P175: Cohort differences in depressive burden in old age: role of psychosocial, behavioral, and functional factors

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Objective: Rapid societal changes occurred during the course of the 20th century. Previous literature has found an increase in depression over time for younger and middle- aged populations. Among older adults, the prevalence of major depression has been found to be stable over time, while for the milder forms, the findings are limited by the largely non-representative nature of analyzed samples. Given the dramatic secular changes in several factors linked to old-age depression, a careful examination of depressive symptom burden and prevalence of depression in representative cohorts of similarly-aged older adults separated in time is required.

Methods: We will analyze data on 2,041 older adults from the Swedish National Study on Aging and Care in Kungsholmen. Separate individuals, aged 60 and 81 years were assessed with a Comprehensive Psychopathological Rating Scale (CPRS) during detailed clinical examinations, separated in time by 15 years (2001 vs. 2016). Information on 21 depressive symptoms, is subsequently combined into diagnoses of *major* depression (presence of at least one core symptom [low mood and/or loss of interest], and at least five out of the nine symptoms); *minor* depression (presence of at least one core symptom, and two to four symptoms in total), and *subsyndromal* depression (presence of at least two symptoms in the absence of any other depression diagnoses). Psychosocial (loneliness, bereavement), behavioral (alcohol consumption, smoking), and functional factors (impairments in activities of daily living) are used as potential explanatory factors for any observed cohort differences in symptom burden or prevalence of depression.

Results: For the 60-year old age-group, comparison of symptom burden and diagnostic status will be done across 739 participants assessed in 2001 and 677 people assessed in 2013. For the 81-year old age- group, comparisons will involve 236 people assessed in 2001, 194 people assessed in 2010, and 195 people assessed in 2016.

Conclusion: Preliminary results are expected by March, once data entry and cleaning are completed. We hypothesize that the burden of depressive symptoms and the prevalence of depression will be lower in later born cohorts and that explanatory factors may account for some of the cohort effect.

P177: Motoric cognitive risk syndrome is associated with MRI-derived brain age: the Arakawa Geriatric Cohort Study

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Objective: Motoric cognitive risk (MCR) syndrome is characterized by slow gait speed and subjective cognitive decline, which could predict future dementia. Previous research reported the associations between MCR and gray matter volume reduction in total and specific cortical regions and increased white matter hyperintensities in the brain. However, knowledge is scarce on the relationship between MCR and neuroimaging-derived brain age. The present study explored the association between MCR and brain-predicted age differences.

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Methods: The present study is a cross-sectional study that involved 1,099 community- dwelling older adults in the Arakawa Ward, Tokyo, Japan, who were between 65 to 84 years old in 2016. In defining MCR, subjective cognitive decline was deemed positive for those who answered "Yes" to the question, "Do you feel that you have more problems with memory than most?" in the Geriatric Depression Scale. Slower gait speed was defined as walking slower than the -1 standard deviation of the age- and sex- stratified gait speed. Brain age was predicted on the 1,021 participants with brain magnetic resonance imaging without severe artifacts or lesions. We used the support vector regression algorithm using MATLAB's "fitrsvm" function, applying ten-fold cross-validation to the results of primary component analysis of the spatially normalized gray-matter images. We calculated the brain-predicted age difference (Brain-PAD) by subtracting the chronological age from the predicted brain age. After excluding the participants with dementia (N=23), the difference in the mean Brain-PAD between MCR+ and MCR- was compared with the Student's t-test. The association between MCR and Brain PAD was examined with multiple regression analyses, adjusting for clinical-demographical data.

Results: The median ages were 72 for both MCR+ (N=96) and MCR- (N=902). The mean Brain-PAD was 3.29 for MCR+ and -0.19 for MCR- ($p < .001$, Hedges' $g = -0.504$). Multiple regression analysis showed a significant association between Brain- PAD and MCR (standardized $\beta = 0.159$, $p < .001$) after adjusting for covariates.

Conclusion: The present findings suggest that MCR reflects accelerated brain aging, which may increase the risk of neurodegeneration. Future studies should examine the longitudinal trajectories of brain age and incident dementia in participants with MCR.

P182: Effects of Physical Environment on Quality of Life of Residents in Dementia Facilities in Canada & South Korea: A Longitudinal Observational Study

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Approximately 44% of new residents of care facilities in Korea were diagnosed with dementia (Song, Park & Kim, 2013), and in Canada, about one-third of older adults younger than 80 who have been diagnosed with dementia live in long-term care facilities (Canadian Institute for Health Information, 2018). Due to the rapid increase of these figures in the future, continuing to provide assistance services and appropriate environment for residents with dementia could be challenging for both countries.

This longitudinal observational study aims to examine whether residents with dementia in long-term care facilities with variability in physical environment attributions in Vancouver (N=11), Canada and Seoul (N=9), South Korea had a distinction in their quality of life (QoL). Physical environmental assessment was conducted using the Therapeutic Environment

Screening Survey for Nursing Homes (TESS-NH) (Sloane et al., 2002). QoL was assessed three times over one year using Dementia Care Mapping tool (DCM) (University of Bradford, 2010). The results of the study demonstrated that the residents with dementia living in an institutional large-scale setting showed statistically more withdrawn behavior and spent more time to be negative mood or affect compared to the ones in a small-scale setting. This study also found that the number of potential positive behaviors of residents in a small-scale setting was three times higher than that of residents in an institutional large-scale setting. When looking at the distinction between two countries in the behavior category with a large average time difference, the residents with dementia in Korea had shorter meal/dessert times compared to those in Canada. The study supports that the small-scale homelike environment is intensely associated with a therapeutic environment for older adults with dementia.

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