Towards evidence-based dementia screening in Australia

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Effective dementia care depends on early and accurate diagnosis

It is predicted that over the next 40 years there will be a fourfold increase in the prevalence of dementia in Australia, as well as considerably more people with milder forms of cognitive impairment. To date, despite extensive research, no effective treatment for established dementia is available. As a result, taskforce policymakers conclude that there is insufficient evidence at present to warrant routine screening for dementia syndromes. However, emerging evidence shows that early non-pharmacological intervention can improve cognitive outcomes for patients with milder forms of cognitive impairment and those at risk of cognitive decline. Early diagnosis also enables patients to plan, with their caregivers, for the future, and deal with matters such as enduring power of attorney authorisation, before they lose the capacity to do so. Over two-thirds of people who notice symptoms of cognitive decline consult a physician for evaluation. However, up to 90% of mild cases are missed at the initial primary care assessment. So how can we improve early detection of cognitive impairment, and what evidence base do we have for dementia screening in Australia?

A diagnosis of dementia relies on a full mental status assessment, with comprehensive history taking and physical examination. Presently, detailed neuropsychological testing is the gold-standard tool for objectively evaluating the magnitude and pattern of cognitive decline. However, neuropsychological evaluation is costly, time-consuming and not generally available as only specialist psychologists can do it. Consequently, general practitioners and specialist physicians, who evaluate most patients presenting with cognitive complaints, administer brief screening instruments such as the mini-mental state examination (MMSE) to assess cognition. In Australia, the use of such instruments has been propagated by guidelines for prescribing acetylcholinesterase inhibitors. The MMSE has many documented and widely appreciated shortcomings. It lacks diagnostic specificity and is insensitive to patient variables such as extreme levels of education, premorbid ability and poor command of English. It has also been criticised for its unsystematic and atheoretical construction, and its poor ability to detect milder forms of cognitive impairment.

The idea that any brief screening tool would have sufficient sensitivity and specificity to diagnose dementia is unrealistic. However, when used as an adjunct to a good clinical history, a more accurate instrument, particularly one that can be serially administered, would potentially increase the reliability of diagnosis. A recent review of screening instruments available for mild cognitive impairment concluded that there are more useful screening tools than the MMSE. Some are in use in Australia, including the Addenbrooke’s Cognitive Examination – Revised (ACE-R); the Alzheimer’s Disease Assessment Scale — cognitive subscale (ADAS-cog); and the Montreal Cognitive Assessment battery. In addition, there are other screening instruments specifically validated for use in Australia, such as the General Practitioner assessment of Cognition (GPCog) and Rowland Universal Dementia Assessment Scale (RUDAS).
Recently, the ACE-R was validated for use in an Australian population.\textsuperscript{11} The ACE-R, which incorporates the MMSE, has been shown to have more diagnostic sophistication, with improved sensitivity and specificity values, than the MMSE alone. This is not to say that the ACE-R is without limitations. For instance, it cannot fully assess some aspects of cognitive function (e.g., non-verbal skills). Furthermore, the ACE-R takes on average 16 minutes to administer and is therefore unlikely to see much uptake by busy GPs; however, it could be used by nurses working in general practices. As with all screening tools, clinicians using the ACE-R in the primary care setting need to be trained to correctly score and interpret patients’ ACE-R performances.

Development of effective dementia treatments depends on earlier and more accurate identification of disease. Cognitive screening tests will continue to evolve, and may in time be replaced with screening for disease-related biomarkers. However, such diagnostic biomarkers have yet to be discovered. With the number of people with dementia growing each year, the lack of adequately validated diagnostic tools is a serious concern. Empirical investigations to further evaluate and validate screening instruments for cognitive impairment are necessary as we strive to develop effective treatments for all forms of this debilitating disorder.

\section*{Competing interests}
Nicholas Cordato has received a grant from the Medical Foundation, University of Sydney, to research Alzheimer’s disease.

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\section*{References}