

Healthy food purchasing among African American youth: associations with child gender, adult caregiver characteristics and the home food environment

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Abstract

Objective: To examine how factors related to the home food environment and individual characteristics are associated with healthy food purchasing among low-income African American (AA) youth.

Subjects: A total of 206 AA youth (ninety-one boys and 115 girls), aged 10–14 years, and their primary adult caregivers.

Setting: Fourteen Baltimore recreation centres in low-income neighbourhoods.

Design: Cross-sectional study. We collected information about food purchasing, the home food environment, sociodemographic and psychosocial factors drawn from social cognitive theory. Multivariable logistic regression was used to examine the factors associated with the frequency and proportion of healthy food purchases in all youth and stratified by gender. Low-fat or low-sugar foods were defined as healthy.

Results: Youth purchased an average of 1.5 healthy foods (range = 0–15) in the week before the interview, comprising an average of 11.6% (range = 0–80%) of total food purchases. The most commonly purchased healthy foods included water and sunflower seeds/nuts. Healthier food-related behavioural intentions were associated with a higher frequency of healthy foods purchased (OR = 1.4, $P < 0.05$), which was stronger in girls (OR = 1.9, $P < 0.01$). Greater caregiver self-efficacy for healthy food purchasing/preparation was associated with increased frequency of healthy purchasing among girls (OR = 1.3, $P < 0.05$). Among girls, more frequent food preparation by a family member (OR = 6.6, $P < 0.01$) was associated with purchasing a higher proportion of healthy foods. No significant associations were observed for boys.

Conclusions: Interventions focused on AA girls should emphasize increasing food-related behavioural intentions. For girls, associations between caregiver self-efficacy and home food preparation suggest the importance of the caregiver in healthy food purchasing.

Keywords
Diet
Overweight
African Americans
Adolescents
Girls
Food purchasing
Behavioural intentions

Obesity is considered the most prevalent nutritional disease in US children and adolescents⁽¹⁾, with 16% of children obese and 34% overweight⁽²⁾. Overweight youth, especially African Americans (AA), are more likely to be obese adults⁽³⁾. Eating away from home has been associated with higher risk of obesity in children and has recently risen markedly^(4–7). Youth purchasing is an important factor influencing dietary practices, as shown by the ubiquitous marketing of high-energy, nutrient-poor food to youth^(8,9).

AA girls have higher intakes of energy and dietary fat than do whites^(10,11), but AA children snack less than whites⁽⁶⁾. In Baltimore, 43% of predominantly AA neighbourhoods had

low availability of healthy foods, compared with 4% of white neighbourhoods⁽¹²⁾. Despite these differences, little is known about the purchasing patterns of AA youth. AA dietary patterns coupled with limited food options in AA neighbourhoods may translate into unique, unhealthy purchasing patterns. Factors related to the home food environment, including the role of the caregiver (e.g. food preparation patterns), may also influence children's food purchasing habits.

Food consumed outside the home comprises a significant portion of dietary intake in urban AA youth^(13,14). Greater youth food-related behavioural intentions and caregiver food-related behavioural intentions for healthy eating have

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both been shown to be related to fewer purchases of high-fat, high-sugar food among AA youth (AJ Coutinho, S Suratkar, L Dennisuk *et al.*, unpublished results). The goal of the present study was to extend this work to understand how the home food environment and caregiver and youth characteristics are associated with healthy food purchasing among AA youth. Since gender differences exist for obesity and dietary patterns^(2,15), we also investigated whether this is reflected in purchasing patterns.

Methods

Sampling

As part of the baseline data for an intervention aimed at improving the eating and purchasing habits, participants were recruited from low-income AA neighbourhoods in East and West Baltimore (96% and 92% AA populations, respectively). Any adolescent, aged 10–14 years, who self-identified as AA and attended activities at one of fourteen recreation centres, was approached by study staff for participation. Children were eligible for the study if they: (i) lived within a mile away from the centre; (ii) attended the centre at least once weekly; and (iii) had no plans to move within the year. If children attended the recreation centre at least once weekly but did not live within 1 mile, it was assumed that they would be affected by the local food environment and be exposed to intervention activities and were therefore eligible. Of those approached and who volunteered to participate, the youth's name was entered into a sampling frame for each centre, from which children were randomly sampled and interviewed. We also asked to interview the household's main food shopper and preparer, now referred to as the caregiver. Caregiver consent and youth assent were obtained when data were collected in 2008–2009. The Institutional Review Board of the Johns Hopkins Bloomberg School of Public Health approved the study.

