Published in final edited form as:
J Nutr Educ Behav. 2009 ; 41(1): 32–40. doi:10.1016/j.jneb.2008.05.013.

Dietary behaviors and portion sizes of Black women who enrolled in SisterTalk and variation by demographic characteristics

Kim M. Gans, Ph.D., MPH, LDN[1], **Patricia Markham Risica, Dr., PH RD**[1], **Usree Kirtania, MS**[1], **Alishia Jennings, BA**[2], **Leslie O. Strolla, MS, CHES**[1], **Matilda Steiner-Asiedu, Ph.D., MPH**[3], **Norma Hardy, M.Ed., CHES**[1], and **Thomas M. Lasater, PhD**[1]

1 *Institute for Community Health Promotion, Brown University, Providence, RI*

2 *Women & Infants Hospital of Rhode Island, Providence, RI*

3 *University of Ghana, Department of Nutrition and Food Science, Legon-Accra, Ghana*

Abstract

Objective—To describe the dietary behaviors of Black women who enrolled in the *SisterTalk* weight control study.

Design—Baseline data collected via telephone survey and in-person screening.

Setting—Boston, MA and surrounding areas.

Participants—A total of 461 Black women completed the baseline.

Variables Measured—Measured height and weight; self reported demographics, risk factors, and dietary variables including fat-related eating behaviors, food portion size, fruit, vegetable, and beverage intake.

Analysis—Descriptive analyses for demographic, risk factors and dietary variables; ANOVA models with Food Habits Questionnaire (FHQ) scores as the dependent variable and demographic categories as the independent variables; ANOVA models with individual FHQ item scores as the dependent variable, and ethnic identification as the independent variable.

Results—The data indicate a low prevalence of many fat lowering behaviors. More than 60% reported eating less than five servings of fruits and vegetables per day. Self-reported portion sizes were large for most foods. Older age, being born outside the US, living without children and being retired were significantly associated with a higher prevalence of fat-lowering behaviors. The frequency of specific fat-lowering behaviors and portion size also differed by ethnic identification.

Conclusions and Implications—The findings support the need for culturally appropriate interventions to improve the dietary intake of Black Americans. Further studies should examine the dietary habits, food preparation methods and portion sizes of diverse groups of Black women and how such habits may differ by demographics.

Keywords

Women; Black; African American; dietary habits; eating habits; fat; portion size; fruit and vegetable

Corresponding author: Kim M. Gans Ph.D., MPH, LDN, Brown University Institute for Community Health Promotion, 121 South Main St. 8th floor, Providence, RI 02912, Tel: 401-863-6564; Fax: 401-863-6551, E-mail: Kim_Gans@Brown.edu.

INTRODUCTION

Obesity is now considered epidemic in the U.S.[1] Its prevalence has increased among most racial and ethnic groups, but an excess of obesity among Black women has been apparent for several decades.[1, 2] National data from 2003–2004 indicate that 81.6% of Black women age 20 and older were overweight or obese,[2] which may contribute to the marked health disparities between Black and White women.[3]

Diet may contribute to an increased prevalence of obesity and chronic diseases in Black Americans.[4] Compared with other ethnic groups, Black Americans have been shown to have higher intakes of cholesterol, total and saturated fat and sodium and lower intakes of fiber, fruits, vegetables, and whole grains.[5–7] Blacks have also been shown to be less likely than Non-Hispanic whites to adopt lower fat eating behaviors, such as avoiding fried foods.[8, 9] There has been inadequate research on how to develop nutrition interventions for specific ethnic minority groups such as Black Americans partly because while nutrient data are available, little information exists on dietary patterns, portion size, specific eating behaviors and food choices by ethnicity.[8] Furthermore, research is needed to provide insights into the heterogeneity of eating patterns among Black Americans.[10–12]

The purpose of this paper is to describe the dietary habits of Black women who joined *SisterTalk*, a weight control intervention designed for home delivery via cable television (TV).[13] In particular, the paper describes the extent to which fat-lowering behaviors are practiced in this population and examines demographic variation in these behaviors.

METHODS

The *SisterTalk* project has been described in detail elsewhere.[13] Briefly, the study was implemented with four cohorts, or "waves", of participants beginning in March 1999. Recruitment was conducted through varied channels within predominantly Black Boston communities. Inclusion criterion for the study were: female, self-identification as Black or African American, aged 18–70; residence in the cable TV company's catchment area; BMI greater than or equal to 22.0; not pregnant or at least four months postpartum; no physical problems that would prevent mild physical activity; no previous history of treatment for eating disorders; able to speak and read English; no current participation in any other weight-control research project; and access to a working telephone, TV and video cassette recorder.

Prospective participants completed a baseline telephone questionnaire and then attended an in-person screening for collection of additional questionnaire data and measurement of height and weight. In-person screenings took place at Brigham and Women's Hospital and neighborhood health and community centers. Randomization to one of the five experimental conditions[13] took place at the end of the screening. After randomization, 87 women were unable to participate because they did not have access to the cable TV provider airing the *SisterTalk* program. These women were not included in the randomized trial, but are included in this analysis of baseline data because they were otherwise eligible for the study. The *SisterTalk* study was approved by the Institutional Review Boards for Human Subjects at Memorial Hospital of RI, Brown University and Brigham and Women's Hospital.

