

# Food Purchasing Behavior of Predominantly Minority Families in an Urban Supermarket Voucher Pilot Program

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## ABSTRACT

The objective of this exploratory community-based trial was to examine the usage and behavior of underserved urban residents participating in a 2-month food voucher program. \$70 supermarket vouchers were provided each month for 2 months to participants enrolled in selected child daycare centers in East Harlem, New York, and receipts were collected to examine purchases. Participants were from low-income households with at least 1 child 5 years and younger ( $n = 113$ ). Participants spent the most on meat, fish, poultry, and eggs (29.7%); fruits and vegetables (15.9%); and cereal and bakery products (15.1%). Fruit and vegetable purchases and dairy purchases were higher in foreign-born participants than in US-born participants. Furthermore, future models should consider the potential benefit of unrestricted vouchers in supporting differences in dietary needs and preferences.

**KEY WORDS:** food purchasing, low income, New York City, supermarket vouchers

Food insecurity, defined as a persistent concern regarding access of adequate food,<sup>1</sup> affects 1 in 10 Americans<sup>1</sup> and is associated with negative health outcomes and chronic diseases.<sup>1</sup> Vulnerable groups, such as single mothers, Black and

Hispanic households, and low-income households, are disproportionately affected.<sup>1</sup> In 2022, food insecurity affected 10.2% of US households,<sup>2</sup> while the underserved New York City (NYC) neighborhood of East Harlem experienced a higher rate of 22.4%.<sup>3</sup>

Federal food assistance programs, like the Supplemental Nutrition Assistance Program (SNAP), support low-income households by supplementing grocery budgets and helping afford a nutritionally adequate diet with monthly funds, based on household size and income.<sup>4</sup> In 2022, 22.4% of NYC residents and 30.8% of East Harlem residents utilized the SNAP.<sup>5</sup> One main issue with the SNAP is that benefit amounts fail to account for the higher cost of urban living.<sup>6</sup> For example, NYC's cost of living is 78% higher than the national average,<sup>7</sup> and according to June 2021 data from the United States Department of Agriculture, 88% of SNAP beneficiaries faced barriers to a healthy diet, with the high cost of nutritious foods being the main obstacle.<sup>6</sup> In addition, program eligibility has limitations, such that undocumented immigrants do not qualify at all.<sup>4</sup>

Other food access programs include food pantries and food voucher programs. However, food pantries often provide predominantly shelf-stable food items and lack culturally specific food items for attendees.<sup>8</sup> Food voucher programs distribute incentives or coupons to supplement grocery purchases, enhancing

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federal food assistance programs.<sup>9</sup> Previous voucher programs targeting produce intake exhibit benefits; however, by only supplementing produce purchases, they fail to address the complete financial burden faced by food-insecure families.<sup>9,10</sup>

### Voucher Pilot Program

To address food insecurity on a local scale, Meals for Good Inc piloted a supermarket initiative in East Harlem and the South Bronx in summer 2021, where households received a 1-time \$70 food voucher to purchase groceries in certain stores.<sup>8</sup> Receipt data revealed that participants purchased mainly meat (such as red meat, poultry, and fish), pantry staples (such as oils, sauces, and spices), and fresh produce—items that are relatively expensive and not typically found at food pantries.<sup>8</sup> This initiative was successful in providing immediate food purchasing aid, but could have improved with longer-term voucher distribution and more in-depth analysis on purchasing patterns.

Expanding on this research, the current article aims to examine the usage and behavior of underserved urban residents participating in a 2-month food voucher program in 2022.

### Methods

The program was implemented in 2 daycare centers in East Harlem, through partnerships with Meals for Good Inc and the Hunter College NYC Food Policy Center. One nearby grocery store to the daycare centers (0.1 and 0.3 miles away) accepted program vouchers. Participants included parents or caretakers residing in East Harlem, with low-income households (at or below 130% poverty level) and at least one child younger than 5 years in a summer Head Start program.

Vouchers were distributed in May and June 2022, with each participant receiving seven \$10 vouchers each month, totaling \$140. Denominations were small since change could not be provided for purchases below the voucher amount. Purchasing guidelines were similar to the SNAP—participants could purchase most foods and beverages, excluding hot or prepared foods, alcohol, and supplements, as depicted in the Table.<sup>4</sup>

Six staff members at the daycare centers promoted and explained the program and provided guidance on voucher use. Grocery store employees ensured participants followed purchasing guidelines and redeemed vouchers at point of sale, printing 2 receipts for voucher purchases: 1 for participants and 1 for analysis.

