

## Dementia Subtypes, Cognitive Decline and Survival among Older Adults Attending a Memory Clinic in Cape Town, South Africa: A Retrospective Study

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### Abstract

**Background:** There are no published longitudinal studies from Africa of people with dementia seen in memory clinics.

**Objective:** The aim of this study was to determine the proportions of the different dementia subtypes, rates of cognitive decline, and predictors of survival in patients diagnosed with dementia and seen in a memory clinic.

**Methods:** Data were collected retrospectively from clinic records of patients aged  $\geq 60$  seen in the memory clinic at Groote Schuur Hospital, Cape Town, South Africa over a 10-year period. Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria were used to identify patients with major neurocognitive disorders (dementia). Additional diagnostic criteria were used to determine the specific subtypes of dementia. Linear regression analysis was used to determine crude rates of cognitive decline, expressed as Mini-Mental State Examination (MMSE) points lost per year. Changes in MMSE scores were derived using mixed effects modelling to curvilinear models of cognitive change, with time as the dependent variable. Multivariable cox survival analysis was used to determine factors at baseline that predicted mortality.

**Results:** Of the 165 patients who met inclusion criteria, 117 (70.9%) had major neurocognitive

disorder due to Alzheimer's Disease (AD), 24 (14.6%) Vascular Neurocognitive Disorder (VND), 6 (3.6%) Dementia with Lewy Bodies (DLB), 5 (3%) Parkinson Disease-associated Dementia (PDD), 3 (1.8%) fronto-temporal dementia, 4 (2.4%) mixed dementia and 6 (3.6%) other types of dementia. The average annual decline in MMSE points was 2.2 (DLB/PDD), 2.1 (AD) and 1.3 (VND). Cognitive scores at baseline were significantly lower in patients with 8 compared to 13 years of education and in those with VND compared with AD. Factors associated with shorter survival included age at onset greater than 65 (HR = 1.82, 95% C.I. 1.11, 2.99,  $p = 0.017$ ), lower baseline MMSE (HR = 1.05, 95% C.I. 1.01, 1.10,  $p = 0.029$ ), Charlson's comorbidity scores of 3 to 4 (HR = 1.88, 95% C.I. 1.14, 3.10,  $p = 0.014$ ), scores of 5 or more (HR = 1.97, 95% C.I. 1.16, 3.34,  $p = 0.012$ ) and DLB/PDD (HR = 3.07, 95% C.I. 1.50, 6.29,  $p = 0.002$ ). Being female (HR = 0.59, 95% C.I. 0.36, 0.95,  $p = 0.029$ ) was associated with longer survival.

**Conclusions:** Knowledge of dementia subtypes, the rate and factors affecting cognitive decline and survival outcomes will help inform decisions about patient selection for potential future therapies and for planning dementia services in resource-poor settings.

**Key words:** Dementia subtypes, Cognitive decline, Older patients