

# A Review of the Impact of the Covid-19 Pandemic on Food Insecurity

Eunice Lee<sup>1</sup>

<sup>1</sup>Woodlands High School

## ABSTRACT

During the COVID-19 pandemic, food insecurity increased despite legislation that put more resources into Federal Nutrition Assistance Programs. I gathered information by reviewing the literature on food insecurity during the COVID-19 pandemic, and how different barriers ranging from lack of transportation to being undocumented affected disadvantaged minorities. The US Census Bureau's weekly Household Pulse Surveys provided tables of data on how the pandemic affected employment, food sufficiency and food security, health, and housing. In studying the data collected from Household Pulse Surveys conducted by the US census, I was able to study trends throughout the pandemic and different phases of the quarantine, generally the uneducated, those that have not even received a high school degree have seen larger percentages of food insecurity. To gain insight into what charitable food sectors provided for those unable to take advantage of Federal Nutrition Assistance programs, I interviewed individuals who run and volunteer at food banks. From reviewing the literature, examining the US Census Household Pulse Survey Data, and interviewing those integral to the charitable food network, it can be concluded that the government should work towards closing transportation accessibility gaps and increasing charitable food sectors in regions where food insecurity is more prevalent.

## **I. Introduction**

Starting in December of 2019, The COVID-19 outbreak ravaged the world, causing many countries to go into lockdown. Due to strict quarantine measures and the sheer number of cases, the pandemic caused numerous unprecedented challenges globally, such as unemployment, economic recession, increase in mental health issues, and food insecurity. According to the United States Department of Agriculture, food insecurity is the limited or uncertain availability of nutritionally adequate and safe foods, or the limited or uncertain ability to acquire acceptable food in socially acceptable ways. Pandemic-induced disruptions to the food system affected those all over the United States, especially those with a disadvantaged socioeconomic status (Fang, Di, et al 2020). Levels of food security are classified into four groups: high food security, marginal food security, low food security, and very low food security (Table 1).

The pervasive issue of food insecurity can have significant nutritional and mental health impacts on both children and adults. Before the COVID-19 outbreak, about 14% of families with children were food insecure or had limited access to sufficient food to sustain a healthy lifestyle (Kinsey et al., 2020). Adverse health outcomes of food insecurity include cognitive and socioemotional development among children and chronic health conditions, including diabetes, hypertension, and obesity, among adults (Marianna S. et al., 2019). The COVID-19 pandemic created barriers for families facing food insecurity by complicating or nullifying the complex strategies they used to feed themselves (Kinsey et al. 2020). The government implemented federal nutritional assistance programs such as SNAP, p-EBT, and WIC in efforts to mitigate the rise of challenges food-insecure households face due to the COVID-19 pandemic. However, despite the government's response to the rapid increase in food insecurity during the COVID-19 pandemic, efforts to alleviate food insecurity have been mainly unsuccessful.

**Table 1.** United States Department of Agriculture: Levels of Food Security

High Food Security	No reported indications of food access problems or limitations
Marginal Food Security	One or two reported indications—typically of anxiety over food sufficiency or shortage of food in the house. Little or no indication of changes in diets or food intake.
Low food Security	Reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.
Very Low Food Security	Reports of multiple indications of disrupted eating patterns and reduced food intake

Before the COVID-19 outbreak, families facing food insecurity often employed unique coping strategies including complex and strategic food shopping patterns. Often, families travel long distances to visit multiple food stores to acquire the most affordable products (Kinsey et al., 2020). Traveling long distances for food-insecure families residing in urban settings is also a risk because they are reliant on public transportation or rideshare services. Using public transportation during a global pandemic is a barrier for food-insecure households because of the federal social distancing regulations (Kinsey et al., 2020). Another coping strategy families facing food insecurity employed pre-pandemic was group shopping: shopping trips using one person’s membership to club stores. Before the pandemic, low-income families often shared meals with neighbors or family. Regulations of proper adherence to social distancing make sharing meals a challenge, and assembling meals at senior centers and soup kitchens is impossible without clear and appropriate guidance from health officials on how to serve meals safely.

