

Pain Management through Physical Activity: Experiences of People with Spinal Cord Injury (SCI)

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Background

Chronic pain is a frequently described consequence of spinal cord injury¹⁻⁵. It can occur above, at, or below the level of injury and in both complete and incomplete injuries. Neuropathic pain occurring below the level of the injury is the most common type of chronic pain in SCI, but also shoulder and musculoskeletal pain have been described. Most people with SCI describe more than one source of pain⁵.

Little is known about the perceived benefits of physical activity on pain post-SCI and the ways people with SCI manage their pain post-injury.

Aim

To examine the role of physical activity in modulating chronic pain after spinal cord injury.

Method

Procedure

20 working-age adults (18 years and over) – 13 Exercisers; 7 Non-Exercisers – were randomly selected from a pool of US survey respondents (n=592); semi-structured interviews were conducted over the telephone.

The survey was based on a snowball sample recruited with support of the National Spinal Cord Injury Association (NSCIA), the Midwest Center for Health Services & Policy Research/Veteran's Administration, Illinois and the Independent Living Research Utilization, Houston, TX.

Data Analysis

Descriptive data analysis, included thematic coding of telephone interview data using a framework analysis (Ritchie & Spencer, 1994) approach

References

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3. Ravenscroft A, Ahmed YS, Burnside IG. Chronic pain after SCI: a patient survey. *Spinal Cord* 2000; 38:611-4.
4. Rintala DH, Loubser PG, Castro J, et al. Chronic pain in a community-based sample of men with spinal cord injury: prevalence, severity, and relationship with impairment, disability, handicap, and subjective well-being. *Arch Phys Med Rehabil* 1998; 79:604-14.
5. Turner JA, Cardenas DD, Warms CA, et al. Chronic pain associated with spinal cord injuries: a community survey. *Arch Phys Med Rehabil* 2001; 82:501-9. & Spencer, 1994) approach

Results

Participant Characteristics

	Exercisersn (%) Mdn (min, max); n=13	Non-Exercisersn (%) Mdn (min, max); n=7
Female gender	4 (30.8%)	4 (57.1%)
Age	51 (23-74)	46 (34-51)
Ethnicity		
White/Caucasian	10 (76.9%)	7 (100%)
Black/African American	2 (15.4%)	0
Hispanic	1 (7.7%)	0
Education		
9-12 years	3 (23.1%)	1 (14.3%)
13-16 years	6 (46.2%)	4 (57.1%)
17 or more years	4 (30.8%)	2 (28.6%)
Age at Injury		
30 ≥	7 (53.8%)	5 (71.4%)
31 ≤	6 (46.2%)	2 (28.6%)
SCI Level		
C	7 (53.8%)	3 (42.9%)
T	5 (35.5%)	4 (57.1%)
L	1 (7.7%)	0
Complete Injuries	5 (38.5%)	5 (83.3%)

Pain reported among Exercisers and Non-Exercisers

11 (85%) of the Exercisers reported pain since their injury; four (57%) of the Non-Exercisers reported pain

Data from wave I of the national sample supports this difference

Differences between individuals with complete and incomplete injury

Five respondents (38.5%) had complete injuries in the exercise group; eight had incomplete injuries (62.5%). Four respondents with complete injuries and eight with incomplete injuries experienced pain on a regular basis. Two respondents with complete injuries indicated that exercise helped them to manage their pain better, which seven respondents with incomplete injuries indicated a beneficial effect of exercise on pain.

Perceived positive impact of exercise on pain (perspectives of Exercisers only)

Eight (62%) felt that exercise had a positive impact on the pain they experienced; one (7.5%) said it had no beneficial effect, three (23%) said they did not know whether it had a beneficial impact, and one respondent (7.5%) indicated that it made the pain actually worse.

Positive impact in terms of:

- Reduction of pain intensity
- Reduction of pain-related spasms
- Balanced muscle development
- Enhanced mobility through pain reduction
- Improved sleep
- Greater upper body flexibility
- Enhanced sense of well-being

"The exercising definitely helps control the pain. It doesn't cause anymore pain. Your body was made to be movable and workable. Wasn't made for me to sit in this wheelchair. I lost most of my left arm in a surgery one time and now my left arm is back to the way it used to be. I built it back up."

"...So stretching really helps with upper body flexibility. I find anytime when I move more, whether it be walking or the few times I've done upper body exercises it definitely makes my spasms go down and the pain go away."

"It [Exercising] has yeah because I had a lot of shoulder pain because pushing the wheelchair is not a normal thing for the body and I was developing muscles...making them over strong and so exercising brings balance."

Cognitive and behavioral strategies of exercise-related pain management

Cognitive

- Distraction
- Fighting

Behavioral

- Medication prior to exercise (ibuprofen)
- Moving more
- Wearing bicycle gloves

Motivation

Conclusions

Regular physical activity and exercise yield perceived benefits in terms of reducing the negative impact of chronic pain post-SCI, especially for individuals with incomplete injuries. Contrary to other disabling long-term conditions the potential of pain self management programs that are based on psychological, and especially cognitive and behavioral strategies has not been sufficiently recognized for people with SCI. Professionally supported pain self management programs that incorporate both exercise and psychological elements should be developed and evaluated for people with SCI.

Contact

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