

Clinical challenges in neuropsychological assessments – Perspectives from India

SNEHASREE NEOGY, DEBANJAN BANERJEE

APOLLO Multispecialty Hospitals (AMHL), Kolkata, India

Key highlights:

- Neuropsychological assessments (NPA) are not diagnostic, but complement clinical understanding and management of neurocognitive disorders (NCD)
- A tailored assessment based on initial screeners followed by comprehensive neuropsychological batteries is ideal
- NPA are mostly westernized; hence adaptation in other areas needs socio-cultural and linguistic context, familiarity, training, and adequate interpretation
- Literacy issues, standardization, resource and time constraints, cultural adaptability, and clinical relevance are the usual challenges
- More training and research are needed to make neurocognitive assessments a valuable clinical tool in dementia care

The history of neuropsychology in India dates back more than four decades. Over this time much of the focus has been on adapting existing neuropsychological assessments to the Indian population, focusing on reducing cognitive deficits in various clinical conditions, and prognostication. Most tests have originated in the West, and therefore have needed adaptation for our varied socio-cultural contexts.

India, with its varied and high populace, is one of the fastest ageing nations in the world.

According to the Report of the Technical Group on Population Projections for India and States 2011-2036, there are nearly 138 million older adults in India in 2021 which is expected to further increase by around 56 million by 2031.

Ever since it was understood that populations differing in their demographic characteristics show variability in test performance; population-based normative studies were needed to reflect the construct it is posited to measure. Even when certain measures are developed in the patient's native language, and for examinees with a similar cultural context, within group differences in test scores may exist due to variability within a culture. This comes as a challenge to the Indian population. Most neuropsychological assessments are based in the United States and other Western nations, with a primarily English-speaking population. A host of culture-specific factors influence the test scores on which the norms are based. Thus, interpretation of such test scores in the Indian population need to be evaluated with caution.

In India, the cognitive tests and assessments are carried out by students who have completed a Masters degree (postgraduation), Masters in Philosophy (M.Phil.) degree or Doctoral degree in clinical psychology. Clinical psychologists as a part of the curriculum receive a fair amount of exposure in the field of neuropsychology and gain a license from the Rehabilitation Council of India (RCI) for clinical practice. This training which is part of the usual two-to-three-year curriculum is however a basic capsulated brush-up. Only a few of them are specifically trained in conducting neuropsychological assessments, and per se, no separate licensing as a neuropsychologist is available at present. Considering the varied cognitive tests, their individual nuances, norms, and interpretations, intensive training and practice are needed to master them in a clinical population. Further, use in research is different from that in the clinics, as the purpose served varies. In the latter, the test results are also used specifically to prognosticate the condition, aid the diagnosis, plan cognitive training/rehabilitation, and provide feedback to patients and families. Few clinical psychologists go on to pursue a Doctoral program with a specialization in Neuropsychology. Many times doctors with MD-level training in general medicine, neurology, or psychiatry conduct neuropsychological evaluations.

Due to the growing need for cognitive testing, increased prevalence of dementia, lack of standardized assessments, lack of uniform training, a limited number of providers, and time constraints, formal cognitive assessments are often replaced by brief non-standardized screenings in busy out-patient settings. While they serve the immediate purpose in most cases,

screeners like the Hindi Mental Status Examination (HMSE) (which is adapted from MMSE), which is literacy sensitive, has a ceiling effect and is heavily based on the memory domain. The HMSE is also not a great tool for assessing improvement with anti-dementia drugs (change in cognitive status over time).

According to the 2011 language Census of India, there are 121 languages and 22 official languages in our nation. Neuropsychological tests frequently need to be translated because assessments often are not available in the language the patient is most comfortable speaking. This dilutes the basic tenet of an empirically standardized assessment tool due to the variability post translation. Few scales have been adapted for some Indian languages like the Mini Mental Status Examination and Montreal Cognitive Assessment Scale, but the diversity of Indian languages outnumbers the adaptations. A translator is always not readily available which makes it difficult to conduct these tests in the Indian population. Copyright issues of many rating scales form another important barrier in their usage.

A considerable segment of the Indian population on whom these assessments are done are not formally educated. Performance on cognitive tests depends heavily on literacy and understanding the testing context. Often existing tests need to be simplified, keeping the basic format of the test structure intact. This is mostly done to suit the performance and comprehension abilities of the patients. The Indo-US Cross-National Dementia Epidemiology Study is one of the best examples of such adaptation. Studies show Serial Subtraction, a sub test for attention, is successfully applied when replaced with a real-life situation. Tests of praxis require a great deal of persuasion in rural areas, as most are illiterate. Recall tests need practical situation stories while visual recognition objects need to be socio-culturally familiar.