Of the 432 children who were selected and eligible, 176 did not return the consent form and fourteen were incomplete (e.g. completed caregiver's, but not child's, interview or vice versa). This resulted in a response rate of 59.2%, with 242 caregiver–child interviews being completed. Twelve caregiver–child dyads with missing values on at least one variable of interest were excluded from the analysis along with twenty-four children who did not report making any purchases during the previous week, leaving an effective sample size of 206.

Survey instruments

Key constructs based on social cognitive theory (SCT) were used, with regard to self-efficacy, knowledge, behavioural intentions and outcome expectancies⁽¹⁶⁾. Youth were administered a Youth Impact Questionnaire (YIQ) and their caregivers answered a Caregiver Impact Questionnaire (CIQ). The YIQ was pilot-tested in two rounds (n 15) with 10–16-year-olds to assess face and content validity, on the

basis of which changes were made. The pilot tests included a semi-structured interview about participant and household patterns of food procurement, preparation and consumption. The CIQ was adapted from a previously fielded instrument⁽¹⁷⁾. Interviewer training was carried out by the principal investigator (J.G.). Interviews were conducted at recreation centres, the participant's home, or, if desired, phone interviews were conducted with caregivers. Youth received a gift card of \$US20 for the 60–75 min survey, while caregivers received a gift card of \$US20 for a 15–20 min survey.

Description of the Youth Impact Questionnaire

The YIQ addressed demographic characteristics followed by questions about food purchasing. Money spent on food was assessed by asking 'How much money do you spend on food for yourself on a typical day?' The survey recorded the purchasing frequency of twenty-nine different foods from four categories (beverages, fruit/vegetables, fast food, snacks), within the past 7 d. This included seventeen healthy food items to be promoted by the intervention and twelve commonly purchased high-fat or high-sugar items. In the survey, healthier foods were those having <10% daily value fat and/or <10g sugar/serving. All purchases recorded were confirmed to be for the child's personal consumption only, as opposed to any household food shopping.

The household food preparation environment was assessed by asking how often food was prepared for the child by a member of the household and by him/herself. Psychosocial factors, including the youth's food-related behavioural intentions, outcome expectancies, food self-efficacy and nutritional knowledge, were assessed. We gathered information about the youth's behavioural intentions by asking seven questions in which the respondent hypothesized his/her future food-related behaviours using a forced choice (e.g. If you wanted a snack, which would you pick? Potato chips, pretzels, yoghurt). The seven questions regarding outcome expectancies posed a statement about the health outcomes of eating certain foods (e.g. I am more likely to get heart disease if I eat fried chicken instead of baked chicken), and the youth responded whether the statement was true, sometimes true or not true. There were six self-efficacy questions that described the respondent's confidence in performing healthy eating behaviours (e.g. I can regularly eat vegetables several times a day). In addition, there were twelve multiple-choice knowledge questions that asked respondents to identify the option lowest in fat, highest in fibre, lowest in sugar or the healthiest.

Description of the Caregiver Impact Questionnaire

The CIQ included a brief home food inventory asking whether the participant had seventeen specific foods (sixteen foods to be promoted by the intervention and one commonly purchased item – high-sugar cereal) in their home in the past 30 d. Psychosocial questions were

related to food self-efficacy, food-related behavioural intentions and nutrition knowledge. Similar to the YIQ, nine self-efficacy questions measured confidence in performing a healthy food-related activity (e.g. I can regularly use cooking spray like Pam to make pancakes or eggs for my child). Behavioural intention questions included nine forced-choice questions on food preparation and purchasing (e.g. If you had to fry eggs for your child, which cooking grease would you use? Cooking spray, vegetable oil, shortening/butter/lard). There were seven knowledge questions that referred to nutritional information to be covered in the intervention. Finally, we collected demographic and socio-economic information.

