

PREVENTION (NONPHARMACOLOGICAL)

Cardiorespiratory fitness is an important marker of cognitive performance in older Latin Americans

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Abstract

Background: Our previous research with older non-Hispanic whites demonstrated that with increasing cardiorespiratory fitness (CRF) there was a concomitant linear increase in processing speed (PS) performance. PS has also been found in a number of reports as a potential precursor to memory decline associated with Alzheimer's disease and cognitive aging. The purpose of this study was to examine whether the same cognitive benefits imbued by CRF generalize within a healthy Latino aging community living in Costa Rica (CR).

Method: 415 community dwelling older adults (315 CR and 100 non-Hispanic whites living in the United States) with a mean age of 71 (SD = 5.29) years old were recruited from the Epidemiology and Development of Alzheimer's Disease (EDAD), a large international study of Latino cognitive aging. Participants completed neuropsychological testing and a graded treadmill exercise stress test. We compared the relationship between Oxygen Uptake Efficiency Slope (OUES) and a composite measure of PS (Digit Symbol, Block Design, and Stroop Color Naming). Confirmatory factor analysis was conducted.

Result: CRF (OUES) significantly predicted PS within the CR ($B = 0.50$; $p < .001$) group and non-Hispanic white ($B = 0.25$; $p < .05$) group after controlling for age and sex. The relationship between CRF and the PS factor showed a non-significant misfit when the relationship was constrained to be equal on both groups ($\chi^2(1) = 0.39$, $p = 0.53$), hence the relationship is equivalent between groups.

Conclusion: In a healthy sample of older individuals living in CR we found the same score profile and interrelationships that were identified among non-Hispanic whites living in the United States. CRF and PS are clinically meaningful therapeutic targets for dementia prevention among older Latin Americans.