Ethnic Differences in Singapore’s Dementia Prevalence: The Stroke, Parkinson’s Disease, Epilepsy, and Dementia in Singapore Study

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OBJECTIVES: To study the prevalence of dementia in Singapore among Chinese, Malays, and Indians.

DESIGN: A two-phase, cross-sectional study of randomly selected population from central Singapore with disproportionate race stratification.

SETTING: Community-based study. Subjects screened to have cognitive impairment at phase 1 in their homes were evaluated clinically for dementia at phase 2 in nearby community centers.

PARTICIPANTS: Fourteen thousand eight hundred seventeen subjects aged 50 and older (67% participation rate).

MEASUREMENTS: The locally validated Abbreviated Mental Test was used to screen for cognitive impairment at phase 1. Dementia was diagnosed at phase 2 as per Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition criteria. Possible Alzheimer’s disease (AD) and possible vascular dementia (VD) were diagnosed along the National Institute of Neurological and Communicative Disorders—Alzheimer’s Disease and Related Disorders Association and National Institute of Neurological Disorders and Stroke—Association Internationale pour la Recherche et l’Enseignement en Neurosciences criteria, respectively.

RESULTS: The overall age- and race-standardized dementia prevalence was 1.26% (95% confidence interval (CI) = 1.10–1.45). Prevalence (in 5-year age bands) was 0.08% (50–54), 0.08% (55–59), 0.44% (60–64), 1.16% (65–69), 1.84% (70–74), 3.26% (75–79), 8.35% (80–84), and 16.42% (≥85). From age 50 to 69, 65% of dementia cases were VD; at older ages, 60% were AD. Logistic regression (adjusted for age, sex, education) showed that Malays had twice the risk for AD as Chinese, and Indians had more than twice the risk for AD and VD than Chinese.

CONCLUSION: Singapore’s dementia prevalence, primarily influenced by its Chinese majority, is lower than seen in the West. The striking interethnic differences suggest a need for a dementia incidence study and further investigation of underlying genetic and cultural differences between the three ethnic groups in relation to dementia risk.


Key words: dementia; prevalence; Chinese; Malay; Indian

Globally, 24 million people aged 60 and older have dementia—a figure that will relentlessly double every 20 years, at least until 2040.1 The majority of this cohort are already from less-developed countries (in particular, Asia),2 and this trend will become more obvious in the coming decades,1 yet there is a relative paucity of dementia epidemiology studies from these regions,3 hindering their policy makers from having reliable estimates of the disease burden and scientists from knowing whether important regional variations in risk factors exist.

Singapore is a small island of 4 million people located in the heart of southeast Asia. The three main ethnic groups in the country are Chinese (77%), Malays (14%), and Indians (8%), and the escalating burden of dementia is one of the more feared consequences of its rapidly aging population. The few local studies on dementia prevalence over the last 2 decades have shown the disease burden to be between 2% and 6%,4,5 and they have tentatively pointed to ethnic differences in dementia prevalence. However, these studies have been small (sample sizes ranging from

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