Self Management of Pain After Spinal Cord Injury: A Review of the Evidence Base

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Background

- A significant proportion of people with SCI experience chronic pain (44% ; Walter et al. 2002)
- Client and Staff Attitudes (McDonald & Fish, 2002)
- Chronic pain is recognized as a biopsychophysiological phenomenon (Wegener & Haythornthwaite, 2001)
- Pain self management interventions have been successfully applied to other chronic pain conditions (Wegener & Shertzer, 2004)
- Successful pain self management may reduce medication dependency, enhance personal control and independence
- Individuals with SCI prefer psychological approaches to chronic pain regulation to pharmacological approaches (Wegener & Haythornthwaite, 2001)
Rationale: Enhancing Self Care to Manage Long-Term Conditions

- Worldwide trend of increased longevity and mounting health care costs (Clark, 2003)
- Patients increasing expectation of direct involvement in health care planning and delivery (Baker, 2000), reflected in service re-design (UK Department of Health, 2004)
- Success to promote self care as part of chronic disease management programs (Dongbo et al., 2003)
Objective:

- To review the evidence base for self management in the modulation of pain after spinal cord injury
- Review question: *What type of interventions are suggested or described that focus on self management with regard to modulating pain after SCI?*

Secondary question

- *Are self management interventions for adults with spinal cord injury effective in modulating the experience of pain?*
Defining ‘Self Management’

- Self management is a multidimensional construct without a ‘gold standard’ definition. It may vary according to who is involved, what is entailed and what the (intended) outcomes are.

- “Self management refers to the individual’s ability to manage the symptoms, treatment, physical and psychosocial consequences and lifestyle changes inherent in living with a chronic condition. Efficacious self management encompasses ability to monitor one’s condition and to effect the cognitive, behavioural and emotional responses necessary to maintain a satisfactory quality of life. Thus, a dynamic and continuous process of self regulation is established” (Barlow, Wright, Sheasby, Turner & Hainsworth, 2002, p.178).
Method

- **Databases searched:** MEDLINE, EMBASE, CINAHL, PsycInfo
- **Used previously established expert search strings and modified them for our purposes to identify relevant information.**
- **Search limited to indexed and peer-reviewed literature published between January 1996 – October 2007.**
Process of selection and appraisal

**Search**
- Medline: 39
- Cinahl: 26
- Embase: 44
- PsycInfo: 2
- **Total:** 111

**Title/Abstracts**
- 54 papers identified after duplicate removal and filter

**Potentially eligible**
- 26 papers retrieved in full; supplemented by hand search

**Included studies**
- 9 papers

**Screening:**
- 9 papers
Evidence based for Pain Self Management
Studies in SCI: MRC Framework for complex interventions

