Comparison of the Fat and Fibre Barometer, a short diet questionnaire, to weighed food records and a food frequency questionnaire in nutrition students

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There is a need for short, simple, inexpensive dietary assessment tools that are also reliable and valid. For this reason the Fat and Fibre Barometer (FFB), a 20 item food behaviour questionnaire that is self-administered and self-scored was developed (1). As part of the assessment of the relative validity of the FFB it was compared to seven day weighed food records (WR) and a food frequency questionnaire (FFQ) in third year nutrition students.

Subjects for this study were 66 female third year nutrition students. Dietary assessment data completed for course credit was collected over a three year period (1993-1995). In the first year of collection students completed a seven day WR and FFB. For the second and third years students completed the WR, a meal-based quantitative FFQ, and the FFB. The FFB were self-administered approximately two months after the completion of the WR. Students who completed the FFQ did so between the WR and administration of the FFB.

Of the 66 female nutrition students, 11 did not meet the criteria for plausible energy intake according to the criteria of Goldberg et al (2) and were removed from further analysis. This left 55 seven day WR, 50 students who had completed the WR and FFB, and 28 students who had completed WR, a FFQ and the FFB.

Pearson correlation coefficients between FFB score and WR and the percent of students similarly/dissimilarly classified into thirds by both methods were: 0.49 and 50/8 for total fat; 0.51 and 56/6 for percent energy from fat; 0.50 and 40/12 for total fibre; and 0.60 and 50/8 for fibre density. Comparison of the FFB with WR and FFQ in the 28 students who completed all three methods is shown below.

	Correlation coefficient (r)			Percent similarly/dissimilarly classified[1]		
	FFB and WR	FFB and FFQ	FFQ and WR	FFB and WR	FFB and FFQ	FFQ and WR
Fat (g)	0.62*	0.26	0.43*	61/4	36/18	39/11
Fat (%MJ)	0.64*	0.51*	0.64*	57/7	42/7	43/7
Fibre (g)	0.45*	0.54*	0.64*	46/11	50/11	54/11
Fibre Density (g/10MJ)	0.54*	0.60*	0.73*	54/11	43/7	57/7

[1] Percent of individuals placed into the same third/opposite third of the distribution by both assessment methods

* $P<0.05$

When compared to WR and FFQ, the FFB demonstrated moderate to good relative validity in ranking students broadly according to their fat and fibre intake. When the FFB and FFQ were both compared to seven day WR, the much shorter FFB showed similar ability to rank for fat and fibre measures as the full FFQ. In conjunction with other results from wider testing (3) this suggests the FFB to be a useful form of dietary assessment.

1. O'Keefe N, Seal J, Butler D. Beat Diabetes 2 health promotion program-final report. Perth: Diabetes Association of Western Australia, 1993.
2. Goldberg GR, Black AE, Jebb SA, Cole TJ, Murgatroyd PR, Coward WA, Prentice AM. Critical evaluation of energy intake data using fundamental principles of energy physiology. 1: Derivation of cut-off limits to identify under-recording. Eur J Clin Nutr 1991;45:569-81.
3. Wright JL, Scott JA. The Fat and Fibre Barometer: a short diet questionnaire. Is it a useful form of dietary assessment ? Proc Dietitians Assoc Aust 1996:68.