## II. Current Federal Nutrition Assistance Programs

Currently, three main federal nutrition assistance programs are available for insecure households to participate in: Supplemental Nutrition Assistance Program (SNAP), The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the National School Lunch Program. SNAP, formerly known as the Food Stamp Program, is an entitlement program with few limits on allowable purchases (Fang et al., 2020). SNAP provides monthly benefits to eligible low-income households to help them purchase food items at SNAP authorized retailers (Coleman-Jensen et al., 2020). WIC is a federally funded preventative nutrition program that provides grants to States to support the distribution of supplemental foods, healthcare referrals, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women (Coleman-Jensen et al., 2020). WIC works toward supporting infants in low-income families and children below the age of five in low-income families who are found to be at nutritional risk or food insecure (Coleman-Jensen et al., 2020). The National School Lunch Program provides free or reduced-price meals to eligible low-income students and federal subsidies (Coleman-Jensen et al., 2020). Over 100,000 public and nonprofit private schools and residential care institutions participate in the National School Lunch Program (Coleman-Jensen et al., 2020) to provide lunches for food-insecure children. The National School Lunch Program provided meals to an average of 29.6 million children each school day in the fiscal year 2019 (Coleman-Jensen et al., 2020).

To help mitigate the rapid increase in food insecurity caused by the COVID-19 outbreak, Congress’ Families First Coronavirus Act (FFCA) made numerous provisions in efforts to increase federal nutrition assistance programs. The National School Lunch Program provided meals to an average of 29.6 million children each school day in the fiscal year 2019 (Coleman-Jensen et al., 2020). As a solution, the FFCA enabled states to issue pandemic Electronic

Benefits Transfer (p-EBT) for households with children eligible for the National School Lunch Program (Kinsey et al., 2020). Due to schools closing during the nationwide quarantine, children could not take advantage of the National School Lunch Program. Essentially, the p-EBT takes the value of school meals and transfers it directly to families already enrolled in SNAP (Turner et al., 2020). The transferred money amounted to about \$144 per child a month (Kinsey et al., 2020). However, during the pandemic, the increase in SNAP benefits and the development of the p-EBT were not helpful in obtaining food due to food hoarding.

### **III. Effectiveness of Federal Nutrition Assistance Programs**

Though SNAP benefit allotments were increased up to the maximum allowable amount as an emergency measure in states across the United States, increasing SNAP benefits did not address the rapidly growing food insecurity issue because 2.5 million households with children already received the maximum benefit, and states are not allowed to raise benefit levels beyond the given maximum (Kinsey et al., 2020; Fang et al., 2020). Therefore, the benefit expansion may not have impacted those at the most significant risk for food insecurity. It is more likely that those who took advantage of the National School lunch program before the pandemic faced food insecurity during quarantine. Before the pandemic, we mentioned that The National School Lunch Program provided meals to an average of 29.6 million children each school day in the fiscal year 2019 (Coleman-Jensen et al., 2020). However, during the pandemic, the increase in SNAP benefits and the development of the p-EBT were not helpful in obtaining food due to food hoarding. Although there was no nationwide shortage of food, in some cases, the inventory of certain foods at grocery stores was temporarily low before stores could restock (USDA), therefore causing food hoarding. Food hoarding is an issue, as it leaves low-income families who cannot afford to buy in bulk at an extreme disadvantage when they find empty shelves at grocery stores (Kinsey et al., 2020). This is even more worrisome to families who rely on SNAP and WIC because their food shopping is already restricted to stores that accept benefits and stock approved food items (Kinsey et al., 2020). Despite the increased SNAP benefit maximum, families tend to run out of SNAP funds before the end of the monthly benefit cycle. On Average, families spend more than 75% of their benefits within 2 weeks of receiving them (Kinsey et al., 2020).

