

Relative validity of a diet quality index for children in Scotland

L.C.A. Craig¹, G. McNeill^{1,2}, L.F. Masson³ and J.I. Macdiarmid¹

¹Rowett Institute of Nutrition and Health, ²Institute of Applied Health Sciences, University of Aberdeen, Aberdeen, AB25 2ZD, UK and ³The Robert Gordon University, Aberdeen, AB10 7GJ, UK.

Diet Quality Indices (DQIs) are useful tools to assess the extent to which individuals' overall diet meets dietary guidelines. The aim of the present study was to assess the relative validity of a diet quality index (DQI) based on the Scottish Diet Goals⁽¹⁾ in children aged 3–16 years, derived from semi-quantitative food-frequency questionnaires (FFQ) (Scottish Collaborative Group (SCG) version C2 and C3) compared with 4-day non-weighed-diet diaries. Participants were a sub-sample of 158 children from the 2006 nation-wide survey of sugar intake among children in Scotland⁽²⁾ who completed both an FFQ and a 4-day diary. Nutrient intakes were calculated using the National Diet and Nutrition Survey databank. FFQs with energy intakes below the 2.5 and above the 97.5 centiles were excluded from the analysis to remove outliers (n = 6). A DQI (scoring intakes of fruit and vegetables, oily fish, red and processed meat, total fat, saturated fat, NMES, NSP and energy density) adapted from one used previously for Expenditure and Food Survey data⁽³⁾ was calculated for FFQ and diet diary data. A score was assigned to each of the 8 components (maximum score 10 for each) then summed and adjusted to a percentage score. Relative agreement was assessed using Spearman rank correlation coefficients and cross-classification of the percentage of subjects in the same and opposite thirds of intake.

	Diet Quality Index percentage score				P for difference	Spearman rank correlation		Percentage agreement	
	FFQ		Diet diary			r_s	P	Same thirds	Opposite thirds
	Median	IQR	Median	IQR					
All children 3–16y (n = 152)	38.1	30.1–48.6	32.3	25.0–44.6	0.004	0.48	<0.001	51.4	9.9
Children 3–11y Version C2 (n = 96)	39.5	32.9–51.1	34.1	24.6–45.9	0.001	0.51	<0.001	54.1	10.5
Children 12–16y Version C3 (n = 56)	33.2	24.2–46.9	31.5	25.8–42.8	0.707	0.42	<0.001	51.8	10.8

IQR, interquartile range.

The DQI percentage score for both methods was low with no children achieving 100 % by either method (ranging from 11 % in both methods to 86 % and 68 % for the FFQ and the diary respectively). Although the ranking agreement was better in younger children, absolute DQI scores agreed better between the two methods for older children. These results are similar to those found for nutrients⁽⁴⁾ and suggest that the FFQ has acceptable validity for measuring this DQI in children.

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