Data analysis

Scale construction

To measure psychosocial and behavioural constructs, a series of scales were developed and assessed for internal consistency reliability using Cronbach's α . Questions that significantly reduced the α -statistic (by more than 0.02) were eliminated from the final scales⁽¹⁸⁾.

Main outcome – youth purchasing

The YIQ healthy food purchasing frequency is an additive scale including fourteen of seventeen healthy foods. The final score ranged from 0 to 15, with a mean of 1.5 (SD 2.5, $\alpha = 0.51$). The distribution of this variable spiked at 0–1 food purchases and tailed off for higher numbers of purchases. On account of this non-normal distribution, the YIQ healthy food purchasing frequency was dichotomized into two categories: 0–1 food purchases/week and >1 healthy food purchases/week.*

The YIQ healthy food purchasing proportion estimates healthy food purchasing frequency as a proportion of total food purchases (mean = 11.6 (SD 17.1), mode = 0%, range = 0–80%). Taking the distribution and density of purchasing in our sample into consideration along with a sensitivity analysis, the continuous healthy food purchasing percentage was dichotomized at 15%. This cut-off was determined by creating three divisions, at 5%, 10% and 15%, and choosing the cut-off showing the strongest bivariate association between healthy purchasing and youth food-related behavioural intentions, the construct most proximal to youth purchasing behaviour in our theoretical model. Over 15% was referred to as a high proportion, whereas $\leq 15\%$ was referred to as a low proportion, of healthy food purchasing. We have developed similar food purchasing scales that have been used in numerous studies for low-income ethnic minority adult

* Healthy foods included 100% juice and diet soda, 2% milk, 1% skimmed milk, fresh or frozen fruit, canned fruit or fruit cups, baby carrots, celery, cucumber, other fresh/frozen vegetables, canned vegetables, subs or sandwiches, baked chips and yoghurt (fourteen items). Unhealthy foods included regular (non-diet) soda, fruit punch or Hugs (non-100% fruit drinks), whole milk, hamburger or cheeseburgers, pizza, French fries, Chinese food, fried chicken, chips/cheese curls, candy, ice cream and baked goods (twelve items).

populations, including AA. In these studies, food purchasing was highly correlated with study outcomes^(17,19,20).

Other youth scales

The YIQ food-related behavioural intentions scale assigns a higher score for choices reflecting the lowest fat or lowest sugar choice, for a maximum of 10 points (five of seven questions). The scale ranged from 5 to 10 with a mean of 6.3 (SD 1.2; $\alpha = 0.50$).

The YIQ outcome expectancy scale includes six of seven questions, where responses of true, sometimes true or not true were given decreasing point values, for a maximum of 18 points. Scores ranged from 7 to 18, with a mean of 15.3 (SD 2.4; $\alpha = 0.51$).

The YIQ food self-efficacy scale includes all six statements and higher scores were assigned to answers representing a higher confidence level. Scores ranged from 8 to 18, the maximum, with a mean of 15.2 (SD 2.1; $\alpha = 0.45$).

The YIQ food knowledge scale is the sum of eleven of twelve questions. Each correct answer was scored as 1, and scores ranged from 2 to 11, with a mean of 8.3 (SD 2.1; $\alpha = 0.66$).

Adult caregiver scales

The home food inventory scale is an additive scale of sixteen healthy foods. The final score ranged from 4 to 16, with a mean of 10.6 (SD 2.2; $\alpha = 0.63$).

The CIQ food self-efficacy scale includes nine questions, where higher scores were given for choices reflecting greater ability to perform an action. Scores ranged from 20 to 36, from a possible 36 points, with a mean of 33.2 (SD 2.9; $\alpha = 0.61$).

The CIQ food-related behavioural intentions scale includes nine questions, and higher scores were given for the choice reflecting the healthiest option for a maximum of 27 points. Scores ranged from 10 to 27, with a mean of 17.8 (SD 3.8; $\alpha = 0.64$).

