

Potentially modifiable mediators of the association between child abuse and dementia

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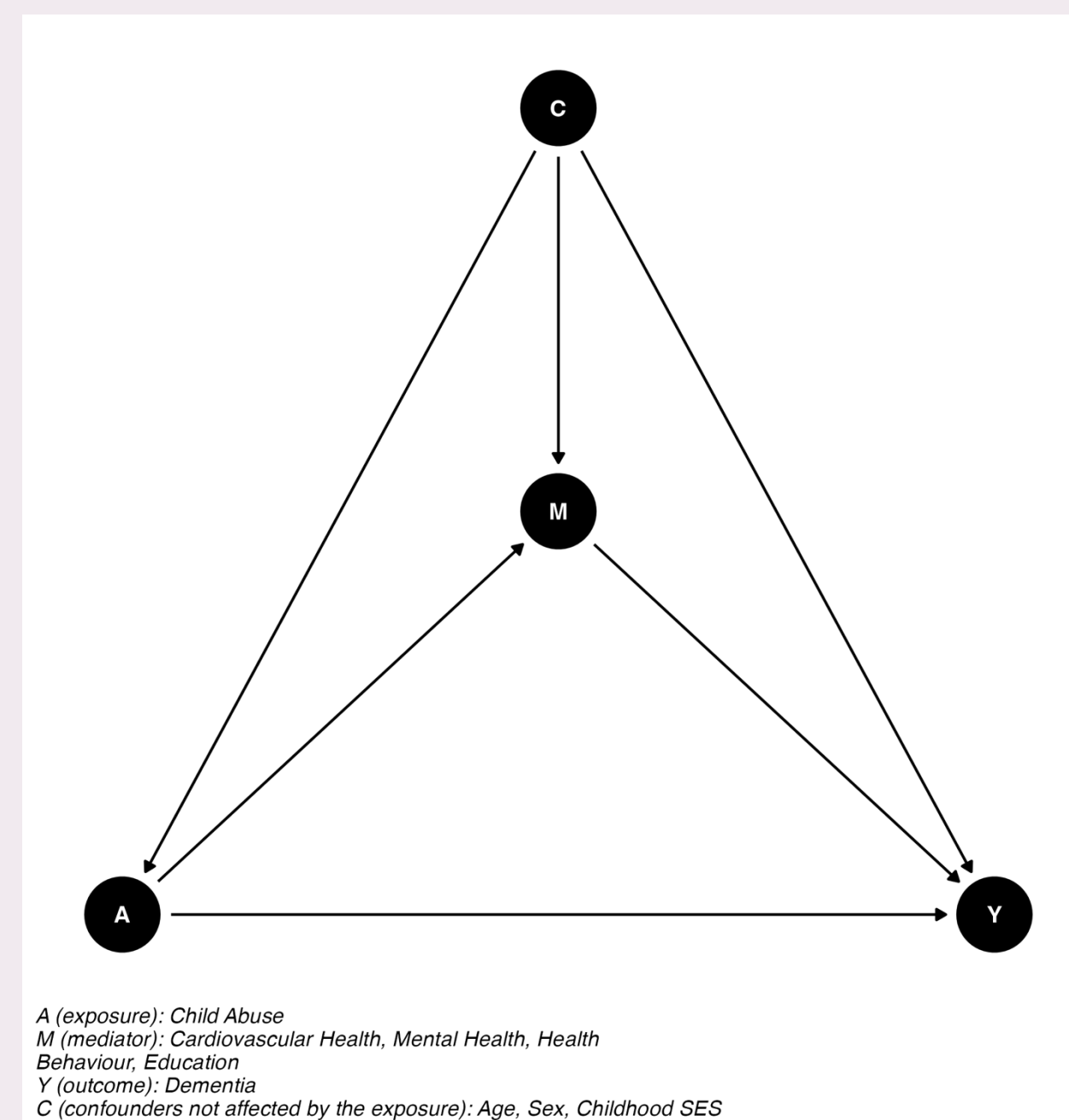
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Introduction

- In prior work, child abuse was associated with a 74% increased hazard of dementia¹. Unfortunately, child abuse cannot always be prevented. Although our focus should be primary prevention, understanding the causal pathways linking child abuse to dementia could inform the design of mitigation interventions for secondary prevention amongst those exposed to child abuse.
- Most studies investigating mediation of this association consider a composite adverse childhood experience score rather than individual adverse experiences despite evidence that different adverse experiences have different impacts on dementia risk^{1,2,3}.
- We investigated mediation of the association between child abuse and dementia using a causal mediation analysis approach that can accommodate multiple mediators.

Methods

- We used data from the English Longitudinal Study of Ageing
- Cardiovascular health, mental health, health behaviours and education were considered as mediators.
- Regression modelling was used to observe the associations between child abuse, mediators and outcomes.
- Interventional effects for mediation analysis were calculated using the g-formula.
- Given the results of regression models, we re-ran the causal mediation analysis including only mental health as a mediator.



