

2024 Food Security Survey Module, Research and Rationale

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Dimensions of food insecurity

Food insecurity is an issue comprising four dimensions¹: food access, availability, utilization, and stability over time. Ashby et. al identified and reviewed 8 multi-item tools used in developed countries, all of which accessed the “food access” dimension and two partially addressing “food utilization” and “stability over time.” They conclude that our current tools are limited in scope and generally only measure access. Tools should be adapted or developed to understand all four dimensions of food insecurity. Researchers need to go beyond accessing and affording food.

- Availability: a reliable and consistent source of enough quality food for an active and healthy life. “At a macro level, this has been the primary focus of nation-states; however simply increasing production is not enough to ensure availability at a household level.”²
- Utilization: the intake of sufficient and safe food which meets individual physiological, sensory and cultural requirements. Also refers to physical, social and human resources to transform food into meals.
- Food utilization: people’s ability to choose nutritionally adequate foods and their ability and resources to safely prepare and store them. Utilization refers to intake of sufficient and safe food and the physical, social, and human resources to transform food into meals.
- Stability over time: this affects the three aforementioned factors through seasonal and temporary change.

Communities Speak’s Food Insecurity Survey Module uses the Cornell Child Food Security survey instrument and draws on the Radimer/Cornell instrument. The Radimer/Cornell and Cornell Child Food Security Measure share several similar questions.

Cornell Child Food Security Measure

The Cornell Child Food Security Measure is a survey instrument addressing food access issues at the household level. It is composed of nine questions with single-response responses (yes or no) making a categorical four-point scale classifying respondents as ‘high food insecurity’ (score =0), ‘marginal food insecurity’ (score= 1), ‘low food insecurity’ (score =2 to 4) or ‘very low food insecurity’ (score =5 to 9). Response options are yes or no.

- Dimensions: Access
- Pros

¹ Ashby, S., Kleve, S., McKechnie, R., & Palermo, C. (2016). Measurement of the dimensions of food insecurity in developed countries: A systematic literature review. *Public Health Nutrition*, 19(16): 2887-2896. doi.org/10.1017/S1368980016001166.

² Ibid., p. 2888

- The four-point scale gives us a thorough look at severity for reporting
- High validity (cronbach's alpha at 0.81)
- Relatively short to avoid survey fatigue
- Cons
 - The tool addresses access but not utilization

Cornell Child Food Security Measure:

In the last 3 months...

1. Did you worry that food at home would run out before your family got to buy more?
2. Did the food that your family bought run out and your family did not have money to get more?
3. Were you not able to eat a variety of healthy foods at a meal because your family didn't have enough money?
4. Did your meals only include a few kinds of cheap foods because your family was running out of money to buy food?
5. Was the size of your meals cut because your family didn't have enough money for food?
6. Did you have to eat less because your family didn't have enough money to buy food?
7. Did you have to skip a meal because your family didn't have enough money for food?
8. Were you hungry but didn't eat because your family didn't have enough food?
9. Did you not eat for a whole day because your family didn't have enough money for food?

Radimer/Cornell

The Radimer/Cornell scale measures access and food utilization issues at the individual level. It is made up of eight questions resulting in a dichotomous scale, either food secure or food insecure. Several questions are focused on issues impacting elderly populations including worry over eating a good meal because one needs help with grocery shopping and preparing food or feeding oneself. Response options are yes or no.

- Dimensions: Access, food utilization
- Pros
 - High validity (cronbach's alpha at 0.94)
 - Relatively short to avoid survey fatigue

- Addresses a second dimension of food insecurity, food utilization
- Questions 3-5 address issues impacting older adults
- Cons:
 - It may be too specific to include in a survey to families and younger adults
 - A dichotomous scale (respondents are categorized as either “food insecure” or “food secure” taken by each question is useful, but does not provide us the same depth of information as the Cornell Child Food Security Measure

Radimer/Cornell instrument (no recall period):

1. Do you worry about whether your food will run out before you get money to buy more?
2. Do you worry about whether the food you can afford to buy will be enough?
3. Do you worry about whether you will eat a good meal because you need help with grocery shopping?
4. Do you worry about whether you will eat a good meal because you need help preparing food or feeding yourself?
5. Do you eat the same thing for several days in a row because you only have a few different kinds of food on hand and don't have the money to buy more?
6. Do you run out of the foods you need to put together a meal and don't have money to get more food?
7. Would you say that the food you buy doesn't last and you don't have money to get more?
8. Would you say you are often hungry but don't eat because you didn't have enough food?