Figure 1: Summary of the MRC model framework for complex evaluations. (Source: MRC (2000). A Framework for development and evaluation of RCTs for complex interventions to improve health. page 3)
<table>
<thead>
<tr>
<th>Publication</th>
<th>Population/Sample</th>
<th>Design</th>
<th>MRC stage</th>
<th>Intervention</th>
<th>Outcomes and effectiveness</th>
<th>Quality</th>
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<td>Norrbrink Budh et al 2006 (SWE)</td>
<td>27 Patients with SCI and neuropathic pain (6 mos ≤ 1, 11 controls)</td>
<td>Non randomised controlled study</td>
<td>Phase I/Phase II</td>
<td>Educational sessions (pain) CBT Relaxation, exercise Body awareness 20 sessions/10 wks</td>
<td>Anxiety and depression decreased Sleep quality improved Pain intensity and unpleasantness; HRQoL; life satisfaction n.s. Analgesics use decreased in TG TG and CG had fewer healthcare visits pre-post</td>
<td>Small study; Non randomisation limits effectiveness evaluation</td>
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<td>Hughes et al 2006 (USA)</td>
<td>78 (53 intervention) community-living women with disabilities (6% spinal impairments; 27% MS)</td>
<td>Random, waiting control; within- and between groups pretest/posttest design with a 3 months follow-up</td>
<td>Phase II</td>
<td>Stress-Self-Management for Women with Disabilities Program; Stress education; time management; cognitive stress management; social support; assertiveness; relaxation; self care; peer led; 6 2.5 hours</td>
<td>Highly educated sample; 53 assigned to intervention, only 28 attended, 25 completed; perceived stress changed in intervention group; no clear picture regarding pain (pain SF-36); less pain at follow-up (unclear of spinal or MS patients remained)</td>
<td>Complex intervention; pain not primary focus; small sample (attrition); effectiveness for pain unclear</td>
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<td>Ehde &amp; Jensen 2004 (USA)</td>
<td>18 (13 intervention) Various disabilities; 10 with SCI</td>
<td>Quasi-experimental</td>
<td>Phase I</td>
<td>Cognitive Restructuring 8 90 minute sessions vs. 8 90 minute session or Group education</td>
<td>Decrease in average pain intensity in CR, not education (pre-post)</td>
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<td>Hough &amp; Kleinginna 2000 (USA)</td>
<td>6 (5 male) SCI patients receiving inpatient psychological services</td>
<td>Case studies</td>
<td>Phase I</td>
<td>Individualised relaxation treatment</td>
<td>Patient self reports and staff observations: reduced pain, anxiety</td>
<td>Pre-experimental; specifics of intervention unclear</td>
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<td>Craig et al. (1997) (AUS)</td>
<td>28 SCI patients (intervention); 41 controls with SCI</td>
<td>Non randomised control trial</td>
<td>Phase II/III</td>
<td>Group cognitive behavioral therapy (relaxation; cognitive restructuring; distraction; pain-reinterpretation; social skills training; discussions) 10 wks 1.5-2 hr sessions</td>
<td>No significant changes in anxiety and depression between intervention and controls Subgroup analysis showed greater benefits for highly depressed individuals in intervention</td>
<td>Although pain addressed in intervention; it did not feature as outcome measure; uneven group sizes; no substantial levels of depression pretreatment; no follow-up</td>
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<td>Ginis et al. (2003) (CAN)</td>
<td>34 individuals with SCI (11 female)– 21 intervention; 13 controls</td>
<td>Randomised control trial</td>
<td>Phase III</td>
<td>Supervised exercise at Health Centre (stretching; resistance exercise)</td>
<td>Adjusted for baseline differences exercisers had less stress and pain than controls; satisfaction with physical function, appearance and depression improved in intervention</td>
<td>Unclear whether formally supervised exercise can count as self management</td>
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Study characteristics and quality

- Heterogenous samples
- Small sample sizes
- Diversity of study designs; no RCTs
- Mostly preliminary findings reported
- Substantial study limitations reported by study authors
Effectiveness of pain self management interventions in SCI

- Cognitive-behavioral therapy (CBT) – may hold promise; no controlled effectiveness studies in SCI
- Hypnosis – no controlled effectiveness studies in SCI
- Exercise-based interventions – controlled studies; self management element limited
- Comprehensive pain and stress self management programs – almost non existent; substandard evaluation; outcomes unclear
Barriers in the development, implementation, evaluation

- Focus on physical functioning and other self care areas bowel, bladder management, skin care)
- Chronic pain not understood as a biopsychophysiologial phenomenon
- Professional beliefs about SCI pain
- Cognitive impairments, co-morbidity
- Lack of family, social and carer support
- Need for adaptation and tailoring of self management interventions requires expertise and resources
Rehabilitation focus on self management in other areas (bowel, bladder management, skin care) may facilitate active patient orientation.

Evidence-base for some self management elements (relaxation, exercise, CBT) “established” for other chronic pain conditions.

Positive impact on affective correlates of chronic pain (eg anxiety, depression) may produce better functional outcomes and enhance independent living.
Conclusions
Thank you!

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