### Reviewer ID: Emily Procter, Matthew Querée

**Type of Outcome Measure:** Zung Self-Rating Depression Scale

<table>
<thead>
<tr>
<th>Author ID Year</th>
<th>Study Design</th>
<th>Setting</th>
<th>Population (sample size, age) and Group</th>
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</thead>
</table>
| Tate et al. 1993 | Retrospective analysis | University of Michigan Medical Center/SCI Rehabilitation Unit | 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.  
Sample 2  
N=30 (28M, 2F)  
Mean age 31.3±12.4yrs  
Consecutively admitted inpatients. 30% paraplegic, 70% tetraplegic. |
| Overholser et al. 1993 | Interview format | 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 |

### 1. RELIABILITY

<table>
<thead>
<tr>
<th>Author ID Year</th>
<th>Internal Consistency</th>
<th>Test-retest, inter-rater, Intra-rater</th>
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| Tate et al. 1993 | Cronbach’s alpha.  
α=0.81  
This suggests a high degree of homogeneity in items. | No data available |

### 2. VALIDITY

<table>
<thead>
<tr>
<th>Author ID Year</th>
<th>Validity</th>
<th></th>
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<tbody>
<tr>
<td>Tate et al. 1993</td>
<td>Zung scores were compared to those obtained with the Brief Symptom Inventory (BSI).</td>
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</table>

**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).

**Cohen's kappa coefficient for inter-test percent agreements.**
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).

**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 to somatic and affective domains.

**Two experienced clinicians rated participants as depressed or not depressed. The percent agreement with the results of the questionnaires was reported.**

The clinicians’ ratings were in 67% agreement with the Zung scores (kappa=0.33; P<.01).
In terms of percent positive agreement (i.e. sensitivity), the clinicians’ ratings were in 86% agreement with the Zung scores.

In terms of percent negative agreement (i.e. specificity), the clinicians’ ratings were in 61% agreement with the Zung scores.

Overholser, et al. 1993

**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: $r=0.64$
- 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, $P<.05$)

3. **RESPONSIVENESS** – no data available

4. **FLOOR/CEILING EFFECT** – no data available

5. **INTERPRETABILITY**

<table>
<thead>
<tr>
<th>Author ID</th>
<th>Interpretability</th>
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<tbody>
<tr>
<td>Tate et al. 1993</td>
<td>Zung mean (SD) score:</td>
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<tr>
<td></td>
<td>Zung Somatic: 15.4 (4.1)</td>
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<td></td>
<td>Zung Affective: 21.2 (6.4)</td>
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<td>Zung total: 45.7 (11.9)</td>
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