



## P35 Education Level may Modify the Association Between Cardiac Index and Cognitive Function Among Elders with Normal Ejection Function

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### ABSTRACT

**Background:** Lower cardiac index (CI) in elders without clinical heart disease has been associated with impaired cognitive function and incident dementia. In the present study, we investigated the modulating effects of education level and arterial stiffness on the association between CI and cognitive function among older adults.

**Methods:** A total of 723 elders ( $\geq 60$  years, 50.1% female) with normal left ventricular ejection-fraction ( $\geq 50\%$ ) were identified from the Cardiovascular Diseases Risk Factor Two-Township Study. CI was calculated from the Doppler-derived stroke volume. We evaluated arterial stiffness by measuring carotid-femoral pulse wave velocity (CFPWV) and global cognitive function by using the Mini-Mental Short Examination (MMSE). Education level was determined by years of formal education.

**Results:** In linear regression analysis adjusting for age, sex, formal years of education and CFPWV, CI was significantly positively associated with MMSE (BETA = 0.344 0.130,  $p = 0.0082$ ). In logistic regression analysis adjusting for age, sex, formal years of education and CFPWV, subjects with a CI 75 percentile had a significantly lower risk of low MMSE ( $< 26$ ) (OR = 0.495, 95% CI = 0.274–0.896,  $p = 0.02$ ). In subgroup analysis, higher CI was significantly associated with higher MMSE and lower risk of low MMSE only in elders with 9 years of formal education. Causal mediation analysis suggests that higher CI maintains higher MMSE in elders with lower education levels whereas higher CFPWV causes lower MMSE in all elders.

**Conclusion:** In elders with normal ejection fraction, a higher CI was associated with a lower risk of cognitive function impairment, independent of arterial stiffness, mainly in subjects with a lower education level and possibly a smaller cognitive reserve.

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