

the efficacy of multi-modal community-based programs for improving memory and mental health with a focus on dementia risk reduction in older adults.

DR PAUL STRUTT
Macquarie University

Hearing loss and Dementia Incidence in Australia: Findings from the Sydney Memory and Ageing Study

Dr Paul Strutt¹, Professor Amanda Barnier¹, Professor Greg Savage², Professor Viviana Wuthrich², Professor Brian Draper³, Scientia Professor Henry Brodaty³

¹Department of Cognitive Science, Macquarie University, Sydney, Australia, ²Department of Psychology, Macquarie University, Sydney, Australia, ³Centre for Healthy Brain Ageing (CHeBA), University of New South Wales, Sydney, Australia

Interventions targeting risk factors for dementia have the potential to delay or prevent a third of dementia cases. Addressing midlife hearing loss could prevent up to 9% of new cases, the highest of any potentially-modifiable risk factor identified in the 2017 commissioned report in The Lancet. In Australia, hearing loss is the second-most common health condition, affecting 74% of people aged over 70. Estimates suggest that people with mild hearing loss are twice as likely to develop dementia, and people with severe hearing loss are five times more likely to develop dementia. While an Association between hearing loss and dementia has been established internationally, less is known about these Associations for older adults in Australia. Using data from the Sydney Memory and Ageing Study (MAS), in which 1,037 adults aged between 70-90 years were enrolled and completed biannual assessments from 2005-2017, we present the first known Australian-based report of hearing loss and dementia incidence using a large longitudinal Australian cohort. Our primary investigation will determine the Association between self-reported hearing difficulties and incident dementia in the MAS cohort. This analysis is based on data gathered from participant medical history, performance on neuropsychological tests, and consensus diagnostic outcomes across the first 12 years of the study. Benefits Associated with self-reported use of hearing aids will also be discussed. This study is an important first step in understanding the role of hearing loss, a significant and potentially-modifiable risk factor for dementia, on cognitive trajectories in older adult Australians.

DR KIMBERLEY STUART
Wicking Dementia Research and Education Centre

Is stress associated with dementia risk? A systematic review

Dr Kimberley Stuart¹, Dr Christine Padgett²

¹Wicking Dementia Research And Education Centre, Hobart, Australia, ²University of Tasmania, School of Medicine, Division of Psychology, Sandy Bay, Australia

Background: It has been estimated that one third of dementia cases may be preventable through modifiable lifestyle interventions. Epidemiological evidence suggests a link between stressful life events and ageing-related cognitive decline and dementia, however inherent methodological limitations in examining subjective and biological measures of stress separately leads to interpretive constraints.

Aim: The aim of this study was to conduct a systematic review of the literature that has investigated the Association between stress and dementia risk, in order to synthesise and evaluate the evidence from both epidemiological and experimental studies utilising human participants.

Methods: We conducted a systematic review of cohort, case-control, longitudinal prospective or retrospective studies examining the Association between stress and risk of developing dementia. Studies were identified from a systematic search across major electronic databases from inception to September 2018.

Results: Overall, 24 studies were identified including a total of 1, 102, 764 participants with age ranges from 30 to 80 years old. There was considerable heterogeneity in the definition and measurement of stress. The identified studies could be broadly classified as having operationalised stress as biological, psychological, clinical, or environmental, with most reporting a significant positive Association between stress and dementia risk.

Conclusions: Preliminary analysis shows consistent evidence that biological and clinical measures of stress is Associated with an increase in dementia risk.

DR JAY JAY THAUNG ZAW
University of Newcastle

Neurovascular coupling is impaired in mildly hypertensive older women

Dr Jay Jay Thaug Zaw¹, Professor Peter Howe¹, Dr Rachel Wong¹

¹University of Newcastle, Callaghan, Australia

Background: Hypertension-induced microvascular injury is a major contributor to vascular dementia. However, no studies have ascertained the extent to which mild hypertension affects cerebral microcirculation and cognition. Using the American Heart Association's 130/80 mmHg threshold for stage-1 hypertension, we investigated the impact of hypertension on neurovascular coupling and cognitive performance in postmenopausal women without overt disease.

Method: Baseline data was obtained from a two-year intervention trial in 146 postmenopausal women aged 65±1 years who underwent a battery of 10 cognitive tests. Compliance of large and small systemic arteries was assessed with Cardiovascular Professoriler. Transcranial Doppler Ultrasound was used to determine responsiveness of cerebral arteries to cognitive tests (neurovascular coupling). Central adiposity was assessed using Dual Energy X-ray Absorptiometry. Fasting blood lipids were also measured.

Results: Of the 146 women, 54 were hypertensive (141±1/75±1 for SBP/DBP) and slightly older (67±1 years) than the normotensives (64±1 years, 114±1/64±1 for SBP/DBP). The hypertensive group had higher BMI, central adiposity and triglycerides and lower compliance of small (-33%) and large (-20%) arteries. Their neurovascular coupling was significantly lower during tests of processing speed (-31%) and cognitive flexibility (-26%). However, cognitive performance did not differ. SBP was negatively Associated with neurovascular coupling during tests of processing speed (r=-0.332, p<0.001), cognitive flexibility (r=-0.294, p=0.002) and overall cognition (r=-0.326, p=0.001).