Education-Related Structural Racism and Biological Risk Factors for Alzheimer's Disease/Alzheimer's Disease Related Dementias (AD/ADRD)

P3-R9

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Structural racism determines the educational contexts into which Black and White Americans are sorted. Such contexts in early life were significant predictors of several biological risk factors for AD/ADRD for both Black and White adults. Interventions aimed toward addressing unequal early life contexts may be effective in mitigating the progression of AD/ADRD.

BACKGROUND

- Accumulating evidence suggests quality of schooling may be a more robust predictor of Black-white disparities in AD/ADRD than educational attainment.
- Yet, research on the types of environments that shape quality of education and, subsequently educational attainment, is limited.
- Historical and contemporary processes of structural racism may differentiate the educational contexts of Black and white students, creating unequal educational pathways to AD/ADRD risk.
- This paper examines the relationship between adolescent educational contexts and biological risk factors for AD/ADRD among Black and white adults.

METHODS

- Data come from Black and White respondents in the National Longitudinal Study of Adolescent to Adult Health.
- We constructed a latent measure of educational context in adolescence (ages 12-20) using 5 school-district level indicators and confirmatory factor analysis (see Fig. 1).
- Outcomes in young adulthood (ages 24-32) included interleukin-6 (IL-6), interleukin-10 (IL-10); TNF-alpha (TNF-a); C-reactive protein (CRP); and Epstein-barr virus (EBV).
- Controls included parent income, parent education, and age respondent moved to school district.
- Multivariate regression models assessed associations between the latent measure of educational context and the outcomes, and an interaction between educational context and respondent race.

RESULTS

- Average factor scores for the educational context construct were higher among Black respondents (mean = .79) compared with Whites (mean = -.10), indicating that Black respondents generally had higher than average exposure to disadvantaged school districts in adolescence.

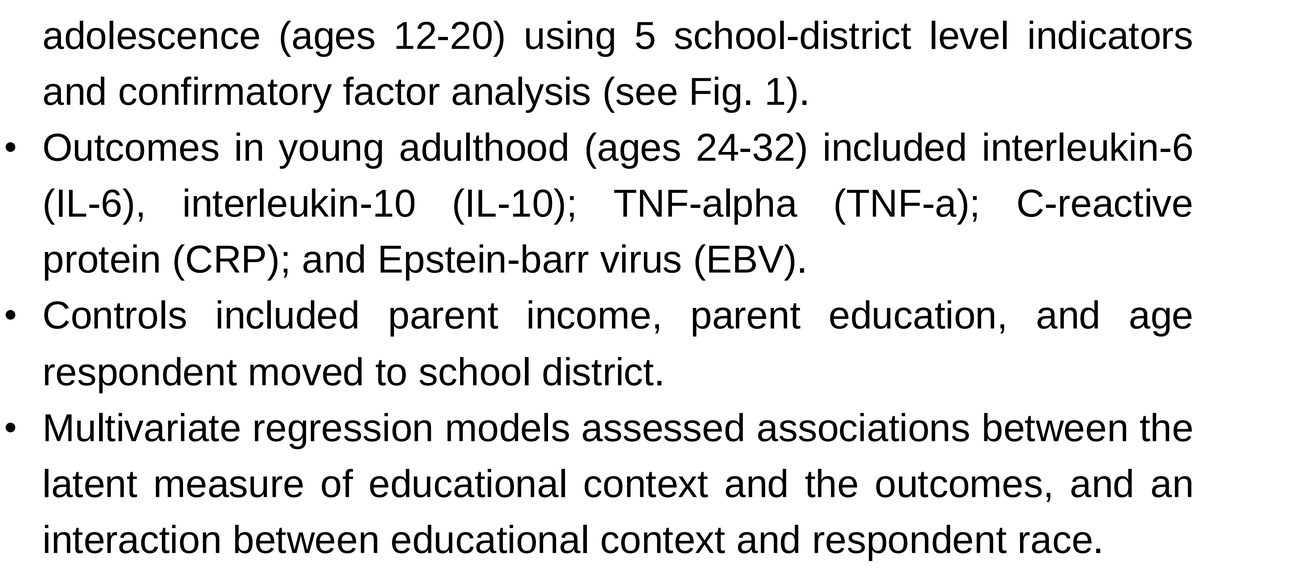

Figure 1. Latent Construct of Adolescent Education Context

RESULTS CONTINUED

- Exposure to higher levels of the educational context construct in adolescence was related to higher levels of adult IL-6 (b=1.083, p-value=.008; see Fig. 2) and EBV (b=1.079, p-value=.003).

