

Research Summary – Zung Self-Rating Depression Scale (SDS) – Mental Health

Author Year Country Research Design Setting	Demographics and Injury Characteristics of Sample	Validity	Reliability	Responsiveness Interpretability
<p>Tate et al. (1993)</p> <p>Retrospective analysis</p> <p>University of Michigan Medical Center/SCI Rehabilitation Unit</p>	<p>Sample 1 N=162 (128M, 34F) Mean age 33.6±9.9yrs Outpatients who had received initial rehab between 1985 and 1989. 45% paraplegic, 55% tetraplegics.</p> <p>Sample 2 N=30 (28M, 2F) Mean age 31.3±12.4yrs Consecutively admitted inpatients. 30% paraplegic, 70% tetraplegic.</p>	<p><i>Zung scores were compared to those obtained with the Brief Symptom Inventory (BSI).</i></p> <p>Pearson correlations. There were significant correlations between a) BSI (global severity index; GSI) and Zung total scores ($r=0.53$; $P<.001$), b) BSI (depression; DEP) and Zung total scores ($r=0.52$; $P<.001$), and c) BSI/GSI and Zung affective scores ($r=0.52$; $P<.001$).</p> <p>Cohen's kappa coefficient for inter-test percent agreements.</p>		<p>Interpretability: Zung mean (SD) score: Zung Somatic: 15.4 (4.1) Zung Affective: 21.2 (6.4) Zung total: 45.7 (11.9)</p>

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		<p>Correlations were stronger between the Zung total and the BSI/DEP scores (K=0.59; P<.0005; 85% agreement) than between the Zung total and the BSI/GSI scores (K=0.44; P<.0005; 78% agreement).</p> <p>Through factor analyses using principal components methodology and varimax rotation, the Zung SDS scale was analyzed for whether it actually measures the construct(s) it purports to measure. Zung: The two factors were not identical to the two original factors, but were meaningful and largely corresponded</p>		

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		<p>to somatic and affective domains.</p> <p><i>Two experienced clinicians rated participants as depressed or not depressed. The percent agreement with the results of the questionnaires was reported.</i></p> <p>The clinicians' ratings were in 67% agreement with the Zung scores (kappa=0.33; P<.01).</p> <p>In terms of percent positive agreement (i.e. sensitivity), the clinicians' ratings were in 86% agreement with the Zung scores.</p>		

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		In terms of percent negative agreement (i.e. specificity), the clinicians' ratings were in 61% agreement with the Zung scores.		
Overholser et al. (1993) Interview Spinal Cord Rehabilitation Unit	N=81 (63 male, 18 female) Age: 36.1±14.5 40 quadriplegia, 41 paraplegia Inpatients (N=58): mean 68 days post-SCI Outpatients (N=23): mean 3639 days post-SCI	Intercorrelation between the Zung SDS scale and subscales of the Medically Based Emotional Distress Scale (MEDS). The MEDS measures similar constructs to the Zung. Dysphoria: r=0.60 Irritability: r=0.53 Anhedonia: r=0.56 Social Withdrawal: r=0.31 Ruminations over past events: r=0.32 Cognitions in the present: r=0.64		

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		Expectations for the future: $r=0.72$ Total MEDS Scores: $r=0.71$ All significant at $P<.001$ (except social withdrawal & ruminations over past events, $P<.05$)		
Davidoff et al. (1990) Cross-sectional Study Southeastern Michigan Spinal Cord Injury Care System, Detroit; or the University of Michigan Model Spinal Cord Injury System, Ann Arbor	N=66, 82% male Mean age (SD): 29.5 (1.3) years, range 18-55 years 29 (41%) of the patients were tetraplegic. Education (SD): 12.2 (0.3) years	ZUNG scores were correlated with PA-RECALL and VR-RECALL, with 10% or less of the variance accounted for by the ZUNG index score.		Interpretability: Mean scores (SD): Control: 37.1 (1.1) SCI Patients: 49.0 (1.3)

Research Summary – Zung Self-Rating Depression Scale (SDS) – Mental Health - Cross-cultural Validation Studies

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<p>Xie et al. (2023) Validation study of the Chinese version of the Community Integration Questionnaire-Revised for individuals with spinal cord injury Cross-sectional Study Shanghai Sunshine Rehabilitation Center.</p>	<p>N=317 first rehabilitation admission participants with SCI, 247 from Shanghai, 70 participants from other provinces Mean (SD) age was 49.8 (13.3) years and the age range spanned from 18 to 70 years. Median time span since injury was 7.1 years, ranging from 6 months to 61.5 years.</p>	<p>Negatively correlated with the 4 domains of CIQ-R-C (N = 65 completed the CIQ-R-C)</p>		
<p>Chang et al. (2022)</p>	<p>N=249 with SCI Age: 18-70 years</p>	<p>SDS was significantly negatively correlated with scores of 3 items</p>		

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<p>Validation study of the WHOQOL Scales (WHOQOL-BREF and WHOQOL-DIS module) for people with spinal cord injury in China</p> <p>Cross-sectional Study</p> <p>Shanghai Sunshine Rehabilitation Center.</p>	<p>Duration of injury: at least half a year</p> <p>Exclusion criteria: adults with cognitive impairment or on their second admission for rehabilitation</p>	<p>and 8 domains of the WHOQOL Scales</p> <p>SDS was not correlated with the discrimination domain in the WHOQOL Scales</p>		