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Objective sleep disturbance in mild cognitive impairment is associated with alterations in the brain's default mode network**Andrew McKinnon**

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This study aimed to identify Default Mode Network (DMN) functional connectivity deficits in patients with Mild Cognitive Impairment (MCI) and sleep disturbance, relative to those with MCI and no sleep disturbance. It is a follow-up study to our prior research, which demonstrated connectivity deficits in those with self-reported sleep disturbances. The current study utilises objective sleep measurement via actigraphy to investigate.

A total of 47 older adults aged 55 years and over were recruited, comprising 15 cognitively intact controls and 32 health-seeking patients. Participants underwent resting-state fMRI along with comprehensive neuropsychological, medical, psychiatric and actigraphic assessments. MCIs demonstrated significantly reduced functional connectivity relative to controls across several temporal and parietal brain regions. Relative to those without sleep disturbance, sleep-disturbed MCI participants also demonstrated significantly diminished DMN connectivity between a number of temporal and parietal regions, however the affected areas and connections differed from those revealed by the control analysis. All of these connections remained significant after controlling for antidepressant usage except one, which became borderline non-significant.

Sleep disturbance in MCI is associated with DMN functional connectivity deficits in brain regions underpinning salient memory and sleep systems. These results build on our previous research and indicate that both subjective and objective sleep disturbances are associated with reductions in functional connectivity across key DMN nodes.

Biography

Andrew is a graduate student undertaking the final year of a combined PhD/Master of Clinical Neuropsychology degree at Macquarie University, Sydney, Australia. He has published 4 papers in peer-reviewed journals, including 2 from his PhD.

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