The CIQ food knowledge scale is the sum of five questions in which 1 point or 0 points was given for a correct or an incorrect answer, respectively, for a maximum of 5 points. Scores ranged from 1 to 5, with a mean of 4.0 (SD 1.1, $\alpha = 0.41$).

Material style of life (MSL) is an additive scale developed as a proxy for socio-economic status (SES), which has been tested and used previously in AA populations^(17,21). Respondents were asked to list the number of eleven household items they owned in working condition (e.g. television, video cassette recorder, computer). Responses of more than one of each item were recorded and used in the scale as such. The scale ranged from 5 to 33, averaging 16.6 (SD 5.8; $\alpha = 0.69$).

Statistical analyses

Factors associated with two dichotomous outcome variables, youth's healthy purchasing frequency and proportion, were examined using multivariable logistic regression

models in the STATA statistical software package version 10.0 (StataCorp., College Station, TX, USA). Using a hypothesis-driven approach, we included sociodemographic variables (child's age and gender, SES and adult's education and gender) in our model as covariates. On the basis of our conceptual framework and our hypothesis, we also included the amount of money that the youth spent on a typical day, youth and caregiver psychosocial variables (food-related self-efficacy, behavioural intentions, outcome expectancies and knowledge) and the frequency of food preparation by the caregiver as independent variables in the model. Owing to low α scores (<0.5), YIQ food-related self-efficacy and CIQ food knowledge were excluded from the analysis. There was significant ($P < 0.05$) intercorrelation between the remaining youth psychosocial factors (Pearson's correlation coefficient ranging from 0.15 to 0.26) and between

caregiver food-related behavioural intentions and self-efficacy (Pearson's correlation coefficient of 0.34). To avoid collinearity between these constructs, we included only the most significant construct for each group in our models, as determined by bivariate analyses.

Since prevalence of overweight differs by gender in AA youth^(2,15), we also stratified by gender to examine potential differences in purchasing. The same hypothesis-driven model was used for the stratified sample.

Results

Characteristics of measures and sample

Children were on average 12 years old and had completed 6 years of schooling (Table 1). Over half (56%) of the children were female. Caregivers had an average of

Table 1 Sociodemographic characteristics of the study sample (n 206)[†]

	Girls (n 115)		Boys (n 91)		Total (n 206)	
	Mean	SD	Mean	SD	Mean	SD
Individual child characteristics						
Female (%)	–		–		55.8	
Age (years)	11.7	1.3	11.6	1.4	11.6	1.4
Schooling: total years of education	6.1	1.5	5.9	1.5	6.0	1.5
BMI (kg/m^2) [‡]	22.6*	5.5	20.9*	4.5	21.8*	5.1
Individual adult caregiver characteristics						
Female (%)		91.3		91.2		91.3
Age (years)	39.6	10.0	39.8	11.2	39.7	10.5
Never married (single; %)		60.0		51.7		56.3
Schooling: total years of education	12.2	1.7	12.4	1.6	12.3	1.6
Education >12 years (%)		26.1		36.3		30.6
Employed (full-time and part-time; %)		57.4		57.1		57.3
Relationship to child (mother; %)		80.9		74.7		78.2
Ethnicity of child's caregiver (African American; %)		96.5		98.9		97.6
Household characteristics						
Household size	4.5	1.6	4.6	1.9	4.6	1.7
Number of children under 10 years of age	1.1	1.1	1.1	1.2	1.1	1.1
Number of adults over 65 years of age	0.1	0.4	0.1	0.4	0.1	0.4
Material style of life score [§]	16.6	5.8	16.5	5.9	16.6	5.8
Psychosocial characteristics						
Youth food behavioural intentions	6.2	1.2	6.4	1.2	6.3	1.2
Youth food self-efficacy	15.2	2.1	15.2	2.2	15.2	2.1
Youth food outcome expectancies	15.1	2.3	15.5	2.4	15.3	2.4
Youth food knowledge	8.4	2.3	8.2	2.1	8.3	2.2
Caregiver food intentions	17.5	3.8	18.1	3.9	17.8	3.8
Caregiver food self-efficacy	33.3	2.6	33.1	3.1	33.2	2.9
Caregiver food knowledge	4.0	1.1	3.9	1.1	4.0	1.1
Home food characteristics						
Home food inventory	10.8	2.2	10.5	2.3	10.6	2.2
Preparation of food by a family member >3 times/week (%)		72.1		76.9		74.3
Youth food purchasing (per week)						
Amount of money spent (\$US)	4.12	3.52	4.09	3.61	4.11	3.55
Total number of items in scale purchased	11.7	1–42	12.2	1–66	11.8	1–66
Frequency of healthy food purchasing	1.3	2.3	1.6	2.7	1.5	2.5
Proportion of youth who made >1 purchase of healthy food/week (%)		26.1		34.1		29.6
Healthy foods purchased, as a proportion of all foods purchased (%)	9.6*	16.0	14.1*	18.1	11.6*	17.1
Proportion of youth whose healthy food purchases were >15% of all foods purchased (%)		26.1*		38.5*		31.6*

