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Relationships Between Vascular Function and Social Determinants of Health in Young Black and White Adults

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Black adults experience higher rates of cardiovascular disease (CVD) than their White counterparts. Measures of vascular function (via flow-mediated dilation, FMD) can predict CVD risk, even in young adults. However, the data regarding the racial differences in vascular health among Black and White adults is inconsistent, in part due to race being a social construct. Thus, the role of Social Determinants of Health (SDoH) are important in assessing vascular health especially when comparing different races. However, the relationship between SDoH and FMD have yet to be studied among young Black and White adults. **PURPOSE:** To determine the relationships between self-reported SDoH conditions and FMD among young Black and White adults. **METHODS:** 16 young adults (20 ± 2 y; Black, $n=8$) self-reported quality of and/or access to adequate: health care; nutrition; education; housing; social acceptance; financial stability; and low-stress environments using 5-point Likert scales. Vascular function was assessed via FMD in response to an ischemic stimulus. The mean response to each SDoH question, sum of the SDoH questionnaire (sum SDoH-Q), and FMD were compared between Black and White adults. Pearson's correlation coefficients were calculated between each SDoH condition and FMD, as well as between the sum SDoH-Q and FMD. **RESULTS:** Self-reported quality of and/or access to adequate: nutrition ($p=0.035$), housing ($p=0.011$), low-stress environments ($p=0.007$), social acceptance ($p=0.022$), and financial stability ($p=0.0001$) were significantly lower among Black as compared to White adults. While the sum SDoH-Q was also significantly lower in Black than White adults (26.00 ± 3.38 vs. 32.75 ± 1.83 , $p < 0.0001$), there were no significant differences in %FMD (5.18 ± 4.34 vs. 4.36 ± 3.10 , $p=0.675$). In Black adults only, %FMD was negatively correlated with self-reported quality of and/or access to adequate: education ($p=0.031$, $r=-0.755$), low-stress environments ($p=0.023$, $r=-0.777$), and financial stability ($p=0.017$, $r=-0.801$). **CONCLUSION:** Self-reported quality of and/or access to adequate low-stress environments and financial stability are significantly lower and share negative relationships with vascular function in young Black adults.

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