

Research Summary – Multidimensional Pain Inventory – SCI (MPI-SCI) – Pain

Author Year Country Research Design Setting	Demographics and Injury Characteristics of Sample	Validity	Reliability	Responsiveness Interpretability
<p>Cruz-Almeida et al. 2009</p> <p>Face-to-face interview</p> <p>VA Medical Center and Miami Project to Cure Paralysis, Miami, FL, USA</p>	<p>N=180 with traumatic SCI and experiences chronic pain</p> <p>155 men, 25 women</p> <p>Mean age = 41.6 ± 13.4</p> <p>Time since injury = 9.5 ± 8.9</p>	<p>Life Interference subscale appears to test limitations related to pain rather than other functional impairments related to SCI or average pain intensity as evidenced by the following findings:</p> <ul style="list-style-type: none"> • Excellent correlation with the Pain Disabilities Index ($r = 0.61$) • Adequate correlation with the Pain Interference with Daily Activities subscale ($r = 0.58$) and the Beck Depression Inventory ($r = 0.39$) 	<p>Test-retest, Inter-rater, Intra-rater</p> <p>Strength of agreement in categorizing pain problems reported on questionnaires was substantial between raters Kappa =0.68</p> <p>Strength of agreement in categorizing pain problems in person was substantial between raters Kappa =0.66</p>	

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		<ul style="list-style-type: none"> Poor correlation with the Functional Independence Measure ($r = -0.17$) and the General Activity subscale ($r = -0.13$) <p>Poor correlation with Average Pain Intensity on Numeric Rating Scale ($r = 0.29$)</p>		
<p>Widerstrom-Noga et al. 2006</p> <p>Interview</p> <p>Veteran affairs medical centre & university-based institute</p>	<p>N=161 SCI participants (138 men, 23 women) mean age: 43.5 ± 13.4 mean years post-injury: 10.9 ± 7.8</p> <p>Neurological level of injury: 76 cervical 84 below cervical 1 not determined</p>	<p>All MPI-SCI subscales were compared with an instrument evaluating the same constructs by using Pearson correlations. All subscales, except the perceived responses from significant other subscales, were significantly correlated with the related construct.</p>	<p>Internal Consistency: Cronbach's alpha for MPI-SCI subscales:</p> <p>Pain severity: 0.76 Life interference: 0.90 Life control: 0.61 Affective distress: 0.60 Support: 0.72 Negative responses: 0.87 Solicitous responses: 0.66</p>	<p>People with tetraplegia ($n=76$) and paraplegia ($n=84$) significantly ($t=3.714$, $P<.000$) differed with respect to level of general activity on the MPI-SCI. Persons with tetraplegia scored lower (34.3 ± 16.4) than those with paraplegia (45.0 ± 19.4). The magnitude of the</p>

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	<p>Completeness of injury: 93 complete 50 incomplete 18 not determined</p>	<p>The pain severity subscale was highly ($r=.61$) and significantly ($P<.000$) correlated with the Numeric Rating Scale (NRS) for pain intensity.</p> <p>Life interference was strongly ($r=.61$) and significantly ($P<.000$) correlated with the Pain Disability Index (PDI).</p> <p>Although support was significantly ($r=.23$, $P<.05$) correlated with the appraisal subscale of Interpersonal Support Evaluation List (ISEL), the perceived responses by significant others subscales (negative, solicitous, and</p>	<p>Distracting responses: 0.71 General activity: 0.83 Pain interference with activities: 0.94</p> <p>Test-retest, Inter-rater, Intra-rater: ICC's for MPI-SCI subscales:</p> <p>Pain severity: 0.69 Life interference: 0.81 Life control: 0.26 Affective distress: 0.71 Support: 0.59 Negative responses: 0.69 Solicitous responses: 0.86 Distracting responses: 0.85 General activity: 0.69 Pain interference with activities: 0.78</p>	<p>effect (effect size) was moderate (0.6).</p>

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		<p>distracting responses) were not significantly correlated with the ISEL.</p> <p>MPI-SCI subscales were compared with instruments evaluating different constructs using Pearson correlations. All MPI-SCI subscales, except life control (compared with Chance Health Locus of Control subscale (CHLC)), were compared with the Internal Health Locus of Control (IHLC), a construct hypothesized to correlate only moderately or minimally with the MPI-SCI subscales. The correlation coefficients obtained</p>		

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		<p>suggest that the MPI-SCI subscales had minimal to no relation with the Muldidimensional Health Locus of Control Scale (MHLC), confirming the discriminant validity of the subscales.</p> <p>People with tetraplegia (n=76) and paraplegia (n=84) significantly ($t=3.714$, $P<.000$) differed with respect to level of general activity on the MPI- SCI.</p>		
<p>Widerstrom-Noga et al. 2002</p> <p>Postal Survey</p> <p>General Community</p>	<p>N=120 with pain, 24 with no pain</p> <p>Mean age = 42.1 ± 12.1 with pain; 34.5 ± 7.6 with no pain</p> <p>Men: 94 with pain, 16 with no pain</p>	<p>Content Validity:</p> <p>During development of the MPI-SCI, confirmatory and exploratory factor analyses were performed for each subscale of the</p>		

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	<p>Time since injury = 9.8 ±5.2 with pain, 9.0 ±4.1 with no pain</p>	<p>Multidimensional Pain Inventory. As a result, six items were removed. An additional question per item of the General Activity subscale was added to determine whether in decrease in activity was due to pain.</p> <p>Face Validity: 10 people with chronic pain and SCI reviewed the SCI-specific questions during development of the MPI-SCI. All 10 people reported a clear understanding of the questions with no modification to the wording required.</p>		

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<p>Soler et al. 2013</p> <p>Postal surveys; Validation of Spanish MPI-SCI (MPI-SCI-S)</p> <p>Guttman Institute, Barcelona, Spain</p>	<p>N=126, 78M 48F Mean age 49.0±13.8 Mean time since injury 11.8±10.8 yrs AIS-A/B/C = 78/20/28 43 traumatic, 83 nontraumatic Chronic pain (>1yr) & SCI (>2yr) & pain rating of >=3 on Numerical Rating Scale</p>	<p>Pearson's r btwn: MPI-SCI life interference subscale and BPI: 0.75, P<0.000 MPI-SCI affective distress subscale and BDI: 0.48, P<0.000 MPI-SCI general activity subscale and FIM: 0.35, P<0.05 MPI-SCI pain interference with activities subscale and BPI: 0.50, P<0.000</p>	<p>Internal Consistency: Cronbach alpha of subscales: mean = 0.81; 0.66~0.94</p>	