Due to the length of the Baseline Survey, we were concerned that both the Radimer and Cornell Child Food Security scales would lead to survey fatigue, and we already have longitudinal data on accessing or finding and affording food, as well as worry about running out of food or running out of food. We took key questions from the Radimer and created a separate question addressing the needs of households with seniors. The question addresses the following with a recall period of 3 months:

- ☐ You ate smaller portions because you didn't have enough money
- ☐ You skipped a meal because you didn't have enough money

- ☐ You were hungry but didn't eat because you didn't have enough money
- ☐ Worried that you or someone in your household needed help with grocery shopping
- ☐ Worried that you or someone in your household needed help preparing food
- ☐ None of the above / does not apply

Household demographics

Disability

Children with autism spectrum disorder and co-occurring intellectual disabilities experience unique challenges in food insecure households.

- Using the National Survey of Children's Health (2016–2018) data, Karpur, Vasudevan, and Lello (date) find households with children with autism spectrum disorder were 1.5 times more likely to be food insecure.
 - Other disabilities were found to be 1.3 times more likely.
 - These families tend to use emergency room services more often.

Multigenerational Households

- Multigenerational households which are "defined as one headed by an adult householder age 40 or older and with three generations (grandparent, parent, child) or grandparent and grandchild with no adult parent " are more likely to face food insecurity.³
- Caregiver Strategies
 - A particular concern is how food insecurity affects children's dietary quality and quantity: "An assumption embedded in the HFSSM is that caregivers will first sacrifice their personal food quality and quantity before they do the same for their children. Little is known, however, about specific changes to children's food quality and quantity when caregivers can no longer buffer the effects of food insecurity."⁴

³ Ziliak, J., and C. Gundersen. 2016. Multigenerational Families and Food Insecurity. *Southern Economic Journal* 82 (4): 1148.

⁴ Blake, C., Bell, B., Burke, M., Martini, L., Draper, C., Liese, A., Jones, S. Younginer, N. (2017) Stretching Good and Being Creative: Caregiver Responses to Child Food Insecurity. *Journal of Nutrition Education and Behavior*, 49: 296-297. doi: 10.1016/j.jneb.2016.11.010.

- Additional Resources/Food Programs
 - It is important to note that the entrance of a child into the home does not always negatively impact food security in a household. In some cases the introduction of a child “seems to buffer the family from extreme forms of food insecurity, perhaps owing to the fact that additional resources such as SNAP flow into the family when the child arrives, and flow out when the child departs.”⁵ However, findings show that assistance programs geared towards parents and children (SNAP) often overlook households headed by grandparents. “For example, an Annie E. Casey Foundation report shows that less than 12% of kinship families receive assistance from Temporary Assistance for Needy Families even though they are eligible. Second, given the demonstrated importance of SNAP in alleviating food insecurity (see Kreider et al., 2012 and references therein), increasing participation in SNAP among grandparents raising grandchildren is another path to improving the well-being of multigenerational households.”⁶
 - Caregiver responsibilities complicate this further, as households headed by grandparents who do not have ‘parental rights’ over grandchildren are not eligible to receive additional support.

Health outcomes

- Depression can be a dependent variable and food insecurity an independent variable,⁷ but it can go the other way. For example, a parent may become depressed if they are not able to provide for their children, but it could also be that parents are not able to feed their children because they are depressed.⁸
- Across the country, 51% of Americans say they consumed much less healthy or somewhat less healthy food and beverages over the past six months compared with their typical consumption in 2023.⁹

⁵ Ibid. 3, p. 1163

⁶ Ibid. 3, p.1163

⁷ Ibid. 3, p.129

⁸ Garg, A., Toy, S., Tripodis, Y., Silverstein, M., & Freeman, E. (2015). Addressing social determinants of health at well child care visits: a cluster RCT. *Pediatrics*, 135(2), e296–e304. <https://doi.org/10.1542/peds.2014-2888>

⁹ 2023 Food and Health Survey (May 2023) International Food Information Council. <https://foodinsight.org/2023-food-and-health-survey/>

- The highest levels of obesity (32%-40%) are found in census tracts without supermarkets where people only have access to bodegas and convenience stores.¹⁰

Financial and Housing Insecurity

Basic Necessities

Households with lower incomes are consistently found to be more likely to be food insecure. Factors that lead to food insecurity include human capital, physical and financial assets, and sharp changes in asset levels. Protective factors against food insecurity include having working teenagers at home, receiving child support, lower heating costs depending on season.

