

Research Summary – Spinal Cord Lesion-related Coping Strategies Questionnaire (SCL-CSQ) – Mental Health

Author Year Research Design Setting (country)	Demographics and Injury Characteristics of Sample	Validity	Reliability	Responsiveness Interpretability										
<div>Elfstrom et al. 2002</div> <div>Cross-sectional</div> <div>Gothenburg Spinal Injuries Unit in Sweden</div>	<div>N=274 (204 men & 70 women) Median age = 40 years (range 16-85)</div> <div>Neuro-grouping: Tetraplegia: AIS A,B,C was 25.9% males & 6.6% females Paraplegia: AIS A,B,C was 25.9% males & 7.3% females All levels: AIS D was 22.3% males & 11.7% females</div>	<div>Item-internal validity (correlation between item and hypothesized scale corrected for overlap) Coping scale: Acceptance (r=0.56-0.64), Fighting spirit (r=0.44-0.57), and Social reliance (r=0.49-0.61)</div> <div>Correlation between items and other scales measuring different constructs than that of the SCL-CSQ Coping scale: Acceptance (r=0.05-0.31), Fighting spirit (r=0.01-0.43), and Social reliance (r=0.05-0.30)</div>	<div>Internal Consistency: Coping scale: Acceptance α=0.79 Fighting spirit α=0.72 Social reliance α=0.73</div> <div>Psychological Outcome: Helplessness α=0.84 Intrusion α=0.86 Personal growth α=0.75</div>	<div>Interpretability: Mean scores and 95% confidence interval of SCL-related coping scale and SCL-related psychological measure</div> <table><tr><th>Scale</th><th>Mean (95% CI)</th></tr><tr><td>Coping</td><td></td></tr><tr><td>Acceptance</td><td>2.53 (2.44-2.61)</td></tr><tr><td>Fighting spirit</td><td>3.23 (3.17-3.30)</td></tr><tr><td>Social reliance</td><td>2.67 (2.57-2.76)</td></tr></table>	Scale	Mean (95% CI)	Coping		Acceptance	2.53 (2.44-2.61)	Fighting spirit	3.23 (3.17-3.30)	Social reliance	2.67 (2.57-2.76)
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		Correlation between scale items: Coping scale: Acceptance & Fighting spirit $r=0.37$ Acceptance & Social reliance $r=(-0.14)$ Fighting spirit & Social reliance $r=(-0.13)$		
Elfstrom et al. 2007 Cross-sectional, questionnaire to investigate the psychometric performance of the SCL-CQ in four different countries. Austria, Germany, Switzerland and UK.	N=355 Male=279; Female=74; Missing=2 Mean age=49 Mean age at lesion=27.8 Austria=44; Germany=172; Switzerland=27; UK=112 Level of lesion Cervical=147; Thoracic=155; Lumbar=23; Sacral=1; Missing=29	Acceptance and Fighting spirit subscales with HADS were negative for all samples (Austria, Germany, Switzerland, UK): Acceptance w/ HADS – Anxiety: $r=(-0.45)$ Acceptance w/ HADS – Depression: $r=(-0.58)$ Fighting spirit w/ HADS –Anxiety: $r=(-$ 0.40) Fighting spirit w/ HADS – Depression: $r=(-0.49)$	Internal Consistency: Coping factors for total sample Acceptance=0.78 Fighting spirit=0.68 Social reliance=0.61	Interpretability: See table 1.

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	Complete paraplegia=162 Complete tetraplegia=85 C=Incomplete paraplegia=32 Incomplete tetraplegia=58 Missing=18	All were P<.01 No values were given for the correlation between Social Reliance and HADS subscales.		
	Table 1. Mean (SD) scores of the subscales of SCL-CSQ in different countries			
	Sample	SCL-CSQ		
		Acceptance: mean (SD) score	Fighting Spirit: mean (SD) score	
	Austria	3.42 (0.58)	3.41 (0.50)	
	Germany	3.28 (0.56)	3.40 (0.45)	
	Switzerland	3.18 (0.72)	3.43 (0.42)	
	UK	2.96 (0.72)	3.24 (0.49)	
	Total	3.19 (0.65)	3.35 (0.47)	
	Sweden	2.53 (0.70)	3.23 (0.52)	

