** Hanley MA et al

**Summary:** Data are reported from a sample of 104 persons with upper limb loss, who were surveyed at least 6 months postamputation about the prevalence, intensity, and functional impact of the following types of pain associated with upper limb loss: phantom limb, residual limb, back, neck, and nonamputated-limb pain. Only 10% of respondents reported that they had not experienced any of the five types of pain assessed. Fifty-three percent reported  $\geq 3$  types of pain. Phantom-limb pain and residual-limb pain were most commonly reported (79% and 71%, respectively), followed by back (52%), neck (43%), and nonamputated-limb pain (33%). Although nonamputated-limb pain was the least prevalent type of pain, it was associated with the highest levels of interference and pain-related disability days. Self-reported quality-of-life was significantly lower for individuals with each type of pain compared with those without any pain. Pain was not related to age, time since amputation, or cause of amputation.

**Comment:** Anatomical change in one body area (in this case upper limb amputation), and indeed our rehabilitative strategies in response to that change, may well impinge on other body structures and function. Given the range of pain sites and activity limitations described here, we have further impetus to ensure rehabilitation assessments go beyond 'anticipated' pathology and impairment. Focusing on the whole person is not 'soft' – it's essential.

**Reference:** *Am J Phys Med Rehabil.* 2009;88(9):742-51.

<http://tinyurl.com/lx2wog>

*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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## Concurrent validity of administering the functional independence measure (FIM) instrument by interview

**Authors:** Young Y et al

**Summary:** This study on rehabilitation and functional recovery among 28 community-dwelling, cognitively intact, elderly patients with hip fracture evaluated the validity of administering the Functional Independence Measure (FIM) instrument by interview. FIM ratings assigned by multidisciplinary teams within 72 hours of admission to (and at discharge from) rehabilitation facilities were compared with FIM ratings assigned concurrently by an FIM-certified interviewer. At admission, the mean FIM ratings assigned by the team and interviewer were 80.5 and 84.5, respectively; at discharge, the corresponding ratings were 103.4 and 104.4, respectively. The intraclass correlation between team and interviewer admission FIM ratings for individuals was 0.74 at admission and 0.76 at discharge. The study authors suggest that their data confirm the feasibility of using the interview technique for administering the FIM instrument to monitor long-term functional recovery.

**Comment:** This is one of a number of papers providing data that the FIM(TM) can be administered by interview or telephone, which is a bonus if you are wanting to follow up patients. The problem is that the FIM(TM) is not sensitive to 'the more subtle changes expected after acute inpatient rehabilitation discharge' (from Wright, J. (2000). *The FIM(TM). The Center for Outcome Measurement in Brain Injury.* <http://www.tbims.org/combi/FIM> (accessed September 21, 2009). This is not to say the FIM(TM) has no place but it only gives a partial picture. However – the same is true of any outcome measure.

**Reference:** *Am J Phys Med Rehabil.* 2009;88(9):766-70.

<http://tinyurl.com/l8nfry>

## Use of virtual reality to enhance balance and ambulation in chronic stroke: A double-blind, randomized controlled study

**Authors:** Kim JH et al

**Summary:** These researchers assessed whether an intensive, repetitive virtual reality (VR) programme augments the therapeutic effect of conventional physical therapy (CPT) on balance and gait function in 24 patients with chronic hemiparetic stroke, all of whom underwent CPT for 40 minutes a day, 4 days a week for 4 weeks; 12 patients were assigned to the experimental group and received an additional 30 minutes of VR therapy each session. Overall static and dynamic balance and gait performances were significantly improved in the VR group compared with the controls. The enhancements in static and dynamic balance were associated with increased ambulation function, except for the static balance score in Balance Performance Monitor measures. Berg Balance Scale scores were also significantly improved in the VR group compared with controls.

**Comment:** In addition to those Virtual Reality environments requiring complex head gear that is the popular image of VR, there are a number of smaller and less confining devices emerging such as that described here. Others include *Wii for Physical Rehabilitation* and 'smart' Assistive Devices that are therapeutic and not just supportive. They are likely to impact on what patients expect rehabilitation could deliver, particularly as TV and newspaper reports tend to paint a very optimistic picture. The reality (forgive the pun) is that there is a way to go before we can say which are most likely to succeed and for which clients.

