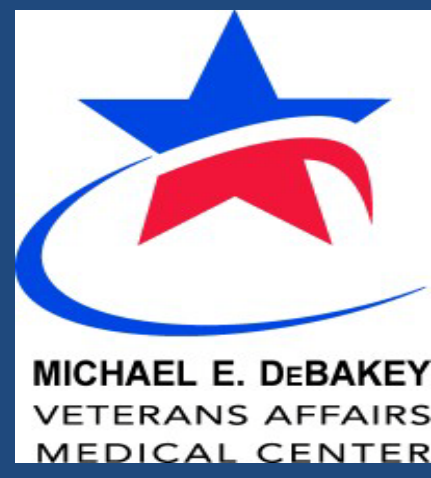


# The Dementia Severity Rating Scale: Factor Structure and Neuropsychological Correlates



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**OBJECTIVE:** The Dementia Severity Rating Scale (DSRS; Xie et al., in press), a previously validated caregiver-based measure assessing dementia severity, was recently revised to improve clarity. Items differentially assess major cognitive and functional domains, suggesting the DSRS consists of two factors.

Study aims included:

- 1) identifying the factor structure of the DSRS
- 2) examining relationships between neuropsychological measures and DSRS identified factor scores.

**PARTICIPANTS & METHOD:** Study included 244 Veterans (men = 96.3%; mean age = 71 years) referred to a cognitive disorders clinic at a VA medical center and their caregivers. Caregivers completed the DSRS, and patients completed standardized neuropsychological instruments of memory, executive functioning, language, and attention/processing speed.

**RESULTS:** Principal components analysis with oblique rotation of the DSRS identified a two factor solution. Factor 1 (43.4% variance), labeled 'Cognitive,' was composed of 7 items that include assessment of memory, language, and decision making. Factor 2 (11.6% variance), labeled 'Self-Care,' was composed of 5 items that assess areas of personal care (i.e, eating, bathing). Individual items with factor loadings equal to or greater than .40 in absolute value were determined significant and therefore interpreted. All factors showed strong loadings on only one factor.

Partial correlations were obtained between DSRS factors and neuropsychological test performance, while controlling for Veteran age and education. Measures of verbal memory and language were significantly associated with the Cognitive factor, while measures of attention/processing speed and executive functioning were significantly associated with both the Cognitive and Self-Care factors.

## SAMPLE DEMOGRAPHICS

Characteristic	%	M (SD)
<b>Demographic Variables</b>		
Gender (% male)	96.3	
Age (years)		71.0 (10.3)
Race		
Black	18.9	
White	70.5	
All Other	9.0	
Education (years)		12.1 (3.1)
<b>Caregiver Variables</b>		
Relationship to Vet		
Spouse	71.3	
Child	16.0	
Other Family	7.8	
Friend	4.5	
Amt Contact with Vet		
≥ 5 days per week	88.9	
< 5 days per week	8.9	

## DSRS FACTOR LOADINGS

Item	Cognitive Factor	Self-Care Factor
1. Memory	.86	-.11
2. Speech & Language	.66	.04
3. Recognition of Family	.71	-.12
4. Orientation to Time	.71	.07
5. Orientation to Place	.68	-.04
6. Decision-Making	.79	.04
7. Social Activities	.69	.12
8. Home Activities	.22	.63
9. Personal Care	-.09	.87
10. Eating	-.09	.79
11. Continence	-.09	.69
12. Getting From Place to Place	.18	.65

## PARTIAL CORRELATIONS of Neuropsychological Measures and DSRS Total Score, Factor 1, and Factor 2

Neuropsychological Measure	DSRS Total	Cognitive Factor	Self-Care Factor
<b>Language</b>			
BNT	-0.12	-0.18**	0.008
<b>Memory</b>			
CVLT-II Total	-0.21**	-0.20**	-0.14
CVLT-II Short-Delay Free	-0.18	-0.17	-0.11
CVLT-II Long-Delay Free	-0.17	-0.17	-0.07
WMS-II Logical Memory I	-0.17	-0.18	-0.10
WMS-II Logical Memory II	-0.27	-0.27	-0.19
<b>Attention &amp; Processing Speed</b>			
TMT A	0.32**	0.26**	0.33**
WAIS-III Coding	-0.40**	-0.35**	-0.36**
WAIS-III Digit Span	-0.22**	-0.24**	-0.10
Stroop Word Reading	-0.35**	-0.32**	-0.31**
Stroop Color Naming	-0.26**	-0.21**	-0.27**
DVT Time	0.29**	0.23**	0.28**
<b>Executive Functioning</b>			
TMT B	0.33	0.28**	0.31**
Stroop Color-Word Reading	-0.18	-0.15	-0.18
WAIS-III Similarities	-0.28**	-0.24**	-0.25**
Phonemic Fluency (FAS)	-0.22**	-0.16	-0.25**
Semantic Fluency (Animals)	-0.33**	-0.29**	-0.26**

\*\* p < 0.01

## CONCLUSIONS:

- The DSRS has a 2 factor structure, including a Cognitive and a Self-Care factor.
- ADL functioning is more closely associated with performance on executive functioning and attention/processing speed measures than memory measures.
- Memory performance was not as predictive of overall caregiver perceived dementia severity.