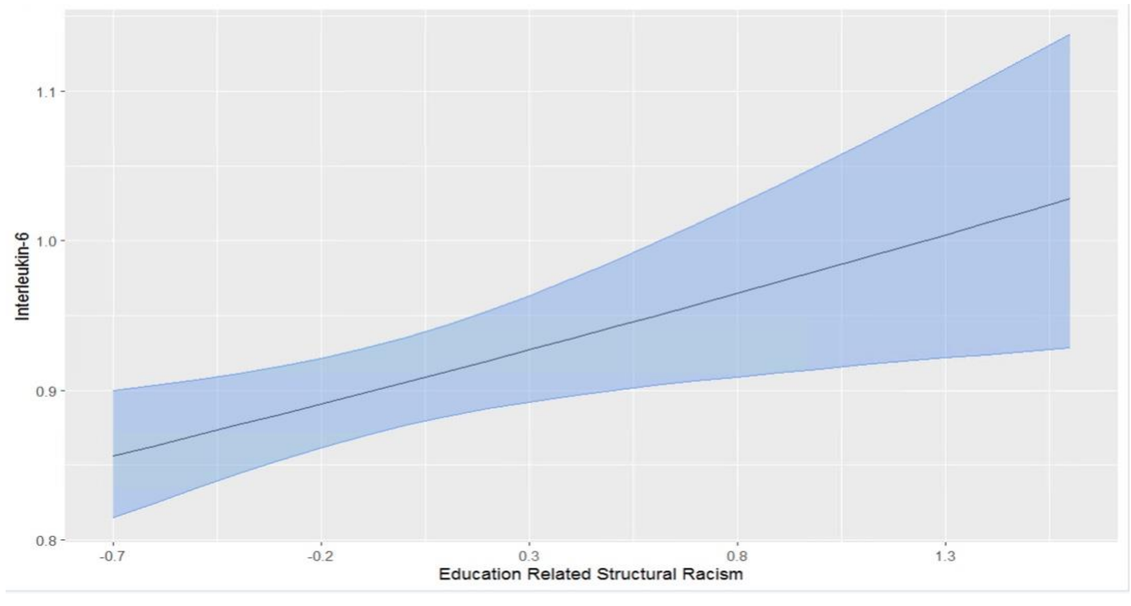

Figure 2. Association between Adolescent Education Context and IL-6

- There was a significant interaction between adolescent educational context and TNF-a, indicating a stronger, positive association between exposure to the educational context construct and TNF-a for Black adults (see Fig. 3).

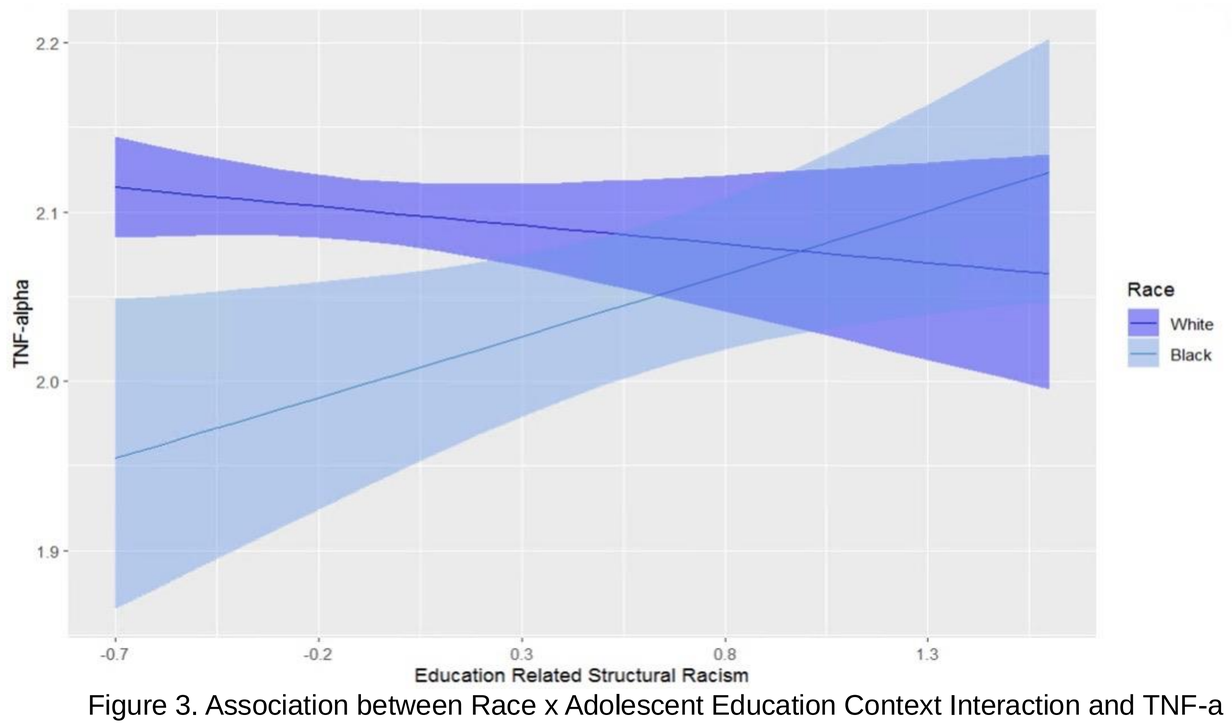

Figure 3. Association between Race x Adolescent Education Context Interaction and TNF-a

- There was no significant association between the educational context construct and IL-10 and CRP.

CONCLUSIONS

- Educational context was a significant predictor of several biological risk factors for AD/ADRD for both Black and White adults, with some evidence of a stronger relationship among Black adults.
- Given the documented importance of educational attainment, future work should also consider how educational contexts and individual educational attainment combine to shape pathways to AD/ADRD.

ADDITIONAL KEY INFORMATION

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