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

Celeste A de Jager¹, L Dye², J Cade² and J Harbron³ ¹University of Cape Town, South Africa ²University of Leeds, United Kingdom ³University of Cape Town, South Africa

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. e diet of low-income populations may be de cient in B vitamins as these are largely absent in staple, starchy foods. Forti ed 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 uency. 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. e 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. e 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=059) and verbal uency (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

Celeste A de Jager, Universit^{*} of Cape Town (UCT) worked in the ,elds of neurops^{*} cholog^{*} and dementia research for 14 ^{*} ears at the Universit^{*} of Oxford, UK. She was the Principal Investigator in studies with Merck, plc to identif^{*} sensitive neurops^{*} chological tests as outcomes for AD treatment trials; and for the Cognitive Archaeolog^{*} collaborative stud^{*} with Dr Peter Garrard from St Georges Universit^{*}, London, on linguistic markers to predict dementia. She designed the cognitive and clinical assessment aspects of the VITACOG trial of B vitamins and omega-3 for those with MCI. Latter work involved novel brain imaging studies for predictive markers of AI: heimers disease. She obtained a British Academ^{*} award for communit^{*} screening for cognitive impairment in India. She returned to UCT in South Africa in 2012 as a Senior Lecturer in Clinical Epidemiolog^{*} and obtained a WUN award to examine nutrition and cognition in collaboration with Dementia SA, and researchers from Leeds and Shef, eld Universit^{*}. She held the interim South African Research Chairs Initiative in Clinical Neurosciences from 2013-2014 and piloted dementia screening tools for Xhosa-speaking elders in order to conduct a large dementia prevalence stud^{*} in a low-income communit^{*}. She represented OPTIMA as a member of the European AI: heimer[©] Disease Consortium (EADC) and was an academic expert on the Nutrition and Mental Performance task force with the Institute of Life Sciences-Europe. She now leads the design of the assessment and recommendation s^{*} stem for stuward.com for famil^{*} carers of people with dementia. She is an Editorial Board member for Journal of AI: heimers Disease and a reviewer for man^{*} medical journals.

celeste.dejager@uct.ac.:a

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