Cognitive Screening Tools for Adults in Indian Setting: A Commentary

Elderly population worldwide is growing at a fast pace and India is projected to have 323 million people over 60 years of age, second only to China, by the year 2050.[1] About 8.6% of the Indian population is expected to be over the age of 65 by the year 2030.[2] The current demographic transition is expected to present several challenges to quality of life and dependency owing to the aging process affecting the cognition. Few studies have reported the prevalence of cognitive impairment among elderly Indians to range from 7 to 26%.[3–5] Mild cognitive impairment (MCI) is regarded as a transitional phase between normal cognitive aging and dementia. Identifying the individuals at an early stage of neuronal damage and good functional reserve is crucial for the prevention and management of dementia.

The diagnosis of cognitive decline or dementia can be challenging in low and middle-income (LMIC) countries owing to lack of validated, locally normed appropriate measures.[6] Tools developed and validated in high-income countries impact the performance in LMIC countries in part due to educational and cultural differences and the impact is greater among the elderly due to higher levels of illiteracy. The normative data of such neurophysiological tests are usually not available for LMIC settings, thereby limiting their use in the community.

Several cognitive batteries like Postgradualte Institute of Medical Education and Research (PGI) memory scale, National Institute of Mental health and Neurological Sciences (NIMHANS) neuropsychological battery for children, adults, and elderly, All India Institute of Medical Sciences (AIIMS) comprehensive neuropsychological battery in Hindi has been developed and standardized for the Indian population.[7] However, they have not been found useful as a screening tool. India, being a multilingual and culturally diverse country, needs appropriate cognitive tests and their population-based normative data which can be used in community at large for screening, assessing severity, and evaluating treatment for cognitive decline. Few language-specific assessment tools for cognitive decline have been developed in India. Ganguli *et al.*,[8] in 1996, had modified and used the Hindi version of the consortium to establish a registry for Alzheimer's disease neuropsychological assessment battery. They also reported age and education-specific normative data for the elderly. Similarly, Kolkata cognitive battery (KCB) proposed by Das *et al.*[9] has focused on the elderly Bengali population. Recently, the Marathi translation of KCB has been used by Sundar *et al.*[10] More such tools are needed in different languages which are tailored for people with different educational levels and socioeconomic status. In the current study, the Hindi cognitive screening test battery has been translated into Malayalam and normative data for the tool has been determined.[11]

The authors of the Malayalam cognitive screening test battery report a good internal consistency with Cronbach's alpha 0.82. The psychometric properties had good reliability and validity. Age and education level have been found to be the two most confounders for a cognitive tool. The normative data in this scale has been assessed taking both of them into consideration. As the population used for normative data also includes patients with comorbidities like hypertension and diabetes, it is more likely to be reflective of the actual setting.[11] However, lack of participants with age >80 years and more than 12 years of education level can be considered as a limitation.

The Indian Council of Medical Research-Neurocognitive Toolbox (ICMR-NCTB) has recently been devised at the national level in five Indian languages with an aim to develop a common neurocognitive tool to diagnose MCI and dementia.[12] The battery consists of tests for domains involving cognition, behavior, and functional activities and requires administration by trained psychologists or clinicians. Use of a common instrument can help to reduce the variability in clinical diagnosis in different hospitals across the country and also result in uniform outcome measures for research purposes. However, uniform cognitive tests are more likely to be culture free which might make it less sensitive in comparison to tests which are developed taking language, sociocultural backgrounds into account.

Cognitive screening tests should be used for screening patients with cognitive decline in clinics and for screening programs in communities. They can also be helpful for domain-specific screening to guide further assessment of cognitive, functional, or psychiatric abilities.[13] However, a cognitive screening test should not be used as a substitute for a full neuropsychological assessment. Clinicians should not be over reliant on a single screening tool rather should take advantage of newer evolving specialized tools for specific situations. Uniform cognitive assessment tools may be useful for maintaining uniformity in diagnosis and collaborative research across the country. Computer-aided administration of tools can facilitate better standardization and faster scoring. Multicentric studies focusing on cognitive assessment tools in different languages and along with population normative data can help in early recognition of cognitive decline and aid in proper management.

Kamalesh Chakravarty, Sucharita Ray

Department of Neurology, Post Graduate Institute of Medical Education and Research, Chandigarh, India

Address for correspondence: Dr. Kamalesh Chakravarty,
Room No 19, Department of Neurology, PGIMER, Chandigarh - 160 012, India.
E-mail: drkamalesh70@gmail.com

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