Background:
- A significant proportion of people with SCI experience chronic pain (44% ; Walter et al. 2002)
- Chronic pain is recognized as a biopsychosocial phenomenon (Wegener & Haythornthwaite, 2001)
- Pain self-management interventions have been successfully applied to other chronic pain conditions (Wegener & Shertzer, 2004)
- Prescription medication appears to be unsatisfactory in controlling pain (Widerstroem-Noga & Turk, 2003)
- Individuals with SCI prefer psychological approaches to chronic pain regulation rather than pharmacological approaches (Wegener & Haythornthwaite, 2001)
- Successful pain self-management may reduce medication dependency, enhance personal control and independence

Objective:
To determine, using a systematic literature review, the evidence base for pain self-management after spinal cord injury

What is “Self-Management”?
“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. Effective self-management encompasses ability to monitor one’s condition and to effect the cognitive, behavioral, 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)

Methods:
- Databases searched: MEDLINE, EMBASE, CINAHL, PsycInfo
- Search limited to indexed and peer-reviewed literature published between January 1996 - October 2007.
- Inclusion Criteria: (1) pain, (2) spinal cord injury, (3) self-care/management and (4) intervention

Results:

<table>
<thead>
<tr>
<th>Publication</th>
<th>Population/Sample</th>
<th>Design &amp; Intervention</th>
<th>Outcomes &amp; Effectiveness</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nebelhau et al. 2008 (SWE)</td>
<td>27 SC &amp; neuropathic pain, 11 controls</td>
<td>Non-RCT Phase I/II</td>
<td>- Educational sessions (pain - CBG - Relaxation, exercise - Body awareness - 20 sessions / 10 wks</td>
<td>Small study - Non-RCT limits effectiveness evaluation</td>
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<tr>
<td>Hughes et al. 2007 (USA)</td>
<td>78 (53 T3) community-living women w/ disabilities (6% spinal impairments, 27% MS)</td>
<td>Random, waiting control, protocol design w/ 3 month follow up Phase II</td>
<td>- Stress self-management program - Stress education - Time management - Cognitive stress management - Social support - Peer led - 4 x 37 hrs</td>
<td>Highly educated sample - 28 of 63 assigned to intervention attended - Complex intervention - Pain not primary focus - Small sample (attrition) effectiveness for pain unclear</td>
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<tr>
<td>Ehde &amp; Jensen 2004 (USA)</td>
<td>18 (13 T3), various disabilities, 10 w/ SCI</td>
<td>Quasi-experimental Phase I</td>
<td>- Cognitive restructuring - R x 90 min. sessions: 8 x 90 min. group education</td>
<td>Small sample - Substantial attrition - Not SCI-specific - Lack of power - Intervention modified</td>
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<tr>
<td>Hough &amp; Kleinman 2003 (USA)</td>
<td>6 (5 main SCI patients receiving inpatient psychological services</td>
<td>Case studies Phase I</td>
<td>- Individualized relaxation treatment</td>
<td>Reduce pain - Reduced anxiety</td>
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<tr>
<td>Craig et al. 1997 (AUS)</td>
<td>28 SCI (patients)</td>
<td>RCT, Phase I/II</td>
<td>- Group cognitive behavioral therapy - 10 wks, 1.5-2 hr sessions</td>
<td>No significant changes in anxiety and depression between TS &amp; BG</td>
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<tr>
<td>Ginn et al. 2003 (CAN)</td>
<td>34 w/ SCI (11 female/ 27 T5, 13 CG)</td>
<td>RCT, Phase III</td>
<td>- Supervised exercise at Health Centre (stretching, resistances)</td>
<td>- Exercisers had less stress and pain than controls - Satisfaction w/ physical function, appearance and depression improved in intervention</td>
</tr>
</tbody>
</table>

Types of self-management interventions
- Complex, multi-component programs
  - Education
  - Cognitive reappraisal
  - Exercise
  - Social support
  - Cognitive-Behavioral Therapy (CBT)
- Hypnosis
- Exercise-focused interventions using goal setting

Effectiveness of pain self-management interventions in SCI
- Cognitive-behavioural 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
- Some indication that affective correlates of pain such as anxiety and depression can be reduced through CBT and Exercise programs
- Direct effect of pain intensity mostly unclear due to lack of quality evaluations

Potential
- 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 (e.g. anxiety, depression) may produce better functional outcomes and enhance independent living

Conclusion:
- Evidence base for complex or uni-modal self-management for chronic pain in SCI is limited due to a) few formalized/published programs; (b) lack of standard quality evaluations
- Potential to develop and adapt interventions that have been developed for other chronic pain populations
- Patient direction still limited in formalized self-management approaches (eg. Exercise)

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