Measures

Data for all of the variables described below were collected during the telephone survey, with the exception of portion size and height and weight, which were ascertained during the in-person screening.

Demographics, Risk factors and Comorbidities—Demographic information collected included: household income; education; household composition, employment status, ethnic identification, birth country, and years lived in the US. Medical history of heart disease, heart attack/stroke, hypertension, diabetes and cancer were ascertained by asking, "Has anyone ever told you that you have/had [XX]". Also, current use of medication for hypertension was queried. Height and weight were used to calculate BMI using the formula kg/m^2. (See Table 1)

Fat-related eating habits—The main dietary outcome measure was the *SisterTalk* Food Habits Questionnaire (STFHQ)[14, 15] which was adapted from older tools[8, 16–18] and administered by telephone. The development and evaluation of the STFHQ is described in detail elsewhere[14, 15] Briefly, the instrument consisted of 28 introductory items related to food frequency and 67 fat-related behavioral items about these foods. The STFHQ has excellent test-retest reliability (r=0.90, p <.001) and validity with fat grams (0.53, p <0.0001).[14] The "introductory" food questions measured frequency of consumption in the past three months (almost always/often, sometimes, rarely or never). If a response besides "never" was given, the related behavioral questions were asked. See Table 2 for the list of behavioral questions. Mean scores for behavioral questions were calculated as the score (1 for never, 2 for rarely, 3 for sometimes, 4 for often/almost always) averaged over all participants who answered the question. Questions that asked about high fat behaviors were reverse scored so that a higher mean score would be reflective of a higher fat intake. The total FHQ score was calculated as the mean of all behavioral item scores.

Portion size—The American Dietetic Association/Center for Nutrition Education, University of Wisconsin-Stout's *Portion Photos of Popular Foods*© tool was used to measure portion size for 12 foods (See Table 3). For each food, the participant was shown three different "life size" portion photographs and asked which best matched the portion size she usually ate. Then, she was asked how many of that portion she usually ate. If the photograph pictured a particular food (i.e. roast beef or broccoli), the woman was instructed to think about her portion size for the overall food category (i.e. red meat or vegetables). For each of the 12 food items, the percent of participants who reported not eating this food at all was calculated. For those who did eat the food, the number of servings was multiplied by grams per serving to get total portion size in grams. Then the mean portion size score in grams was calculated and converted into standard serving equivalents[19] (Table 3). The total mean portion score was shown to have concurrent validity as it was significantly correlated with BMI (0.19, p <0.0001).

Fruit and vegetable intake and Beverage consumption—Fruit and vegetable intake was measured using a validated six-item questionnaire that asked how many times various fruits and vegetables (fruit, fruit juice, green salad, potatoes not counting fries, carrots and any other vegetables) had been consumed the previous day.[20] These were then summed to get a total number of servings per day.

The *SisterTalk* telephone survey included five items assessing beverage consumption. Two questions assessed frequency and amounts of alcohol consumed. One question measured daily water consumption and two questions assessed the amount and type (sugar-free or regular) of soft drinks (defined as soda, Kool-Aid or punch) drunk on a daily basis.

Statistical methods

All statistical analyses were performed with SAS version 8.2 (SAS Institute, Cary, NC, USA, 2001). Descriptive analyses including frequencies and means were used to describe participant demographics, risk factors and comorbidities, and dietary variables. Analysis of variance (ANOVA) models were calculated with FHQ scores as the dependent variable and

demographic categories as the independent variables, with resulting mean FHQ scores and standard deviations for each level of demographic category. Also, ANOVA models were conducted with individual food item FHQ scores as the dependent variable, and ethnicity (African American v. other) as the independent variable.

RESULTS

Participants

A total of 461 women completed both the telephone surveys and in-person screening. Table 1 shows the demographic characteristics of these women. The mean age was 43.5 years. Most participants were born in the US and three-quarters self-identified as African American. Many participants were well educated (42% college or greater). The majority had children living with them and more than one third of these women had no other adults living in the household. More than three quarters were employed either full or part-time, and the majority had household incomes < $40,000 per year. The mean BMI was in the obese range (34.3 kg/m^2). The most prevalent comorbid conditions reported were hypertension (27%) and diabetes (11%).

Fat-related dietary behaviors

Responses to fat-lowering behavior questions indicating which behaviors were most and least often practiced are presented in Table 2 grouped by food category as well as dining out and food preparation categories. In the food categories, the most common fat-lowering behaviors were not cooking vegetables/beans using pork/ham fat, trimming removable fat from red meat, and choosing turkey or chicken lunch meats. The least common behaviors were eating “vegetable meat”, eating low-fat or fat free types of cakes/cookies and eating low fat or fat free cheese. Less than half (48%) of participants reported rarely or never eating at fast food restaurants, while 21% reported eating there often. When participants ate at restaurants or bought take-out food, the only fat lowering behavior that was common was ordering pizza without extra cheese. About 78% of participants reported preparing meals or baking on a regular basis. Of those who did not, 66% knew how their food was prepared. Food preparation behaviors to lower fat were not commonly practiced.

