primary purpose of this study was to examine if fall status of community dwelling elderly residents with and without ADRD differs over a four year period and additionally does receipt of rehabilitation in any year modifies this association. National Health and Aging Trends Study (NHATS) data from 2015-2018 was used and sample consisted of participants age 65 and older who were community dwellers. Baseline characteristics of individuals in ADRD (n= 264) and non-ADRD group (n=2,971) was compared using chi square statistic. A generalized estimating equation model (multivariate logistic regression) was used to estimate odds ratio of falls in the two groups, adjusted for sociodemographic and clinical conditions that are predictors of fall risk. At baseline, ADRD group comprised of older, frail individuals who reported increased use of assistive device (AD) and presence of depression. Those in the non-ADRD group at baseline had significantly decreased odds for falls however no statistically significant change was observed for fall status over four years in the two groups (non-ADRD vs ADRD) and this association was not modified by receipt of rehabilitation. Those who used AD, had depression and received rehabilitation had increased odds for falls however no differences were found for those who lived alone and were frail. Future studies should examine the bi-directional interplay between falls and rehabilitation in elderly with ADRD with inclusion of other predictors of fall risk to study their unique characteristics.

LUNG FUNCTION AND DEMENTIA RISK IN THE ATHEROSCLEROSIS RISK IN COMMUNITIES (ARIC) STUDY

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Poor lung function has been linked with adverse neurocognitive outcomes including dementia, but evidence from well-designed prospective studies is limited. We therefore examined the association between lung function, as measured by forced expiratory volume in 1 second (FEV1) and forced vital capacity (FVC), and dementia risk in 12,688 participants of the ARIC study, a prospective study of adults aged 46-70 years (at index visit, mean age =57y, 45% male, 76% White) from four US communities. Lung function was assessed in 1991-1992 (index visit, 76% normal, 16% obstructive, and 8% restrictive lung function), and dementia was ascertained through 2019 via in-person assessments, telephone interviews, and medical record surveillance, with adjudication of dementia with all in-person exams. A total of 2452 developed dementia over 30 years of follow-up. We used Cox proportional hazards model to estimate hazard ratio (HR) and 95% confidence intervals (CI), adjusting for potential confounders (socio-demographics, behavioral factors, cardiovascular risk factors, APOE ε4). Higher FEV1 and FVC were associated with reduced dementia risk [(HR: 0.86, 95%CI: 0.78-0.98, per 1L increase in FEV1) and (HR: 0.86, 95%CI: 0.80-0.93 per 1L increase in FVC)]. Compared to normal lung function, restrictive disease was associated with elevated dementia risk [(HR: 1.19, 95%CI: 1.01-1.41), n=168 dementia cases]; HR for obstructive disease, though modestly elevated (1.09, 95%CI: 0.96-1.24, n=713 dementia cases), was not statistically significant. Our findings of decreased dementia risk with better lung function may have important implications in reducing burden of dementia that is attributable to environmental exposures and associated lung function impairment.

PREVALENCE OF MCI AND DEMENTIA PRIOR TO INCARCERATION

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As the number of older, incarcerated persons increases, prevalence of dementia and mild cognitive impairment (MCI) in this population will likely grow, with implications for healthcare costs and advance care planning within the prison setting. This study is the first to determine the prevalence of dementia or MCI in later-life adults prior to incarceration. We leveraged a national cohort of Veterans aged 50+ whose most recent incarceration was ≤10 years in length and who were released between 10/1/2012 and 9/30/2018 (N=17,962). We linked VA and CMS healthcare records to determine diagnosis of dementia or MCI within 3 years prior to incarceration. The overall sample had a mean age of 62.4 (±7.6) years at the start of their incarceration, were largely male (97%), and were 65% White and 30% Black. Before incarceration, 445 (2.5%) and 152 (0.8%) Veterans were diagnosed with dementia and MCI, respectively. Compared to those without a diagnosis of dementia or MCI prior to incarceration, those with dementia or MCI were older at incarceration start (66.1 [±8.3] vs. 62.3 [±7.9]), had more chronic medical conditions (4.0 [±2.2] vs. 2.2 [±1.9]), were more likely to experience homelessness (21.6% vs. 9.1%), have a TBI (24.5% vs. 9.1%), and have serious mental illness (81.7% vs. 49.1%). All comparisons were significant (p<.001). Our findings indicate that later-life adults with dementia or MCI are being incarcerated. Improved understanding of pathways linking cognitive impairment to later-life incarceration is needed to both prevent unnecessary incarceration and to help provide appropriate healthcare for this vulnerable group.

