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# Dementia and Dementia Care

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## Associations of dietary intake of B vitamins and cognition in older adults from a low-income community in South Africa

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**Background:** Elevated concentrations of plasma homocysteine are associated with cognitive impairment and dementia. Homocysteine levels are raised when dietary intake of B vitamins (folic acid, B6 and B12) is low. The diet of low-income populations may be deficient in B vitamins as these are largely absent in staple, starchy foods. Fortified foods may provide B vitamins, but older people tend to have poor absorption. We aimed to look at the association of B vitamin intake with cognitive performance in a low-income community.

**Methods:** We assessed 60 Xhosa-speaking participants aged 60 years and over with the Community Screening Instrument for Dementia (CSID: isiXhosa version) the MMSE and verbal fluency. Blood samples were assayed for vitamins B12, B6, folate, homocysteine and other biomarkers. A food frequency questionnaire, adapted to the local diet, was completed by each participant.

**Results:** Over 85% of participants were overweight or obese. The median dietary intake of folate was 242.5 (196.7-316.4) mcg/d, much lower than the estimated average requirements for adults of 320mcg/d. The median dietary intakes were adequate for Vitamin B12 and Vitamin B6 at 5.95 (3.1-9.0) mcg/day and 2.2 (1.9-2.6) mg/day respectively. CSID scores were negatively correlated with folate intake (-0.33, p=0.015) and BMI (0.28, p=0.03). Trends were observed for correlations of serum B12 with MMSE (0.26, p=0.059) and verbal fluency (0.24, p=0.09).

**Conclusions:** Folate intake was inadequate for 75% of our participants. Dietary sources of folate and other micronutrients for this low-income region will be presented and implications for cognitive function will be discussed.

### Biography

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