Research Summary – Spinal Cord Lesion-related Coping Strategies Questionnaire (SCL-CSQ) – Mental Health - Cross-cultural Validation Studies

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<p>Aaby et al. 2022</p> <p>Triangulated mixed-methods validation study to validate the Danish version of the SCL-CSQ</p> <p>**Three-Step Test Interview (TSTI): 1) responses provided while thinking out loud; 2) interviewers asked probing questions based on gaps observed in step 1, and; 3) respondents asked to explain</p>	<p>Survey participation: N = 107 community-dwelling participants with SCI 54M, 53F* (*~50% compared to 33-37% in other large scale Dutch studies) Mean (SD) age 57.40 (11.72) years Injury level: Paraplegia (n = 52), tetraplegia (n = 30), missing (n = 25) Injury completeness: Complete (n = 30), incomplete (n = 54), missing (n = 23) Mean (SD) time since injury 18.52 (14.27) years</p> <p>Interview (TSTI)** participation: N = 11 participants with</p>	<p>Criterion validity: Acceptance showed a strong negative correlation with depression ($r = -0.64$, $p < 0.001$) and a moderate positive correlation with QoL ($r=0.49$, $p<0.001$) as expected. Fighting spirit likewise showed expected moderate negative correlation with depression ($r = -0.36$, $p < 0.001$) and a weak positive correlation with QoL ($r=0.26$, $p=0.007$). Social reliance showed a weak, but non-significant, positive correlation with depression ($r=0.10$, $p=0.31$) and a weak, but also non-</p>	<p>Internal consistency: Internal consistency was acceptable for both the acceptance subscale (Cronbach's $\alpha = 0.72$) and the fighting spirit subscale (Cronbach's $\alpha = 0.76$), while the social reliance subscale had inadequate internal consistency (Cronbach's $\alpha = 0.58$).</p>	

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reasoning behind their responses. Community in Denmark.	SCI, who also participated in the initial survey. 6M, 5F Mean age 58 years Incomplete tetraplegia (n = 5), incomplete paraplegia (n = 4), complete paraplegia (n = 2) Had lived with their injury 5 to 10 years (n = 5)	significant, negative correlation with QoL (r = -0.18, p = 0.07). Construct validity based on response processes: Overall, the acceptance and fighting spirit subscales showed mostly congruent responses, as only item 6 was problematic with only 45% congruent responses. Conversely, item 4 and item 9 from the social reliance subscale showed issues with only 9% and 27% congruent responses, respectively.		
Migliorini et al. 2008	N=443, male = 345 The mean age of respondents was 51.78	Univariate relationships between components of the		Interpretability: Mean and S.D. scores