Portion sizes

All of the foods on the portion size chart were eaten by the majority of women. The two foods that were eaten least often were hamburger and red meat (80% and 74% of women, respectively). The portion sizes (Table 3) for most foods were large, representing multiple servings based on the USDA serving sizes.[19, 21, 22] The only portion sizes that approximated USDA serving sizes were red meat, butter/margarine as a spread, and cheese.

Fruits and vegetables

Participants reported eating fruit 2.2 times (SD 1.6) and vegetables 1.9 times (SD 1.7) per day, for a total of 4.1 times per day. Fruits were eaten most often (mean 1.2 times per day), followed by fruit juice (0.99 times), other vegetables (0.91 times), green salad (0.49 times), carrots (0.34 times) and potatoes (0.20 times). A total of 38.1% of participants reported eating five or more servings of fruits and vegetables daily.

Beverages

Women reported drinking 4.45 glasses of water and 4.65 glasses of soft drinks per day. The majority of women (58%) drank non-diet soft drinks with only 25% drinking diet soft drinks almost always or often. The majority of women (57%) reported drinking no alcoholic beverages. Of the women who did drink alcohol, a mean of 3.7 drinks per week was reported.

Comparison by demographics

Older women had lower FHQ scores than younger women indicating a lower fat diet (1.27 for age 50 and up compared to 1.42–1.56 for younger age groups, $p < .0002$). Those born outside the US had lower FHQ scores than those born in the US (1.27 vs. 1.42, $p < .02$), and those living with children had higher FHQ scores than those living without children (1.43 vs. 1.34, $p < .02$). Retired women had lower FHQ scores than unemployed, homemakers/students or employed women (1.13 vs. 1.34, 1.42, 1.43, respectively, $p < .03$). Mean FHQ scores did not significantly differ by income levels, educational level or ethnic identification. However, the frequency of specific dietary behaviors did differ somewhat by ethnic identification (Table 4). SisterTalk participants who identified as African American were more likely than women who identified themselves as other than African American (i.e. West Indian, Cape Verdean, etc.) to add fat to hot cereal and potatoes/plantains, and were more likely to eat the trimmable fat on meat, eat higher fat salty snacks, and choose fried foods in restaurants. However, African American women were more likely to choose extra lean ground beef or ground turkey, and less likely to choose whole milk, and to add gravy to meats. Portion sizes appeared to be larger for African American participants for almost all foods, and were significantly larger for chips (69.7 vs. 56.7 grams, $p = .04$), and pasta (427.0 vs. 372.6 grams, $p < .05$). Fruit and vegetable intake did not differ by ethnic identification, and neither did beverage consumption, with the exception that African American women drank more water per day than women who did not identify as African American (4.60 vs. 3.96 glasses per day, $p < .03$).

DISCUSSION

Overall, there was a relatively low prevalence of fat-lowering behaviors by SisterTalk participants. Other researchers have also found that Black Americans including women have higher fat intakes than Hispanics and Non-Hispanic whites.[5, 6, 8, 9, 23, 24] Some of the prevalent fat-related behaviors in SisterTalk were also consistent with previous studies including eating the skin on chicken, frying chicken and fish,[8, 9, 24, 25] and a low prevalence of fat lowering behaviors such as: eating meatless meals, eating lower fat cakes and cookies, using low fat food preparation methods.[8, 9, 24] *SisterTalk* participants had low levels of fruit and vegetable consumption as in other studies with Black Americans.[5, 26] The reported consumption of sugar sweetened beverages is consistent with national data that have shown a dramatic increase in recent years and may contribute to obesity and diabetes among women.[27, 28]

Positive dietary behaviors that were observed in SisterTalk included low rates of alcohol use, which mirrored national rates for Black women,[29] drinking more water than sweetened soft drinks, and a low prevalence of eating the fat on meat and adding meat fat to vegetables/beans. Further studies need to determine if these behaviors are generalizable to other populations of Black women.