**TABLE**

**Framework of Main Food Categories and Subcategories of Food Used in Data Analysis**

Main Food Category	Food Subcategory
Fruits and vegetables	<ul style="list-style-type: none"> <li>Fresh, frozen, canned, and dried fruits and vegetables</li> <li>Fresh, canned and bottled fruit juice</li> </ul>
Meat, poultry, fish, and eggs	<ul style="list-style-type: none"> <li>Fresh and frozen beef, steak, pork, and poultry</li> <li>Processed meats such as hot dogs, sausages, and lunch meats</li> <li>Organ meats and others such as game</li> <li>Fresh, canned, and frozen fish and seafood</li> <li>Eggs</li> <li>Meat alternatives such as beans and legumes</li> </ul>
Dairy	<ul style="list-style-type: none"> <li>Milk and milk products</li> <li>Butter</li> <li>Cheese</li> <li>Ice cream</li> <li>Nondairy milk and nondairy milk products</li> </ul>
Cereal and bakery products	<ul style="list-style-type: none"> <li>Hot and cold cereals</li> <li>Rice and rice products</li> <li>Pasta and pasta products</li> <li>Flour and prepared flour mixes</li> <li>Bread</li> <li>Biscuits and rolls</li> <li>Cookies</li> <li>Crackers</li> <li>Cakes and donuts</li> <li>Other pastries such as pies</li> </ul>
Fats and oils	<ul style="list-style-type: none"> <li>Margarine</li> <li>Salad dressings</li> <li>Cooking oils and vinegar</li> <li>Peanut butter</li> </ul>
Sugar and other sweets	<ul style="list-style-type: none"> <li>Candy and chewing gum</li> <li>Sugar</li> <li>Artificial sweeteners</li> <li>Jams, preserves, and other sweets such as syrup and honey</li> </ul>
Miscellaneous foods	<ul style="list-style-type: none"> <li>Canned and packaged soups</li> <li>Chips and other snacks such as dips and popcorn</li> <li>Nuts and seeds</li> <li>Condiments and sauces such as ketchup and marinara sauce</li> <li>Baking needs such as baking soda and yeast</li> <li>Fresh, dried, and powdered spices and seasonings</li> <li>Frozen prepared foods and meals</li> <li>Other canned and packaged prepared foods such as gelatin, baby food, and coleslaw</li> </ul>
Beverages	<ul style="list-style-type: none"> <li>Cola and other carbonated drinks</li> <li>Coffee and tea</li> <li>Fruit-flavored drinks</li> <li>Bottled water</li> <li>Sports drinks</li> <li>Other drinks such as nutritional shakes and energy drinks</li> <li>Alcoholic beverages</li> </ul>

Data collection involved surveys on demographics, food assistance use, and perceptions of food resources. A validated screening tool, Hunger Vital Sign, was used to assess risk for food insecurity.<sup>11</sup> Surveys were available in the most common languages spoken by participants: English, Spanish, and Mandarin. Day-care staff provided translation assistance as needed. Vouchers and receipts were collected, and each food item was coded by type based on the Bureau of Labor Statistics 2021 Consumer Expenditures Survey.<sup>12</sup> Modifications were made to better align with nutrient profiles, including moving beans and legumes from “fruits and vegetables” to “meat, fish, protein, and eggs.”

Statistical analysis included descriptive statistics and Mann-Whitney tests. Effect sizes were also calculated for nonparametric data, where  $r$  values of 0.1 or more are “small” in magnitude; 0.3 or more are “moderate”; and 0.5 or more are “large.”<sup>13</sup> Statistical tests were conducted using IBM SPSS Statistics (Version 29). Total food purchases and proportion (%) of total food purchases for each of the 8 main food categories were calculated in Excel (Microsoft) for the first month, second month, and both months combined.

## Results

### **Participant characteristics**

A total of 1019 vouchers were distributed, with a redemption rate of 84.9%. Eighty participants initially enrolled; however, 13.8% did not redeem any vouchers and only 33.8% returned for the second month. To compensate for attrition, 33 additional participants were enrolled, resulting in a total of 113 participants. The average participant was 33 years old, predominantly female (84%), and identified as Latino/a (65%) or Black/African American (30%). Most participants (70%) were US born, had an average household size of 4 with 2 children, and utilized federal food assistance programs (70%). About 35% self-reported risk for food insecurity, 49% did not, and 16% had missing data regarding food insecurity risk.