- Student Loan Payments: households with student debt are more likely to have higher incomes however, over ¼ of households in poverty also had debt, with low-income Black and Latino households facing the most difficulty.¹¹
- Some parents are faced with purchasing food and basic hygiene products. The City of Seattle's 2021 Recovery Plan Performance Report included state and local pandemic recovery funds for an enhanced diaper distribution project.¹²

Housing Insecurity

Community Service Society Housing and Vacancy Survey findings

- 26% of families with kids in NYC lived in overcrowded apartments; those with immigrant households faced higher rates than U.S.-born. Struggling with food insecurity was found acute for public housing residents: 18% reported food insecurity. 15% of tenants below \$50,000 (in this study, that's the median), nearly 200,000 households struggled to afford food on a regular basis.

¹⁰ Larson, M., Story, M., and Nelson, M. (2009). Neighborhood Environments: Disparities in Access to Healthy Foods in the U.S., *American Journal of Preventive Medicine* 36(1): 74-81.

¹¹ Lew, I., Rodriguez, C., Joseph, P., & Torres, E. (2022). Mitigating the Growing Impact of Student Loan Debt. In Community Service Society. https://smhttp-ssl-58547.nexcesscdn.net/nycss/images/uploads/pubs/Student_Loan_V5.pdf

¹² City of Seattle, Washington Recovery Plan Performance Report. (2021). In Seattle.gov (pp. 1–82). https://home.treasury.gov/system/files/136/Seattle_2021-Recovery-Plan_SLT-3134.pdf

Supplemental Nutrition Assistance Program and Women, Infants, and Children

SNAP Application Income Limits (NYC)

Family Size		1	2	3	4	5	6	7	8	Additio nal memb er
Max Gross income (Month ly)	Househol ds w/o earned income	\$1,580	\$2,137	\$2,694	\$3,250	\$3,807	\$4,364	\$4,921	\$5,478	+\$557
	Househol ds with earned income	\$1,823	\$2,465	\$3,108	\$3,750	\$4,393	\$5,035	\$5,678	\$6,320	+\$643

Commented [1]: Updated

Different income limits are used for SNAP households that:

- Have a person with a disability or 60 years of age or older; or
- Pay dependent care expenses

SNAP Maximum Allotment Payments (NYC)

Family Size		1	2	3	4	5	6	7	8	Additio nal memb er
Max Gross income (Ann ual)	Households w/o earned income	\$18,960	\$25,644	\$32,328	\$39,000	\$45,684	\$52,368	\$59,052	\$65,736	+\$6,684
	Households with earned income	\$21,876	\$29,580	\$37,296	\$45,000	\$52,716	\$60,420	\$68,136	\$75,840	+\$7,716

SNAP Maximum Allotment	\$291	\$535	\$766	\$973	\$1,155	\$1,386	\$1,532	\$1,751	+\$29
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To be eligible for WIC benefits and services, an applicant must: (1) be a woman who is pregnant or postpartum, or an infant or a child less than five years old; (2) have an income below 185 percent of federal poverty guidelines (set annually by the Department of Human Services); and (3) be at medical or nutritional risk as verified by a health professional. After they are officially certified as eligible, infants can participate for one year; children (aged 1 through 4) can participate for six months. At the end of each certification period, the participant must be re-certified to continue participating.¹³

If eligible, some households with little income or savings, or with high housing costs, can receive SNAP benefits within five days. Households who aren't working receive the maximum amount of benefits.

Participation in SNAP

Currie and Gahvari identify three main factors for nonparticipation:¹⁴

1. Transaction costs such as the time it takes to get to a SNAP office which may include the burden of bringing children to the location or paying for childcare, and the cost to travel.
2. SNAP benefits can be small for some households: "Given the inverse relationship between income and SNAP benefit levels, this explains why, all else being equal, households with incomes closer to the SNAP eligibility threshold are less likely to participate".¹⁵
3. Stigma including bad experiences at SNAP office

¹³ USDA. (2018). WIC Eligibility Requirements | Food and Nutrition Service. Usda.gov. <https://www.fns.usda.gov/wic/wic-eligibility-requirements>

¹⁴ Currie, J., and F. Gahvari. 2008. Transfers in Cash and In-kind: Theory Meets the Data. *Journal of Economic Literature* 46: 333–83.