Self-reported portion sizes appeared to be large for most foods in the *SisterTalk* study. Nationally, portion sizes have grown in parallel with increasing body weights.[30] Several studies have shown that providing individuals with larger food portions can lead to significant increases in energy intake.[31–33] Our data confirms an observation in the United Kingdom, in which mean portion size of several foods were found to be higher for African-Caribbean men and women than for the White population.[34] More study is needed on portion sizes of different population subgroups and on the validity of size measurement aids, particularly as it relates to their use by different population groups.[34, 35]

This research also demonstrates the high degree of variability in dietary behaviors among Black women. As in SisterTalk, other studies have shown that Black Americans who were not born in the US have healthier eating habits than those born in the US[7, 36, 37] Moreover, dietary

habits have been shown to differ by level of African American ethnic identity with stronger African American ethnocultural association usually being linked to less healthful diets.[10, 23] Future studies need to differentiate between the effects of culture and race from the effects of income, education, age and gender on dietary intake among Black Americans.[36]

Food choices and cooking methods of Black Americans have been influenced by both custom as well as slavery and discrimination.[11] Although food scarcity was a major issue in the past, taste, convenience, and cost are the major factors that drive the current food choices of Black Americans.[38] Specific barriers to eating healthy for Black Americans include: the perception that 'eating healthfully' means giving up one's cultural heritage and conforming to the dominant culture; lack of social support; social and cultural symbolism of high fat foods; the poor perceived taste and expense of 'healthy' foods; lack of information on nutrition; no sense of urgency to change diet unless there is a health concern; lack of time and energy to prepare healthy foods; and cultural acceptability of overweight and less healthful eating.[6, 10, 38, 39] Moreover, because Black Americans are oriented to adjust to environmental stresses, they may be more likely to eat in response to environmental cues (i.e. visible food, large portions, food advertising, etc.) rather than hunger.[11, 39] Thus, for effective dietary change in Black communities, changes in food access and availability likely need to precede or parallel dietary changes recommended to individuals.[11]

Regardless of the cultural and environmental causes, high fat dietary behaviors, low fruit or vegetable intake, and large portion sizes are important dietary issues that should be addressed. Efforts should focus on changing dining out choices and choosing healthier snacks and sweets, trying lower fat products, modifying food preparation techniques such as frying and cooking with fat; making better choices at restaurants, decreasing portion sizes and eating more fruits and vegetables[8, 26] In addition, identifying ways to increase the relevance of cultural context and meanings in nutrition interventions is important to anchor the messages within values perceived by Black Americans.[11] These messages may need to differ for subgroups within the Black American population and further research is necessary on nutrition intervention needs by country of origin or ethnic identification.

The present study has certain limitations that need to be acknowledged. Because the STFHQ is a qualitative tool, it was unable to provide a quantitative measure of actual fat intake as it does not inquire into all sources of fat and calorie intake. However, the FHQ does reflect fat intake[8, 13, 14, 16–18] and measures the frequency of fat-related behaviors, which may be more helpful for evaluating nutrition interventions and designing future interventions. The separate portion-size tool was piloted in this study, so it was not "validated" against a gold standard measure for portion size. However, the tool appeared to have face validity and did demonstrate predictive validity as indicated by its relationship to BMI. Several other studies support the validity of using color food photographs as a tool for quantifying food portion size in epidemiological dietary surveys and intervention studies.[40, 41]

In addition, the dietary data described in this paper were from participants in a weight control study and thus, are not necessarily reflective of the general population of Black women. However, the SisterTalk sample is indicative of women who would be likely to volunteer for future nutrition education/weight control programs. Interpretation of these results outside of New England is also limited as the dietary habits of these urban Black women from Boston may not generalize to Black women from other parts of the country. In addition, the current study was not adequately powered to examine dietary differences by demographic subgroups, so further studies of dietary differences within larger samples of diverse Black American populations are needed.

IMPLICATIONS FOR RESEARCH AND PRACTICE

The current findings support the need for culturally appropriate interventions designed to improve the dietary intake of Blacks born in the U.S. and to encourage immigrant Blacks to maintain the healthful dietary intake of their native country.[36] Dietary intakes closer to national dietary guidelines may reduce the risk for chronic diseases and decrease overall health disparities.[36] The findings presented here can be useful for developing nutrition interventions that are targeted to Black American women, and the specific dietary behaviors that may be emphasized in nutrition education messages and programs. The results from this study can also be used to inform the development of better dietary assessment tools by identifying dietary behaviors, food products, food preparation techniques and portion sizes to include, and appropriate probing questions. Further research should continue to study the dietary habits, food preparation methods and portion sizes of Black women including those with a wide range of ages, social classes, country of origin, etc.

Acknowledgements

The *SisterTalk* project was funded by the National Cancer Institute, Grant# CA74484. The authors would like to acknowledge the following individuals for their help in preparing this manuscript: Robin Scheer, Katherine Munoz, and Dr. Shiriki Kumanyika.

