

# Barriers to Buying Healthy Foods for People With Diabetes: Evidence of Environmental Disparities

Carol R. Horowitz, MD, MPH, Kathryn A. Colson, MPH, Paul L. Hebert, PhD, and Kristie Lancaster, PhD

At least 16 million Americans have diabetes, and its prevalence is increasing, especially among Latinos.<sup>1</sup> African American and Latino adults are 1.3 to 1.9 times more likely to have diabetes than are White adults.<sup>1-3</sup> Among adults 40 to 74 years of age, 26% of Puerto Ricans, 24% of Mexican Americans, and 19% of African Americans have diabetes, compared with 12% to 13% of Whites. In New York City, Latinos 18 to 39 years of age are 4 times more likely than Whites to have diabetes, and African Americans in this age group are 2 times more likely than Whites to have diabetes.<sup>4</sup> In the United States, Latinos and African Americans also are less likely than Whites to be in control of their blood sugar levels; they have 2 to 4 times Whites' rate of diabetes complications, such as renal disease and blindness, and they have higher diabetes-specific mortality rates.<sup>1-3,5-8</sup>

Diabetes may disproportionately affect residents of communities of color, such as East Harlem in New York City. East Harlem's population, which is 50% Latino and 40% African American,<sup>9</sup> faces both limited resources and a disproportionate burden of chronic diseases, including diabetes. In East Harlem, nearly one third of adults and half of children live in poverty, and residents have the highest prevalence of obesity and the highest all-cause death rate in New York City. The prevalence of diabetes in East Harlem is nearly double that in New York City overall.<sup>4</sup> Among people with diabetes, mortality and hospitalization rates in East Harlem are nearly double those of New York City as a whole.<sup>10</sup> The rate of hospitalizations for diabetes-related amputations among persons aged 65 years and older in East Harlem is nearly 5 times the rate in New York City overall.<sup>11</sup>

Diet is an integral part of the treatment of diabetes and maintenance of glycemic control. The American Diabetes Association recommends that people with diabetes consume a diet low in fat and high in fiber-containing

**Objectives.** A community coalition compared the availability and cost of diabetes-healthy foods in a racial/ethnic minority neighborhood in East Harlem, with those in the adjacent, largely White and affluent Upper East Side in New York City.

**Methods.** We documented which of 173 East Harlem and 152 Upper East Side grocery stores stocked 5 recommended foods.

**Results.** Overall, 18% of East Harlem stores stocked recommended foods, compared with 58% of stores in the Upper East Side ( $P < .0001$ ). Only 9% of East Harlem bodegas (neighborhood stores) carried all items (vs 48% of Upper East Side bodegas), though East Harlem had more bodegas. East Harlem residents were more likely than Upper East Side residents (50% vs 24%) to have stores on their block that did not stock recommended foods and less likely (26% vs 30%) to have stores on their block that stocked recommended foods.

**Conclusions.** A greater effort needs to be made to make available stores that carry diabetes-healthy foods. (*Am J Public Health.* 2004;94:1549-1554)

foods such as fruits, vegetables, and whole grains. The American Diabetes Association also recommends substitution of diet soft drinks and "lite" breads to reduce carbohydrate and calorie intake while allowing patients to enjoy their preferred foods.<sup>12,13</sup> The availability of these and other recommended foods in neighborhood food stores may influence the food choices of African American and Latino adults with diabetes.<sup>14</sup> Evidence exists that foods recommended as part of a healthy diabetic diet are in short supply in low-income, non-White neighborhoods such as East Harlem. In 2002, researchers found more supermarkets overall in White, compared with African American, neighborhoods and a positive association between fruit and vegetable intake and number of supermarkets in African American neighborhoods.<sup>15,16</sup> In addition, the availability of low-fat milk is not as prevalent in stores in non-White neighborhoods in New York State.<sup>17,18</sup>

In 1998, a community-centered coalition of health providers, community advocates, and researchers formed the East Harlem Diabetes Center of Excellence to examine and improve care for persons with diabetes living in East Harlem.<sup>19</sup> The coalition surveyed 939 adults who live in and receive care for diabetes in East Harlem. Results of the survey

showed that 40% of respondents did not follow a diabetic diet because of financial concerns. In addition to these findings, coalition partners and community members repeatedly stated that diabetes-healthy foods are less available or more expensive in many East Harlem groceries, especially in comparison with neighboring nonminority communities. The coalition therefore shifted its attention from individual patients in clinical settings to patients' local food environments. Through this new focus, coalition partners joined the ranks of groups working to address community-level risk factors for obesity and suboptimal dietary practices and choices by linking science and community action.<sup>20-23</sup>