Results

- Our analytical sample consisted of 5,448 participants. 88 (7.3%) participants experienced child abuse, and 557 (10.2%) participants developed dementia. Participants were followed up for an average of 10.85 years.
- Participants who experienced child abuse were at an 80% increased hazard of developing dementia.
- 18% of this association was mediated by the potentially modifiable factors considered.
- Joint intervention on health behaviours, mental health, cardiovascular health and education amongst those who experienced child abuse was estimated to reduce their hazard of dementia by approximately 8% (RNIE: 1.08, 95 CI%:1.03-1.14).
- Most of the observed mediation resulted from mental health and there was limited evidence of associations between child abuse and other mediators.

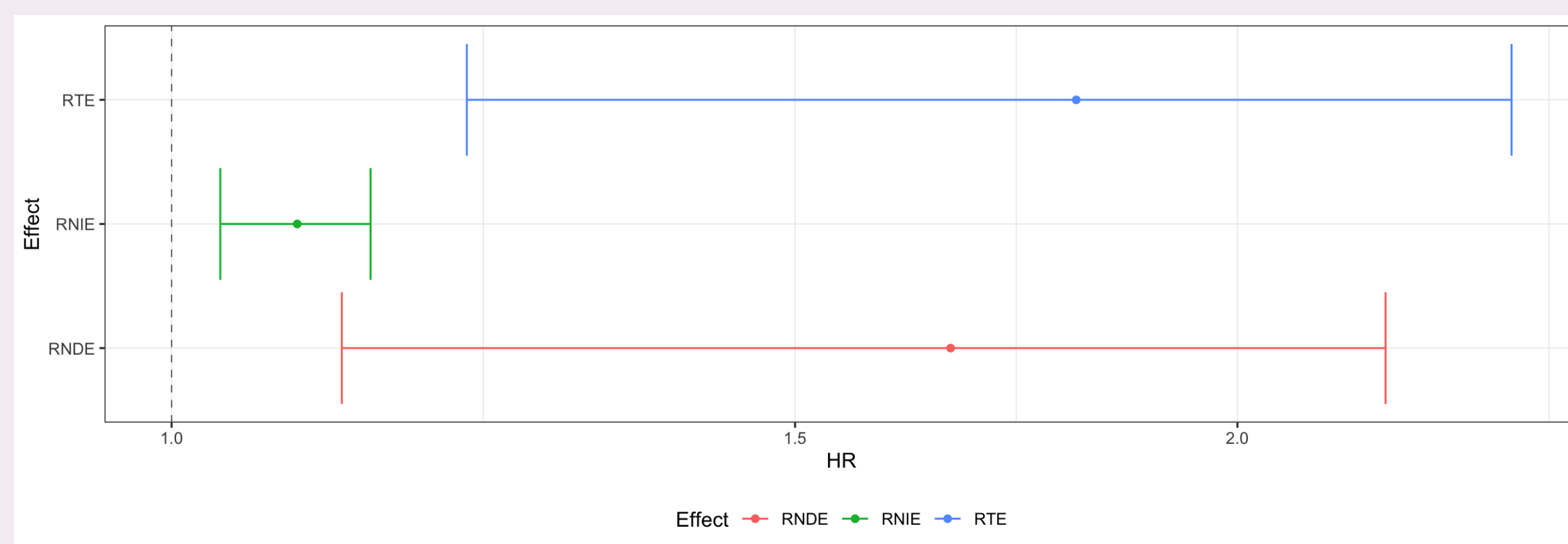


Figure 1. Randomised interventional effects for mediation analysis. Joint mediation effects of education, health behaviours, cardiovascular health and mental health on the association between child abuse and dementia incidence. RNDE: Randomised natural direct effect. RNIE: Randomised natural indirect effect. RTE: Randomised total effect.