References

1. Centers for Disease Control and Prevention. State-specific prevalence of obesity among adults--United States, 2005. MMWR Morb Mortal Wkly Report 2006;55:985–988.
2. Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak CJ, Flegal KM. Prevalence of overweight and obesity in the United States, 1999–2004. JAMA 2006;295:1549–1555. [PubMed: 16595758]
3. Mensah GA, Mokdad AH, Ford ES, Greenlund KJ, Croft JB. State of disparities in cardiovascular health in the United States. Circulation 2005;111:1233–1241. [PubMed: 15769763]
4. Kumanyika S. The cultural aspects of weight control. The Weight Control Digest 1994;4:347–352.
5. Gary TL, Baptiste-Roberts K, Gregg EW, et al. Fruit, vegetable and fat intake in a population-based sample of African Americans. J Natl Med Assoc 2004;96:1599–1605. [PubMed: 15622690]
6. Sanchez-Johnsen LA, Fitzgibbon ML, Martinovich Z, Stolley MR, Dyer AR, Van Horn L. Ethnic Differences in correlates of obesity between Latin-American and black Women. Obes Res 2004;12:652–660. [PubMed: 15090633]
7. Diaz VA, Mainous AG 3rd, Koopman RJ, Carek PJ, Geesey ME. Race and diet in the overweight: association with cardiovascular risk in a nationally representative sample. Nutrition 2005;21:718–725. [PubMed: 15925297]
8. Kristal AR, Shattuck AL, Patterson RE. Differences in fat-related dietary patterns between black, Hispanic and White women: results from the Women's Health Trial Feasibility Study in Minority Populations. Public Health Nutr 1999;2:253–262. [PubMed: 10512559]
9. Gans KM, Burkholder GJ, Risica PM, Lasater TM. Baseline fat-related dietary behaviors of white, Hispanic, and black participants in a cholesterol screening and education project in New England. J Am Diet Assoc 2003;103:699–706. [PubMed: 12778040]
10. Ard JD, Durant RW, Edwards LC, Svetkey LP. Perceptions of African-American culture and implications for clinical trial design. Ethn Dis 2005;15:292–299. [PubMed: 15825976]
11. Airhihenbuwa CO, Kumanyika S, Agurs TD, Lowe A, Saunders D, Morssink CB. Cultural aspects of African American eating patterns. Ethn Health 1996;1:245–260. [PubMed: 9395569]
12. Bronner YL, Harris E, Ebede TL, Hossain MB, Nowverl A. Historical assessment of nutrition studies using only African-American study subjects: gender, socioeconomic status, and geographic location. Ethn Dis 2001;11:134–143. [PubMed: 11289234]
13. Gans KM, Kumanyika SK, Lovell HJ, et al. The development of SisterTalk: a cable TV-delivered weight control program for black women. Prev Med 2003;37:654–667. [PubMed: 14636799]

14. Risica PM, Burkholder G, Gans KM, et al. Assessing fat-related dietary behaviors among black women: reliability and validity of a new Food Habits Questionnaire. J Nutr Educ Behav 2007;39:197–204. [PubMed: 17606245]
15. Anderson CA, Kumanyika SK, Shults J, Kallan MJ, Gans KM, Risica PM. Assessing change in dietary-fat behaviors in a weight-loss program for African Americans: a potential short method. J Am Diet Assoc 2007;107:838–842. [PubMed: 17467382]
16. Kristal AR, Beresford SA, Lazovich D. Assessing change in diet-intervention research. Am J Clin Nutr 1994;59:185S–189S. [PubMed: 8279421]
17. Shannon J, Kristal AR, Curry SJ, Beresford SA. Application of a behavioral approach to measuring dietary change: the fat- and fiber-related diet behavior questionnaire. Cancer Epidemiol Biomarkers Prev 1997;6:355–361. [PubMed: 9149896]
18. Prewitt TE, Durazo-Arvizu R, McGee DL, Luke A, Cooper RS. One size fits all: implications for assessing dietary behavior. J Am Diet Assoc 1997;97:S70–72. [PubMed: 9216572]
19. Center for Nutrition Policy and Promotion. Putting the Guidelines into Practice USDA. Mar2002 [Accessed May 23, 2008]. (Bulletin No. 267-1). http://www.cnpp.usda.gov/Publications/DietaryGuidelines/2000/2000DGBrochureHowMuch.pdf
20. Serdula M, Coates R, Byers T, et al. Evaluation of a brief telephone questionnaire to estimate fruit and vegetable consumption in diverse study populations. Epidemiology 1993;4:455–463. [PubMed: 8399695]
21. U.S. Food and Drug Administration. Code of Federal Regulations: 21CFR101.12 Reference amounts customarily consumed per eating occasion: US Government Printing Office; 2002:Page 47–56.
22. U.S. Departments of Agriculture and Health and Human Services. Nutrition and your health: Dietary Guidelines for Americans. 2005 Dietary Guidelines Advisory Committee Report.; 2005.
23. Daroszewski EB. Dietary fat consumption, readiness to change, and ethnocultural association in midlife African American women. J Community Health Nurs 2004;21:63–75. [PubMed: 15123436]
24. Patterson RE, Kristal AR, Coates RJ, et al. Low-fat diet practices of older women: prevalence and implications for dietary assessment. J Am Diet Assoc 1996;96:670–679. [PubMed: 8675910]
25. Satia JA, Galanko JA. Comparison of three methods of measuring dietary fat consumption by African-American adults. J Am Diet Assoc 2007;107:782–791. [PubMed: 17467373]
26. Haire-Joshu D, Kreuter MHC, Steger-May K. Estimates of fruit and vegetable intake in childhood and adult dietary behaviors of African American women. J Nutr Educ Behav 2004;36:309–314. [PubMed: 15617613]
27. Bray G, Nielson S, Popkin B. Consumption of high-fructose corn syrup in beverages may play a role in the epidemic of obesity. Am J Clin Nutr 2004:537–543. [PubMed: 15051594]
28. Schulze MB, Manson JE, Ludwig DS, et al. Sugar-sweetened beverages, weight gain, and incidence of type 2 diabetes in young and middle-aged women. JAMA 2004;292:927–934. [PubMed: 15328324]
29. Falk DE, Yi HY, Hiller-Sturmhofel S. An epidemiologic analysis of co-occurring alcohol and tobacco use and disorders: findings from the national epidemiologic survey on alcohol and related conditions. Alcohol Res Health 2006;29:162–171. [PubMed: 17373404]
30. Young LR, Nestle M. The contribution of expanding portion sizes to the US obesity epidemic. Am J Public Health 2002;92:246–249. [PubMed: 11818300]
31. Ello-Martin JA, Ledikwe JH, Rolls BJ. The influence of food portion size and energy density on energy intake: implications for weight management. Am J Clin Nutr 2005;82:236S–241S. [PubMed: 16002828]
32. Rolls BJ, Morris EL, Roe LS. Portion size of food affects energy intake in normal-weight and overweight men and women. Am J Clin Nutr 2002;76:1207–1213. [PubMed: 12450884]
33. Diliberti N, Bordi PL, Conklin MT, Roe LS, Rolls BJ. Increased portion size leads to increased energy intake in a restaurant meal. Obes Res 2004;12:562–568. [PubMed: 15044675]
34. Sharma S, Cade J, Landman J, Cruickshank JK. Assessing the diet of the British African-Caribbean population: frequency of consumption of foods and food portion sizes. Int J Food Sci Nutr 2002;53:439–444. [PubMed: 12396469]
35. Cypel YS, Guenther PM, Petot GJ. Validity of portion-size measurement aids: a review. J Am Diet Assoc 1997;97:289–292. [PubMed: 9060946]

