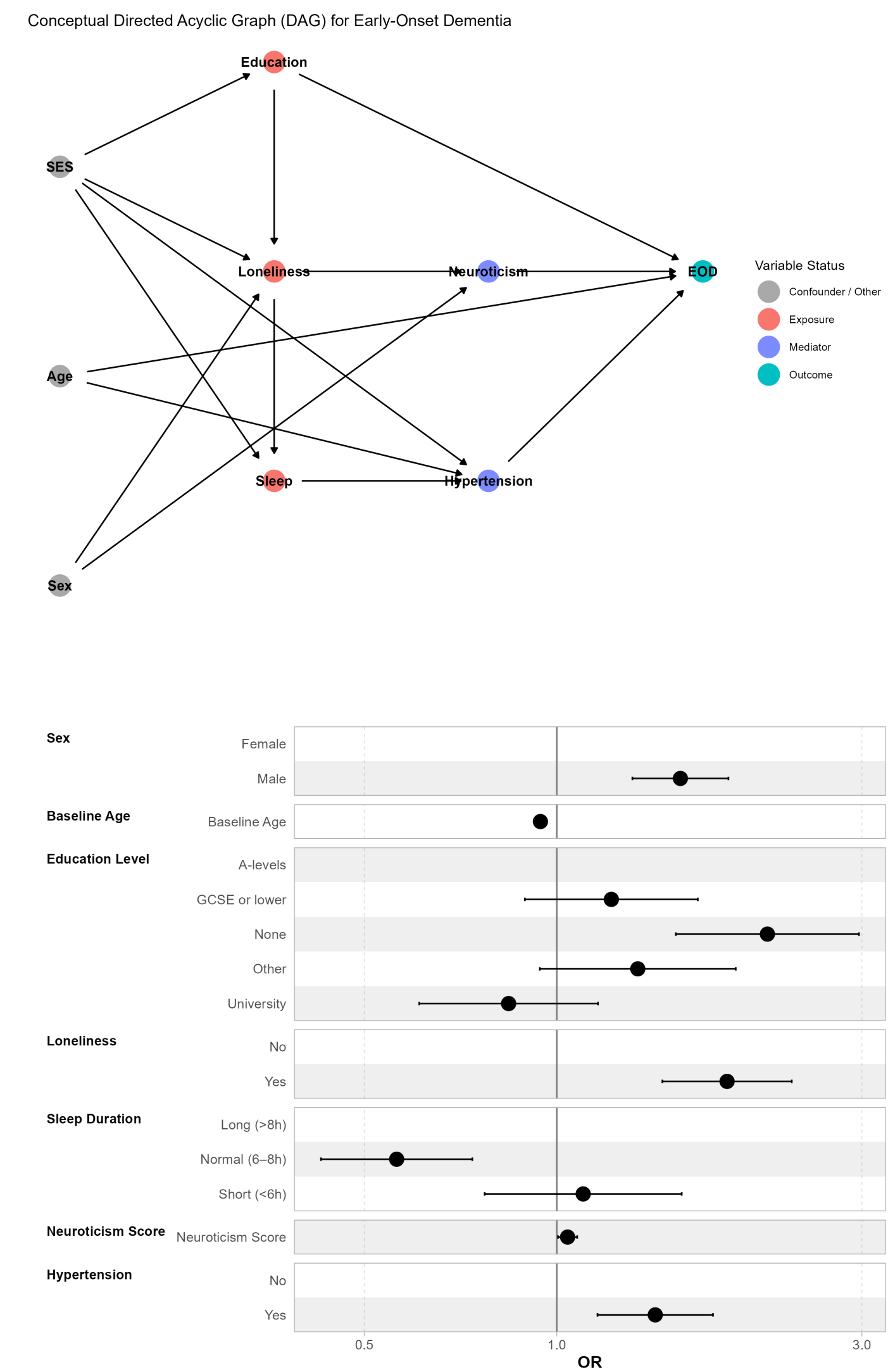


Loneliness, Education, And Hypertension As Targets For Prevention Of Early-onset Dementia: A UK Biobank Cohort Study

P2-13

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Loneliness, lack of educational qualifications, and hypertension were identified as independent risk factors that significantly increase EOD risk in midlife. Maintaining a normal sleep duration demonstrated a protective effect, reducing the likelihood of developing EOD. Midlife represents a critical window for targeted interventions; addressing psychosocial elements and managing vascular factors can reduce the population burden of EOD.

INTRODUCTION		RESULTS	CONCLUSIONS	Figure	REFERENCES
Early-onset dementia (EOD) is a major public health concern, yet modifiable pathways remain unclear.		During 15 years of follow-up, 537 EOD cases occurred. Loneliness (OR 1.7, 95% CI 1.3-2.1), no educational qualifications (OR 1.7, 95% CI 1.2-2.4), and hypertension (OR 1.4, 95% CI 1.1-1.7) were independent risk factors, while normal sleep duration was protective (OR 0.6, 95% CI 0.5-0.8). Neuroticism did not account for this association, and eliminating loneliness could modestly reduce absolute risk at the population level.	Psychosocial and vascular factors in midlife strongly influence EOD risk. Reducing loneliness and controlling hypertension may substantially lessen dementia burden. These findings highlight midlife as a critical window for interventions with long-term benefits for ageing populations.	 The figure consists of two parts. The top part is a Conceptual Directed Acyclic Graph (DAG) for Early-Onset Dementia. It shows variables: Education, Loneliness, Neuroticism, Sleep, Hypertension, and EOD. Education is a confounder for Loneliness, Neuroticism, and Sleep. Loneliness, Neuroticism, Sleep, and Hypertension are all exposures that influence EOD. There are also direct paths from Education to EOD and from Neuroticism to EOD. The bottom part is a Forest Plot showing the Odds Ratios (OR) for EOD risk factors. The plot includes Sex (Female, Male), Baseline Age, Education Level (A-levels, GCSE or lower, None, Other, University), Loneliness (No, Yes), Sleep Duration (Long (>8h), Normal (6-8h), Short (<6h)), Neuroticism Score, and Hypertension (No, Yes). The OR values are plotted on a log scale from 0.5 to 3.0, with a vertical line at 1.0 representing the null effect. Most risk factors show ORs greater than 1.0, indicating increased risk, while normal sleep duration shows an OR less than 1.0, indicating a protective effect.	Hendriks S, et al. <i>JAMA Neurol.</i> 2021;78(11):1341-1349. Luchetti M, et al. <i>Nat Ment Health.</i> 2024;2(4):360-369. Evans IEM, et al. <i>Age Ageing.</i> 2019;48(3):388-397. Yuan Z, et al. <i>Int J Ment Health Addict.</i> 2024;22(4):1998-2012. Sabia S, et al. <i>BMJ.</i> 2021;374:n1640.
	METHODS We analyzed 406,033 UK Biobank participants aged 40-64 years without baseline dementia. Incident EOD (diagnosed ≤64 years) was identified through linked health records. Multivariable regression and causal modelling approaches were applied to assess risk factors and potential intervention effects.				CONTACT Email:shulm@gzhmu.edu.cn 