

Assessing Fat-related Dietary Behaviors among Black Women: Reliability and Validity of a New Food Habits Questionnaire

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ABSTRACT

Objective: To describe the development of the SisterTalk Food Habits Questionnaire (STFHQ).

Design: Formative research was conducted to adapt previous tools for the study's target population. A pilot tool (168 questions) was tested. The new 94-question tool was then used for evaluation of the SisterTalk project. Lastly, a 4-week reliability calibration study of the revised STFHQ was conducted in comparison with a food frequency questionnaire (FFQ).

Analysis: Reliability was assessed using test-retest correlations. Validity was assessed by correlations between STFHQ scores with FFQ calculated calories, total fat (g) and percentage of calories from fat. Three scoring methods (ie, introductory, product, and detail) were calculated along with inclusion or exclusion of dining out questions and alternate methods of scoring for food items not consumed.

Results: Reliability (correlation) was 0.87. Inclusion of dining out questions and imputation of zero for food items never consumed were more highly associated with fat intake than other scoring methods. The introductory score was most highly correlated with fat (g), whereas the product and detail scoring methods correlated highest with percentage of calories from fat. Responsiveness to the SisterTalk intervention was highest with the detail score.

Conclusions and Implications: The STFHQ is a reliable and valid tool that may be useful for evaluating dietary change for black women.

Key Words: black, African American, women, dietary assessment, dietary fat, dietary behaviors

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INTRODUCTION

The prevalence of obesity in the United States increased nearly 10% between 1991 and 2001,¹ and the prevalence is particularly high among black women.²⁻⁶ Dietary differences between white and black women have also been noted, including a higher intake of dietary cholesterol and saturated fat among black women^{7,8} and less adoption of lower-fat eating behaviors, such as avoiding fried food.^{9,10} It has

been suggested that differences among food preferences by ethnicity may contribute to an increased prevalence of chronic diseases.¹¹⁻¹³ Dietary fat, as a concentrated source of calories, is a risk factor for overweight and obesity,^{14,15} and comorbid conditions.^{16,17}

Tailoring diets by ethnicity may be beneficial in promoting weight loss, and black women have been found to respond differently to weight loss interventions than white women.¹⁸ Therefore, assessment of culturally specific dietary practices is essential to evaluate the effectiveness of interventions focused on changing dietary behavior in ethnic minority populations.¹⁹ Accordingly, there is a need for dietary assessment tools that can be used to evaluate culturally tailored intervention programs, and few such tools exist.

Food frequency questionnaires have been used to assess detailed nutrient intake.²⁰ However, many researchers have noted that quantitative dietary assessment instruments (ie, those that determine a specific number of calories and/or

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nutrients consumed) are too time consuming for use in field intervention studies²¹⁻²⁵ and are insensitive to dietary changes made in response to interventions.²⁶ As a result, there is a collective call for brief, inexpensive, user-friendly instruments to assess changes in diet and dietary behavior in intervention studies.

The purpose of this paper is to discuss the development and evaluation of the SisterTalk Food Habits Questionnaire (STFHQ), a dietary assessment tool developed to evaluate SisterTalk, a cable TV-delivered weight control intervention study designed for black women in Boston.¹⁰ This study required a dietary assessment tool to estimate dietary fat intake and to accurately measure dietary changes that were culturally relevant for the diverse black women in the study population, as well as a tool that was responsive to the dietary changes that were recommended in the intervention.

BACKGROUND

The STFHQ was created based on previously developed instruments that queried food behaviors instead of nutrients.^{19,24,25,27} The initial Food Habits Questionnaire (FHQ) was developed and tested by Kristal et al,²⁴ later revised by the same group,^{19,25} and further adapted for use with the African American population by Prewitt et al.²⁷ The FHQ assesses fat-related eating behaviors based on the results of anthropological research, wherein dietary change operates through various behavioral domains that can be measured.²⁴ The FHQ tool²⁵ asks introductory questions such as, "In the past month, did you eat [a particular food]" (yes or no), followed by a behavioral question(s) related to that food. For example, if a participant responds that he or she ate chicken in the past month, he or she receives a behavioral question such as, "When you ate chicken, [how often did you] have it baked or broiled?" The responses are "usually or always," "often," "sometimes," "rarely," or "never." If the participant answered "No" to eating chicken in the past month, the behavioral questions for chicken are skipped. Certain behavioral questions are reverse coded so that the score always reflects food behaviors associated with lower fat intake. Subscales are calculated as the average of non-missing items, so behaviors for food items that were not consumed are scored as missing. The overall score is calculated as the average of the 5 subscales: avoid fat as a flavoring, substitution with manufactured low-fat food, modify meats, replace with fruit and vegetables, and replace with low-fat alternatives.

An adapted version of this tool, Eating Patterns Questionnaire,²⁷ added culturally relevant questions for black participants (eg, use of processed meats and breads, such as biscuits and cornbread). This version omitted "often" as a response, and a value of "0" was scored when the introductory question indicated that the participant "never" ate that food. This 26-item version of the instrument was found to have a 4-factor structure, including behavior exclusion, modification, replacement, and substitution.

The total FHQ scores from these tools have moderate correlations with percentage of energy from fat ranging from 0.53 to 0.68,^{19,24,25,27} and they have been shown to be responsive to change in intervention programs.^{9,19,23,28,29} These tools have also been used with ethnically diverse populations,^{9,27,30-32} however, in 1 study, the validity was lower for black participants than for either white or Hispanic participants. Moreover, Prewitt et al demonstrated that although the fat factors were similar to those on previous tools, example food items within in each factor were different for the specific black population in which this tool was tested.²⁷

Formative Research

Though the Prewitt FHQ was more directly applicable to a black population than the other FHQ tools, the SisterTalk investigators determined that further formative research was necessary to directly address the food habits of the diverse black population of Boston, which included West Indian, Cape Verdean, Haitian, and Jamaican immigrants, as well as African Americans.

Details on the formative research for the development of the SisterTalk intervention and evaluation tools are discussed elsewhere,¹⁰ but that research included 28 focus groups with 173 black women as well as a random-digit dial telephone marketing survey with 309 black women. Scripts in some of the focus groups, as well as a subset of questions on the marketing survey, elicited discussion about culturally relevant food behaviors, including food choices, food preparation, and dining out. The marketing survey further quantified the frequency of behaviors reported in the focus groups. Results offered suggestions for eating behaviors to add to the questionnaire including questions related to dining out.

Further refinement and evaluation of the tool occurred in 3 phases, including (1) a pilot study and refinement of the final instrument, (2) use of the final instrument in the SisterTalk study, and (3) a reliability and calibration study of the instrument. The purpose of this process was to determine which scoring method was most correlated with fat intake and thus, which method should be used for the evaluation of the SisterTalk and SisterTalk II (a second intervention study with hypertensive black women in southern New England not described in this paper). The remainder of this paper describes these 3 component studies that together compose the development, initial use, and testing of this instrument. All studies were approved by the Memorial Hospital and/or Brown University Institutional Review Boards for the protection of human subjects.

METHODS

Phase I: Telephone Pilot Study (October To November 1998)

Using the results from the formative research, the investigators constructed a pilot STFHQ instrument to be tested in a

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