36. Lancaster KJ, Watts SO, Dixon LB. Dietary intake and risk of coronary heart disease differ among ethnic subgroups of black Americans. J Nutr 2006;136:446–451. [PubMed: 16424126]

37. Maitland TE, Gomez-Marin O, Weddle DO, Fleming LE. Associations of nationality and race with nutritional status during perimenopause: implications for public health practice. Ethn Dis 2006;16:201–206. [PubMed: 16599371]

38. Hargreaves MK, Schlundt DG, Buchowski MS. Contextual factors influencing the eating behaviours of African American women: a focus group investigation. Ethn Health 2002;7:133–147. [PubMed: 12523941]

39. Wilson DB, Musham C, McLellan MS. From mothers to daughters: transgenerational food and diet communication in an underserved group. J Cult Divers 2004;11:12–17. [PubMed: 15357222]

40. Turconi G, Guarcello M, Berzolari FG, Carolei A, Bazzano R, Roggi C. An evaluation of a colour food photography atlas as a tool for quantifying food portion size in epidemiological dietary surveys. Eur J Clin Nutr 2005;59:923–931. [PubMed: 15928683]

41. Williamson DA, Allen HR, Martin PD, Alfonso AJ, Gerald B, Hunt A. Comparison of digital photography to weighed and visual estimation of portion sizes. J Am Diet Assoc 2003;103:1139–1145. [PubMed: 12963941]

Table 1

Baseline Demographic and Health Characteristics for *SisterTalk* Participants who completed both Phone and In-person Survey (N=461).

Variable	% or mean, as indicated	Variable	% or mean, as indicated
Mean Age (years) (SD)	43.5 (10.8)	Household Composition, n (%)	
Age (years), n (%)		Live alone	87 (19%)
18–29	49 (11%)	Live with adults only	101 (22%)
30–39	132 (29%)	Live with children only	101 (22%)
40–49	149 (32%)	Live with children/adults	171 (37%)
50–59	101 (22%)	Employment Status, n (%)	
60 or greater	29 (6%)	Employed Full or Part Time	347 (76%)
Ethnic identification, n (%)		Unemployed	54 (12%)
African American or African	357 (77%)	Homemaker/Student	28 (6%)
West Indian/Caribbean	42 (9%)	Other	30 (6%)
Cape Verdean	11 (2%)	Household Income, n (%)	
Hispanic	6 (1%)	20k or less	91 (22%)
Native American	4 (1%)	20k to 40k	170 (41%)
Mixed	6 (1%)	40k to 60k	71 (17%)
None given	35 (8%)	60k or more	82 (20%)
Birth country, n (%)		Mean Body Mass Index (kg/m^2)	
Born in the US	405 (88%)	(SD)	34.3 (7.5)
Born outside the US	55 (12%)	Medical History, n (%)	
Education Level, n (%)		Heart disease	16 (3.5%)
Less than high school	27 (6%)	Heart attack/stroke	7 (1.5%)
High school graduate	77 (17%)		121
Some college/technical		Hypertension	(26.6%)
School	161 (35%)	Medication for blood pressure	102
College graduate	125 (27%)	/heart condition	(22.4%)
Graduate school	69 (15%)	Diabetes	49 (10.7%)
		Cancer	20 (4.4%)

Table 2

Percentages for Almost Always and Never response categories and mean scores for Fat-Related Behavior questions on the *SisterTalk* Food Habits Questionnaire (n=461).

