

### **P38: Associations between occupation, retirement age and 20-year cognitive decline: The Atherosclerosis Risk in Communities (ARIC) Study**

**Authors:** Albert C. Liu, Mehul D. Patel, Alden L. Gross, Thomas H. Mosley, Andrea L.C. Schneider, Anna M. Kucharska-Newton, A. Richey Sharrett, Rebecca F. Gottesman, Silvia Konto

**Objectives:** Activities that require active thinking, like occupations, may influence cognitive function and its change over time. Associations between retirement and dementia risk have been reported, however the role of retirement age in these associations is unclear. We assessed associations of occupation and retirement age with cognitive decline in the US community-based Atherosclerosis Risk in Communities (ARIC) cohort.

**Methods:** We included 14,090 ARIC participants, followed for changes in cognition during up to 21 years. Information on current or most recent occupation was collected at ARIC baseline (1987–1989; participants aged 45–64 years) and categorized according to the 1980 US Census protocols and the Nam-Powers-Boyd occupational status score. Follow-up data on retirement was collected during 1999–2007 and classified as retired versus not retired at age 70. Trajectories of global cognitive factor scores from ARIC visit 2 (1990–1992) to visit 5 (2011–2013) were presented, and associations with occupation and age at retirement were studied using generalized estimating equation models, stratified by race and sex, and adjusted for demographics and comorbidities.

**Results:** Mean age (SD) at first cognitive assessment was 57.0 (5.72) years. Higher occupational status and white-collar occupations were significantly associated with higher cognitive function at baseline. Occupation was associated with cognitive decline over 21 years only in women, and the direction of the effect on cognitive function differed between black and white women: in white women, the decline in cognitive function was greater in homemakers and low status occupations, whereas in black women, less decline was found in homemakers and low (compared to high) occupational status. Interestingly, retirement on or before age 70 was associated with less 21-year cognitive decline in all race-sex strata, except for black women.

**Conclusions:** Associations between occupation, retirement age and cognitive function substantially differed by race and sex. Further research should explore reasons for the observed associations and race-sex differences.

### **P39: The Effect of Home-Visit Nursing in Preventing Readmission of Patients with Mental Disorders to Psychiatric Hospitals: A Literature Review**

**Authors:** Taiki Teshima, Yuta Koto, Miyae Yamakawa, BSN, Ph.D.

**Background:** The transition from hospital to community for psychiatric patients is often challenging due to difficulties in managing community life after discharge and receiving consistent mental health treatment (Marianne, 2019). Some systematic reviews reported on interventions to improve discharge from acute adult mental health inpatient care to the community (Tyler, 2019) and the effectiveness of crisis resolution/home treatment teams for older people with mental health problems (Toot, 2011). However, these reviews revealed inadequate evidence for nursing interventions in community. In Japan, home-visit nursing is considered to play an important role for people with mental disorders living in community.

This review aims to provide an overview of the effectiveness of home-visit nursing in supporting community life for individuals with mental disorders discharged from psychiatric hospitals.

**Methods:** We conducted a search in electronic databases including Medline (OVID) and CINAHL (EBSCOhost). The search was conducted using the following keywords: “mental disorders”, “hospitalization”, “patient readmission”, “home visit nursing”, “home nursing”, “home health care”, “home care services”, and “house calls”. The review included original articles and research reports. Conference reports and articles about other professions, and interventions conducted in hospitals or facilities were excluded.

**Results:** A total of 205 articles were extracted, with 109 from Medline and 96 from CINAHL. We retrieved 13 studies, including three randomized controlled trials, two interventional studies, and eight retrospective studies. Most participants were post-discharge individuals with mental disabilities, but some studies included individuals prior to hospital admission. Most studies reported that home-visit interventions reduced psychiatric rehospitalization, the duration of hospitalization, and medical costs. One study reported that community-based treatment for older persons with severe mental illness decreased depressive symptoms and psychiatric hospitalization at 6 months. Additionally, telephone follow-ups were reported to be more effective than regular interventions in some studies. However, the intervention and effectiveness measurement Methods varied among the studies.

**Conclusions:** Home-visit interventions appear to be effective in preventing hospitalization for individuals with mental disorders. However, it is difficult to make simple comparisons as the content of home-visit interventions varies according to the background system and the region. Further research and systematic reviews are necessary.

**Keywords:** Coping, caregivers, Alzheimer’s

#### **P40: Memantine effects on resting-state EEG sources in Alzheimer’s disease**

**Authors:** Takahiro Mori<sup>1,4</sup>, Norifumi Tsuno<sup>2</sup>, Ichiro Ishikawa<sup>3,4</sup>, Yu Nakamura<sup>3</sup>

1. Department of Liaison Psychiatry, Kagawa University School of Medicine, Miki-cho, Japan
2. Department of Clinical Psychology, Kagawa University School of Medicine, Miki-cho, Japan
3. Department of Neuropsychiatry, Kagawa University School of Medicine, Miki-cho, Japan
4. Department of psychiatry, Mitoyo City Nishikagawa Hospital, Mitoyo, Japan

**Objectives:** Several studies have shown that acetylcholinesterase inhibitors (AChEIs) decrease delta or theta activity, increase alpha activity on Electroencephalography (EEG) in Alzheimer’s disease (AD) patients. The effects of memantine on EEG in AD patients are not as well understood as those of AChEIs. The present study investigated the electrocortical effects of 3 months memantine medication in AD patients.

**Methods:** EEG was recorded in 28 patients with AD (mean age  $83.3 \pm 4.6$  years, 19 females) before and 3 months after the onset of memantine medication. Source localization was applied to the EEG using exact low-resolution brain electromagnetic tomography (eLORETA) in 8 frequency bands (delta, theta, alpha-1, alpha-2, beta-1, beta-2, beta-3, gamma). Differences in source strengths from before to after memantine treatment were compared per frequency band using t-statistics (corrected for multiple testing over frequency bands and voxels).

**Results:** Theta activity significantly decreased in bilateral anterior cingulate gyrus, bilateral posterior cingulate gyrus, right parahippocampal gyrus, right insula, right fusiform gyrus, bilateral precuneus, right uncus and right temporal gyrus. Alpha-1 and alpha-2 activity decreased in the anterior cingulate gyrus. Beta-1 activity significantly decreased in the anterior and posterior cingulate gyrus. There were no areas of increased EEG activity in any frequency bands.