DOI: 10.1002/alz.052227

DEMENTIA CARE AND PSYCHOSOCIAL FACTORS

POSTER PRESENTATION

Alzheimer's & Dementia®
THE JOURNAL OF THE ALZHEIMER'S ASSOCIATION

Social network characteristics moderate associations between cortical thickness and cognitive functioning in older adults

Neika Sharifian[1] | Afsara B Zaheed[1] | Emily P Morris[1] | Ketlyne Sol[1] | Jennifer J Manly[2] | Nicole Schupf[2] | Richard Mayeux[2] | Adam M Brickman[2] | Laura B Zahodne[1]

[1] University of Michigan, Ann Arbor, MI, USA

[2] Columbia University Irving Medical Center, New York, NY, USA

Correspondence
Neika Sharifian, University of Michigan, Ann Arbor, MI, USA.
Email: nsharifi@umich.edu

Abstract

Background: Although prior research suggests that brain health is associated with cognitive functioning in later life, the strength of brain-cognition associations varies. Lifestyle factors may alter these associations by either increasing or decreasing the probability of exhibiting cognitive symptoms at any given level of brain pathology. One lifestyle factor that prior clinicopathologic research has found to influence the association between greater Alzheimer's disease pathology and lower cognitive performance is an individual's total social network size. However, little is known about distinct social relationship types (i.e., family vs. friends).

Method: The current cross-sectional study used data from the Washington Heights-Inwood Columbia Aging Project (WHICAP; $n = 654$, 63-96 years old, 62.40% Female) to examine whether distinct social network characteristics moderate associations between cortical thickness in regions implicated in Alzheimer's disease and cognitive performance. Initial linear regression models examined the effects of total social network size, cortical thickness and their interaction on global cognitive functioning and individual cognitive domains (memory, language, speed/executive functioning, visuospatial function). Subsequent models tested the effects of distinct social relationship types (i.e., spouse/partner, number of children, other relatives, friends).

Result: Although there were no main effects of cortical thickness or individual social network components on cognition, there was an interaction between cortical thickness and the size of friend networks. Specifically, lower cortical thickness was associated with lower global cognition among individuals with smaller friend networks, but not individuals with larger friend networks. When broken down by individual cognitive domains, this pattern of results was most prominent for language and speed/executive functioning. Total social network size and family networks (spouse/partner, number of children or relatives) did not moderate associations between cortical thickness and cognition.

Conclusion: Results are consistent with a growing body of literature suggesting that maintaining more friendships may promote cognitive reserve in older adulthood. Longitudinal, intervention, and functional neuroimaging studies are needed to determine whether interacting with friends strengthens neural networks that can support cognitive performance in the context of poorer brain health.