

Neuropsychology: Cognitive and functional assessment in diverse populations

Latinx brain health disparities in cognitive aging: The role of acculturation on brain integrity and cognition among older HIV+ adults

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Abstract

Background: The US Latinx population is the largest ethnoracial minority group and the fastest growing sector of the aging population (Escarce et al., 2006; US Census Bureau, 2008). Compared to non-Latinx whites (NLW), the Latinx population bears a disproportionate dementia burden secondary to multiple etiologies (e.g., Alzheimer's, HIV-infection; Babulal et al., 2018; Rivera Mindt et al., 2014). Yet, little is understood regarding the sociocultural factors underlying these significant brain health disparities. This aim of cross-sectional study was to investigate indices of brain integrity, cognition, and acculturation in older HIV+ Latinx and NLW adults.

Method: Participants included 75 older HIV+ adults (Age: $M=60$ yrs [$SD=6.9$]; Education: $M=13.6$ yrs [$SD=3.1$]; 47% Latinx [primarily Caribbean heritage] & 53% NLW; and 71% male) who completed multimodal neuroimaging (structural MRI and resting state fMRI [rs -fMRI]), cognitive (seven domains; e.g., learning, memory, executive function), neuromedical (HIV clinical indices [HIV viral load]), and sociocultural (e.g., acculturation [Abbreviated Multidimensional Acculturation Scale, AMAS]) evaluations. Global and domain-specific Average T-scores were computed on individual tests based on demographically-adjusted norms.

Result: Compared to the NLW group, the Latinx group had greater white matter lesion volumes ([mL], FLAIR; Cohen's $d=1.13$, $p<.01$) and lower hippocampal and posterior cingulate intrinsic activity (rs -fMRI fALFF values; $d's=.61-.67$), and worse global cognition, learning, memory, and processing speed ($ds=.53-.83$, $ps<.05$), with the largest effects in learning and memory. Lower acculturation to US majority culture (i.e., AMAS US Total Score) was related to reduced intrinsic activity of the right hippocampus and posterior cingulate cortex at the trend level (rs -fMRI fALFF values; $rs=.61-.63$, $ps<.10$) and worse global cognition, learning, memory, and processing speed ($rs=.39-.51$, $ps<.05$).

Conclusion: These findings highlight marked disparities in brain integrity and cognition in older HIV+ Latinx adults. Acculturation may be an important factor for understanding these disparities. Future longitudinal research is needed with HIV- controls, larger sample sizes, and the inclusion of other Latinx subpopulations (i.e., Mexican-American, South American) to extend the current findings and inform culturally-targeted interventions to promote Latinx brain health. Acknowledgements: The authors thank the Alzheimer's Association for their support of this study (AARGD-16-446038).