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Validation study for Australian version of SCL CSQ Adults on the Victorian traumatic SCI register and attendees of the nontraumatic outpatient clinic were invited to participate.	years (range 18–86 years). The mean time since injury was 19.20 years (range 1–66 years). Paraplegia - Incomplete= 149 (33.6%); Complete = 136 (30.7%) Tetraplegia - Incomplete = 112 (25.3%); Complete = 45 (10.2%)	SCL-CSQ and psychological outcome variables (as measured by the Depression, Anxiety and Stress Scale – short version (DASS-21): Acceptance and Depression: Spearman’s ρ = -0.45 Acceptance and Anxiety: Spearman’s ρ = -0.24 Acceptance and Subjective QOL: Spearman’s ρ = 0.55 Social Reliance and Depression: Spearman’s ρ = 0.11 Social Reliance and Anxiety: Spearman’s ρ = 0.18 Social Reliance and Subjective QOL: Spearman’s ρ = -0.01		of the new subscales (Australian sample) <table><tr><th>SCL-CSQ Subscales</th><th>Mean (SD) score</th></tr><tr><td>Acceptance</td><td>3.03 (0.59)</td></tr><tr><td>Social reliance</td><td>2.69 (0.70)</td></tr><tr><td>Fighting Spirit</td><td>3.24 (0.43)</td></tr></table>	SCL-CSQ Subscales	Mean (SD) score	Acceptance	3.03 (0.59)	Social reliance	2.69 (0.70)	Fighting Spirit	3.24 (0.43)
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		Fighting Spirit and Depression: Spearman's ρ = -0.22 Fighting Spirit and Anxiety: Spearman's ρ = -0.05 Fighting Spirit and Subjective QOL: Spearman's ρ = 0.32		
Paker et al. 2014 Validation study for Turkish version of SCL CSQ Consecutive patients with SCI at major rehabilitation center in Istanbul, Turkey	N=100, 74 male Mean age 40.83; s.d.=16.12 Time since injury: 28.47; s.d. = 44.01 months	Positive correlations between: Brief Coping Styles Inventory (BCSI) "self-confidence and optimism" & SCL-CSQ-T "acceptance" and "fighting spirit" BCSI "self-confidence & optimism" and SCL-CSQ-T "fighting spirit" BCSI "social reliance & optimism" and SCL-CSQ-"helplessness" and "seeking social support"	Internal consistency: Cronbach's alpha for each subscale: Acceptance = 0.80 Social reliance = 0.67 Fighting spirit = 0.81 Test-retest, inter-rater, intra-rater: Test-retest ICC (95%CI) ($P < 0.0001$) for each subscale for 15 day interval: Acceptance = 0.80 (0.73-0.85)	

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			Social reliance = 0.61 (0.52-0.78) Fighting spirit = 0.80 (0.74-0.86)	
Saffari et al. 2015 Validation study for Iranian (Persian) version of SCL CSQ Consecutive patients referred to major University neurology center with SCI	N=220, 164 male Mean age 58.18; s.d.=10.32 Time since injury: 50.96; s.d.= 35.05 months	Pearson correlation coefficients: SCL-CSQ-I with Physical Composite Score-12 & Mental Health Composite Score-12 (part of Short Form Health Survey- 12(SF-12)): r=0.21~0.39,P<0.01 With Anxiety & Depression (part of HADS): r=(-0.30~- 0.44),P<0.01 Between SCIM-III physical functioning scores and subscale of: Acceptance & Fighting Spirit: r=0.19~0.33,P<0.01	Internal consistency: Cronbach's alpha for each subscale: Acceptance = 0.82 Social reliance = 0.68 Fighting spirit = 0.88 Test-retest, Inter- rater, Intra-rater: Test-retest ICC (95%CI) for each subscale for 2 week interval: Acceptance = 0.84 (0.79-0.89) Social reliance = 0.74 (0.94-0.96) Fighting spirit = 0.89 (0.81-0.93)	

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		<p>Social Reliance: $r=(-0.16\sim-0.25)$, $P<0.01$ Between CIQ and subscale of: Acceptance: $r=0.29$, $P<0.01$ Fighting spirit: $r=0.33$, $P<0.01$ Social reliance: $r=(-0.27)$, $P<0.01$</p> <p>Regression analysis:</p> <p>Fighting spirit subscale, age, and SCIM-III predicts PCS- 12 (part of SF-12); $R^2 = 0.32$ Acceptance, Fighting spirit and Social reliance subscale, and SCI etiology predicts CIQ; $R^2 = 0.38$</p>		
Saurí et al. 2014	N=511 (375M, 136F) Mean age 50.66; s.d.=14.37		Internal Consistency:	

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<p>Cross-sectional validation study for Spanish version of SCL CSQ</p> <p>Discharged SCI patients in community in Barcelona, Spain</p>	<p>mean (SD) time since injury = 15.44 (10.00)</p>		<p>Cronbach's alpha for each subscale: Acceptance = 0.74 Social reliance = 0.76 Fighting spirit = 0.69</p> <p>Reliability coefficient between Acceptance & Fighting spirit = 0.89, $P < 0.05$. May indicate overlap.</p>	