The reliability and validity of the informant AD8 by comparison with a series of cognitive assessment tools in primary healthcare

Muhammad Amin Shaik,1,2 Xin Xu,1,2 Qun Lin Chan,1,2 Richard Jor Yeong Hui,3 Steven Shih Tsze Chong,3 Christopher Li-Hsian Chen1,2 and YanHong Dong1,2,4

1 Department of Pharmacology, National University of Singapore, Singapore
2 Memory Aging and Cognition Centre, National University Health System, Singapore
3 NHG Polyclinics, National Healthcare Group, Singapore
4 Centre for Healthy Brain Ageing (CHeBa) and Dementia Collaborative Research Centre – Assessment and Better Care, School of Psychiatry, UNSW Medicine, The University of New South Wales, Australia

ABSTRACT

Background: The validity and reliability of the informant AD8 in primary healthcare has not been established. Therefore, the present study examined the validity and reliability of the informant AD8 in government subsidized primary healthcare centers in Singapore.

Methods: Eligible patients (≥60 years old) were recruited from primary healthcare centers and their informants received the AD8. Patient-informant dyads who agreed for further cognitive assessments received the Mini-Mental State Examination (MMSE), Montreal Cognitive Assessment (MoCA), Clinical Dementia Rating (CDR), and a locally validated formal neuropsychological battery at a research center in a tertiary hospital.

Results: 1,082 informants completed AD8 assessment at two primary healthcare centers. Of these, 309 patient-informant dyads were further assessed, of whom 243 (78.6%) were CDR = 0; 22 (7.1%) were CDR = 0.5; and 44 (14.2%) were CDR ≥ 1. The mean administration time of the informant AD8 was 2.3 ± 1.0 minutes. The informant AD8 demonstrated good internal consistency (Cronbach’s α = 0.85); inter-rater reliability (Intraclass Correlation Coefficient (ICC) = 0.85); and test–retest reliability (weighted κ = 0.80). Concurrent validity, as measured by the correlation between total AD8 scores and CDR global (R = 0.65, p < 0.001), CDR sum of boxes (R = 0.60, p < 0.001), MMSE (R = −0.39, p < 0.001), MoCA (R = −0.41, p < 0.001), as well as the formal neuropsychological battery (R = −0.46, p < 0.001), was good and consistent with previous studies. Construct validity, as measured by convergent validity (R ≥ 0.4) between individual items of AD8 with CDR and neuropsychological domains was acceptable.

Conclusions: The informant AD8 demonstrated good concurrent and construct validity and is a reliable measure to detect cognitive dysfunction in primary healthcare.

Key words: screening, cognitive impairment, dementia, primary care

Introduction

Dementia is a growing public health concern with worldwide prevalence rates of 35.6 million and it is expected to double to 66 million by 2030 and more than triple to 115 million by 2050 (Wortmann, 2012). However, it is largely under-recognized in elderly primary healthcare patients (Iliffe et al., 2009). Despite awareness of the high rates of undiagnosed dementia in primary healthcare, routine screening for dementia in the general primary healthcare population has not been recommended due to insufficient evidence (Lin et al., 2013). By comparison, there remains substantial evidence that strongly recommends the detection of dementia in older adults for early interventions (Budd et al., 2011; Borson et al., 2013).

Several brief performance-based cognitive screening instruments such as the Mini-Cog, the Memory Impairment Screen, and the General Practitioner Assessment of Cognition were