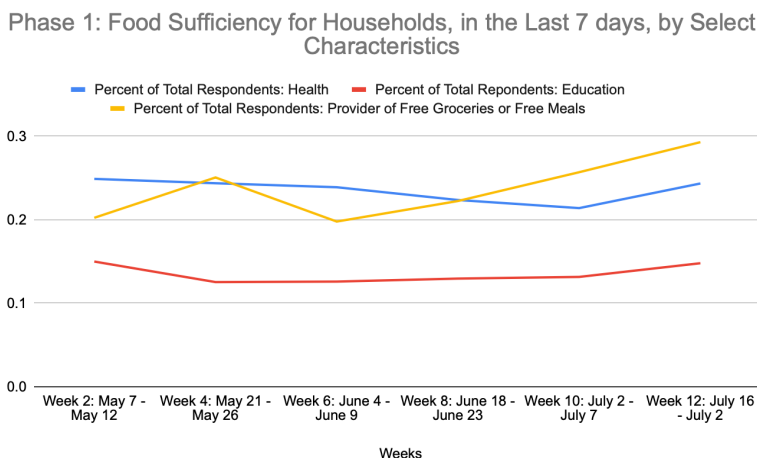
### **IV. US Census Bureau Household Pulse Survey**

From the US Census Bureau, the Household Pulse Survey is designed to quickly and efficiently collect data on how people's lives have been impacted by the COVID-19 pandemic. The Household Pulse Survey was established during the pandemic and has been collecting social and economic data from US households, including food insecurity. The data were collected in three phases representing each phase of the COVID-19 pandemic. Phase 1 of the Household Pulse Survey began on April 23, 2020, and data was collected and disseminated on a weekly basis. Data on the later phases of the survey have been collected and disseminated on a biweekly basis. Phases 3.3 and on maintain the two-week data collection period but transitioned to two weeks on, two weeks off collection method. The detailed tables of the Household Pulse Survey Data collected include Education Tables, Employment Tables, Food Sufficiency and Food Security Tables, Health Tables, and Housing Tables. My paper will be examining the data and discerning general trends for vulnerable populations. Throughout the pandemic and different phases of the quarantine, those without a high school degree have seen a greater incidence of food insecurity. Despite the end of the pandemic, these populations still have not seen a less percentage of food insecurity than other populations, such as the educated those who have had a bachelor's degree and above, pre-pandemic (US Census Bureau).

The detailed tables of the Household Pulse Survey Data collected include Education Tables, Employment Tables, Food Sufficiency and Food Security Tables, Health Tables, and Housing Tables. Food Security Tables collected data on the demographic of individuals and households and asked questions based on a scale from enough food to no food: Enough of the kinds of food wanted; enough food, but not always the kind wanted; sometimes not enough

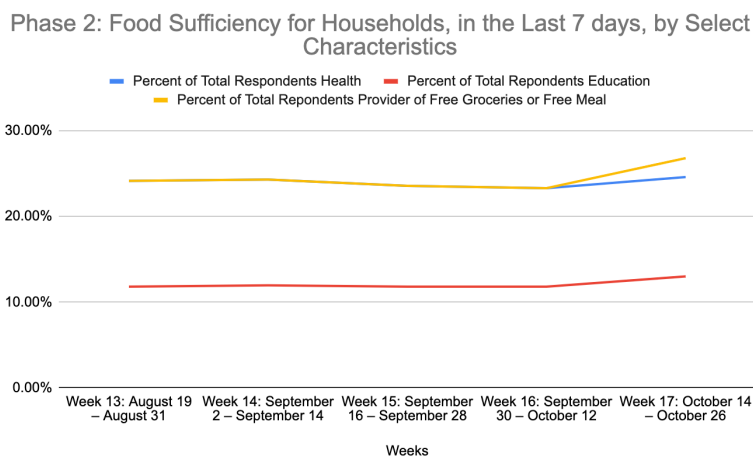
to eat; often not enough to eat; did not report. In examining the data, it was found that generally, people reported having enough food, but not always the types wanted. (US Census Bureau).

From Phase 1 of the Household Pulse Survey, Figure 1 shows that around 30% of Disadvantaged Minors who receive free groceries or free meals still suffered from food insecurity, showing that there were not enough charitable food sectors. Those who only received High School or GED level education are shown to have been impacted by food insecurity when compared to those who received higher education. The graph also shows that about 25% of those who have fair or poor health suffer from food insecurity (US Census Bureau).



