Validation of a Newly Developed Eating Habits Questionnaire for New Zealand Women

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Abstract

Background: Eating habits can be defined as behavioural eating patterns that become an automatic response after repeat performances. Poor eating habits are a contributing factor to obesity, a major health concern worldwide and in New Zealand (NZ). Young women particularly, are at risk of developing poor eating habits as they make lifestyle changes, often unhealthy, following greater independence. Once habits are formed, they can continue throughout adulthood, often resulting in poor health outcomes. In order to determine and change eating habits, it is important that appropriately validated tools, of which there are none in NZ, are available to assess eating habits.

Aim: To develop and validate an eating habits questionnaire (EHQ), which assesses the usual eating habits of NZ women, including habitual intake, types of foods consumed, food combinations and the timing of meals and snacks.

Methods: An online self-administered EHQ was developed and validated against a 4-day weighed food record (WFR) in women aged 16-45 years (n=108), living in Auckland, NZ. The EHQ focused on eating habits linked with obesity and excess body fat including behaviours associated with healthy/unhealthy eating, social occasions, the time distribution of meals and snacks and typical foods consumed for these eating occasions. Validity was assessed between the EHQ and WFR using cross-classification analysis, and the weighted kappa statistic (Kw).

Results: Agreement from cross-classification between the EHQ and WFR ranged from 60.2% to 87.0% for snack foods; reached 91.0% for beverages between meals; was >50% for the behaviours of eating fried foods and takeaways, with Kw ranging from 0.21 to 0.33; and was >50% for low fat milk, meat and cheese. Agreement between the EHQ and WFR for the top five foods consumed for main meals ranged from 54.6% to 93.4% and for snacks ranged from 52.8% to 92.6%. Common foods consumed for breakfast were dairy, grains and basic sandwich; for lunch were non-starchy vegetables (NSV), meat and bread; and for dinner were NSV, meat and grains. Typical snack foods were fruit, tea and coffee, dairy, grains, baking and chocolate, with snacks most

common between lunch and dinner. Agreement between the EHQ and WFR ranged from 51.8% to 94.4% for the top two food combinations consumed for main meals, and from 83.3% to 99.0% for food combinations consumed for snacks. Typical food combinations reflected those food items consumed for main meals. Common food combinations for breakfast were ‘dairy + grains’, ‘dairy + grain + fruit’ and ‘bread-based foods’; for lunch were ‘bread-based foods’, ‘leftover combinations’ and ‘takeaway combinations’; and for dinner were ‘meat + grain + NSV’, ‘meat + SV + NSV’ and ‘takeaway combinations’. ‘Dairy + grains’ were the only food combination commonly eaten as a snack.

Conclusion: The EHQ is a valid tool for assessing the usual eating habits that potentially contribute to obesity and excess body fatness in 16-45 year old NZ women. Further research is warranted to investigate the eating habits of a larger group of women to identify areas where nutrition education could be targeted as well as associations with health and chronic disease.

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Abbreviations

ANS	2008/09 New Zealand Adult Nutrition Survey
AMDR	Acceptable Macronutrient Distribution Range
BF	Body Fat
BMI	Body Mass Index
B-EAT	Breakfast Eating Assessment Tool
CDL	Chronic Diseases of Lifestyle
CHO	Carbohydrate
CI	Confidence Interval
CVD	Cardiovascular Disease
DHQ	Dietary Habits Questionnaire
D-EAT	Dinner Eating Assessment Tool
EBPQ	Eating Behaviour Pattern Questionnaire
EHQ	Eating Habits Questionnaire
EO	Eating Occasion
ESQ	Eating Styles Questionnaire
EXPLORE	EXamining the Predictors Linking Obesity Related Elements
FDDR	Four Day Diet Record
FFQ	Food Frequency Questionnaire
FH	Food Habits
FR	Food Record

HNRU	Human Nutrition Research Unit
HUB	Healthy and Unhealthy eating Behaviours
ID	Identification Number
Kw	Weighted Kappa Statistic
L-EAT	Lunch Eating Assessment Tool
L-FAT	A Low Fat Alternatives Tool
NHANES	National Health and Nutrition Examination Survey
NNS	1997 National Nutrition Survey
NSV	Non-Starchy Vegetables
NZE	New Zealand European
NZHS	New Zealand Health Survey
NZ	New Zealand
n/a	Not Applicable
OREB	Obesity Related Eating Behaviours
PRO	Protein
SD	Standard Deviation
SES	Socioeconomic Status
SSB	Sugar Sweetened Beverages
STFHQ	SisterTalk Food Habits Questionnaire
SV	Starchy Vegetables
S-EAT	Snack Eating Assessment Tool

T2DM	Type 2 Diabetes Mellitus
UK	United Kingdom
USA	United States of America
WC	Waist Circumference
WEST	WEight STatus
WFR	Weighed Food Record
WHO	World Health Organisation
WHR	Waist to Hip Ratio
yrs	Years
%BF	Percentage body fat
χ^2	Chi-squared

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