[Vnukova 15-04790]

How does our decision to smoke and drink in midlife affect our cognition in later life? Findings from the 1946 British Birth Cohort

Martina Vňuková, Dorina Cadar, Diana Kuh, Marcus Richards

MRC Unit for Lifelong Health and Ageing, University College London, London,UK (D Cadar PhD, D Kuh PhD, M Richards PhD); and Research Department of Epidemiology and Public Health, University College London, London, UK (M Vňuková BA)

Correspondence to:

Dr Dorina Cadar, MRC Unit for Lifelong Health and Ageing, University College London, 33 Bedford Place, London WC1B 5JU, UK

d.cadar@ucl.ac.uk

Abstract

Background There are current public health concerns about increasing disability secondary to cognitive decline in ageing populations, with a less clear understanding of the potential time window for lifestyle interventions. This study examined how smoking and harmful drinking during early midlife affect cognitive performance in later life.

Methods Data are from the Medical Research Council National Survey of Health and Development (NSHD), a study of 5362 children born in March, 1946, who are beingmonitored across their entire life. Cognitive abilities were measured at age 60–64 years with a 15 item word-list short-term memory task and a timed letter-search task devised by the NSHD team. The scores were categorised as low or moderate to high. Information about alcohol consumption was collected via food diaries at ages 36, 43, 53, and 60–64 years and classified according to the Department of Health as no drinking, light-to-moderate drinking 3-4 units per day for men, 2–3 for women), heavy drinking (4-7 and 3-5), and harmful drinking (>8 and >6, respectively). Information about smoking was collected via

interviews and questionnaires at ages 20, 25, 31, 36, 43, 53, and 60–64 years. Multivariable logistic regression was used, adjusting for sex, childhood cognition at age 8 years, education, and socioeconomic status.

Findings Drinking in moderation across midlife seems to be protective against poor memory in later life (odds ratio 0·86, 95% CI 0·63–1·16). By contrast, harmful drinking at 43 and 53 years was associated with higher odds of poor memory (1·36, 0·79–2·33 and 1·26, 0·65–2·43, respectively). Drinking heavily, particularly at 43 years of age, was also associated with higher odds of slow search-speed at the same age (1·66, 1·01–2·76). Number of smoking pack-years was strongly associated with low memory (2·17, 1·33–3·54) and slow search-speed (1·65, 1·03–2·64).

Interpretation These results suggest that a possible sensitive period for harmful effects of smoking and drinking occurs after the age 36 years and is observed consistently between the ages of 43 and 53 years. By contrast, sensible drinking, particularly from the age of 53 years, might be protective of speed performance, suggesting that intervention could be more beneficial in the decades preceding clinical manifestation of neuropathological burden.

Funding Medical Research Council (unit programme no MC_UU_12019/1).

Contributors

MV and DC ran the analyses and drafted the astract. MR contributed to the analyses. All authors contributed to the revision of the abstract.

Declaration of interests

We declare no competing interests.