¹⁵ Ibid. 11, p. 125

Commented [2]: @mlc2272@columbia.edu My thinking here is that the only way we could somehow bring all these variables together for analysis (i.e. income, snap allotment allowances, household income) is to 1) ask respondents to select what \$ allotment they receive (from table). We can then measure this against the food-security scale (and other variables) to get a better read on whether SNAP allotment allowances are a constraint/support in food security. I also wonder if we do OE (open-ended) questions in the survey? Alternatively, we could just ask what was the biggest barrier they faced in accessing food etc.

Commented [3R2]: @imm2146@columbia.edu Really good idea. We do have that question about cash reserves (\$400, \$1200, and 3 months worth of expenses). We might see some relationships between people with/w.o. cash. We could also add "SNAP allotment is not enough" to issues with SNAP and something similar for WIC.

We do have one open-ended question at the end. See here if you haven't already, it's in the same folder: https://docs.google.com/document/d/1twNSmub39AVp-ZNlIkD2xTn_R3aCZc7P/edit

Commented [4R2]: Agreed, sounds good!

Women, Infants, and Children Program

Center on Budget and Policy Priorities

- At a federal level, Congress has yet to provide the WIC program with the additional funding needed due to higher-than-expected participation and increased food costs.¹⁶ According to the Center on Budget Policy and Priorities, WIC needs funding beyond the current amounts allocated in House and Senate bills to avoid having to turn away households. With the current funding levels, about 2 million parents and young children could be turned away from WIC by September 2024.¹⁷

Eligibility

- The latest USDA reports on WIC eligibility are from 2020 and presented that WIC coverage rate varies substantially across states. However, in most states, the coverage rates for all demographic groups (Hispanic/Latino, White-Only, Black-Only, Two or More Races) were consistent with the national pattern: infants had the highest coverage rates, women had lower coverage rates, and children (combining all ages 1 through 4) had lower coverage rates than the combined group of pregnant and postpartum women.¹⁸
- Nationally, more than 50 percent of WIC-eligible SNAP and Medicaid recipients do not participate in WIC.¹⁹
- Unlike SNAP, non-citizens are allowed to participate in WIC. Yet, this information is not well advertised or known.²⁰

¹⁶ The USDA Farm Bill, one of the 12 annual appropriations bills that was supposed to be passed in Fall 2023, has been extended through to March 1, 2024, when Congress will meet again to approve the 2024 fiscal year budget. The United States Government. (2024, January 19). *Press release: Bill signed: H.R. 2872*. The White House.

¹⁷ Bergh, K., Hall, L., & Neuberger, Z. (2023, December 12). *About 2 million parents and young children could be turned away from WIC by September without full funding*. Center on Budget and Policy Priorities.

¹⁸ Kessler, C., Bryant, A., Munkacsy, K., & Farson Gray, K. (2023). National- and State Level estimates of WIC eligibility and WIC program reach in 2021. U.S. Department of Agriculture Food and Nutrition Service.

¹⁹ Ibid. 15

²⁰ Sequeira, S., Edelman, R., & Hirschtritt, D. (2022, April 27). In Their Own Words: Parents Help Us Understand Barriers to Accessing WIC. Code for America.

<https://codeforamerica.org/news/understand-barriers-to-accessing-wic/>

Barriers to Access and Participation

Liu and Liu identify the barriers that women from the NYC area experienced regarding the WIC program:²¹ Those who experience sociodemographic and psychosocial stressors like unintended pregnancy, stressful life events, fewer social supports are more likely to participate in WIC but women with more structural barriers are less likely to participate²²

- Structural barriers include difficulties:
 - Scheduling an appointment
 - Transportation
 - Child care
 - Taking time off work
 - Long lines at WIC centers
 - Language, complex shopping guidelines
 - Ambivalence to receiving government aid
 - Unawareness of program^{23 24}
- Caregiver Perspectives on under-enrollment and use of WIC:
 - Cash allotment issues: cash value of \$11/month to purchase fruits and vegetables insufficient with an overabundance of cash available for dairy and cereal²⁵
 - Dietary issues: caregivers found it difficult to acquire foods that met dietary, cultural, and allergy requirements²⁶

Community Fridges

- Four years after the onset of the covid-19 pandemic, are community fridges still being managed by the community and benefiting the community? Can they become a permanent, sustainable mutual aid tool?²⁷ What role do these low-barrier-to-access fridges play in urban areas like New York where there is a rise in food insecurity?²⁸ Are

