Spatial Navigation Testing for Dementia Diagnosis in a Setting of Low Literacy and Multilingualism

Felicity Davies[1], Suvarna Alladi[2]
[1]University of Warwick, UK
[2] National Institute of Mental Health and Neuroscience, Bangalore, India

Background

There are over 2.9 million people living with Alzheimer's disease in India. Alzheimer's is a global disease characterized by progressive cognitive decline, the extent of which is assessed to aid diagnosis. Since the Indian population has a diverse range of schooling and language ability, traditional measures of cognitive decline may not be appropriate. Tools that assess cognitive changes in skills obtained outside a formal learning environment are likely to have more diagnostic benefit. The aim of the project is to aid in the development of screening tools for cognitive decline that are effective for patients with low literacy levels.

Methods

Patients with dementia and healthy controls were recruited from outpatient clinics at NIMHANs, Bengaluru. Each participant completed an ACE-III assessment and a questionnaire on spatial navigation.

Results

16 patients and 28 healthy controls were recruited. The average ACE-III score was 51 for patients and 86 for controls out of a possible 100. The average spatial navigation score was 61% for patients and 94% for controls. This showed a statistically significant difference ($p < 0.001$) in perceived navigational skill between patients and controls.

Key messages

Significant differences between the self-perceived navigational skill of patients and controls were observed, with a higher number of self-reported difficulties within the patient group. This adds to the growing evidence that spatial navigation assessment may act as an appropriate substitute for existing cognitive tests. Future research will need to focus on cross-cultural cooperation to devise more in-depth navigational assessments.