Veterans with Dementia and their Caregivers: Neuropsychological Correlates of Caregiver Burden

Kacey L. Maestas, Ashley W. LeMaire, Susan M. Wood, and Robert L. Collins

MICHAEL E. DeBAKEY VETERANS AFFAIRS MEDICAL CENTER

Baylor College of Medicine

Introduction

Despite increased attention to the assessment of caregiver burden in research and clinical contexts, it is surprising that existing studies have reported weak associations between caregiver burden and patients' cognitive functioning. We propose this lack of association is partly due to the fact that caregiver burden has been measured as a global score despite evidence that caregiver burden is a multidimensional construct. We sought to clarify the multi-factorial structure of the widely used Zarit Burden Interview (ZBI; Zarit et al.,1980), with the goal of demonstrating differential associations among factor scores with patients' neurocognitive performance.

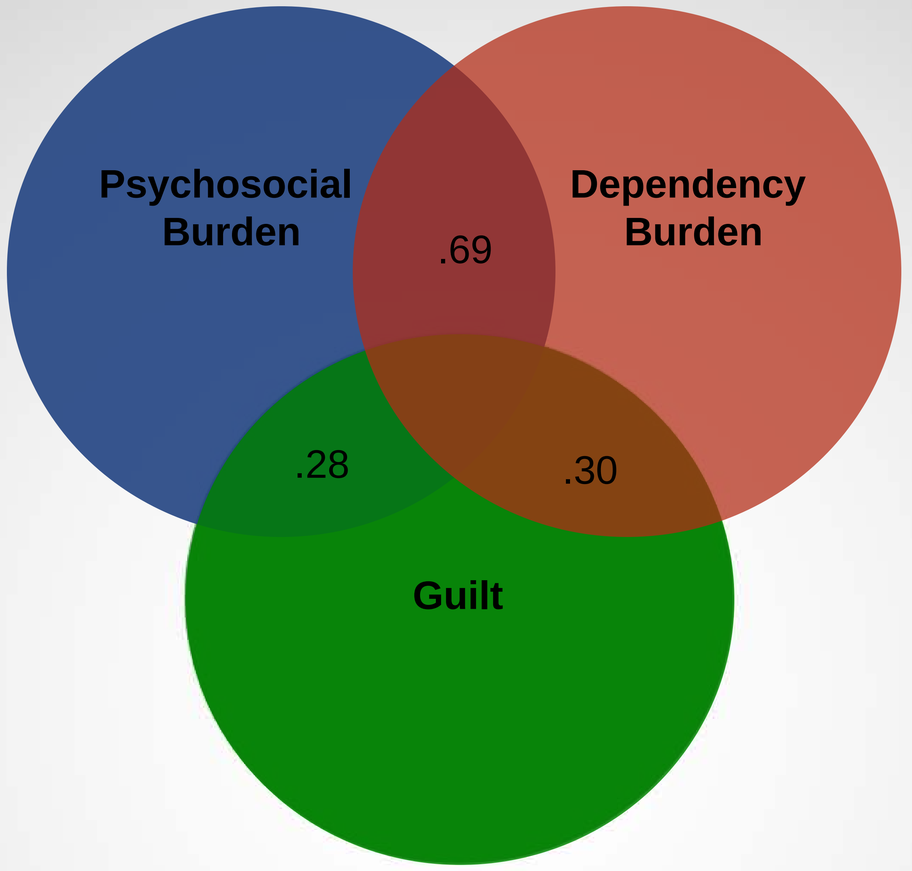
Participants and Methods

The sample included 243 dyads of Veterans referred to a cognitive disorders clinic at a VA medical center, and their caregivers. Caregivers completed the ZBI to assess caregiver burden. Patients completed a battery of neuropsychological tests measuring: attention/processing speed, memory, language, and executive functioning.

Sample Characteristics (N = 243)

	%	M (SD)
Veteran Variables		
Gender (% male)	96.7	
Age (years)		71.2 (10.6)
Race		
Black	18.9	
White	69.1	
All Other	10.3	
Education (years)		12.0 (3.1)
Caregiver Variables		
Relationship to Vet		
Spouse	75.0	
Child	13.6	
Other Family	6.1	
Friend	4.1	
Amt Contact with Vet		
≥ 5 days per week	92.2	
< 5 days per week	7.8	

Zarit Burden Interview: Factor Structure



Partial Correlations of ZBI Factors and Neuropsychological Performance

Neuropsychological Measure	Psychosocial Burden	Dependency Burden	Guilt
Language			
BNT	-.13	-.04	.03
Memory			
CVLT-II Total 1-5	-.05	-.12	-.10
CVLT-II Short-Delay Free	-.01	-.08	-.04
CVLT-II Long-Delay Free	-.10	**-.20***	-.10
Attention & Processing Speed			
TMT A	.02	**.20****	-.01
WAIS-III Coding	.02	**-.15***	-.03
WAIS-III Digit Span	-.07	-.13	-.01
Stroop Word Reading	-.05	**-.17***	-.04
Stroop Color Naming	-.08	**-.17***	-.02
DVT Time	.04	**.21***	.10
Executive Functioning			
TMT B	.01	.10	.12
Stroop Color-Word Reading	-.10	**-.20***	-.10
Phonemic Fluency (FAS)	-.02	-.13	-.05
Semantic Fluency (Animals)	.10	**-.15***	-.13
Emotional Functioning			
Beck Depression Inventory	.15	**.30****	.19

Results

The 22 items of the ZBI were subjected to principal components analysis with oblique rotation. The Kiser criterion suggested three factors, explaining 43.3%, 8.2%, and 5.6 % of the variance respectively. Examination of the scree plot also suggested a three factor solution. Individual items with factor loadings equal to or greater than .4 in absolute value on only one factor were determined significant and therefore interpreted. With the exception of item 17,all items showed strong loadings on only one factor. Item 17 showed strong loadings (>.4) on two factors and was therefore deleted.

Following deletion of item 17, a three factor solution remained with factors explaining 42.4%, 8.6%, and 5.9% of the variance respectively. Factor 1 was composed of 11 items that assess the social and emotional consequences of caregiving; this factor was labeled "psychosocial burden." Factor 2 was composed of 7 items that reflect stress caregivers may experience as a consequence of the care recipients' dependency on them; this factor was labeled "dependency burden."

Factor 3 was composed of 3 items that reflect feelings of guilt caregivers may experience; this factor was labeled "guilt.“Partial correlations were obtained between the ZBI factors and measures of neuropsychological functioning, while controlling for patient age and education.

Conclusions

- Higher scores on the Dependency Burden factor were significantly associated with worse performance on measures of memory, attention/processing speed, and executive functioning, controlling for patient age and education.
- The Psychosocial Burden and Guilt factors were not significantly associated with neurocognitive performance.
- Caregiver burden, as measured by the ZBI, has a multi-factorial structure, and factors are differentially related to patients' neurocognitive performance.