

The relationship between alcohol use and dementia: A combined analysis of prospective, individual-participant data from 15 international studies

LOUISE MEWTON¹, RACHEL VISONTAY^{1,2}, NICHOLAS HOY¹, DARREN LIPNICKI¹, JOHN CRAWFORD¹, COSMIC COLLABORATORS³, PERMINDER SACHDEV¹

¹*Centre for Healthy Brain Ageing, University of New South Wales, Sydney, Australia*

²*The Matilda Centre for Research in Mental Health and Substance Use, The University of Sydney, Sydney, Australia*

³*Various institutions*

Presenter's email: <r.visontay@unsw.edu.au>

Introduction and Aims: Despite the contribution of excessive and disordered alcohol consumption to the global burden of disease and neurodegeneration specifically, the exact nature of the alcohol–dementia relationship in older adults remains unclear. Often, a J-shaped form emerges, with an apparent protective effect of moderate consumption. However, whether these findings are methodological artefacts, or true causal relationships that hold across populations, has not been established. This study aimed to provide a cross-national comparison of the alcohol-dementia relationship, including evidence from understudied populations.

Design and Methods: Longitudinal data from 15 international cohorts were harmonised to perform individual participant data meta-analysis (24,461 individuals; 151,544 person years). Multilevel Cox models, as well as separate study-level Cox models, were performed to evaluate the relationship between baseline alcohol consumption and risk for all-cause dementia over follow-up.

Results: The meta-analysis produced a J-shaped relationship: when compared with occasional drinkers (<1.3g/day), the risk for dementia was higher for abstainers and lower for moderate drinkers (25g/day-44.9g/day). Occasional drinkers did not differ from heavy (≥45g/day) drinkers in risk. After stratification by Gross Domestic Product (GDP), the alcohol–dementia relationship was U-shaped in the lowest GDP category, but negative and linear in higher GDP categories. There were also differences in the alcohol–dementia relationship when investigated at the individual study level.

Conclusions: The heterogeneity of the alcohol-dementia relationship across different populations calls into question the causal nature of the J-shaped relationship, which may instead reflect uncontrolled confounding.

Disclosure of Interest Statement: This work was supported by a Dementia Centre for Research Collaboration Pilot Grant.