

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.