Fat-related behavior	% Almost Always/Often	% Never	Mean*	Std Dev
Meats				
Low-fat or turkey sausage or bacon?	21.6	46.3	**2.88**	1.21
Low-fat deli meats?	19.0	46.2	**2.93**	1.17
Choose ham or roast beef deli meats?	14.9	32.6	**2.76**	1.07
Choose turkey or chicken deli meats?	52.5	8.1	**1.76**	0.96
Have fresh or frozen fish fried?*RS*	33.2	18.8	**2.74**	1.11
Have chicken without the skin?	34.0	27.1	**2.36**	1.21
Have chicken fried?*RS*	21.3	19.1	**2.55**	1.03
Extra lean ground meat/hamburger or ground turkey?	54.1	14.6	**1.87**	1.11
Baked, broiled or grill ground meat?	41.3	15.7	**2.05**	1.09
Eat a red meat portion that was ≤ 3 oz. cooked?	20.8	16.0	**2.49**	0.99
Eat trimmable fat from red meat?*RS*	12.9	55.8	**1.80**	1.07
Eat higher fat cut of red meat?*RS*	13.8	26.3	**2.27**	1.0
Eat lean cut of red meat?	32.6	14.7	**2.21**	1.05
Add gravy to red meat?*RS*	11.7	46.0	**1.93**	1.04
Lean or low-fat hot dogs?	21.9	40.4	**2.78**	1.19
Have main meal without red meat, chicken, fish, eggs or cheese?	13.0	29.4	**2.74**	1.02
Eat vegetable meat like Garden™, Boca™ burgers?	8.5	70.9	**3.46**	0.95
Dairy				
Drink whole or regular milk?*RS*	29.8	48.0	**2.21**	1.31
1% or skim milk?	34.1	43.3	**2.64**	1.34
Drink 2% milk?*RS*	30.1	42.7	**2.30**	1.29
Low-fat or fat free cheese?	8.8	60.7	**3.30**	1.0
Vegetables				
Add butter/margarine to cooked vegetables/beans at the table?*RS*	17.5	42.8	**2.08**	1.13
Cook vegetables/beans with pork, bacon fat, fat back or ham hock?*RS*	8.4	64.5	**1.64**	0.98
Cook vegetables/beans with butter, margarine or oil?*RS*	30.6	27.5	**2.59**	1.19
Eat potatoes/plantains/yucca fried?*RS*	19.6	19.0	**2.54**	1.01
Add butter, margarine or oil to boiled/baked potatoes?*RS*	47.7	17.0	**3.02**	1.13
Use light or fat free salad dressing on green salad?	35.2	29.1	**2.36**	1.23
Desserts & Snacks				
Low-fat ice cream, frozen yogurt or sherbet?	17.6	36.1	**2.81**	1.11
Eat only fruit for dessert?	21.4	15.9	**2.34**	0.99
Eat pastries, doughnuts or chocolate?*RS*	8.51	36.6	**2.94**	0.98