To better understand the environmental barriers people with diabetes face in attempting to consume a healthy diet, we conducted a food availability survey. The purpose of this survey was to document and compare the availability and cost of foods recommended for people with diabetes in East Harlem and the adjacent, more affluent, and predominantly White Upper East Side neighborhood. Although these 2 neighborhoods are adjacent, East Harlem is 6% White, whereas the Upper East Side is 84% White. East Harlem has one of the lowest median household incomes in New York City; the Upper East Side

**TABLE 1—Population Characteristics of East Harlem and the Upper East Side, New York City, 1998**

	East Harlem (n = 121 000 <sup>9</sup> )	Upper East Side (n = 243 000 <sup>9</sup> )
Race/ethnicity, <sup>9</sup> %		
White, Non-Hispanic	6	84
Black	40	2
Hispanic	50	6
Other	4	8
Median annual household income, <sup>9</sup> \$	21 295	74 130
Persons in poverty, <sup>9</sup> %	37	6
Adults with diabetes, <sup>4</sup> %	15	2
Adults with obesity, <sup>4</sup> %	31	7
No. of diabetes-related amputations in adults ≥65 years per 10 000 population <sup>11</sup>	16	1

has the highest.<sup>9</sup> East Harlem has the highest prevalence of diabetes and obesity and the highest diabetes hospitalization rate in New York City; the Upper East Side has the lowest percentages in all 3 categories (Table 1).<sup>4,10</sup>

## METHODS

A nutrition subcommittee of the East Harlem diabetes coalition, composed of local dietitians, health professionals, and outreach workers, selected appropriate foods to be included in the survey. It also planned ways to conduct the survey in stores that might be wary of research and researchers. The subcommittee selected items (1) commonly recommended by clinicians for people with diabetes; (2) relatively affordable and culturally acceptable to Whites, African Americans, and Latinos; and (3) quickly and accurately identifiable on store shelves by surveyors with limited specialized nutritional knowledge. The items chosen were diet soda (1-L or 2-L size); 1% fat or fat-free milk (1-quart, half-gallon, or 1-gallon size); high-fiber bread, low-carbohydrate bread, or both high-fiber and low-carbohydrate bread (defined as 2 g or more fiber, 10 g or less carbohydrate per slice, or both); fresh fruits; and fresh green vegetables or tomatoes. The subcommittee presented its recommendations to the entire diabetes coalition, which ratified the survey after substantial discussions. Because food quantities could be con-

founded by time of assessment in relation to customer volume, delivery schedules, and out-of view storage of overstocked items, surveyors were instructed to document the presence of 1 or more of each of the target items rather than to assess the quantities of food items. We did not evaluate the quality of the fresh produce because we lacked a valid assessment method. Surveyors were instructed to document only the presence of “edible” fruits and vegetables and to exclude any visibly rotten produce.

We used a database of stores (not restaurants) inspected and licensed to sell food by the New York State Department of Agriculture and Markets to identify food stores in both neighborhoods. This database included the addresses of stores and the number of cash registers per store. We labeled stores with 1 register as small stores or bodegas. Stores with 2 to 4 registers were categorized as medium-sized stores, and those with more than 4 registers were considered large.

Dietetic interns and local outreach workers volunteered to conduct the surveys. All surveyors received 6 hours of training in conducting the survey; to provide field training, interns and volunteers were accompanied by the senior surveyor to several ineligible stores not included in the study. In pairs, surveyors visited every store in the database, introduced themselves to store managers, stated the purpose of the survey, and provided a letter about the study for the store’s records and a

shirt with diabetes messages designed by a local artist for the store manager. Surveyors independently documented the presence of the foods of interest and the lowest price for each category of food or beverage. They did not collect prices on fruits or vegetables. If prices were not available on or near the food item, surveyors asked the store manager for the price. The surveyors also verified that the number of cash registers in each store was consistent with information in the New York State database. Surveyors compared observations with their partners, recorded discrepancies, and resolved them together while at the store. At the end of every day of surveying, the project manager and a senior surveyor reviewed all data collected by the survey teams. We used the data recorded before the discrepancies were resolved to calculate inter-rater reliability for all stores. We found reliability to be excellent, with  $\kappa$  scores ranging from 0.94 to 1.