* $P < 0.05$.

[†]The t test and Wilcoxon–Mann–Whitney test were used for testing the significance of the difference for continuous variables (normal and skewed distributions, respectively) and the χ^2 test was used for dichotomous variables.

[‡]Three values were missing for BMI.

[§]Material style of life score is the measure used as a proxy for socio-economic status.

^{||}Data are presented as mean and range.

Table 2 Logistic regression analysis examining factors associated with African American youths' healthy food purchasing frequency and proportion in the study sample (*n* 206)

Variables	Healthy food purchasing frequency (>1 healthy purchase/week)			Healthy food purchases as a proportion of total food purchases (>15% healthy food purchases)		
	OR	SE	<i>P</i> value	OR	SE	<i>P</i> value
Youth age (years)	0.88	0.11	0.311	0.83	0.10	0.120
Girls (compared with boys)	0.72	0.24	0.332	0.57	0.18	0.080
Caregiver's† years of education	1.01	0.11	0.903	0.92	0.10	0.452
Caregiver's† gender (female compared with male)	1.47	0.97	0.559	1.43	0.89	0.568
Material style of life‡	1.02	0.03	0.537	1.04	0.03	0.131
Total number of food purchases	1.06	0.02	0.001***	1.02	0.02	0.294
Amount of money youth spent	1.11	0.06	0.049*	1.08	0.05	0.094
Youth food behavioural intentions	1.40	0.20	0.020*	1.26	0.17	0.090
Caregiver's† food self-efficacy	1.14	0.08	0.055	1.10	0.07	0.112
High frequency of food preparation by a member of the household (compared with low frequency)§	0.84	0.33	0.660	0.95	0.36	0.891
<i>R</i> ²		0.1261			0.0706	

P* < 0.05; **P* < 0.001.

†The caregiver answering the survey was, in almost all cases, identified as the main food preparer/shopper in the household.

‡Material style of life score is the measure used as a proxy for socio-economic status.

§High preparation was defined as >3 times/week, whereas low preparation was defined as ≤3 times/week.

||*R*² is the variance in the outcome that is explained by the variables in the model.

12 years of education, and over half were single and employed, at least part-time. Almost all were female (91%). There were no differences in demographic factors, household, psychosocial or home food characteristics between girls and boys. However, girls were less likely to have at least 15% of their purchases on healthy foods (26% for girls; 39% for boys) and had a higher average BMI (23 kg/m² for girls; 21 kg/m² for boys).

The 206 youth in our sample reported spending an average of \$4.11 (SD \$3.55), mode = \$5.00, range = \$0.00–\$25.00; excluding three extreme values, mean = \$3.83 (SD \$2.68), mode = \$5.00, range = \$0.00–\$10.00 (values in US dollars) on a typical day on personal food purchases. The average number of total items purchased in the week preceding the interview was thirteen (range = 1–66).

