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NIMHANS neuropsychological battery for the old age population and determination of threshold value

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Aging is a global phenomenon and the proportion of older persons is increasing across the globe. In absolute terms, the number of elderly has tripled over the last 50 years (United Nations, 2009). Differential changes in the spectrum of cognitive functions have been identified in the process of normal aging, and in clinical conditions such as mild cognitive impairment (MCI) and dementia. Decline in episodic memory (particularly delayed recall) is usually the earliest cognitive change that occurs prior to the development of AD dementia. The Objective of this study is to develop a battery of neuropsychological tests and standardize it for older adults in India. The normative sample (N=180), in the age range of 55-64 years meeting the inclusion and criteria and clinically proved MCI/AD were 49 subjects selected for this study. Nine tests were developed as battery for testing the different cognitive functions of the brain. Age, education and gender shown the significance difference on some of the test administrated. Education was found to be a strong contributor which accounted for 3%-48% of variance. The area under the ROC curve (AUC) results indicate that Word List delayed recall and story memory delayed recall have good accuracy with AUC of 0.97 and 0.90 respectively and the other tests were found to have AUC 0.70 to 0.86. The neuropsychological battery measures attention, working memory, episodic memory, semantic memory, construction and parietal focal signs. Education emerged as a significant determinant.

Biography

Palaniappan Marimuthu is currently a Professor and Head at the National Institute mental Health and Neuro Sciences, Government of India, Bangalore. He has more than 35-years teaching and research experience of Biostatistics, data management, analysis, Demography and Epidemiology. He had been to College of Health Science of Sultan Qaboos University in spring 2014 semester as a faculty, Muscat. He has been the General Secretary of the International Biometrics Society Indian Region (IBS-IR) and IBS International Council Member. He is also a Life Member of five professional societies. He received WHO fellow ship for short term training in Liverpool School of Tropical Medicine. He had completed three extra mural grants projects as Principal Investigator in the fields of urban health and health seeking behavior. His works includes statistical applications for projection of cancer incidence in India.

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