Most older adults in the Indian population have not been previously exposed to such cognitive testing and treat such cognitive examinations similarly to school exams, which makes performance anxiety a crucial factor. Difficulty in answering is akin to “memory loss” which alarms the patient and family alike as they may perceive an “illness” at play. Thus, the instructions

need to be given with caution, to appear non-specific and not too reassuring when a patient requests for multiple clarifications during the test.

Also, imagine an average Indian farmer from a rural region exposed to a barrage of memory tests from a doctor which could freak the patient out! After all, serial subtraction, copying figures or building blocks may be too “exotic” for them to relate to health or memory.

Additionally, there is a lack of awareness and understanding of the importance of neuropsychological evaluations among healthcare professionals and the general public in India. Stigma associated with neuropsychological disorders can make it difficult for individuals to seek help and receive appropriate treatment. Socio-economic disparities also play a role as neuropsychological assessments may not be readily available or affordable for individuals from lower financial backgrounds. Limited availability of specialized services for specific disorders is also a problem in many parts of India. Geriatric psychiatrists and neurologists are themselves limited in number and cross-disciplinary liaison, which is a must in these cases, remains a challenge.

Despite existing challenges efforts are consistently being made to improve the availability and quality of neuropsychological assessments in India. Resources, training and logistics have improved over the last decade, and language-specific validated scales are on the rise. It is important to remember that nothing beats a thorough clinical examination and tailored history from both the patient and family which is the gold standard. Structured cognitive assessments are not substitute but complementary to this practice. While screeners (like HMSE) may serve the purpose in busy community settings, detailed assessments (ACE-III, CERAD, ADAS-Cog, Indian neuropsychological batteries like the NNB-E) will be needed for specific patients, more so in tertiary healthcare centers with experienced staff. Lobar function testing based on symptom profiles and history can further potentiate our understanding. Associated assessments of functioning, activities of daily living and neuropsychiatric symptoms make it comprehensive.

Key factors for neuropsychological assessments are highlighted in Table 1.

Socio-cultural and linguistic sensitivity form the core of any cognitive testing and need to be kept in mind particularly for a westernized-cognitive-tool applied in a low-and-middle-income country like India. Special attention needs to be devoted to training and research in neuropsychology. Primary care healthcare providers and dementia-healthcare staff need to be accustomed to basic screeners like the HMSE. In a LMIC like India, the majority of dementia-related care takes place in primary care settings where basic and focused cognitive assessments are especially needed at this time.

Table 1: Key factors for cognitive assessments in clinical settings

<ul style="list-style-type: none">• For routine clinical practice – Clinical interview is the GOLD STANDARD• Cognitive assessment scales are NOT used to diagnose dementia/MCI• Concordance of clinical findings, imaging and neuropsychological findings occur only in a few cases• Such assessments are necessary for prognostication, feedback and assessing treatment response• Use brief screener initially followed by a detailed assessment (if needed)• Schedule follow-up assessment after three to six months• Socio-cultural sensitivity, comprehension, language, and consideration of the context and circumstances of assessment are VITAL• GPCOG, HMSE, ACE-R, MOCA, Cognitive Screening Battery (CSB) are commonly used screeners in Indian settings• A feedback needs to be discussed with the treating clinician and patient/family based on the interpretation of the cognitive tests• Use structured testing for cognitive training, remediation and rehabilitation, whenever possible (especially in Traumatic brain injuries and dementia)• BPSD and psychiatric comorbidities will bias cognitive test scores• Case by case tailored assessment is the BEST APPROACH
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***** In clinical practice – Any testing is meant to help the diagnosis and aid in the treatment. Hence based on patient profiles in developing countries, the cognitive assessments need to be time, resource and economy sensitive.***

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AUTHORS:



Ms. SNEHASREE NEOGY is an RCI-registered Clinical Psychologist at the APOLLO Multispecialty Hospitals (AMHL), Kolkata (India) and the Mental Health Foundation, Kolkata. Her areas of interest include both child and geriatric psychiatry, neuropsychology as well as dance/movement therapy.



Dr. DEBANJAN BANERJEE is a Consultant Geriatric Psychiatrist at the APOLLO Multispecialty Hospitals (AMHL), Kolkata (India) and the Vice-Chair, Advocacy and Public Awareness Committee, IPA. He works actively in human rights for older people, dignity in dementia care, end of life care, elder abuse prevention and sexual health.