**Reference:** *Am J Phys Med Rehabil.* 2009;88(9):693-701.

<http://tinyurl.com/mmkokj>

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# Rehabilitation focused on returning to productive life

## Vibration therapy in multiple sclerosis: a pilot study exploring its effects on tone, muscle force, sensation and functional performance

**Authors:** Schyns F

**Summary:** This pilot study aimed to determine whether whole body vibration training combined with exercises was more beneficial to patients with multiple sclerosis (MS) than exercise alone. A total of 16 patients with MS received exercise alone and with whole body vibration three times a week for 4 weeks each, in a crossover fashion. The exercise programme had positive effects on muscle force and wellbeing, but evidence was scant in support of whole body vibration providing any further benefit. While the Modified Ashworth Scale was generally unaffected by either intervention, Multiple Sclerosis Spasticity Scale measures showed that whole body vibration and exercise decreased muscle spasms as well as the pain associated with those spasms to a greater extent than exercise alone. Results for the 10-metre walk and Timed Up and Go Test were improved by the addition of whole body vibration, but failed to reach statistical significance. Neither intervention appeared to affect sensation or muscle tone.

**Comment:** A small study not showing much might be your first take on this paper, but there are some important observations in here. People with MS and other neurological conditions benefit from activity and exercise but find routine approaches difficult to engage in and maintain. The authors of this study rightly state that vibration therapy was not proven to be effective in these populations either before or after their study. However – they remind us that people are looking for solutions and that may involve purchasing equipment (both cheap and expensive) that claims to be the newest, brightest and best thing. Good information and good evidence is required if disabled people are to have the best chance at health and fitness.

**Reference:** *Clin Rehabil.* 2009;23(9):771-81.

<http://cre.sagepub.com/cgi/content/abstract/23/9/771>

## What type of service provision do patients with chronic pain want from primary care providers?

**Authors:** Kirby K et al

**Summary:** These researchers explored the types of service patients with and without chronic pain want when attending general practitioner (GP) appointments, in a sample of 155 patients recruited from three general practice surgeries. Patients self-completed a questionnaire measuring anxiety and depression and quantifying the extent to which patients wanted four different types of help from their GP (explanation and understanding, medical treatment, psychological support and information). Ninety-one participants self-reported chronic pain and there were 64 in the no pain group. After statistically controlling for the group differences in anxiety and depression, the data indicated that participants in the chronic pain group wanted more psychological support, explanation and understanding from their GPs compared to those in the no pain group.

**Comment:** Is it a surprise that patients want more psychological support, explanation and understanding from their GPs? Probably not. Is it likely that the same is true in NZ as it was here in Northern Ireland? Probably. Every patient I have talked to with chronic pain (here and in the UK) has found it really difficult to understand why he or she has it. Explanations are inevitably complex and often counter intuitive to their experience and expectation of healthcare. But if someone doesn't understand, it's going to be difficult to adapt. So listening, acknowledging and ensuring the timing and level of information fits with where the patient is seems key.

**Reference:** *Disabil Rehabil.* 2009;31(18):1514-9.

<http://www.informaworld.com/smpp/content~db=all?content=10.1080/09638280802639137>

Research Review publications are intended for New Zealand health professionals.

## Validation study of a distress screener

**Authors:** Braam C et al

**Summary:** This study sought to validate a 3-item screening instrument termed the Distress Screener, developed for early identification of distress among 171 employees on sick leave. The items were obtained from the distress subscale of the four-dimensional symptom questionnaire (4DSQ). An optimal cutoff point was assessed by computing sensitivity and specificity values and validity was assessed by relating the Distress Screener to the 4DSQ and to medical diagnoses from occupational physicians. Using the 4DSQ distress score >10 as reference standard, the optimal cutoff point of the Distress Screener was  $\geq 4$ . A high correlation (0.82) existed between the Distress Screener and the 4DSQ distress subscale and it was significantly different from the correlations with the other 4DSQ subscales. The test-retest reliability was also highly correlated (0.83). Furthermore, a high score on the Distress Screener seemed to be related to the medical diagnosis 'Stress-related complaints'. All low scores seemed to be related to the medical diagnosis 'Other complaints'. Sensitivity (0.85) and specificity (0.78) values, and positive and negative predictive values of the screener were comparable to those of the 4DSQ distress subscale.

