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Development and Evaluation of a Food Behavior Survey to Assess Nutrition Transition Among Adolescents in South India

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Abstract

Background

The nutrition transition in low- and middle-income countries including India may involve changes not only in dietary patterns but also food behaviors; these need to be understood to design appropriate public-health messages and interventions to promote health and well being among adults and youth. For instance, in the nutrition transition, people may be eating foods away from home rather than eating homemade or traditional foods. However, no instrument exists to evaluate food behaviors related to the nutrition transition for these settings.

Objective

To develop and evaluate a food behavior survey (FBS) to assess nutrition transition-food behaviors among adolescents in South India.

Methods

A 22-item weekly FBS that focused on the social context of food consumption (location and people) was developed to assess the nutrition transition-food behaviors among 198 school-

going adolescents ages 14 – 18 years. Trained interviewers administered the FBS to participants at their homes in the urbanizing region of Vijayapura in South India. Participants were asked to report the weekly frequency of food behaviors (day/week), including eating at friends' homes, friends coming over to eat at their home, and eating Indian sweets prepared outside the home. Participants also were asked about the frequency of watching TV while eating, of dinner at home, and of eating meals away from home (e.g.: at restaurants, street food stalls, and at the home of a friend or family). For all questions, the response categories were daily, 4–6 days/week, 1–3 days/week, and never. The reproducibility of the FBS was assessed using weighted kappa statistics to compare the responses at baseline (time 1) and after two months (time 2). The face validity of the FBS was evaluated using semi-structured cognitive interviews with a random sample of 30 adolescents ages 14 – 18 years. The trained interviewers asked each question from the FBS, elicited a response, and probed for the meaning of the question to ensure consistency with the intent of the question.

Results

The mean age of the 198 school-going adolescents was 16.8 years (range 14 – 18 years), 55% were female, and 66% attended public (government funded) schools. Reproducibility of the FBS (time 1 vs. time 2): The weighted kappa for food behaviors ranged from 0.24 (eating snacks while watching TV) to 0.67 (eating lunch at home) with a mean of 0.40, suggesting moderate agreement. Validity of the FBS: The questions on the FBS had acceptable face validity, as participants were able to understand, explain, and repeat the questions from the FBS in their own words.

Conclusion

The FBS has good reproducibility and acceptable face validity and can be used to assess food behaviors associated with the nutrition transition. This is the first validated FBS survey to assess food behaviors related with the nutrition transition.

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Weighted kappa between Food Behavior Surveys (time 1 vs. time 2).

Food behavior	Weighed Kappa

Food behavior	Weighed Kappa
Eating outside food with friends	0.41
Eating outside food brought home	0.37
Eating Indian sweets made outside home	0.29
Eating Indian sweets made at home	0.29
Eating fried food made .at home	0.30
Taken dietary supplements in past year	0.40
At home:	
Eating breakfast	0.50
Eating lunch	0.67
Eating evening snack	0.40
Eating dinner	0.35
Outside home:	
Eating breakfast	0.49
Eating lunch	0.60
Eating evening snack	0.37
Eating dinner	0.38



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