

Longitudinal associations between racial discrimination and brain aging among black older adults

Laura B. Zahodne¹ | Neika Sharifian¹ | A. Zarina Kraal¹ | Emily P. Morris¹ |
Ketlyne Sol¹ | Afsara B. Zaheed¹ | Lindsey Meister¹ | Richard Mayeux² |
Nicole Schupf² | Jennifer J. Manly² | Adam M. Brickman²

¹ University of Michigan, Ann Arbor, MI, USA

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

Correspondence

Laura B. Zahodne, University of Michigan, Ann Arbor, MI, USA

Email: lzahodne@umich.edu

Abstract

Background: Non-Hispanic Black older adults exhibit worse brain and cognitive health than non-Hispanic Whites. Emerging research points to racially-patterned social stress (e.g., discrimination) as a contributor to racial inequalities independent of socioeconomic and health status. While comparative studies show that non-Hispanic Blacks face more discrimination than non-Hispanic Whites, few studies focus exclusively on non-Hispanic Black older adults in order to examine within-group heterogeneity and clarify how the unique experiences of discrimination among Black older adults link to their brain aging.

Method: 221 non-Hispanic Black participants in the Washington Heights-Inwood Columbia Aging Project completed psychosocial measures and structural magnetic resonance imaging (MRI). Experiences of discrimination were operationalized using the Everyday Discrimination and Major Experiences of Lifetime Discrimination scales. After reporting the frequency of discrimination, participants reported the attribution(s) of these experiences (e.g., race). Latent difference score models examined associations between discrimination and brain aging, operationalized as hippocampal and white matter hyperintensity (WMH) volumes measured over an average of four years. Initial models considered general discrimination (i.e., regardless of attribution), and subsequent models considered racial discrimination per sé. All models controlled for age, sex/gender, education, income, total intracranial volume, and length of follow-up.

Result: General discrimination was not associated with brain aging. Lifetime racial discrimination was associated with lower initial hippocampal volume. Everyday racial discrimination was associated with faster accumulation of WMH over time.

Conclusion: This longitudinal MRI study suggests that racial discrimination may be detrimental for brain aging among non-Hispanic Black older adults, which could contribute to their disproportionate dementia burden. Disaggregating discrimination by attribution can clarify research on psychosocial contributors to racial inequalities in brain and cognitive aging, as racial discrimination appears to be particularly toxic. Future research should examine both distal (e.g., environmental exposures, life course opportunities) and proximal (e.g., physiological stress pathways, inflammation) mechanisms linking racial discrimination to worse brain aging, which may differ for institutional versus interpersonal forms of racism.

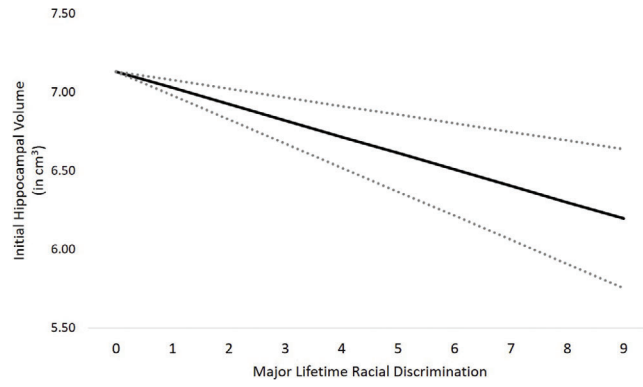


FIGURE 1

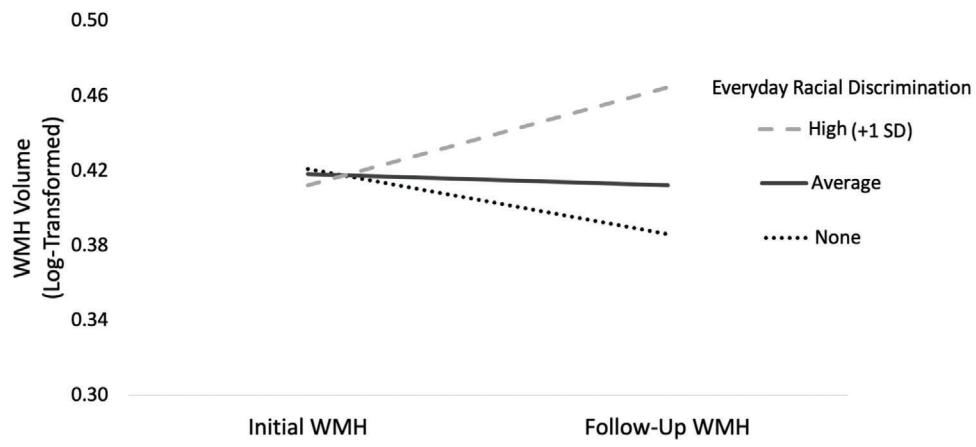


FIGURE 2