## DATA ANALYSIS

We defined as *desirable* those stores that carried at least 1 item from each of the 5 food or beverage groups explained in the Methods section. All other stores were defined as *undesirable*. We used  $\chi^2$  tests to assess differences in the prevalence of desirable and undesirable stores by neighborhood and by store size. Mann–Whitney (Wilcoxon) non-parametric, rank-sum tests were used to assess differences in prices by neighborhood.

We used data from the 2000 census to map each store to the US census block (the smallest unit of tabulation for the census) on which it was located.<sup>24</sup> In these 2 neighborhoods under study, a census block is roughly equivalent to 1 square city block. For blocks with lower population densities, 2 or more city blocks may form a census block. We then obtained census information on the total population living in each census block and determined the percentage of the population in each neighborhood living in census blocks that contained selected combinations of desirable and undesirable stores. Although we used a census of the totality of stores and people in the 2 communities, the *P* values and confidence intervals for all percentages are identical to those we would have obtained if we had drawn an equivalently

**TABLE 2—Availability of Stores and of Recommended Foods in Stores, by Neighborhood: East Harlem and the Upper East Side, New York City, 1998**

	East Harlem	Upper East Side	RR for Store Availability, Upper East Side vs East Harlem (95% CI)
<b>Available stores</b>			
Total no. stores	173	151	
Total no. stores per 100 000 population	143	62	0.4
No. small stores (1 cash register) (% of all stores)	151 (87)	98 (65)	0.7 (0.7, 0.9)
No. medium-sized stores (2–4 cash registers) (% of all stores)	11 (6)	28 (18)	3.0 (1.5, 6.1)
No. large stores (> 4 cash registers) (% of all stores)	11 (6)	25 (17)	2.8 (1.4, 5.8)
<b>Availability of recommended foods (% of all stores)</b>			
Low-carbohydrate or high-fiber bread	32	74	2.3 (1.7, 3.2)
Low- or nonfat milk	49	92	1.9 (1.6, 2.3)
Fresh fruit	74	90	1.2 (1.1, 1.4)
Fresh green vegetables	60	76	1.3 (1.1, 1.5)
Diet soda or club soda	86	88	1.0 (0.9, 1.1)
<b>Desirable stores</b>			
Total no. desirable <sup>a</sup> stores (%)	31 (18)	88 (58)	3.2 (2.2, 4.6)
Total no. desirable stores per 100 000 population	26	36	1.4
No. desirable small stores (% of all small stores)	13 (9)	47 (48)	5.3 (3.1, 9.1)
No. desirable medium-sized stores (% of all medium stores)	7 (63)	18 (64)	1.0 (0.9, 1.2)
No. desirable large stores (% of all large stores)	11 (100)	23 (92)	0.9 (0.9, 1.0)

Note. CI = confidence interval; RR = relative risk.  
<sup>a</sup>Desirable = stores that carry all 5 recommended food items.

sized sample from a larger population. All analyses were conducted with SAS version 8e (SAS Institute Inc, Cary, NC).

**RESULTS**

The New York State database listed 521 stores in East Harlem and the Upper East Side. We excluded 37% of the stores (e.g., pawnshops, chocolate shops, butcher shops) because they did not sell general food items. Six additional stores (1%) declined to participate in the survey. Of the remaining 324 stores, 173 were in East Harlem, and 151 were in the Upper East Side (Table 2). Because the Upper East Side is more populated, residents of this neighborhood have fewer than half the number of stores per 100 000 residents than does East Harlem (62 stores per 100 000 Upper East Side residents vs 143 per 100 000 East Harlem residents; relative risk [RR]=0.4). Significantly fewer stores in the Upper East Side were small bodegas with 1 cash register, com-

pared with the number of bodegas in East Harlem (65% Upper East Side vs 87% East Harlem; RR=0.7). More stores in the Upper East Side than in East Harlem were midsized (18% Upper East Side vs 6% East Harlem; RR=3.0) or large (17% Upper East Side vs 6% East Harlem; RR=2.8) (Table 2).