²¹ Liu, C.H. and Liu, H. (2016), Concerns and Structural Barriers Associated with WIC Participation among WIC-Eligible Women. *Public Health Nurs*, 33: 395-402.
<https://doi.org/10.1111/phn.12259>

²² Ibid. 18, p. 5-6

²³ Ibid. 18, p. 8

²⁴ Gago CM, Wynne JO, Moore MJ, et al. Caregiver Perspectives on Underutilization of WIC: A Qualitative Study. *Pediatrics*. 2022;149(2):e2021053889

²⁵ Ibid. 21, p.4-5

²⁶ Ibid. 21, p.5

²⁷ Berman, H. (2023, November 22). *What Happened to All of NYC's Community Fridges?* Hellgatenyc.com. <https://hellgatenyc.com/nyc-covid-community-fridges-mutual-aid>

²⁸ Office of Budget Policy and Analysis . (2023, March). *New Yorkers in Need: Food Insecurity and Nutritional Assistance Programs* | Office of the New York State Comptroller. [Wwww.osc.ny.gov](http://www.osc.ny.gov).
<https://www.osc.ny.gov/reports/new-yorkers-need-food-insecurity-and-nutritional-assistance-programs#:~:text=In%20the%20summer%20of%202021>

fridges used in addition to food pantries and other food assistance programs or are they a primary source of food for community members?

- There is a website with a has a list of community fridges in the city,²⁹ where community members can update the location and status of operations as needed, but it is unclear if this list is accurate and if (and at what frequency) New Yorkers continue accessing these fridges

NYC Programs, Policies, and Solutions

In East and Central Harlem, approximately 2 in 3 food stores are bodegas compared to 1 in 3 on the Upper East Side.³⁰ Target neighborhoods include: South Bronx, North and Central Brooklyn, and East and Central Harlem (2007) In parts of Brooklyn, 80% of food stores are bodegas with only 1/3 selling low-fat milk, and only a quarter of East Harlem bodegas carry apples, oranges, and bananas. Leafy green vegetables are available in only 4% of bodegas in East Harlem and 2% in Central Harlem.

A NYC Department of Health study found that about 31% are obese in East Harlem and 27% of adults in Central Harlem while the citywide obesity rate is 22%. Compared to the Upper East Side, East and Central Harlem have more bodegas and the food they carry is less healthy. All three regions are plentiful in restaurants but fast-food and are less common on the Upper East Side.

NYC Fresh

new Feb report needs to go

here:<https://www.nyc.gov/assets/planning/download/pdf/plans-studies/fresh2/fresh-report-feb2023.pdf>

NYC Green Cart Initiative

The original program model assumed that the way to provide access to fresh produce for low-income populations was by targeting neighborhoods where this population lives. This analysis found that Green Carts are clustered in areas of high pedestrian traffic where low-income customers live, work or

²⁹ *NYC Free Fridge*. (n.d.). Nycfridge.com. <https://nycfridge.com/>

³⁰ Gordon C, Ghai N, Purciel M, Talwalkar A, Goodman A. (2007). *Eating Well in Harlem: How Available Is Healthy Food?* New York, NY: New York City Department of Health and Mental Hygiene.

shop. Vendors are already locating where they expect the most customers. Future evaluations must also consider where low-income customers shop and work, not just where they live.

- Innovative Partnership for Public Health Key Findings³¹:
 - “50 percent of [Green Cart] customers are “always” or “sometimes” worried about having enough money to buy fresh fruits and vegetables
 - 92 percent of customers said location and prices are two main reasons for shopping at Green Carts”
 - Green Carts is economically viable in the long term as the program provides entrepreneurial support to vendors. It’s also better shopping for New Yorkers: 65 percent decide what produce to sell based on customer requests
- Green Carts was designed to give vendors the flexibility to find their own location within the assigned geographic area. Vendors tend to co-locate with other vendors in areas of high foot-traffic, creating clusters of Green Carts. As a result, some neighborhoods have an abundance of Green Carts, while some have none. If the program goal is to ensure that the heart of the food desert is also served, the City should provide economic incentives to locate in areas that have not yet been penetrated by the Green Carts.³²

³¹ Fuchs, E. R., et al. Innovative Partnership for Public Health: An Evaluation of the New York City Green Cart Initiative to Expand Access to Healthy Produce in Low-Income Neighborhoods. Columbia School of International and Public Affairs, 2014, 6.
https://internal.sipa.columbia.edu/system/files/GreenCarts_Final_June16.pdf.

³² Ibid. 25, p. 7

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