### **Total food purchases**

Overall, participants spent the most on purchasing meat, fish, poultry, and eggs (29.7%); fruits and vegetables (15.9%); and cereal and bakery products (15.1%). Within meat, most purchases were on beef (28.8%), poultry (21.1%), and pork (12.3%). Within fruits and vegetables, most purchases were on fresh vegetables (39.9%) and fresh fruit (30.7%), with fewer purchases of fruit juice (17.4%). Within cereal and bakery products, most purchases were on

rice and rice products (17.3%), bread and bread products (13.2%), and cereal products (12.6%) (see Table 2, Supplemental Digital Content 1, available at <http://links.lww.com/JPHMP/B292>, which summarizes total food purchases and proportion of foods purchased by category).

### **Demographic differences in food purchases**

Based on nativity, purchases of fruits and vegetables were significantly higher in the foreign-born group (median = 28.16,  $n = 23$ ) than in the US-born group (median = 9.26,  $n = 56$ ),  $P \leq .001$ , with moderate effect size  $r = 0.43$ . In addition, dairy purchases were significantly higher in the foreign born group (median = 16.97,  $n = 23$ ) than in the US-born group (median = 5.69,  $n = 56$ ),  $P = .01$ , with small effect size  $r = 0.29$  (see Table 3, Supplemental Digital Content 2, available at <http://links.lww.com/JPHMP/B293>, which compares differences in food purchases by nativity).

When examined by federal food assistance program use and food insecurity risk, no significant differences in food purchases were found for the main food categories (see Table 4, Supplemental Digital Content 3, available at <http://links.lww.com/JPHMP/B294>, which compares differences in food purchases by federal food assistance program use, and Table 5, Supplemental Digital Content 4, available at <http://links.lww.com/JPHMP/B295>, which compares differences in food purchases by food insecurity risk, respectively).

## Discussion and Conclusion

The most common purchases among participants were items not typically found in food pantries, including meat, fish, eggs, and fresh produce.<sup>8,14</sup> Unlike food pantries, participants were provided the flexibility to purchase food items based on individual needs and preferences.

Results demonstrated that foreign-born participants spent significantly more on fruits, vegetables, and dairy products compared with those born in the United States. While exact reasons for these findings are likely multifactorial, it is possibly related to the influence of variable levels of acculturation, advertising and media, as well as availability and financial access to these products.<sup>15</sup>

### **Study strengths**

This program demonstrated promise for many reasons. Minimal resources were required for planning and implementation. Participants shared with daycare

## Implications for Policy & Practice

- A voucher program model provides a hyperlocalized population increased food access with use of minimal resources. Future program models can be implemented in similar settings such as daycare centers or schools with identified underserved or increased need populations, as well as community centers, community-based organizations, or social service organizations.
- Future models should consider the potential benefit of unrestricted vouchers, since a well-balanced diet will look different within different cultures, ages of household members, and dietary needs. It might also be beneficial to provide additional voucher funds over several months, as \$70 per month might not be sufficient to address food insecurity in the long term.
- Improvements for future program implementation should include increased written communication and programmatic materials as well as follow-up with participants in order to encourage adherence to the multimonth program and minimize loss to follow-up. Formal evaluation tools should also be utilized. Postprogram surveys for participants could be used to explore its perceived value and impact, and qualitative interviews with grocery store staff and voucher providers could be conducted to evaluate program feasibility.
- Future studies should aim to explore how demographic characteristics influence food purchasing behavior, as this study showed that purchases differed based on nativity status.

staff that they felt empowered to purchase desired foods they could not normally afford, and that the vouchers provided choice and dignity in food purchasing decisions. The percentage of participants who self-reported food insecurity risk (about 35%) is higher than the rate of food insecurity in East Harlem overall (23.5%),<sup>4</sup> which in addition to the high rate of food assistance program usage in our population (70%) indicates that the program effectively reached underserved residents.

### Study limitations

The high attrition rate required stratification of data into 2-month and 1-month participants, limiting generalizability. Reasons for nonreturn in June include discontinuing childcare, travel, or forgetting to use vouchers. Self-reported data were subject to social biases, with some participants leaving questions blank, potentially due to misinterpretation or stigma surrounding the questions.

Paper vouchers were not the most efficient method for implementation and redemption at the grocery

store. They could be lost or damaged, leading to unredeemed vouchers. Manual application of vouchers to receipts could introduce errors, and it was not possible to determine which foods were purchased with vouchers alone for receipts with more than one payment method.

Overall, this program was successful in providing underserved urban residents in need of food assistance with immediate funds to supplement their food purchasing, as well as the autonomy to purchase preferred items.

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