The 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. Derived from the MPI, the MPI-SCI was developed specifically for use in SCI populations. The questionnaire can be self-completed or done via interview/proxy and is not considered to be a burden to patients. 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

Please contact Dr. Eva Widerström-Noga to obtain the MPI-SCI.

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)”

(Widerstorm-Noga et al. 2006, p.520; n=161, 138 men, mixed injury types, mean (SD) time since injury = 10.9 (7.8) years)
### Measurement Properties

#### 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, 155M, mean age=41.6±13.4, 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, mixed injury types, mean (SD) = 11.8 (10.8) years)

**High** correlation between MPI-SCI pain severity subscale and the Pain Intensity on Numeric Rating Scale:
\[ r = 0.29 \]
(Widerstrom-Noga et al. 2006; N=161, 138M; mean age 43.5±13.4; mean years post-injury 10.9±7.8)

[**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, 155M, mean age=41.6±13.4, time since injury=9.5±8.9)
(Widerstrom-Noga et al. 2006; N=161, 138M; mean age 43.5±13.4; mean years post-injury 10.9±7.8)

[**Moderate**] correlation between MPI-SCI pain interference with activities subscale and BPI:
\[ r = 0.50 \ (P<0.000) \]
(Soler et al. 2013; n=126, 78 males, mixed injury types, mean (SD) = 11.8 (10.8) years)

[**Moderate**] correlation between MPI-SCI affective distress subscale and Beck Depression Inventory (BDI):
\[ r = 0.39-0.48 \ (P<0.000) \]
(Cruz-Almeida et al. 2009; N=180, 155M, mean age=41.6±13.4, time since injury=9.5±8.9)
(Soler et al. 2013; n=126, 78 males, mixed injury types, mean (SD) = 11.8 (10.8) years)

[**Low to Moderate**] correlation between MPI-SCI general activity subscale and Functional Independence Measure (FIM):
\[ r = -0.17-0.35 \ (P<0.05) \]
(Cruz-Almeida et al. 2009; N=180, 155M, mean age=41.6±13.4, time since injury=9.5±8.9)
(Soler et al. 2013; n=126, 78 males, mixed injury types, mean (SD) = 11.8 (10.8) years)

#### 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 men, mixed injury types, 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, mixed injury types, mean (SD) = 11.8 (10.8) years)

Number of studies reporting reliability data: 2
**Low** correlation between MPI-SCI life interference subscale and the General Activity subscale:

\[ r = -0.13 \]

(Cruz-Almeida et al. 2009; N=180, 155M, mean age=41.6±13.4, time since injury=9.5±8.9)

**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, 155M, mean age=41.6±13.4, time since injury=9.5±8.9)

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

\[ r = 0.23 \ (P<.05) \]

(Widerstrom-Noga et al. 2006; N=161, 138M; mean age 43.5±13.4; mean years post-injury 10.9±7.8)

**Number of studies reporting validity data:** 4

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### Responsiveness

<table>
<thead>
<tr>
<th>Floor/Ceiling Effect:</th>
<th>Effect Size:</th>
<th>Number of studies reporting responsiveness data:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not established in SCI</td>
<td>Moderate effect size (0.6) comparing tetraplegia and paraplegia regarding general activities section</td>
<td>1</td>
</tr>
</tbody>
</table>

(Widerstrom-Noga et al. 2006; n=161, 138 men, mixed injury types, mean (SD) time since injury = 10.9 (7.8) years)