

Epidemiology: Dementia and risk in underrepresented populations

Incident cognitive impairment in a longitudinal cohort of older adults in rural South Africa, 2014-19

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Abstract

Background: We aimed to determine the incidence of cognitive impairment and its key sociodemographic, social, and health-related predictors at the first longitudinal follow-up of the population-representative “Health and Aging in Africa: A Longitudinal Study of an INDEPTH Community in South Africa” (HAALSI) cohort in South Africa.

Method: Data were from 3,861 adults aged ≥ 40 in rural Agincourt sub-district, South Africa from 2014-19, who were free from cognitive impairment at baseline. Cognitive impairment was defined as scoring ≥ 1.5 SD below the baseline mean composite time orientation and episodic memory score, or requiring a proxy interview with “fair” or “poor” proxy-reported memory. Limitations to activities of daily living (ADLs) were compared according to incident cognitive impairment status. Incidence rates (IRs), incidence rate ratios (IRRs), and 95% confidence intervals (CIs) for cognitive impairment were estimated according to sociodemographic, social, and health-related characteristics using modified Poisson regression. IRs and IRRs were weighted to account for mortality over the follow-up. IRRs were adjusted for age, sex/gender, and country of birth.

Result: Over a mean follow-up of 3.7 years, 309/3,861 at-risk participants newly developed cognitive impairment (IR=24.0 per 1000 person-years (PY); 95% CI: 21.6-26.8). Incidence increased steadily with age, from IR=9.1 per 1000 PY (95% CI: 5.5-16.1) among those aged 40-44 years at baseline to IR=76.5 per 1000 PY (95% CI: 63.2-93.4) among those aged 80+. At least one ADL limitation was prevalent at follow-up in 39% of those with an incident cognitive impairment, compared to 7% of non-cognitively impaired participants. The incidence of cognitive impairment did not vary by sex/gender, HIV infection status, or cardiovascular risk factors, but was strongly graded according to education, literacy, household assets, employment, marital status, and frequency of alcohol consumption. For example, IRR=1.13 (95% CI: 0.91-1.40) for female vs. male, IRR=1.05 (95% CI: 0.77-1.43) for HIV-positive vs. HIV-negative, IRR=2.40 (95% CI: 1.81-3.17) for illiterate vs. literate.

Conclusion: This study presents one of the first incidence rate estimates for cognitive impairment in sub-Saharan Africa, where populations are beginning to rapidly age. Social and socioeconomic disparities in incident cognitive impairment rates were apparent in a similar pattern as in many high-income countries.