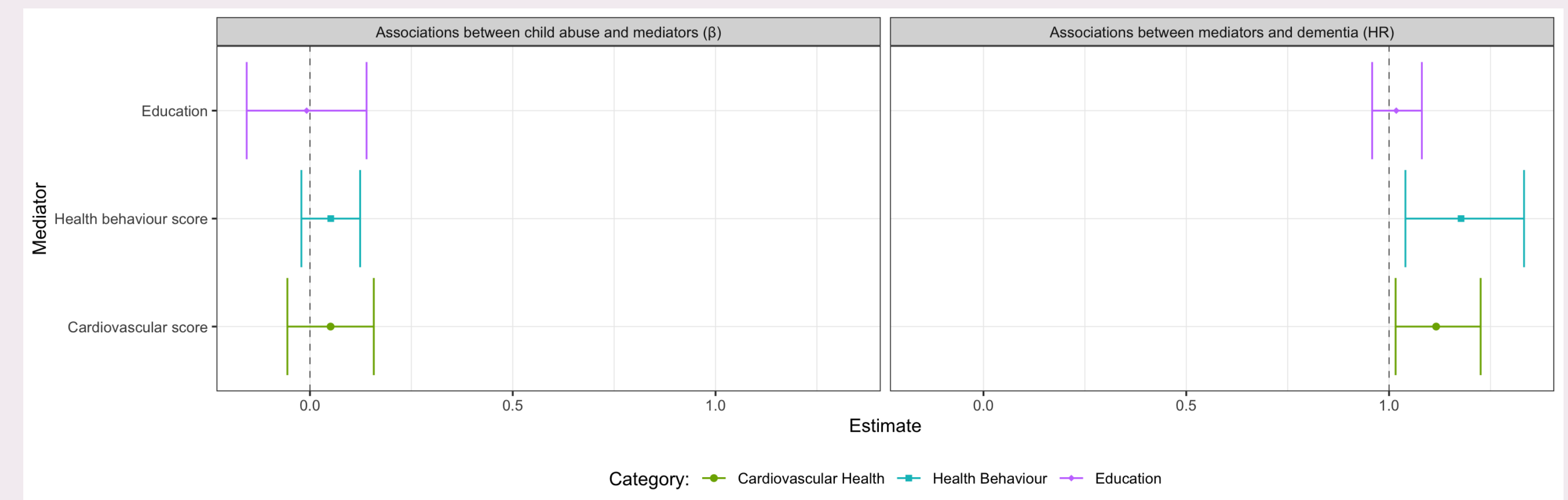


Figure 2. Regression models of the associations between exposure, continuous mediators and outcomes. Linear regression of mediators in association with child abuse. Cox-proportional hazards model of dementia in association with mediator.

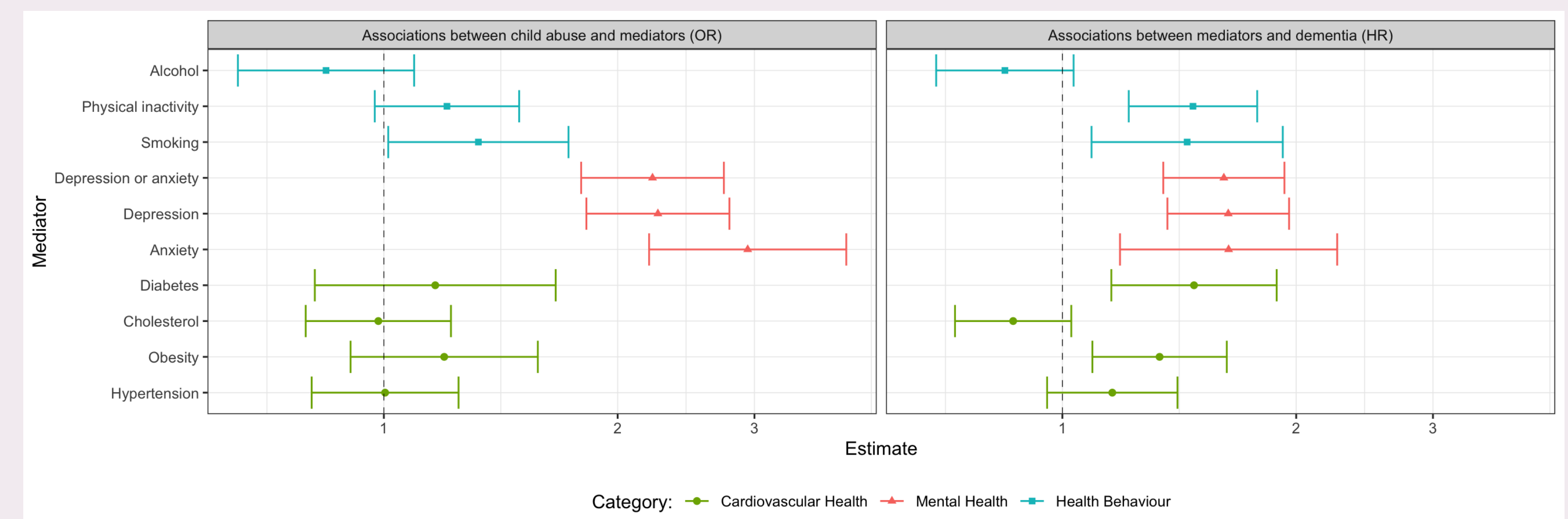


Figure 3. Regression models of the associations between exposure, binary mediators and outcomes. Logistic regression of mediators in association with child abuse. Cox-proportional hazards model of dementia in association with mediator.

Conclusions

- Individuals who experienced childhood abuse were at increased risk of developing dementia; however, only a modest proportion of this association was mediated by cardiovascular health, mental health, health behaviours, and education.
- Most observed mediation can be attributed to mental health.
- Future research should focus on other potential pathways from child abuse to dementia, considering biological and other social mechanisms.

Acknowledgements

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