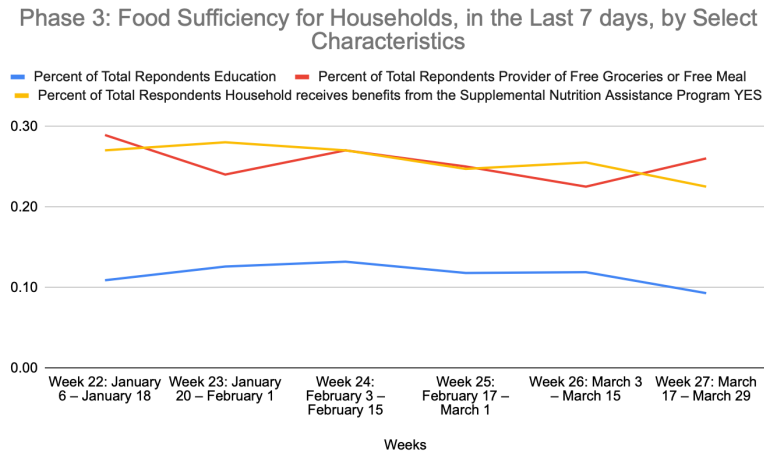
**Figure 1.** Food Insecurity Percentages of Disadvantaged Minors from the US Census Bureau’s Household Pulse Data Surveys from Phase 1

From Phase 2 of the Household Pulse Survey, Figure 2 shows that around 25% of those who had fair or poor health and received benefits from charitable food sectors suffered from food insecurity. The figure also shows that above 10% of those who received a High School or GED level education were more likely to suffer from food insecurity.



**Figure 2.** Food Insecurity Percentages of Disadvantaged Minors from the US Census Bureau’s Household Pulse Data Surveys from Phase 2

From Phase 3 of the Household Pulse Survey, Figure 3 shows that above 10% of individuals who received a High School or GED level education were more likely to suffer from food insecurity. The figure also shows around 20 to 30% of those who received benefits from charitable food sectors as well as Federal Nutrition Assistance Programs like SNAP still suffered from food insecurity.



**Figure 3.** Food Insecurity Percentages of Disadvantaged Minors from the US Census Bureau’s Household Pulse Data Surveys from Phase 3

## V. Charitable Food Networks

Charitable food networks are essential because they serve populations unable to take advantage of Federal Nutrition Assistance programs. To be eligible to register for SNAP benefits, applicants are required to submit documents including recent pay stubs, current rent or mortgage statement, current property tax bill, existing homeowner’s insurance bill, and a Social Security card. For those who are undocumented, applying for Federal Nutrition Assistance programs is not an option; therefore they have no choice but to turn to charitable food networks to cope with food insecurity. At times, undocumented individuals are eligible to apply to some Federal Food Assistance programs if they have children born in the United States. However, they are hesitant to ask for help due to the fear of facing deportation and being separated from family. Some households are unable to apply for Federal Nutrition Assistance programs because their annual or monthly gross income based on family size barely exceeds the limit to qualify. Those people who do not financially qualify for Federal Nutrition Assistance programs and are food insecure come to charitable food sectors as a resource.

Another barrier people face in the process of applying for Federal Nutrition Assistance Programs is transportation. Those who do not have access to transportation or are unable to go to visit local Food Stamp Offices or other social service organizations. Additionally, people with jobs during the same time as Food Stamp Office hours are not able to apply for Federal Nutrition Assistance Programs. The inability to visit Food Stamp Offices or other social service organizations to apply for Federal Nutrition Assistance programs leaves food insecure individuals in need of assistance with the option of applying online. Even technology may be a barrier. The SNAP application is an online process that on average takes 60 minutes per transaction. For individuals with language barriers or those unfamiliar with using technology, applying for Federal Nutrition Assistance Programs can be a daunting process. Charitable food sectors receive a great number of clients that are seniors. Seniors may not have access to technology to fill out the forms to apply for Federal Nutrition assistance programs. To add, seniors may have a device to apply for Federal

Nutrition Assistance programs electronically but may face barriers in navigating through the website to go through the application process.

