London EDUCATION PROTECTS AGAINST CORONARY HEART DISEASE AND STROKE INDEPENDENTLY OF COGNITIVE FUNCTION: EVIDENCE FROM MENDELIAN RANDOMAZATION

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Background:

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Observational studies support an inverse relationship between education and neurovascular disease, however, the role of cognitive function is still not clear. Mendelian randomization (MR) is a method that uses genetic variants like single nucleotide polymorphisms (SNPs) to make causal inferences¹.

Aim:

To investigate the role of education and cognitive function independently on the risk of coronary heart disease (CHD) and ischemic stroke (IS) respectively using MR.

Methods:

• 625 SNPs for education 226 SNPs for cognition

MR analysis using:

- \succ Fixed-effects inversed variance weighted method (**IVW**), MR-Egger, weighted median
- > Conventional multivariable MR (**MVMR**) adjusting for either education or cognition, MVMR-Egger, MVMR median regression

Results:



Education and CHD		
IVW		0.65 (0.61-0.70; 1.31E-3
Egger	••	0.69 (0.51-0.94; 0.017)
Weighted median	(0.64 (0.58-0.71; 1.34E-1

Conclusion:

- Education protects against CHD and IS independently of cognition.
- Any effect of cognition on CHD is mediated though education.

1. Lawlor DA, Harbord RM, Sterne JAC, Timpson N, Davey Smith G. Mendelian randomization: Using genes as instruments for making causal inferences in epidemiology. Stat Med. 2008 Apr 15;27(8):1133–63.

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