Healthy food purchasing frequency was low. An average of 11.6% (SD 17.1%) of purchases was of healthy foods (range = 0–80%). There were 30% of youth who purchased >1 healthy food/week (mean = 1.5 purchases) and 32% who had purchased >15% healthy foods/week (Table 1). The most commonly purchased healthy foods included in our scale were water and sunflower seeds/nuts with an average of 0.9 and 1.3 purchases/week.

Healthy food purchasing in youth: multivariable results

In Table 2, we display multivariable models. Youth behavioural intentions for eating healthy foods was positively associated with having purchased a high frequency of healthy foods in the last week (OR = 1.4, *P* < 0.05). In addition, the amount of money that the youth spent (OR = 1.1, *P* < 0.05) and total number of food items purchased by the youth (OR = 1.1, *P* < 0.001)

were also significantly positively related to the frequency of healthy purchasing.

Healthy purchasing in girls and boys: stratified multivariable results

Generally, in stratified analyses, factors related to healthy food purchasing in youth were stronger for girls (Table 3). In girls, spending more money and having healthy food intentions were associated with 38% and 91% higher odds of purchasing a higher frequency of healthy foods/week (OR = 1.4, *P* < 0.01; OR = 1.9, *P* < 0.01, respectively). Greater caregiver self-efficacy (OR = 1.4, *P* < 0.05) and increase in the number of times that food was prepared by someone in the household (OR = 6.6, *P* < 0.05) were associated with a high proportion of healthy purchasing in girls. Girls in families with higher MSL were also more likely to make healthy purchases (OR = 1.2, *P* < 0.05). The results of the frequency of the healthy purchase outcome were similar in magnitude and significance for these variables. In addition, having a female caregiver indicate that she was the main food preparer/shopper (i.e. responded to the caregiver survey) was close to significance with approximately nineteen times higher odds of frequent healthy purchases compared with having a male caregiver in this role (OR = 18.8, *P* < 0.057). Finally, the total number of food purchases was associated with a higher frequency of healthy purchases (OR = 1.2, *P* < 0.001). There were no significant associations with either food-purchasing outcome for boys (data not shown).

Discussion

The present study is one of the first to focus on healthy purchasing among low-income AA youth. We found that

Table 3 Logistic regression analysis examining factors associated with African American girls' healthy food purchasing frequency and proportion in the study sample (*n* 115)

Variables	Healthy food purchasing frequency (>1 healthy purchase/week)			Healthy food purchases as a proportion of total food purchases (>15% healthy food purchases)		
	OR	SE	<i>P</i> value	OR	SE	<i>P</i> value
Youth age (years)	0.78	0.19	0.300	0.69	0.15	0.102
Caregiver's† years of education	1.23	0.23	0.272	0.92	0.18	0.657
Caregiver's† gender (female compared with male)	18.76	28.8	0.057	6.9	8.63	0.119
Material style of life‡	1.15	0.07	0.016*	1.19	0.07	0.003**
Total number of food purchases	1.17	0.05	<0.001***	1.07	0.03	0.028*
Amount of money the youth spent	1.38	0.17	0.009**	1.26	0.11	0.010**
Youth food behavioural intentions	1.91	0.47	0.008**	1.46	0.32	0.083
Caregiver's† food self-efficacy	1.32	0.18	0.043*	1.37	0.18	0.017*
High frequency of food preparation by a member of the household (compared with low frequency)§	6.27	5.66	0.042*	6.62	5.61	0.026*
<i>R</i> ²		0.3733			0.2792	

P* < 0.05; *P* < 0.01; ****P* < 0.001.

†The caregiver answering the survey was, in almost all cases, identified as the main food preparer/shopper in the household.

‡Material style of life score is the measure used as a proxy for socio-economic status.

§High preparation was defined as >3 times/week, whereas low preparation was defined as ≤3 times/week.

||*R*² is the variance in the outcome that is explained by the variables in the model.

youth food-related behavioural intentions had a strong relationship with purchasing a high proportion of healthy foods (>15%) in AA youth. The strong relationship of food-related behavioural intentions with purchasing a high frequency of healthy foods in AA youth is consistent with results from studies in other populations, such as American Indians^(19,22). Intentions to eat healthily have been positively associated with fruit and vegetable consumption and negatively associated with total energy and fat intake in adolescents aged 14–19 years⁽²³⁾. Attitudes and subjective norms have been associated with healthy food intentions in ninth-grade AA youth⁽²⁴⁾, suggesting that these factors are potentially important for healthy purchasing. Together, these results imply that efforts to improve intentions in this population are needed.