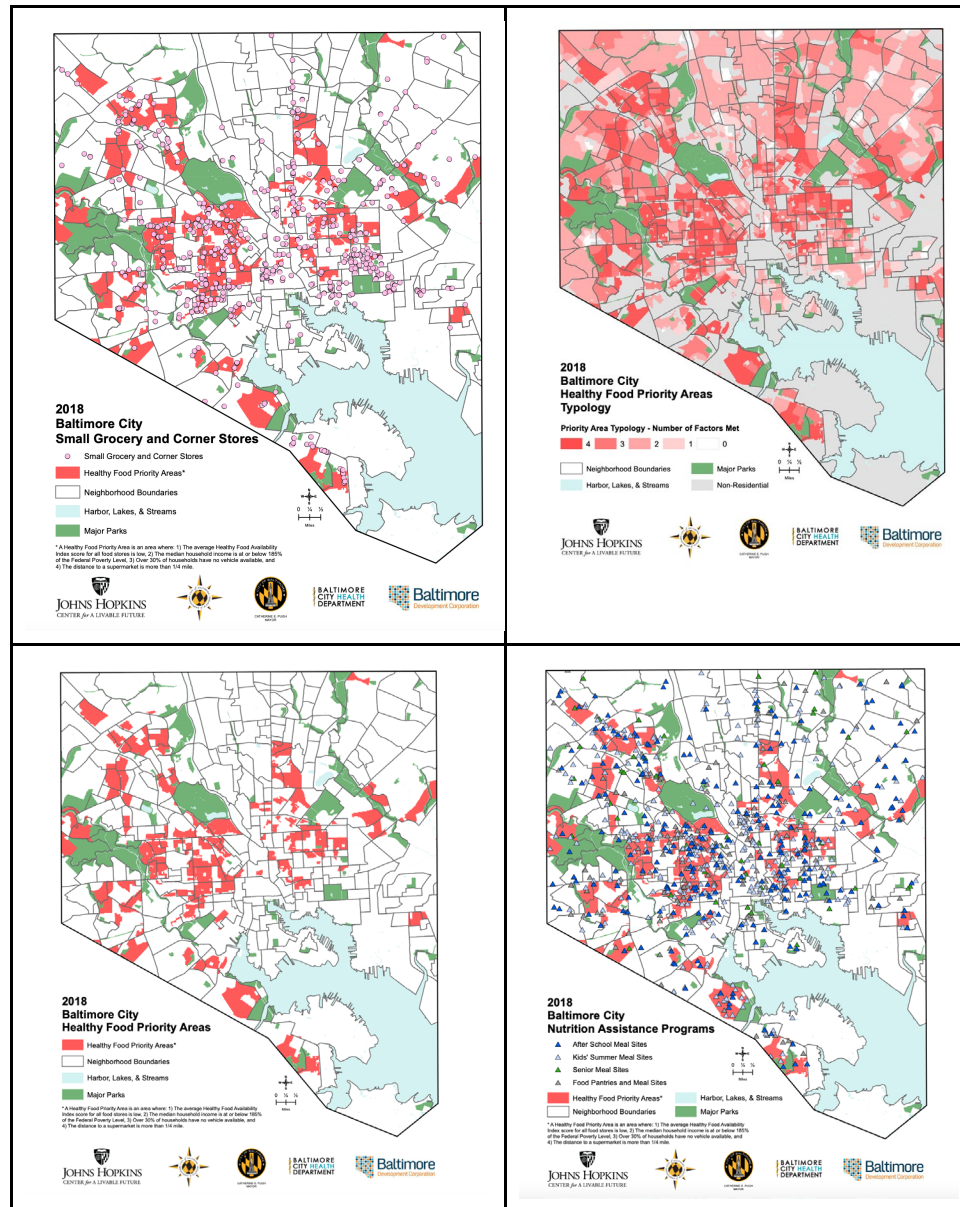
Besides providing food for families unable to access Federal Nutrition Assistance Programs, food pantries provide other critical resources such as nutrition education, health screenings, and seasonal food packets which can improve the physical health of those facing food insecurity. Food banks are generally run by volunteers and are sourced fully by donations like food reclamation, food drives, individual donations, and the USDA [United States Department of Agriculture]. Volunteers cover all aspects of the food pantry from food reclamation, client service, and client registration. Oftentimes, volunteers do not have time to apply for and gather funds as they have jobs aside from volunteering. Generally, clients will come on scheduled days to receive pre-packaged bags of canned and boxed foods, fresh produce, frozen meat, and baked items. Sometimes, volunteers help clients choose food items and offer a combination and pre-packed and client-choice foods. Although some do not, most food pantries require clients to show proof of residency.

