

Abstract

Measuring Adherence with the New Zealand Dietary Guidelines Using an Index and Associations with Metabolic Syndrome and Cognitive Function in Older Adults Living in Auckland, New Zealand †

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Abstract: Poor diet is associated with an increased risk of metabolic syndrome and poor cognitive function. This study uses the Eating Index in Older Adults (*the index*) to measure adherence to New Zealand's dietary guidelines in older adults and associations with metabolic syndrome and cognitive function. This cross-sectional study uses data from the Researching Eating, Activity, and Cognitive Health (REACH) study, 371 adults (65–74 years, 36% male) living in Auckland, New Zealand. A validated 109-item food frequency questionnaire was used to collect dietary data. Adherence to the dietary guidelines was scored using *the index*, which comprises a total score (maximum = 100) and two sub-scores based on adequacy (60) and moderation (40). Higher scores indicate better adherence to guidelines. Metabolic syndrome was defined using the National Cholesterol Education Program Adult Treatment Panel III criteria. Six cognitive domains were tested using COMPASS (Computerised Mental Performance Assessment System). Regression analyses were performed, adjusted for age, sex, index of multiple deprivation, education (cognitive function only), physical activity, Apolipoprotein E-ε4 genotype (cognitive function only) and energy intake. Because of the number of tests, $p \leq 0.001$ was considered statistically significant. The mean [standard deviation] index scores, for males and females, were 62 [9] and 64 [10] for total ($p = 0.03$); 42 [8] and 43 [7] for adequacy ($p = 0.03$) and 21 [5] and 21 [6] ($p = 0.54$) for moderation scores. Adherence to *the index* was not associated with metabolic syndrome (total score $p = 0.55$) nor cognitive function (total score and global $p = 0.50$; attention $p = 0.32$; executive function $p = 0.46$; episodic memory $p = 0.68$; working memory $p = 0.04$; spatial memory $p = 0.17$). Higher deprivation was positively associated with metabolic syndrome, while higher education was positively associated with cognitive function (both, $p < 0.001$). In this population, deprivation and education rather than adherence to *the index* were more influential factors affecting metabolic syndrome and cognitive function.

Keywords: a priori dietary pattern; cognitive health; nutrition epidemiology; dietary guideline adherence; index of multiple deprivation



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