

# PSYCHOLOGICAL WELL-BEING AND COGNITIVE FUNCTION OF DEMENTIA CAREGIVERS



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## Background

Informal caregivers of dementia patients, including their spouses and children, provide the majority of long-term care in the United States (Vitaliano et al., 2004). Today, five million caregivers provide care for individuals aged 50 and older with dementia (National Alliance for Caregiving and AARP, 1997). More than half of all diagnosed Alzheimer's patients live in home settings, with 80 to 90 percent relying on family members for care (American Geriatric Society, 2008). By 2050, 14 million Americans are expected to have Alzheimer's disease (NIA, 2008). We can expect an equally dramatic increase in the number of caregivers.

Caring for a progressively dementing spouse or parent is considered to be a chronic stressor, defined as frequent, long-term exposure to events perceived to be stressful. Caregivers must manage a complicated and progressive illness which makes demands on emotional, physical and cognitive resources. The added impact of chronic stress accelerates the aging process and precipitates subsequent impairments in psychological and cognitive health (Vitaliano et al., 2005). The impact of chronic caregiver stress on psychosocial and physical attributes of caregivers has been well studied, but little research has focused on its impact on cognition. Given evidence that chronic stress affects the hippocampus and frontal lobes (Lupien, 2007; Shors, 2006), we predicted that dementia caregivers would perform more poorly than age-matched non-caregivers on tests of delayed episodic memory and category fluency.

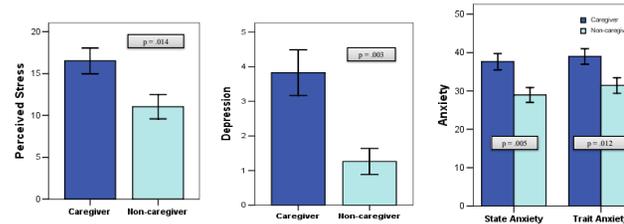
## Method

29 informal dementia caregivers recruited from local support groups and 23 non-caregivers from the local community completed a take-home packet of seven standardized clinical measures and a cognitive battery administered over the phone (Tun & Lachman, 2006). The following were used for the analyses reported here:

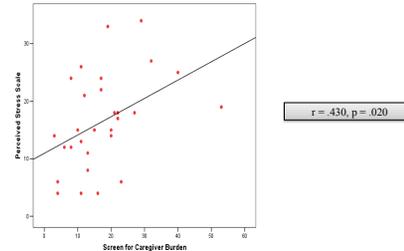
- 1.) **Perceived Stress Scale (PSS):** Measures the perception of stress. The items are designed to tap into how unpredictable, uncontrollable, and overloaded respondents find their lives during the past month.
- 2.) **Geriatric Depression Scale (GDS):** Identifies depressive symptoms in older adults. The items cover a range of depressive symptoms including mood quality, level of energy and motivation, hopelessness, social initiative and subjective evaluation of various cognitive functions.
- 3.) **State-Trait Anxiety Inventory (STAI Y-1 & STAI Y-2):** Measures levels of state and trait anxiety, respectively. Items ask respondents how they *feel at this moment* and how they *generally feel* about a range of emotions, thoughts and decisions.
- 4.) **Screen for Caregiver Burden (SCB):** Measures the prevalence of caregiver experiences deemed to be upsetting (e.g., financial responsibility, grooming) as well as the subjective distress associated with each over the past two weeks.
- 4.) **Word List Recall (WLR) & Delayed WLR:** Respondents are asked to recall 15 words immediately and again in a delayed task approximately 20 minutes after. Previous research has demonstrated age-related deficits in recall (Geffen et al., 1990). This task of episodic memory is thought to depend on the hippocampus.
- 5.) **Category Fluency (CF):** Respondents are given one minute to generate as many items as possible within a category. CF is commonly used as an index of executive function, which is linked with frontal lobe function.

## Results

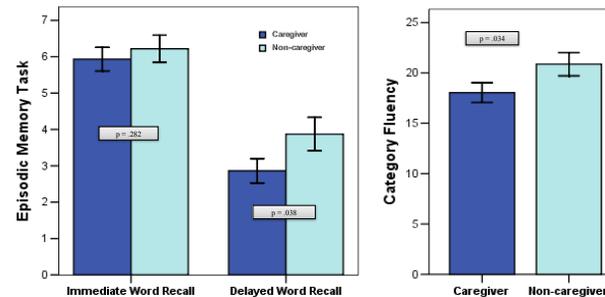
**Figure 1.**  
Psychological Well-being:  
Higher levels of stress,  
depression and anxiety for  
Caregivers than Non-caregivers



**Figure 2.**  
Perceived Stress Scores  
correlated with Caregiver Burden.



**Figure 3.**  
Cognitive Function:  
Delayed Word List Recall and Category Fluency  
poorer for Caregivers than Non-caregivers  
Note. Based on one-tailed t-tests.



## Participants

Participants (Means & SDs)	Caregivers	Non-Caregivers
Gender	26F, 3M	13F, 10M
Age	66.52 (9.41)	69.83 (9.7)
Education Level*	15.28 (2.99)	17.17 (2.60)
SCB	17.48 (11.10)	N/A

\* p < .05

## Conclusions

### Psychological Well-being

- Caregivers scored significantly higher on Perceived Stress, Depression, and State and Trait Anxiety than age-matched non-caregivers (Figure 1), suggesting that caregiving has a negative impact on psychological well-being.
- A significant relationship was found between Perceived Stress and Caregiver Burden among caregivers (Figure 2).

### Cognitive Function

- Caregivers were significantly worse than non-caregivers on Delayed, but not Immediate, Word Recall, consistent with earlier evidence that stress affects the hippocampus (Lupien, 2007) (Figure 3).
- Caregivers were significantly worse than non-caregivers on Category Fluency, consistent with evidence that stress affects the frontal lobes (Shors, 2006) (Figure 3).

## Future Directions

- An understanding of the specific cognitive domains affected by caregiving is crucial in order to help caregivers preserve and maximize their cognitive integrity so they are able to care for both themselves and those who depend on them.
- This study suggests that chronic caregiving stress affects systems dependent on the hippocampus and frontal lobes. Further exploration is needed to understand the role of these structures in dementia caregivers.

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05.23.2008

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Supported by NIH Grants R37-AG15450 & F31 AG028956