Overall, Upper East Side stores were 3.2 times more likely than East Harlem stores to be desirable and to stock all recommended food items (58% Upper East Side vs 18% East Harlem; RR=3.2). Although Upper East Side residents had fewer stores overall, they had relatively more desirable stores (36 stores per 100 000 Upper East Side residents vs 26 per 100 000 East Harlem residents; RR=1.4). Availability differed greatly by store size. Upper East Side bodegas were more than 5 times more likely than East Harlem bodegas to be desirable and to carry all 5 recommended foods (48% vs 9%; RR=5.3) (Table 2). In both neighborhoods, medium-sized stores were more likely than small stores to carry all recommended foods (64% Upper East Side vs 63% East Harlem), and all but 2 large stores carried all recommended items. There were no food availability disparities when medium-sized and large stores in the Upper East Side were compared with those in East Harlem. However, the 2 neighborhoods did differ in the availability of specific food items. Upper East Side stores were significantly more likely than East Harlem stores to carry each item, with the exception of diet soda.

Table 3 shows that significantly more Upper East Side residents than East Harlem residents lived on a block with at least 1 desirable store (30% vs 26%; RR=1.2). Many more Upper East Side residents lived on a block with only desirable stores than did East Harlem residents (22% vs 9%; RR=2.5). Furthermore, Upper East Side residents were only half as likely as East Harlem residents to

**TABLE 3—Percentage of Residents Living in a Census Block With a Store, by Store Desirability<sup>a</sup>: East Harlem and the Upper East Side, New York City, 1998**

Census Block Store Availability	Percentage of Residents		RR for Store Availability, Upper East Side vs East Harlem (95% CI)
	East Harlem	Upper East Side	
At least 1 desirable store	26.0	30.2	1.2 (1.2, 1.2)
Only desirable stores	8.8	22.1	2.5 (2.5, 2.6)
At least 1 undesirable store	50.3	23.8	0.5 (0.5, 0.5)
Only undesirable stores	35.3	18.6	0.5 (0.5, 0.5)
More undesirable stores than desirable stores	42.2	18.9	0.5 (0.4, 0.5)
No stores	38.7	51.2	1.3 (1.3, 1.3)

Note. CI = confidence interval; RR = relative risk.  
<sup>a</sup>Desirable = stores that carry all 5 recommended food items.

**TABLE 4—Lowest Price of Food Item in Each Store, by Neighborhood and Store Size: East Harlem and the Upper East Side, New York City, 1998**

Food Items	Median Cost, \$ (Interquartile Range)		P
	East Harlem	Upper East Side	
<b>All stores</b>			
High-fiber bread (loaf)	1.79 (1.79, 1.79)	2.29 (1.79, 2.49)	<.001
Low-fat milk (gallon)	2.89 (2.79, 2.89)	3.45 (3.04, 3.45)	<.001
Diet soda (2 L)	1.39 (1.29, 1.50)	1.99 (1.39, 2.00)	<.001
<b>Bodegas only</b>			
High-fiber bread (loaf)	1.79 (1.79, 1.79)	2.39 (1.99, 2.49)	<.001
Low-fat milk (gallon)	2.89 (2.79, 2.99)	2.99 (2.99, 2.99)	.005
Diet soda (2 L)	1.49 (1.39, 1.59)	2.00 (1.79, 2.00)	<.001
<b>Large stores (&gt; 4 registers) only</b>			
High-fiber bread (loaf)	1.79 (1.79, 1.79)	1.79 (1.79, 1.89)	.168
Low-fat milk (gallon)	2.79 (2.69, 2.79)	3.45 (3.39, 3.49)	<.001
Diet soda (2 L)	0.99 (0.89, 0.99)	1.19 (1.15, 1.29)	<.001

live on a block with at least 1 undesirable store (24% vs 50%; RR=0.5) or with only undesirable stores (19% vs 35%; RR=0.5). Upper East Side residents also were more likely to live on a block with no store at all (51% vs 39%; RR=1.3)

The median prices of all food items were significantly higher in Upper East Side stores than in East Harlem stores (Table 4). These overall differences persisted when prices were compared between bodegas in both neighborhoods, and between large stores, with the exception of high-fiber breads in large stores. Furthermore, with the exception of milk in Upper East Side stores and bread in East Harlem stores, prices of recommended foods were higher in small bodegas than in large markets.

## DISCUSSION

Community leaders and clinicians working to prevent and control diabetes in racial/ethnic minority communities in which diabetes and other chronic diseases take their greatest toll must look beyond individual patients in clinical settings and address environmental influences on community health. Our data demonstrate environmental disparity in the availability of healthier foods recommended for diabetes between a poor, non-White community and an affluent White community divided by only 1 city street.

This disparity warrants further investigation and action.