## VI. Conclusion

Upon examination of government at all levels, it can be determined there is a necessary demand for the increase in charitable food sectors in food-insecure neighborhoods. The development of more charitable food networks in areas where food-insecure households are more prevalent should be a priority to tackle food insecurity. In the City of Baltimore, as part of its 2018 Food Environment report, a methodology to locate Healthy Food Priority Areas was developed using maps of four different datasets: 1) supply of healthy food, 2) household income, 3) vehicle availability, 4) distance to supermarket. A Healthy Food Priority Area, formerly called “food desert” is an area where the average Healthy Food Availability Index (HFAI) score for all food stores is low. The median household income is at or below 185 percent of the Federal Poverty Level and over 30% of households have no vehicle available, and the distance to a supermarket is more than a quarter of a mile (Misiaszek et al. 2018). The federal government should pass legislation requiring each state to perform annual surveys to create maps to locate Healthy Food Priority Areas based on the four datasets mentioned above.

Furthermore, the lack of access to transportation is a barrier to receiving Federal Nutrition Assistance programs and a barrier to visiting charitable food sectors as well. To mitigate this barrier, the City of Baltimore partnered with the Central Maryland Transit Alliance to conduct a food access analysis of the impact of the planned BaltimoreLink bus system in an effort to make public transit more accessible for food shopping (Guenard et al., 2019). States should use the Healthy Food Priority Area map of all four datasets, (supply of healthy food, household income, vehicle availability, distance to the supermarket), to determine which areas lack accessible transportation in food-insecure neighborhoods. Then, like the City of Baltimore, states should partner with public transportation organizations to provide transportation access to food shopping. With the same goal of mitigating transportation barriers, Cincinnati is testing delivery services under a pilot project called Freshmen Cincy to bring affordable groceries into neighborhoods that retailers consider unreachable. Residents in these unreachable neighborhoods can call or text a “freshmen ambassador” to receive a delivery. To provide food access for those who are disabled and are food insecure, again, based on the Healthy Food Priority Area Maps, each state should model “Freshmen Cincy” to develop a community food delivery service for residents residing in neighborhoods where food insecurity is more prevalent.

In the future, I believe that it is important for the government to do thorough research on the types of predictors and factors that would impact food insecurity in households. Food insecurity can be a seedling of many problems that individuals may have in the future. Once the government surveys individuals they will be able to create heat maps, as shown in figure 4, of food-insecure areas and tackle demographic by demographic issues that may hinder them from having access to food. This paper can serve as a starting point for this research so food insecurity can be mitigated regardless of any crisis the US will encounter.



**Figure 4.a.** Baltimore City Small Grocery and Corner stores: This map shows where all small gray and corner stores are located, along with the healthy food priority areas shaded in red. (top left) b. Baltimore City Small Healthy Food Priority Areas: This map shows where the most food-insecure neighborhoods are in Baltimore City. (bottom left) c. Baltimore City Healthy Food Areas Typology: This map shows the number of factors met that determine whether a neighborhood is food insecure. (top right) d. Baltimore City Nutrition Assistance Programs: This map shows where different nutritional food sites are located within Baltimore City. (Bottom right)

## References

Aguiar, Ana, et al. "Food Insecurity in Portugal during the COVID-19 Pandemic: Prevalence and Associated Sociodemographic Characteristics." Portuguese Journal of Public Health, vol. 40, no. 1, 2022, pp. 35–42. Crossref, <https://doi.org/10.1159/000522319>.

“Apply for SNAP.” The State of New York, [www.ny.gov/services/apply-snap](http://www.ny.gov/services/apply-snap). Accessed 1 June 2022.

Banna, Md. Hasan Al, et al. “Factors Associated with Household Food Insecurity and Dietary Diversity among Day Laborers amid the COVID-19 Pandemic in Bangladesh.” *BMC Nutrition*, vol. 8, no. 1, 2022. Crossref, <https://doi.org/10.1186/s40795-022-00517-8>.