Factors positively associated with healthy purchases in girls and all youth included youth food-related behavioural intentions and amount of money the youth spent on food. Being female was inversely related to healthy purchasing, with 26% of girls compared with 39% of boys reportedly purchasing a high proportion of healthy foods per week. It appears that the overall results were driven by associations in girls, since stratified analyses did not show significant associations in boys. This may suggest that girls are more engaged in thinking about food or more influenced by household food practices, whereas boys may be influenced by factors that are not measured.

Each additional time that food was prepared by a member of the household was associated with a 6.6 times greater odds of girls purchasing a high proportion of healthy foods. This association is similar to prior studies in AA showing stronger correlations between total fat and energy intakes of mothers and daughters, compared to that of mothers and sons⁽²⁵⁾. In a study of 8–10-year-old girls, a higher frequency of low-fat food preparation by parents was associated with

lower fat as a percentage of total energy intake⁽²⁶⁾. This suggests that girls may be sensitized to healthy choices in households where their parents cook.

The caregiver's attitude towards healthy eating, as reflected in self-efficacy for purchasing and preparing healthy foods for the child, also appears to influence girls' healthy purchasing. Research has indicated parent modelling as a predictor of healthy eating in youth^(23,27). Furthermore, according to SCT, observational learning influences behaviour change⁽²⁸⁾.

Higher MSL and having more spending money were related to healthier purchasing in AA youth. In a controlled experiment, the amount of spending money was found to be related to healthy and unhealthy purchases in 10–12-year-old youth⁽²⁹⁾ and to fruit and vegetable consumption in teenagers⁽³⁰⁾. Compared with whites, AA adults are more influenced by lower food cost and larger portion sizes⁽³¹⁾, factors that may have less influence on individuals with more spending money and/or higher SES. Given that higher income has been associated with increased fruit availability in restaurants and availability of healthier foods in stores^(12,32), factors related to the food environment might also explain the relationship between higher SES and healthier purchasing.

Although the caregiver's gender was not statistically significant in the present analysis, its near significance is suggestive. The fact that girls who had a female caregiver (i.e. self-identified food preparer/shopper) respond to the survey more frequently and purchase healthy foods suggests that the gender of the main food preparer/shopper may have an influence on healthy purchasing; however, further study is needed to test this hypothesis.

The cross-sectional nature of the data prohibits us from inferring causality. However, as one of the first studies to describe healthy purchasing in AA youth, our study provides

important preliminary information on an understudied topic. An advantage is that new measures were developed, allowing us to collect novel information. Formal cognitive testing of the measures has not been conducted, although it is planned. In future studies, measures should be modified so that purchasing questions differentiate between weekdays *v.* weekend days, meals *v.* snacks, and account for possible seasonal patterns in purchasing. Another limitation is that our youth and caregiver psychosocial scales had somewhat low α -coefficients (range = 0.50–0.69). However, our models still explained up to 37% of the variability. In addition, the response rate of 59.2% was fairly low, which may limit the generalizability of the findings. Although this response rate is low, non-responses resulted entirely from a failure to return consent forms.

The present study identified important factors related to food purchasing in AA youth. The home food environment and caregiver self-efficacy were associated with a higher proportion of healthy purchasing in girls, showing the potential importance of the caregiver's role in healthy purchasing by AA girls. The intervention designed as a follow-up to these baseline data will incorporate the potential influence of the caregiver by working with children and their parents. Our study findings could inform initiatives focused on obesity and healthy food purchasing in girls. These results suggest that behavioural intentions for healthy eating may be important for healthy purchasing behaviours. Given that we did not identify any factors related to healthy purchasing in boys, further research is needed to determine whether the lack of associations with healthy purchasing among boys is due to omission of important factors or to lack of power.

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