East Harlem has more than twice the number of food stores per capita as the Upper East Side. However, only 18% of East Harlem stores carried all 5 recommended food items, compared with 58% of Upper East Side stores. Medium-sized and large stores in the 2 neighborhoods were equally likely to carry recommended foods; disparities in food availability were most pronounced in small stores or bodegas. East Harlem had significantly more bodegas, and East Harlem bodegas were substantially less likely than Upper East Side bodegas to carry all 5 food items. Although Morland et al. found that the presence of small grocery stores showed little association with diets reported by African Americans,<sup>16</sup> their study might describe phenomena in areas where the population is less concentrated (i.e., nonurban). Small stores are conveniently located. A study of sociodemographic factors and taste, nutrition, cost, and convenience of dietary choices found that convenience was most important to non-Whites and people with lower incomes.<sup>25</sup>

In densely populated inner-city areas, bodegas may not only be conveniently located, but also may contribute to residents' comfort level. Community leaders suggest that in some neighborhoods, people shop in bodegas because they are comfortable fre-

quencing a familiar place, and they may be able to shop with informal credit that they or a family member can pay back over time. It is possible that persons affected by chronic illnesses such as diabetes, those who have difficulty walking even a few blocks, and those who need to quickly pick up a few essential items may choose to "go downstairs" to a bodega for staples such as bread and milk—healthier versions of which were less commonly available in East Harlem stores. Future researchers need to evaluate the connection between small stores and food consumption in inner-city neighborhoods and the relative contributions of store supply and consumer demand to the availability of healthier foods. Community, policy, research, and clinical leaders need to understand these connections to improve the diets of inner-city residents by taking into account the food environment.

Interesting differences between the neighborhoods emerged when we compared percentages of residents living on a census block that contains desirable or undesirable stores. It is encouraging that East Harlem residents can find desirable stores in their neighborhood, especially if they seek out medium-sized and larger stores. Although people in the Upper East Side are only 20% more likely than those in East Harlem to live on a block with a desirable store, East Harlem residents have fewer stores at which they can find the recommended foods. East Harlem residents also are disproportionately exposed to undesirable stores. Persons living in the Upper East Side are twice as likely as East Harlem residents to have only desirable food stores on their blocks. East Harlem residents are twice as likely to be limited to undesirable food stores on their block. Persons shopping for diabetes-healthy foods in East Harlem are 2 times more likely than their Upper East Side neighbors to have more undesirable than desirable stores to choose from on their blocks. Therefore, East Harlem residents need to take the following steps to procure diabetes-healthy foods: (a) become familiar with which food items (such as low-fat milk) are healthier, (b) recognize that many of their neighborhood stores do not carry these foods and forgo shopping at these undesirable stores, (c) be aware that other stores may



offer healthier food choices, and (d) shop at these desirable stores instead.

Contrary to our expectations, food items included in the survey were less costly in East Harlem than in the Upper East Side. However, because the median household income in the Upper East Side is nearly 4 times that in East Harlem, residents of East Harlem may still face significant financial barriers when shopping for foods. An earlier survey by the coalition found that 77% of persons with diabetes in East Harlem had an annual income of less than \$20 000. Many of these persons did not follow a diabetic diet because of concerns about money, and this behavior was independently associated with poorer health status.<sup>19</sup>

This study has several limitations. First, although we chose 5 commonly recommended food items that often are readily available in stores, no standard diabetic diet exists. Second, we did not measure the quantity, quality, or placement of foods on store shelves, factors that may have differed between the 2 communities. Third, we do not have data to associate availability of food items with consumption of those items, although others have demonstrated such a correlation.<sup>16,17,26</sup> Fourth, because some census blocks are larger than a geographic block, some of our estimates of store locations in relation to population density may encompass more than 1 neighborhood block. Fifth, we measured the percentage of the population that lived on a census block with a desirable or undesirable store. People who lived across the street from such stores would have similar access to foods but might not live on the same census block as those stores.

The lower percentage of stores selling basic low-fat, high-fiber, low-carbohydrate, and low-calorie food items in East Harlem may explain sociocultural disparities in diet and overweight found in other research.<sup>1-8</sup> These findings also point to one reason that African Americans and Latinos may not be as successful as the general population in following the American Diabetes Association and other dietary recommendations. In comparison with food-sufficient, White, and more affluent persons, adults from food-insufficient families, African Americans, and the poor are more likely to have diets higher in fat and lower in fiber, fruits, and vegetables.<sup>27-30</sup> African

Americans and Latinos are more likely to be obese compared with Whites,<sup>2</sup> and women in food-insecure households are more likely to be obese than those in food-secure households, even after income and education are controlled.<sup>31</sup> African Americans with uncontrolled diabetes have higher intakes of calories and lower intakes of fiber compared with their White counterparts.<sup>32</sup> Consumers with limited financial resources and insufficient education about nutritionally appropriate, affordable, accessible foods may find it difficult to maintain a healthy diet.