Fat-related behavior	% Almost Always/Often	% Never	Mean*	Std Dev
Low-fat or fat free types of cakes/cookies?	5.0	56.1	**3.35**	0.87
Snack on only fruit?	24.0	8.8	**2.20**	0.9
Eat nuts, regular popcorn or crackers?	29.5	5.8	**3.00**	0.86
Eat potato chips, corn chips, skins, nacho chips or cheese puffs?*RS*	22.8	18.0	**2.58**	1.03
Eat pretzels, low-fat chips, air popcorn or low-fat crackers?	9.7	34.1	**2.87**	1.0
Dining out/Take-out				
Choose fried items?*RS*	14.9	19.4	**2.43**	0.97
Choose fruit for dessert?	7.6	54.1	**3.26**	0.95
Share dessert?	13.1	45.8	**3.02**	1.08
Share entree?	13.7	39.5	**2.90**	1.07
Order smaller portions?	5.7	70.7	**3.53**	0.85
Choose items with high fat sauce?*RS*	19.7	22.8	**2.40**	1.05
Eat fast food burgers/sandwiches with cheese?*RS*	38.1	18.3	**2.79**	1.14
Eat fast food burgers/sandwiches with mayo/sauce?*RS*	23.7	26.2	**2.41**	1.11
Order small fast food sandwiches like regular hamburgers?	25.5	22.6	**2.48**	1.1
Order fried chicken?*#RS*	29.5	15.1	**2.73**	1.05
Order a vegetarian dish at Chinese restaurant?	14.6	47.1	**3.00**	1.12
Order Chinese selections with fried chicken, fried shrimp or fried pork?*RS*	24.2	26.0	**2.46**	1.12
Order egg rolls, fried wings or wontons at Chinese restaurant?*RS*	26.4	27.7	**2.50**	1.15
Order fried rice?*RS*	48.0	11.0	**3.00**	1.08
Get pizza made with extra cheese?*RS*	13.8	21.4	**1.90**	1.08
Get pizza made with meat toppings?*RS*	34.0	26.0	**2.65**	1.2
Get pizza with no cheese or half the cheese?	5.8	77.6	**3.60**	0.81
Food preparation				
Use regular mayo?*RS*	61.7	15.3	**3.21**	1.14
Change recipe to use less fat in baking?	13.0	59.8	**3.23**	1.09
Add oil, butter or margarine to the batter or skillet for cornbread?*RS*	60.8	15.2	**3.19**	1.14
Use butter or margarine or oil when pan fry or sauté?*RS*	53.7	8.3	**3.24**	0.97
Use nonstick spray?	25.9	38.2	**2.64**	1.23
Other				
Add meat to hot cereal/grits?*RS*	14.8	61.5	**1.80**	1.12
Add whole milk or cream to hot cereal?*RS*	25.4	53.3	**2.10**	1.28
Add butter or margarine to hot cereal?*RS*	51.0	26.5	**2.90**	1.29
Put regular mayonnaise on sandwiches?*RS*	48.4	15.0	**3.00**	1.14
Eat biscuits/cornbread without butter or margarine?	26.5	31.4	**2.60**	1.18

*Higher mean scores equal greater frequency of high fat behavior.

#Yes/No question, response shown = no.

RS Item was reverse scored to calculate mean so that a higher mean value is always related to higher fat intake.

Table 3

Average Portion Sizes for 12 individual food items (grams) for women who reported eating each food and comparisons to Standard Serving Sizes

Variable	Mean (grams)	Std Dev	Portion Equivalent	Standard Serving Size
Cake	136.7	98.5	3 two-inch square pieces (150 g)	80g†
Vegetable*	170.3	98.8	2 cups	½ cup‡/85g†
Chips	67.0	55.0	4 cups (2.4 oz., 68 g)	1 oz.‡, 28 g†
Cheese	72.2	61.8	2.4 slices (2.5 oz.)	2 oz.‡/30g†
Ice cream	195.4	107.1	1.13 cups	½ cup†
Fried chicken	286.8	147.3	10.1 oz.	2–3 oz.‡/85g†
Hamburger	174.1	96.1	6.12 oz.	2–3 oz.‡/85g†
Red meat	94.7	54.1	3.3 oz.	2–3 oz.‡/85g†
Macaroni & cheese	428.8	255.9	1.75 cups	1 cup†
Pasta	414.4	248.0	3 cups	½ cup‡/140g†
Butter on bread	10.6	10.7	2 tsp.	1 Tbsp.†
Salad dressing	51.41	35.42	3.5 Tbsp.	2 Tbsp.‡/30 g†

*Vegetable shown was broccoli, but participants were asked to generalize response to all cooked vegetables.

†Serving size from reference [22].

‡Serving size from reference [21].

Table 4

Comparison of Scores for Fat-Related Behaviors among African-American and Non-African American Sister Talk Participants [Mean (SD)].

		African American			Non-African American		
	n	**Mean**	**SD**	**n**	**Mean**	**SD**	**P-value**
Items with higher mean scores for African-Americans (indicating higher fat intake):							
Add butter or margarine to boiled/baked potatoes, plantains?[RS]	318	**3.10**	1.09	95	**2.74**	1.20	0.009
Eat trimmable fat on meat?	308	**1.85**	1.09	95	**1.65**	0.98	0.095[†]
Add butter or margarine to hot cereal/grits?[RS]	275	**2.99**	1.25	76	**2.43**	1.34	0.002
Eat potato chips, corn chips, skins, nacho chips or cheese puffs?[RS]	333	**2.63**	1.02	101	**2.42**	1.05	0.072[†]
Choose fried items in restaurants?[RS]	327	**2.49**	0.97	96	**2.25**	0.92	0.030
Items with lower mean scores for African-Americans (indicating lower fat intake):							
Eat extra lean ground beef or ground turkey instead of regular hamburger?	296	**1.78**	1.07	87	**2.17**	1.19	0.007
Snacks were pretzels, low fat chips, air-popped popcorn or low-fat crackers?	333	**2.81**	0.98	101	**3.08**	1.04	0.021
Add gravy to red meat?[RS]	307	**1.86**	0.99	95	**2.14**	1.16	0.038
Drink whole or regular milk?[RS]	292	**2.14**	1.29	81	**2.46**	1.39	0.071[†]

[RS] Item was reverse scored to calculate mean so that a higher mean value is always related to higher fat intake.

[†] These items had borderline statistical significance, but it is likely that if the study had been powered to look at subgroup differences, these would be significantly different.