



policy
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Cognitive function testing

Evidence on mobile technology

Context Computerised neuropsychological assessment devices (CNADs) are increasingly used in attempts to reduce the costs of large-scale screening for age-related cognitive decline whilst reaching a wider proportion of the population. While there are calls for better and earlier detection of dementia, concerns have been raised regarding approaches to population screening. This project explored challenges of translating such cognitive tests onto mobile devices to inform key policies.

Approach Sixty healthy older individuals completed either a standard pen-and-paper or a computerised version of an existing test, and a common test for direct comparison.

POLICY INSIGHTS | Cognitive tests on mobile platforms

- 1 **Low exposure to technology may interfere with results**
- 2 **Dementia screening at a population level is controversial**
- 3 **Further validation is required prior to expanding mobile screening**
- 4 **Evidence on mobile format tests and score developments are necessary**

Results Scores on the pen-and-paper version of the test were significantly higher than on the computerised version. When individuals were matched on their common test scores, results on the mobile version were 20% lower than on the traditional pen-and-paper version. This was a large effect size when considering the small sample and health status of participants.

Recommendations Translating a test initially validated for use on pen and paper onto computerised mobile format results in a new test. Interference from the use of an unfamiliar device with the results of the actual neuropsychological test must be considered. Policymakers should require evidence on test and score development, as well as validation on all relevant levels, prior to promoting their application at a population level. This will ensure effective use of resources. The simplicity and accessibility of CNADs presents opportunities beyond simply creating new products to confirm illness, but could offer more to encouraging healthy behaviour across a population.

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Further details on this project available in the following:

Ruggeri, K., Andrews, J. L., Menon, S., Martin, E., & Maguire, Á. (2015). Cognitive testing and mental health policies: Translation concerns with mobile technology. *Society for Neuroscience Annual meeting*. Chicago.

Maguire, Á. Ruggeri, K., Andrews, J. L., Menon, S., Martin, E. (submitted). Are we there yet? Exploring the impact of translating cognitive tests for mobile technology. *Frontiers in Aging Neuroscience*.