Bartfeld, Judi, and Fei Men. 2017. “Food Insecurity Among Households with Children: The Role of the State Economic and Policy Context,” *Social Service Review* 91(4): 691-732.

Coleman-Jensen A, Rabbitt MP, Gregory CA et al. (2020) Household Food Security in the United States in 2019, ERR-275. U.S. Department of Agriculture, Economic Research Service. <https://www.ers.usda.gov/publications/pub-details/?pubid=99281> (accessed September 2020)

Dasgupta, S., Robinson, E.J.Z. Impact of COVID-19 on food insecurity using multiple waves of high-frequency household surveys. *Sci Rep* 12, 1865 (2022). <https://doi.org/10.1038/s41598-022-05664-3>

Derso A, Bizuneh H, Keleb A, Ademas A, Adane M (2021) Food insecurity status and determinants among Urban Productive Safety Net Program beneficiary households in Addis Ababa, Ethiopia. *PLoS ONE* 16(9): e0256634. <https://doi.org/10.1371/journal.pone.0256634>

Gundersen, Craig, and Hilary K. Seligman. “Food Insecurity and Health Outcomes.” *The Economists’ Voice*, vol. 14, no. 1, 2017. Crossref, <https://doi.org/10.1515/ev-2017-0004>.

Fang, Di, et al. “Food Insecurity during the COVID-19 Pandemic: Evidence from a Survey of Low-Income Americans.” *Food Security*, vol. 14, no. 1, 2021, pp. 165–183., <https://doi.org/10.1007/s12571-021-01189-1>.

Kinsey, Eliza W., et al. “COVID-19 and Food Insecurity: An Uneven Patchwork of Responses.” *Journal of Urban Health*, vol. 97, no. 3, 2020, pp. 332–35. Crossref, <https://doi.org/10.1007/s11524-020-00455-5>.

Lindow, Payge, et al. “‘You Run out of Hope’: an Exploration of Low-Income Parents’ Experiences with Food Insecurity Using Photovoice.” *Public Health Nutrition*, vol. 25, no. 4, 2022, pp. 987–993., doi:10.1017/S1368980021002743.

Nord, Mark. 2012. “How Much Does the Supplemental Nutrition Assistance Program Alleviate Food Insecurity? Evidence from Recent Programme Leavers,” *Public Health Nutrition* 15(5): 811-17.

NPR Cookie Consent and Choices. (2020, March 20). NPR. <https://choice.npr.org/index.html?origin=https://www.npr.org/2020/03/20/818300504/schools-race-to-feed-students-amid-coronavirus-closures>

Misiaszek, Caitlin, et al. “Baltimore City’s Food Environment: 2018 Report.” *Baltimore City’s Food Environment: 2018 Report*, 1 Jan. 2018.

Simons-Rudolph, Ashley. “More than Filling Empty Bellies: How Food Banks Are Evolving to Nourish Community Health.” *Community Psychology: Social Justice Through Collaborative Research and Action*, 30 Mar. 2020, [www.communitypsychology.com/foodbanks](http://www.communitypsychology.com/foodbanks).



US Census Bureau. "Household Pulse Survey Data Tables." Census.Gov, 9 May 2022, [www.census.gov/programs-surveys/household-pulse-survey/data.html](http://www.census.gov/programs-surveys/household-pulse-survey/data.html).

"Wider Circle and Helping Hands Community Partner to Aid Over 50,000 Individuals in Vulnerable California Communities with Fresh Food: Organizations Mobilize Food Delivery Task Force, Distributing Over 100,000 Pounds of Food to Combat Food Insecurity during the COVID-19 Crisis." U.S.Newswire, Sep 22, 2020. ProQuest, <https://www.proquest.com/wire-feeds/wider-circle-helping-hands-community-partner-aid/docview/2444593596/se-2?accountid=34785>.

Willis, Don E., et al. "COVID-19 and Food Insecurity in a Vulnerable Rural State." Dialogues in Health, vol. 1, 2022, p. 100013. Crossref, <https://doi.org/10.1016/j.dialog.2022.100013>.