

agitation differentially relate to distinct patterns of caregiver burden.

Participants and Methods: Medical record data from an outpatient memory clinic were extracted for 609 persons with dementia and their caregivers. Caregivers completed the Zarit Burden Interview (ZBI) to assess caregiver burden and the Cohen-Mansfield Agitation Inventory (CMAI) to assess care recipient agitation behaviors. At their initial outpatient appointment, care recipients were also administered a measure of global cognitive functioning (either the Montreal Cognitive Assessment or the Mini-Mental State Examination). Demographic information was extracted from medical records. Exploratory factor analysis was used to determine ZBI and CMAI factor structures. Hierarchical multiple regression analyses then examined whether factors of the CMAI differentially predicted ZBI factors, controlling for dementia severity and demographic variables.

Results: Exploratory factor analysis yielded three domains of agitation on the CMAI ("Physically Aggressive," "Physically Non-Aggressive," "Verbally Agitated") and four domains of burden on the ZBI ("Impact on Life," "Guilt/Uncertainty," "Embarrassed/Frustrated," and "Overwhelm"). Regression analyses demonstrated all domains of agitation positively predicted overall burden. Regarding specific aspects of burden, Physically Aggressive behaviors predicted only Embarrassment/Frustration ($B=.41$, $SE=.10$, $\beta=.16$, $p<.001$). Non-Aggressive behaviors predicted Impact on Life ($B=.14$, $SE=.05$, $\beta=.13$, $p<.01$) and Guilt/Uncertainty ($B=.05$, $SE=.02$, $\beta=.10$, $p<.05$). Verbally Agitated behaviors predicted all burden dimensions: Impact on Life ($B=.35$, $SE=.06$, $\beta=.32$, $p<.001$), Guilt/Uncertainty ($B=.12$, $SE=.03$, $\beta=.22$, $p<.001$), Embarrassment/Frustration ($B=.17$, $SE=.02$, $\beta=.38$, $p<.001$), and Overwhelm ($B=.16$, $SE=.02$, $\beta=.40$, $p<.001$).

Conclusions: Findings enhance understanding of the relationships between specific agitation symptoms and distinctive aspects of caregiver burden, suggesting that targeted interventions for aspects of caregiver burden based on agitation symptoms may be useful in alleviating burden. Interventions focused on caregivers' feelings of guilt, personal health decline, lack of time for themselves, and fear and uncertainty about the future may be effective when care recipients present with physically non-aggressive behaviors (e.g., pacing,

restlessness, inappropriate dress or disrobing). When a care recipient presents with physically aggressive behaviors, helping the caregiver cope with embarrassment or anger may be of benefit. When a care recipient presents with verbally agitated behaviors, interventions targeting burden globally may be most useful. Future work should seek to replicate the current findings and explore such interventions.

Categories: Dementia (Alzheimer's Disease)

Keyword 1: caregiver burden

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35 Correlations Between Sleep and Cognitive Functioning in Healthy, Older Adults

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Objective: Alzheimer's disease (AD), a leading cause of dementia worldwide, affected an estimated 47 million people in 2015, placing a burden of over \$1 trillion on health systems. Subclinical markers of AD pathology are seen many years before the clinical onset of dementia, suggesting that steps could be taken to prevent progression to disease in healthy individuals. Sleep optimizes cognition by creating a window of opportunity to consolidate memories, prune synaptic networks, and clear waste products. Studies that characterize the relationship between sleep and cognitive function prior to the onset of clinical AD could guide research into effective methods of delaying AD onset or preventing it altogether. The objective of our study is to describe how sleep quality and quantity correlate with performance on cognitive assessments within a healthy, aging population.

Participants and Methods: Seventeen participants, between 62-82 years of age enrolled in an ongoing clinical trial assessing the effects of melatonin (5mg daily) versus placebo, were included in our study. Participants were observed over a 2-month period, during which no experimental interventions were administered. At study entry, participants underwent a comprehensive neuropsychological

evaluation evaluating cognitive domains of attention, memory, speed of information processing, language, executive functioning, and mood. Afterwards, all participants wore a watch that measured actigraphy and light data (Philips Actiwatch Spectrum Pro actigraphy monitor) for 8 weeks to evaluate their sleep habits. Pearson and Spearman partial correlations were used to evaluate relationships between objective sleep parameters and baseline cognitive function test scores.

Results: Aberrations of sleep length, sleep fragmentation, and daytime activity measures significantly correlated with cognitive performance on memory, language, visuospatial skills, and speed of processing tests ($p < 0.05$). Greater variability of awakenings at nighttime associated with better scores on memory tests but worse scores on language tests. Longer sleep times associated with worse language scores, while greater variability in daily activity correlated with poorer scores on visuospatial skills tests and speed of processing tests.

Conclusions: This study establishes a framework for obtaining longitudinal sleep data in conjunction with serial cognitive function testing, encouraging further exploration into how sleep metrics affect specific domains of cognitive function. Findings suggest that having a less consistent sleep routine correlates with poorer cognitive function across multiple domains. The authors recommend broader analysis of actigraphy and cognitive function testing as objective measures of sleep and cognition in research and clinical practice.

Categories: Dementia (Alzheimer's Disease)

Keyword 1: cognitive functioning

Keyword 2: sleep

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36 Lexical Frequency and Semantic Fluency Performances in Cognitively Normal APOE ϵ 4 Carriers

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Objective: There is a pressing need for sensitive, non-invasive indicators of cognitive impairment in those at risk for Alzheimer's disease (AD). One group at an increased risk for AD is APOE ϵ 4 carriers. One study found that cognitively normal APOE ϵ 4 carriers are less likely to produce low frequency (i.e., less common) words on semantic fluency tasks relative to non-carriers, but this finding has not yet been replicated. This study aims to replicate these findings within the Wake Forest ADRC clinical core population, and examine whether these findings extend to additional semantic fluency tasks.

Participants and Methods: This sample includes 221 APOE ϵ 4 non-carriers (165 females, 56 males; 190 White, 28 Black/African American, 3 Asian; Mage = 69.55) and 79 APOE ϵ 4 carriers (59 females, 20 males; 58 White, 20 Black/African American, 1 Asian; Mage = 65.52) who had been adjudicated as cognitively normal at baseline. Semantic fluency data for both the animal task and vegetable task was scored for total number of items as well as mean lexical frequency (attained via the SUBTLEXus database). Demographic variables and additional cognitive variables (MMSE, MoCA, AMNART scores) were also included from the participants' baseline visit.

Results: APOE ϵ 4 carriers and non-carriers did not differ on years of education, AMNART scores, or gender ($ps > 0.05$). APOE ϵ 4 carriers were slightly younger and included more Black/African American participants ($ps < 0.05$). Stepwise linear regression was used to determine the variance in total fluency score and mean lexical frequency accounted for by APOE ϵ 4 status after including relevant demographic variables (age, sex, race, years of education, and AMNART score). As expected, demographic variables accounted for significant variance in total fluency score ($p < 0.0001$). Age accounted for significant variance in total fluency score for both the animal task ($\beta = -0.32$, $p < 0.0001$) and the vegetable task ($\beta = -0.29$, $p < 0.0001$), but interestingly, not the lexical frequency of words produced. After accounting for demographic variables, APOE ϵ 4 status did not account for additional variance in lexical