How Can We Best Screen for Cognitive Impairment in Malaysia? A Pilot of the IDEA Cognitive Screen and Picture-Based Memory Impairment Scale and Comparison of Criterion Validity with the Mini Mental State Examination

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Abstract

Objectives: To pilot two new cognitive screening tools for use in an urban Malaysia population and to compare their criterion validity against a gold standard, well establish Mini Mental State Examination (MMSE).

Methods: The IDEA cognitive screen, Picture-based Memory Impairment Scale (PMIS) and MMSE were administered to a convenience sample of elderly (≥65 years) from the community and outpatient clinics at an urban teaching hospital. Consensus diagnosis was performed by two geriatricians blinded to PMIS and IDEA cognitive screen scores using the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) clinical criteria. The MMSE performance was used as a reference.

Results: Of 66 participants, median age was 78.5 (interquartile range, IQR) 72.5–83.0) years and median years of education 11.0 (IQR 9.0–13.0), forty-three (65.2%) were female and 32 (48.4%) Chinese. The area under the receiver operating characteristic curve were 0.962 (IDEA cognitive screen), 0.970 (PMIS) and 0.935 (MMSE). The optimal cut-off values, sensitivity and specificity were:
IDEA cognitive screen: ≤11, 90.9% and 89.7%, PMIS: ≤6, 97.3% and 69.0% and MMSE: ≤23, 84.6% and 76.0%. Although the sample size was small, multivariable logistic regression modelling suggested that all three screen scores did not appear to be educationally biased.

**Conclusion:** The IDEA and PMIS tools are potentially valid screening tools for dementia in urban Malaysia, and perform at least as well as the MMSE. Further work on larger representative, cohorts is needed to further assess the psychometric properties.

Keywords: Cognitive assessment, dementia, elderly, IDEA cognitive screen, mini mental state examination, picture-based memory impairment scale, screening tool

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