

Capstone Project: SNAP and Emergency Food System Use and Users: A Report for UWKC

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Background

The original research questions for this project are, “What is the relationship nationally between SNAP program users, and emergency food system users/clients? What are the characteristics of who uses each program, and how are they similar or different from one another?” United Way of King County (UWKC) seeks to answer these questions to inform their advocacy and outreach strategies for SNAP enrollment.

My goals for this project as a student in University of Washington’s Nutrition Sciences Program and MPH candidate are to “communicate[s] audience-appropriate public health content, both in writing and through oral presentation,” and “describe[s] the basic components and determinants of the US food and nutrition systems.”

Introduction

As of April 2020, 13.9% of Americans (42.9 million) were enrolled in SNAP.¹ SNAP benefits are intended to be supplemental, and without sufficient income, households often turn to food pantries when their SNAP benefits are exhausted.²⁻⁴ Some food pantry clients, however, only use emergency food and are not enrolled in SNAP.⁶

Estimates of the percentage of SNAP enrollees who also use food pantries range from 12% to 57.1%.^{6,7} Most published studies rely on surveys of food pantry clients in a specific geographic area; national-level data on the overlap between SNAP and pantry use is more limited.

Currently, there is only one study mapping the post-COVID-19 overlap between SNAP and food pantry clients, despite significant increases in participation for both since 2019.^{1,8,9} In addition to a literature review of the relationship between SNAP use and food pantry use, I analyzed data from the Household Pulse Survey (HPS), a recent national survey that asked about SNAP enrollment and food pantry use, to provide an additional post-COVID-19 data point.

Methods

Literature Review

To retrieve relevant literature, I searched the query ("food pantry" OR "food bank") AND ("snap" OR "food stamps") on PubMed and Google Scholar. PubMed returned 17 articles and Google Scholar 9,890 results. I screened the abstracts of all the PubMed articles and the first 50 results returned from Google Scholar, and determined articles were relevant if they provided information on both food pantry and SNAP use. After reviewing relevant articles, I performed a hand search that yielded national-level reports from Feeding America and the USDA-ERS.

Data Analysis

Analyzing Household Pulse Survey (HPS) data provided an additional post-COVID-19 data point for SNAP and emergency food use. The U.S. Census Bureau began administering the HPS in April 2020 to measure “the social and economic effects of coronavirus on American households,” and inform recovery planning.¹⁰ The U.S. Census Bureau collected results weekly from April 2020 and biweekly from July 2020 to present.¹⁰ Each week, the HPS sampled a nationally representative group of about 1,000,000 people and returned roughly 60,000-120,000 responses.¹¹⁻¹²

Researchers with UWKC administered the DoorDash program client survey in September 2021 and received 467 responses. To meaningfully compare HPS data with UWKC’s DoorDash client survey, I selected HPS data from Phase 3.2, which were collected near the same time as the UWKC DoorDash survey responses. I selected the largest sample size from Phase 3.2, Week 36 (August 18-30, 2021). I downloaded data tables from the U.S. Census Bureau website and used R version 4.0.2 (2020-06-22) for statistical analysis.

Results

Literature review results

Table 1 provides a summary of results from the literature about the overlap between SNAP and food pantry use. Nine studies surveyed food pantry clients about SNAP enrollment, two surveyed SNAP users about emergency food use, and four asked low-income households about SNAP and emergency food use. Rates of simultaneous SNAP and emergency food use varied by study design, with an average of 43% of food pantry users reporting SNAP enrollment, 27.3% of SNAP users reporting emergency food use, and 29.5% of low-income respondents reporting SNAP enrollment and emergency food use.

Because of the overlap in participation, SNAP and emergency food users are generally similar. Multiple studies suggest that food pantry use is driven by the SNAP benefits cycle when families run out of benefits at the end of the month.^{2,3,6,13} Pruitt, et al. found twice the prevalence of functional limitations or worse health overall among low-income individuals using both SNAP and food pantries compared to low-income households using SNAP, food pantries, or not receiving nutrition assistance.⁶ Bryne and Just suggest that in addition to age, food pantry use is predicted by access to a car and available time.¹³ Seniors are the most likely group to rely exclusively on food pantries for nutrition assistance.^{2,3,5}

Studies Included in the Literature Review of the SNAP/Emergency Food System Overlap (n=15)					
Author	Title	Citation	Year		Study type, sample size, and location
Food Pantry Clients Enrolled in SNAP (N=9)				Percent of Pantry Clients Enrolled in SNAP	
Algert, et al.	Barriers to participation in the food stamp program among food pantry clients in Los Angeles	<i>Am J Public Health.</i> 2006;96(5):807-809. doi: 10.2105/AJPH.2005.066977	2006	15%	14,317 clients of 2 food pantries in Ontario & Pomona, CA
Bartfeld	Single mothers, emergency food assistance, and food stamps in the welfare reform era	<i>Journal of Consumer Affairs.</i> 2003;37(2):283-304. doi: 10.1111/j.1745-6606.2003.tb00454.x	2003	26%	The Wisconsin Survey of Food Pantry Clients; n=839 respondents; limited to single mothers <65 years old who qualify for SNAP (based on income and household size)
Berner, et al.	A portrait of hunger, the social safety net, and the working poor	<i>Policy Studies Journal.</i> 2008;36(3):403-420. doi: 10.1111/j.1541-0072.2008.00274.x	2008	39%	Survey of clients at a large food pantry operated by the NE Iowa Food Bank (n=1897)
Kicinski	Characteristics of short and long-term food pantry users	<i>Michigan Sociological Review.</i> 2012;26:58-74.	2012	49%	Survey of clients from a food bank serving pantries across Kent Co., MI (n=105)
Liu, et al.	Frequency of food pantry use is associated with diet quality among Indiana food pantry clients	<i>Journal of the Academy of Nutrition and Dietetics.</i> 2019;119(10):1703-1712. doi: 10.1016/j.jand.2019.02.015	2019	53%	Survey of pantry clients from 63 pantries associated with a large food bank in IN (n=270)
Parks, et al.	Perceptions of SNAP policies among food pantry clients in the Midwest: A comparison between SNAP and non-SNAP participants	<i>Journal of Hunger & Environmental Nutrition.</i> 2019;14(1/2):82-97. doi: 10.1080/19320248.2018.1549519	2019	55%	A survey of pantry clients recently associated with two food banks in Omaha and Lincoln, NE (n=211)

