

Multidimensional Pain Inventory (MPI) – SCI version

Assessment Overview

Assessment Area

ICF Domain:

Body Functions

Subcategory:

Sensory Functions

Sections:

Pain Impact (5 subscales)

Responses by Significant Others

(3 subscales)

General Activities (4 subscales)

You Will Need

Length:

15-20 minutes, 50 items

Scoring:

Each item scored 0-6, total and mean subscale scores are calculated.

Total score is not used.

Summary

The Multidimensional Pain Inventory (MPI)-SCI is theoretically linked to the cognitive-behavioral conceptualization of chronic pain, where emphasis is placed on the assessment of subjective distress and the impact of pain on patient's lives.

The questionnaire can be self-completed or done via interview/proxy and is not considered to be a burden to patients.

Derived from the MPI, the MPI-SCI was developed specifically for use in SCI populations. Although evidence supports the use of the MPI-SCI to assess the impact of chronic pain with SCI populations, more psychometric evidence is needed to warrant its sustained use.

The MPI-SCI consists of 3 sections (12 subscales total):

- 1) Pain Impact (life interference, support, life control, pain severity, affective distress)
- 2) Responses by Significant Others (distracting responses, negative responses, solicitous responses)
- 3) General Activities (household activities, activities away from home, social activities, outdoor work)

Availability

Worksheet: Can be found in the appendix of the following article:

<https://pubmed.ncbi.nlm.nih.gov/11887122/>

Languages: English (The non-SCI MPI is available in Swedish, Dutch, German, Italian, Spanish, Portuguese, French and Japanese).

Assessment Interpretability

Minimal Clinically Important Difference

Not established in SCI

Statistical Error

Not established in SCI

Typical Values

Mean (SD) Scores:

For general activities section:
"Persons with tetraplegia scored lower (34.3±16.4) than those with paraplegia (45.0±19.4)"

(Widerstrom-Noga et al. 2006; n=161; 138 males, 23 females; 76 cervical, 84 below cervical; 93 complete injury, 50 incomplete injury, 18 not determining; mean (SD) time since injury: 10.9 (7.8) years)

Validity – **Low** to **High**

High correlation between MPI-SCI life interference subscale and Pain Disabilities Index:

$r = 0.61$

(Cruz-Almeida et al. 2009; n=180; 155 males, 25 females; mean age: 41.6 (13.4) years; mean (SD) time since injury: 9.5 (8.9))

High correlation between MPI-SCI life interference subscale and Brief Pain Inventory (BPI):

$r = 0.75$ ($P < 0.000$)

(Soler et al. 2013; n=126; 78 males, 48 females; ASIA A-C; 43 traumatic, 83 non-traumatic; mean (SD): 11.8 (10.8) years)

High correlation between MPI-SCI pain severity subscale and the Pain Intensity on Numeric Rating Scale:

$r = 0.61$ ($P < .000$)

High correlation between MPI-SCI life interference subscale and the Pain Disability Index:

$r = 0.61$ ($P < .000$)

(Widerstrom-Noga et al. 2006; n=161; 138 males, 23 females; 76 cervical, 84 below cervical; 93 complete injury, 50 incomplete injury, 18 not determining; mean (SD) time since injury: 10.9 (7.8) years)

Moderate to **High** correlation between MPI-SCI life interference subscale and Pain Interference with Daily Activities subscale:

$r = 0.58-0.61$

(Cruz-Almeida et al. 2009; n=180; 155 males, 25 females; mean age: 41.6 (13.4) years; mean (SD) time since injury: 9.5 (8.9))

(Widerstrom-Noga et al. 2006; n=161; 138 males, 23 females; 76 cervical, 84 below cervical; 93 complete injury, 50 incomplete injury, 18 not determining; mean (SD) time since injury: 10.9 (7.8) years)

Low correlation between MPI-SCI life interference subscale and the General Activity subscale:

$r = -0.13$

Low correlation between MPI-SCI life interference subscale and the Average Pain Intensity on Numeric Rating Scale:

$r = 0.29$

(Cruz-Almeida et al. 2009; n=180; 155 males, 25 females; mean age: 41.6 (13.4) years; mean (SD) time since injury: 9.5 (8.9))

Reliability – **Low** to **High**

Low to **High** Test-retest reliability for MPI-SCI Subscales:

ICC = 0.26-0.86

(Widerstrom-Noga et al. 2006; n=161; 138 males, 23 females; 76 cervical, 84 below cervical; 93 complete injury, 50 incomplete injury, 18 not determining; mean (SD) time since injury: 10.9 (7.8) years)

Low to **High** Internal Consistency for MPI-SCI Subscales:

$\alpha = 0.66-0.94$

(Soler et al. 2013; n=126; 78 males, 48 females; ASIA A-C; 43 traumatic, 83 non-traumatic; mean (SD): 11.8 (10.8) years)

Number of studies reporting reliability data: 2

Number of studies reporting validity data: 4

Responsiveness

Floor/Ceiling Effect:

Not established in SCI

Effect Size:

Moderate effect size (0.6) comparing tetraplegia and paraplegia regarding general activities section

(Widerstrom-Noga et al. 2006; n=161; 138 males, 23 females; 76 cervical, 84 below cervical; 93 complete injury, 50 incomplete injury, 18 not determining; mean (SD) time since injury: 10.9 (7.8) years)

Number of studies reporting responsiveness data: 1