RISK FACTORS OF SLEEP DISTURBANCE IN OLDER ADULTS WITH DEMENTIA: AN ACTIGRAPHY-BASED VALIDATION STUDY

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Sleep disturbance is a common and significant symptom experienced by older adults with dementia. Early detection and timely treatment of sleep disturbance are critical to prevent adverse consequences including decreased quality of life for persons with dementia and increased caregiver burden. While direct observations and sleep diaries are often unreliable, actigraphy is a cost-effective method in measuring sleep problems in older adults with dementia and provides reliable and rich sleep data. Therefore, this study aimed to examine sleep disturbance objectively measured by actigraphy and its risk factors in community-dwelling older adults with dementia in Korea. This is a prospective study consisting of a two-wave dataset. The model was fitted using Wave 1 data (n=151) and then validated using Wave 2 data (n=59). Independent variables were demographics, cognitive and physical function, depressive symptoms, physical activity level, and neuropsychiatric symptoms measured by Neuropsychiatric Inventory(NPI), and clinical factors including dementia type, sedative use, and comorbidities. Sleep disturbance was defined as less than six nighttime sleep hours and sleep efficacy less than 75%. Using the Youden's Index, the sample was dichotomized into sleep disturbance group (n=83) and sound sleep group (n=68). The results of the generalized linear mixed model showed that the risk factors for sleep disturbance included vascular dementia, age, step count, and having three neuropsychiatric symptoms (i.e., delusions, depression, and disinhibition). Individuals with dementia at risk for sleep disturbance should be identified to prioritize early prevention strategies and individualized interventions. Particularly, management of delusion, depression, disinhibition is critical in preventing disturbed sleep.

SOURCES OF POSITIVITY IN THE DAILY LIFE OF FAMILY CAREGIVERS OF PERSONS WITH DEMENTIA

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Family caregivers often experience fatigue, burnout, and health complications yet also enjoy many aspects of caregiving that may benefit their well-being. This study identifies positive aspects of caregiving in the daily life experiences of dementia family caregivers in order to inform interventions to support caregivers' well-being. This case study entails a secondary analysis of open-ended question data obtained from 165 family caregivers who answered daily diaries over 21 days (n = 2841 responses). We used content analysis to organize and elicit thematic categories from the data collected in response to the question "what was the best part of your day." A final 762 responses were selected as meeting the "care" criteria for the study, with an inter-rater reliability of 91.6%. Data analysis revealed three major sources of daily positive aspects including: caregiver-focused, patient-oriented, and support-system based. The analysis also revealed seven different kinds of daily positive aspects, such as getting to enjoy time with the care recipient or getting to accomplish other non-caregiving tasks. Many of the positive aspects of caregiving reported were enabled by social support, but they were ultimately from how they utilized that support (e.g., getting alone time) that provided the positivity. The findings of this study demonstrate the important role social support plays in caregiving, as well as highlights other possible intervention targets to create easier, more positive days for family caregivers.

THE RELATIONSHIP BETWEEN NEUROPSYCHIATRIC SYMPTOMS, NIGHTTIME BEHAVIORS, AND ALZHEIMER'S DISEASE CSF BIOMARKERS

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Alzheimer's disease (AD) commonly involves neuropsychiatric symptoms (NPS), such as nighttime behaviors (or sleep disturbance), hallucination, delusion, or mood changes. However, it is unclear how NPS and sleep disturbances are correlated with AD biomarkers. The purpose of this analysis was to examine how NPS and nighttime behaviors are associated with AD CSF biomarkers by cognitive status. A total of 1,667 subjects' (mean age = 69.4 SD=9.3, 48 % (808) were male) data from the National Alzheimer's Disease Coordinating Center (NACC) were used, including subjects with dementia (n = 577), mild cognitive impairment (MCI, n = 363), cognitive impairment but not MCI (n = 47), cognitive impairment due to Alzheimer's etiology (n= 608), and normal cognition (n = 680). The nighttime symptoms, number, and severity of NPS were assessed using the Neuropsychiatric Inventory Questionnaire Quick Version (NPI-Q). Cerebrospinal fluid (CSF) samples were analyzed for Aβ42,dft5 t-tau, p-tau. We used generalized linear models to explore the associations accounting for age, sex, APOE4 alleles, and BMI. We found the number of NPS were associated with Aβ42 (p = 0.042) in individuals with MCI, impaired, or dementia due to Alzheimer's etiology. Yet, the number of NPS were not associated with t-tau or p-tau in individuals with and without dementia. The severity of NPS including nighttime symptoms were not associated with biomarkers. Our results could suggest that the number of NPS can be reflected by higher CSF Aβ42 levels in the individuals with Alzheimer's etiology. Future longitudinal analyses are warranted to understand the causal relationships.

TIME-VARYING INSOMNIA SYMPTOMS AND INCIDENCE OF COGNITIVE IMPAIRMENT AND DEMENTIA AMONG OLDER US ADULTS

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There is conflicting evidence regarding the association between insomnia and the onset of mild cognitive impairment (MCI) or dementia. This study aimed to evaluate if time-varying insomnia is associated with the development of MCI and dementia. Data from the Health and Retirement Study (n = 13,833) from 2002 to 2014 were used (59.4% female).