**Comment:** Taking a 50-item questionnaire and reducing it to 3 items might seem a rather ambitious task. The three questions are from only one of the domains of the original questionnaire (distress) and are "During the past week, did you suffer from worry?", "During the past week, did you suffer from listlessness?" and "During the past week, did you feel tense?". My first thought was how many people would understand the word 'listlessness'. However – that said, given that psychosocial factors are a big factor influencing how long people remain off work when injured or sick, this quick measure seems worth further consideration.

**Reference:** *J Occup Rehabil.* 2009;19:231-7.

<http://tinyurl.com/lr4lrr>



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## A comparison of functional assessment instruments and work status in chronic back pain

**Authors:** Sivan M et al

**Summary:** This study sought to determine the extent of agreement between current work status measures and three standard functional outcome instruments (the Oswestry Disability Index [ODI], the Roland Morris Disability Questionnaire [RMQ] and the Orebro Musculoskeletal Pain Questionnaire [OMPQ]) used in chronic low back pain. The study enrolled 375 patients with chronic low back pain attending back pain outpatient clinics over a 1-year period. Although there was good agreement among the three functional outcome measures (correlation  $r=0.76$  for ODI/ RMQ,  $r=0.70$  for ODI/OMPQ and  $r=0.66$  for RMQ/ OMPQ), individual outcome scores were only modestly correlated with work status; Spearman rank correlations were 0.47 for the OMPQ, 0.43 for the ODI and 0.39 for the RMQ.

**Comment:** We've just finished a series of reviews and projects about return to work, workability and work disability in a number of populations (more about them another time). But – one message reiterated here is if you want to know someone's work outcome you have to measure it specifically. The flip side is that work status or workability are not the only outcomes that matter to people and may not tell you other key things of interest for predicting health and participation gains over time. As per usual – a simplistic approach to measuring outcome is likely to be the wrong one.

**Reference:** *Eur J Phys Rehabil Med.* 2009;45(1):31-6.  
<http://tinyurl.com/m9rzvk>

## Communication about work between general practitioners and patients consulting for musculoskeletal disorders

**Authors:** Weevers HJ

**Summary:** These researchers used descriptive analysis to study 680 systematic observations of communication about work-related matters between general practitioners (GPs) and patients with paid work consulting for musculoskeletal disorders (MSDs). Work was discussed in 227 consultations. In 69% of these consultations the patient started communication concerning work-related matters, with an average number of 38.5 verbal utterances, equalling, on average, 15% of the total consultation time. In 36% of consultations the patient's working conditions were discussed and in 12% the GP advised on whether to stay at home or return to work. A statistically significant positive correlation was observed between the extent to which GPs rated the patient's MSDs to be work-related and the number of utterances the GP and patient made about work-related matters during the consultation.

**Comment:** Given that all the consultations reviewed here were for people in paid work with musculoskeletal conditions it does seem odd that 'work' was discussed in less than a third of those sessions. Perhaps it is different here than in the Netherlands – maybe more of our general practitioners (and other primary care practitioners) are talking about work with their patients given our insurance climate. Then again – maybe not.

**Reference:** *Qual Prim Care.* 2009;17(3):197-203.  
<http://tinyurl.com/kppbth>

## VINTAGE PAPER

### Audit: the third clinical science?

**Authors:** Russell IT and Wilson BJ

**Summary:** These researchers describe clinical audit as being directed at quality of care (purpose of audit), and as a cycle comprising three essential steps – set the standard; observe practice and compare with (this) standard; and implement change. Russell and Wilson contend that clinical audit ought to be seen as “the third clinical science” with theories, techniques, and literature distinct from both biomedical science and health care science. They propose and discuss how to implement a cycle of nine distinct steps for conducting scientific audit, which they argue is simple, cheap, and potentially very effective, capable of delivering substantial benefits to patients and health professionals alike.

**Comment:** Mention the word 'audit' and you tend to get a strong reaction. Clinicians seem to go pale and academics glaze over or roll their eyes. Just like there is plenty of bad research, there has been bad audit but it doesn't have to be. This paper was in the very first issue of Quality in Health Care (now Quality and Safety in Health Care) and describes the characteristics of good quality audit. The journal has gone on to describe a format for Quality Improvement Reports (2008;17 Suppl 1) that you might also find useful. And – as an Associate Editor of the journal, it would be great to see more 'good quality' rehabilitation Quality Improvement Reports submitted so – if you are doing some improving – think about telling folk via QSHC.

**Reference:** *Qual Health Care.* 1992;1(1):51-5.  
<http://qshc.bmj.com/cgi/content/abstract/1/1/51>



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**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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