

Blood Pressure, Serious Life Events, and Cognitive Aging Among Older Black Americans in The Health ABC Study

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Serious life events may moderate the association between high blood pressure and cognitive change over time in Black American adults

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS																									
- High blood pressure (HBP) is a well-documented risk factor for cognitive decline, yet the role of stressful life events (SLE) in modifying this relationship remains underexplored, particularly among Black Americans - This study examined whether blood pressure predicts changes in cognitive functioning over time and whether SLE moderate this relationship - It is critical to understand the psychosocial factors that may buffer this association, as Black Americans are disproportionately affected by both hypertension and cognitive decline	Participants - N= 770 Black Americans enrolled in The Dynamics of Health, Aging, and Body Composition Study (Health ABC) - Aged 68-95 years Cognition - Digit Symbol Substitution Test and measured at baseline and at follow-up years 5, 8, 10 and 11 Blood Pressure (BP) Measurement - Objective BP measures of systolic and diastolic were taken seated Stressful Life Events - Participants were asked if they had experienced any of 7 serious life events in the past year (yes/no response) - Possible number of life events ranged from 0 (none) to 7 (all events) - This variable was categorized as 0, 1, 2 and 3 or more life events Data Analysis - Data were analyzed using mixed effects models, controlling for covariates	Interaction of DBP with Stressful Life Events <table><caption>Approximate data points from the interaction graph</caption><tr><th>Average Diastolic BP (mm Hg)</th><th>0 Stressful Events</th><th>1 Stressful Event</th><th>2 Stressful Events</th><th>3+ Stressful Events</th></tr><tr><td>30</td><td>26.5</td><td>25.0</td><td>25.0</td><td>24.0</td></tr><tr><td>60</td><td>25.5</td><td>25.5</td><td>25.5</td><td>26.5</td></tr><tr><td>90</td><td>24.5</td><td>26.5</td><td>26.5</td><td>29.0</td></tr><tr><td>120</td><td>24.0</td><td>27.5</td><td>27.0</td><td>31.5</td></tr></table> - No main effect of BP on follow-up cognitive changes over 11 years - Overall interaction between SBP and SLE on cognition was not significant ($\chi^2(7) = 7.73, p= 0.36$) - The interaction between DBP and SLE on cognition was non-significant for most groups (all p's>.05) but was significant in the group of participants reporting 3 or more SLE ($b= .10, p=.05$, see Figure)	Average Diastolic BP (mm Hg)	0 Stressful Events	1 Stressful Event	2 Stressful Events	3+ Stressful Events	30	26.5	25.0	25.0	24.0	60	25.5	25.5	25.5	26.5	90	24.5	26.5	26.5	29.0	120	24.0	27.5	27.0	31.5	These counterintuitive findings suggest that serious life events are a modifiable factor that can contribute to better cognition even with high blood pressure This finding is limited to a small number of participants and warrants future study
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CONTACT & FUNDING  DeAnnah R. Byrd, PhD Arizona State University, 550 North 3rd Street, Phoenix, AZ 85004, USA. E-mail: deannahbyrd@asu.edu National Institute on Aging [NIA grant #1 K01 AG068376-01A1] and the Alzheimer's Association [AARFD-21-852652] to DRB 																												