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EPIDEMIOLOGY

Loneliness and cognitive decline in the community: Examining demographic and APOE4 status differences

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Abstract

Background: Limited information exists regarding patterns of loneliness and relationships among subgroups of older adults in the community. We evaluated demographic and APOE4 status differences in associations between loneliness and cognitive decline in older adults.

Method: Participants (N = 7,696) were selected from the Chicago Health and Aging Project (CHAP), a longitudinal population-based study, who completed at least two measurement time points of neuropsychological testing, including individual tests of episodic memory, perceptual speed, and the Mini-Mental State Examination (MMSE). The mean of individual test scores was taken to calculate composite global cognitive function. Loneliness was measured using an item from the Center for Epidemiologic Studies-Depression Scale (modified). Mixed effects regression models evaluated associations between loneliness and decline in global cognitive function and individual tests, by race, sex, and APOE4 (one or more copies of e4 allele (any) vs. none). Modeling included adjustments such as sex, race, age, education, chronic conditions, cognitive activities, statin prescription, and interactions with time for each.

Result: A higher percentage of participants that were female (74% vs. 61%), African American compared to Non-Hispanic White (72% vs. 63%), with older mean age (74 vs. 72 years) reported loneliness. The prevalence of loneliness was similar across APOE4 status. The interaction/ synergy of loneliness with time had statistically significant associations with global cognition (β = -0.010, p = 0.005), episodic memory (β = -0.010, p = 0.017), and MMSE (β = -0.015, p = 0.000) for women. This interaction was statistically significant in associations with global cognition (β = -0.012, p = 0.001), episodic memory (β = -0.011, p = 0.012), and MMSE (β = -0.018, p = 0.000) among African American participants. This interaction also showed the following statistically significant associations by APOE4 status: any (β = -0.012, p = 0.034) and none (β = -0.007, p = 0.049) for global cognition, none (β = -0.009, p = 0.039) for episodic memory, and any (β = -0.017, p = 0.009) and none (β = -0.011, p = 0.004) for MMSE.

Conclusion: Loneliness is differentially associated with global cognitive decline based on race and sex but not APOE4 status. More research is needed to understand rela-

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tionships between loneliness and biological mechanisms and how to best account for demographic characteristics when intervening on loneliness.