

**Methods:** This study included 7887 individuals 65 years and older from 2017 to 2018 in the China Longitudinal Healthy Longevity Survey (CLHLS). The frequency of indoor natural ventilation was measured as the self-reported frequency of window opening per week in each season. Depressive symptoms were measured by the 10-item Center for Epidemiologic Studies Short Depression Scale (CES-D). Using a model adjusted for demographic, socio-economic, health status, and environmental factors, the correlation between indoor ventilation frequency and depressive symptoms was verified through logistic regression.

**Results:** Among the 7887 elderly people included in this study, 1952 (24.7%) had symptoms of depression. In the fully adjusted model, compared with the lower indoor overall ventilation frequency group (indoor ventilation frequency: 0–3 times/week), the higher indoor overall ventilation frequency group (indoor ventilation frequency: 6–8 times/week) showed a decrease in depressive symptoms by 33% [OR: 0.67, 95% (CI): 0.51–0.88]. Subgroup analysis and sensitivity analysis yielded similar results.

**Conclusions:** High frequency of indoor ventilation is significantly associated with the reduction of depressive symptoms in Chinese individuals 65 years old or older. This result provides strong evidence for health intervention and policy formulation. Encouraging an increase in indoor ventilation frequency will be an economically beneficial measure to promote healthy aging of the Chinese population.

#### **FC48: Using Complexity Analysis to Explore the Differences of Resting-state fMRI Data Among Late-life Depressed, Mild Cognitive Impaired, and Cognitive Normal Older Adults.**

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**Introduction:** Late-life depression (LLD) is associated with cognitive deficit with risk of future dementia. By examining the entropy of the spontaneous brain activity, we aimed to understand the neural mechanism pertaining to cognitive decline in LLD.

**Methods:** We collected MRI scans in older adults with LLD (n = 32), mild cognitive impairment [MCI (n = 25)] and normal cognitive function [NC, (n = 47)]. Multiscale entropy analysis (MSE) was applied to resting-state fMRI data. Under the scale factor (tau) 1 and 2, reliable separation of fMRI data and noise was achieved. We calculated the brain entropy in 90 brain regions based on automated anatomical atlas (AAL). Due to exploratory nature of this study, we presented data of group-wise comparison in brain entropy between LLD vs. NC, MCI vs. NC, and LLD and MCI with a p-value below 0.001.

**Results:** The mean Mini-Mental State Examination (MMSE) score of LLD and MCI was 27.9 and 25.6. Under tau 2, we found higher brain entropy of LLD in left globus pallidus than MCI (p = 0.002) and NC (p = 0.009). Higher brain entropy of LLD than NC was also found in left frontal superior gyrus, left middle superior gyrus, left amygdala and left inferior parietal gyrus. The only brain region with higher brain entropy in MCI than control was left posterior

cingulum (p-value = 0.015). Under tau 1, higher brain entropy was also found in LLD than in MCI in right orbital part of medial frontal gyrus and left globus pallidus (p-value = 0.007 and 0.005).

**Conclusions:** Our result is consistent with prior hypothesis where higher brain entropy was found during early aging process as compensation. We found such phenomenon particular in left globus pallidus in LLD, which could be served as a discriminative brain region. Being a key region in reward system, we hypothesis such region may be associated with apathy and with unique pathway of cognitive decline in LLD. We will undertake subsequent analysis longitudinally in this cohort

**Key words:** resting-state fMRI, Late-life depression, Brain entropy, globus pallidus, cognitive decline

### **FC49: Alzheimer's Symposium: A Perspective from the Academy**

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The World Health Organization (WHO) proclaimed September 21 as World Alzheimer's Disease Awareness Day and extended the observance to the entire month. Various awareness campaigns are being conducted around the world, with special emphasis on the importance of education to improve the quality of life for patients, families, and the community at large, and to eliminate stigma and ageism.

It is estimated that there are approximately 44 million people worldwide with some form of dementia, while in the United States it reaches 5.4 million. In Puerto Rico, it is estimated that there are approximately 60,000 people with Alzheimer's disease. An AARP study (2021) showed that there are over 500,000 caregivers of older adults, making Puerto Rico one of the top three countries with the largest aging population and the 6th country in the world. While in Latin America and the Caribbean there is a prevalence between 6.2 and 6.5 per 100 adults aged 60 years or older (WHO).

This health and social situation require an educated and empowered society to meet the challenges. Muñoz et. al (2023) conducted a qualitative study with caregivers and found that 91% of the participants stated that training would help them provide better care to the elderly. Social work is one of the main disciplines dealing with this social phenomenon and should therefore play a leading role in education and therapeutic intervention.

For the past five years, the Department of Social Work at Inter-American University, Metro Campus, has joined and supported the cause through the celebration of the Alzheimer's Symposium: A Perspective from the Academy. This event involves the entire university community, as well as the community at large, which includes caregivers, government and non-profit agencies, and professionals from various disciplines. There will be concurrent lectures, Discussions among local and international professionals, a film forum, poster presentations, artistic expressions, and educational tables. The 6th Symposium will be held on September 20, 2024. The Symposium is promoted through various media. This activity has generated alliances, recommendations and new educational projects that contribute to the well-being of older adults.

**Keywords:** Education, Alzheimer's, Caregivers, Academia, Stigma, Partnerships, Dementia, Elderly, Symposium, Aging, Quality of Life, Quality of Life, Puerto Rico