Our coalition used the principles of community-centered research to develop a collaborative project and to engage community residents in the research from its inception through dissemination of its findings.<sup>33</sup> Community coalition members recommended the idea of this study, helped develop the survey tool and methods, served as partners in data collection, posed the key questions for data analysis, and, on the basis of answers to these questions, took specific actions. The coalition first shared the data with local clinician and community groups at multiple interactive meetings to inform the groups about the local food environment and to solicit concrete suggestions for interventions. From these suggestions, the coalition began to educate clinicians about food availability through in-service training at health care sites in East Harlem. During these sessions, we suggested that clinicians ask patients whether they have had any trouble finding or buying the foods the clinicians recommend and that if patients acknowledge such difficulties, clinicians encourage patients either to shop at larger supermarkets or to substitute other diabetes-healthy foods that are more widely available. Coalition members are collaborating with community and business leaders to explore ways to create more desirable stores and are working with residents to increase the demand for diabetes-healthy foods. The coalition members planned and conducted focus groups to better understand where people shop for food and why. This information will be used to develop patient-centered interventions, including peer-led nutrition courses. We also formed a local nutrition consortium of clinicians, food-store owners and distributors, emergency food workers (such as food pantry

leaders), and other local food and nutrition stakeholders to discuss our findings and plan strategies to increase the availability of diabetes-healthy foods.

Finally, we have disseminated information locally and nationally to help other neighborhood coalitions learn to collect data on food availability and to organize demonstration projects. Projects under way include providing diabetes-healthy foods and nutrition advice at street festivals, bringing farm-fresh produce to bodegas, and teaching high school students to recognize, map, and share information about diabetes-healthy stores in their area with peers and neighbors. Other communities may want to form nutrition consortiums that can spearhead interventions tailored to their local circumstances. These interventions may include promoting public recognition of desirable stores and influencing distributors or store owners to carry diabetes-healthy foods in exchange for a commitment to direct consumer traffic to those stores.

## CONCLUSIONS

East Harlem does not have a shortage of food markets, and some stores do carry diabetes-healthy foods in East Harlem. However, the neighborhood has fewer large stores (which generally have a greater variety of foods) and fewer stores that carry recommended food items. In addition, East Harlem residents have many more undesirable stores than do their affluent neighbors on the Upper East Side. These disparities in healthy-food availability may be a barrier to diabetes self-management. We used the principles of community-based participatory research to gather data local researchers, clinicians, and community leaders use to educate their constituents and to capitalize on local assets to devise strategies that improve food availability. We plan to evaluate whether differences in availability are attributable to supply or demand, to determine how food availability correlates with food consumption and diabetes control, and to test interventions to improve food availability and healthy eating. Because the epidemics of diabetes and obesity disproportionately affect persons of color, addressing environmental disparities in the availability of diabetes-healthy foods may be an area in

which clinicians and community leaders can collaborate to improve neighborhood health. ■

### About the Authors

Carol R. Horowitz and Paul L. Hebert are with the Department of Health Policy, Mount Sinai School of Medicine, New York, NY. Carol R. Horowitz is also with, and Kathryn A. Colson, and Kristie Lancaster are with the East Harlem Diabetes Center of Excellence, New York. Carol R. Horowitz is also with the Department of Medicine, Mount Sinai School of Medicine. Kathryn A. Colson is also with the Center for Organizational and Leadership Effectiveness, New York Presbyterian Hospital, New York. Kristie Lancaster is also with the Division of Nutrition, New York University School of Medicine, New York.

Requests for reprints should be sent to Carol Horowitz, MD, MPH, Mt Sinai School of Medicine, 1425 Madison Ave, New York City, NY 10029 (e-mail: carol.horowitz@mssm.org).

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### Contributors

C. R. Horowitz conceived the study, supervised all aspects of its implementation and analysis, and led the writing. K. A. Colson assisted with the study and managed the data collection process. P. L. Hebert led the data analysis. K. Lancaster assisted with analysis. All authors helped to conceptualize ideas, interpret findings, and review drafts of the article.

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### Human Participant Protection

The research protocol was reviewed and approved by the Mt Sinai School of Medicine institutional review board.

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