Dementia symptoms peak in winter and spring, study finds

04/09/2018

Adults both with and without Alzheimer's disease have better cognition skills in the late summer and early fall than in the winter and spring, according to a new study published this week in *PLOS Medicine* by Andrew Lim of Sunnybrook Health Sciences Centre and the University of Toronto, Canada, and colleagues.

There have been few previous studies concerning the association between season and cognition in older adults. In the new work, researchers analyzed data on 3,353 people enrolled in three different cohort studies in the U.S., Canada, and France. Participants had undergone neuropsychological testing and, for some participants, levels of proteins and genes associated with Alzheimer's disease were available.

The authors found that average cognitive functioning was higher in the summer and fall than the winter and spring, equivalent in cognitive effect to 4.8 years difference in age-related decline. In addition, the odds of meeting the diagnostic criteria for mild cognitive impairment or dementia were higher in the winter and spring (odds ratio 1.31, 95% CI: 1.10-1.57) than summer or fall. The association between season and cognitive function remained significant even when the data was controlled for potential confounders, including depression, sleep, physical

activity, and thyroid status. Finally, an association with seasonality was also seen in levels of Alzheimer's-related proteins and genes in cerebrospinal fluid and the brain. However, the study was limited by the fact that each participant was only assessed once per annual cycle, and only included data on individuals from temperate northern-hemisphere regions, not from southern-hemisphere or equatorial regions.

"There may be value in increasing dementia-related clinical resources in the winter and early spring when symptoms are likely to be most pronounced," the authors say. "By shedding light on the mechanisms underlying the seasonal improvement in cognition in the summer and early fall, these findings also open the door to new avenues of treatment for Alzheimer's disease."