

AMBIENT AIR POLLUTION AND INCREASING DEPRESSIVE SYMPTOMS IN OLDER WOMEN: THE MEDIATING ROLE OF THE PREFRONTAL CORTEX

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Exposure to air pollution may accelerate brain aging and increase risk of late-life depressive symptoms (DS). Brain structures underlying these associations are unknown. Longitudinal data from 829 community-dwelling women without dementia (baseline age 81.6 ± 3.6 years old) who participated in both the Women's Health Initiative Memory Study Magnetic Resonance Imaging study (WHIMS-MRI; 2005-06) and the WHIMS-Epidemiology of Cognitive Health Outcomes (2008-16) were analyzed to examine whether volumetric measures of brain structures mediated associations between long-term exposure to ambient air pollutants and annual increases in DS (as measured by annually assessed 15-item Geriatric Depression Scale). Annual PM_{2.5} (fine particulate matter of aerodynamic diameter <2.5) and NO₂ were estimated at the participants' residence using regionalized universal kriging models and aggregated to the 3-year average prior to the WHIMS-MRI. Structural equation models were constructed to estimate associations between exposure, structural brain variables, and trajectories of DS (standardized on baseline mean and SD). Living in locations with higher NO₂ (standardized $\beta = 0.023$; 95% Confidence Interval (CI) = 0.004, 0.042) or PM_{2.5} (standardized $\beta = 0.021$; 95% CI = 0.004, 0.038) was associated with larger annual increases in DS (~60% larger annual increase in DS). Higher NO₂, but not PM_{2.5}, was associated with smaller prefrontal cortical volumes (standardized $\beta = -0.431$; 99% CI = -0.518; -0.344). Prefrontal cortical volume explained 30.4% of the total association between annual DS increase and NO₂. These findings underscore the importance of the prefrontal cortex in associations between NO₂ exposure and increasing DS in later-life.

CRIME AND PERCEIVED NEIGHBORHOOD SAFETY ACROSS RACIAL-ETHNIC GROUPS

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Crime often increases safety concerns for residents, and safety concerns are generally associated with worse health. Despite that marginalized racial/ethnic groups are more likely than non-Hispanic Whites to live in areas with more crime, prior studies have documented that these groups differentially view crime as a threat to safety. Furthermore, older adults are more likely to report safety concerns than younger adults, despite a lesser chance of being victimized. Using multiple waves of data from the Health and Retirement Study, a representative sample of US adults aged 51 years and older ($n = 11,161$, mean age of 66 years), we conducted weighted

repeated cross-sectional linear regressions to examine whether the association between crime and perceived neighborhood safety varies by racial/ethnic group, by age, or by wave of data collection. Study results indicated that higher crime rates consistently predicted more safety concerns among non-Hispanic Whites, Hispanics, and "Others," but were inconsistently associated with safety concerns among non-Hispanic Blacks, adjusting for age, household wealth, and census tract-level concentrated disadvantage, population density, and racial/ethnic heterogeneity. Furthermore, among non-Hispanic Whites, greater crime predicted more safety concerns before, but not after including a measure of racial/ethnic heterogeneity. These patterns persisted across the full age span. Racial/ethnic differences in the crime-safety link could be explained by additional sociopolitical and environmental variables including diversity that vary over time. Follow-up analysis is needed to determine if the racial/ethnic differences in crime-safety links extend to health.

SPACE, CONTEXT, HUMAN CAPITAL: A MACRO-MICRO PERSPECTIVE ON SOCIAL ENVIRONMENT AND FINANCIAL LITERACY IN LATER LIFE

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Despite a large body of literature documenting the association between individual characteristics and financial literacy, our understanding of the impact of macro-environmental conditions on individual financial literacy remains limited, particularly in later life. Drawing from a micro-macro perspective on the social environment and individual processes, we examined the extent to which three state-level contextual characteristics were associated with individual later-life financial literacy in the United States: tertiary educational attainment, poverty prevalence, and Internet penetration. We utilized data from the 2019 Understanding America Study (UAS) for adults aged 50 years or older to assess financial literacy ($n = 2,930$), and data from the American Community Survey to evaluate contextual conditions. The UAS is a nationally representative survey panel supported by the Social Security Administration and the National Institute on Aging. Cross-sectional multilevel regression models were used to examine the hypothesized effects. We found that state-level poverty prevalence was negatively associated with individual financial literacy while state-level Internet penetration was positively associated with individual financial literacy, over and above individual characteristics known to impact financial literacy. No association was found between state-level educational attainment and individual financial literacy after controlling for respondents' own education. Findings suggest that the social environment may condition financial literacy in later life through exposure to opportunities that promote knowledge acquisition. Interventions to enhance later-life financial literacy may benefit from targeted approaches that take into account the environmental characteristics of their locations of residence.