Paynter, et al.	When even the 'Dollar Value Meal' costs too much: Food insecurity and long term dependence on food pantry assistance	<i>Public Administration Quarterly.</i> 2011;35(1):26-58.	2011	35.6%	Study of long-term food pantry users in NC (n=463)
Robiana, et al.	Food insecurity, poor diet quality, and obesity among food pantry participants in Hartford, CT	<i>Journal of Nutrition Education and Behavior.</i> 2013;45(2):159-164. doi: 10.1016/j.jneb.2012.07.001	2013	57.1%	Survey of Hartford, CT food pantry clients (n=212)
Weinfield , et al.	National report prepared for Feeding America	National report prepared for Feeding America. Published online 2014:177.	2014	54.8%	Aggregate intake survey data for emergency food programs supplied through the Feeding America food bank network (n=5.8 million)
NAP Users Accessing Emergency Food (N=2)				Percent of SNAP Users Who Access Emergency Food	
Mabli & Worthington	Supplemental Nutrition Assistance Program participation and emergency food pantry use	<i>Journal of Nutrition Education and Behavior.</i> 2017;49(8):647-656.e1. doi: 10.1016/j.jneb.2016.12.001	2017	16.6%	Nationally representative cohort study (n=3,191) of new SNAP participants. Pre/post design sampled at time of SNAP enrollment and at six months afterward
Walkinshaw, et al.	An evaluation of Washington state SNAP-Ed farmers' market initiatives and SNAP participant behaviors	<i>Journal of Nutrition Education and Behavior.</i> 2018;50(6):536-546. doi: 10.1016/j.jneb.2018.01.003 *Unreported data	2019	38%	Clustered random sample of SNAP participants in King Co., WA (n=400)
SNAP and Emergency Food Use Among Low-Income Households (N=4)				Percent of Low-Income Households Reporting SNAP and Emergency	

				Food Use	
Coleman-Jensen, et al.	Statistical supplement to household food security in the United States.	Statistical Supplement to Household Food Security in the United States. Published online annually.	Annual publication	2015: 31.2% 2020: 37.2%	Only includes households with income <185% of the Federal Poverty Guidelines
Daponte	Private versus public relief: Use of food pantries versus food stamps among poor households	<i>Journal of Nutrition Education.</i> 2000;32(2):72-83.	2000	22.5%	Combined two different 1993 surveys of low SES households in Allegheny Co., PA (n=405). Asked about usage of food banks and SNAP within last 30 days
Pruitt, et al.	Who is food insecure? Implications for targeted recruitment and outreach, National Health and Nutrition Examination Survey, 2005–2010	<i>Prev. Chronic Dis.</i> 2016;13:E143. doi: 10.5888/pcd13.160103	2016	12.0%	n=4,555 food insecure people identified in NHANES (National Health and Nutrition Examination Survey)
Siddiqi, et al.	SNAP participants and high levels of food insecurity in the early stages of the COVID-19 pandemic	<i>Public Health Rep.</i> 2021;136(4):457-465. doi: 10.1177/00333549211007152	2021	44.4%	Longitudinal data from an ongoing, neighborhood-representative cohort of predominantly Black households residing in two urban food deserts in Pittsburgh, PA (n=598)

Table 1. Studies included in literature review.

HPS Data Analysis Results

Week 36 (August 18-30, 2021) of the Household Pulse Survey (HPS) returned 69,114 responses. Rates of SNAP enrollment and accessing emergency food within the last seven days were 1.3% nationwide and 1.6% in the Seattle-Tacoma-Bellevue Metropolitan Statistical Area (MSA) (**Table 2**).

	HPS Week 36, National (n=69,114)	HPS Week 36, Seattle-Tacoma-Bellevue MSA (n=1,695)
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Currently enrolled in SNAP	7.46% (N= 4,594)	5.56% (N=85)
Accessed emergency food within the past 7 days	3.71% (N=2,304)	4.02% (N=62)
Currently enrolled in SNAP and accessed emergency food	1.31% (N=804)	1.57% (N=38)

Table 2. Reported SNAP and Emergency Food Use in the Household Pulse Survey, Nationally and in the Seattle-Tacoma-Bellevue Metropolitan Statistical Area (MSA).

To verify the representativeness of the HPS sample for the Seattle-Tacoma-Bellevue Metropolitan Statistical Area (MSA), I compared HPS data against the U.S. Census Bureau’s most recent American Community Survey (ACS).¹⁴ Reported household income followed a similar distribution in the HPS and 2019 ACS (*Table 3*). The HPS Week 36 survey did not capture income data from 22.9% of respondents (N=316), and it is unclear if or how this information would change reported income distribution.

<u>Income Category</u>	<u>2019 ACS</u>	<u>HPS Week 36</u>
<25,000	11.00%	7.00%
\$25,000 to \$34,999	4.90%	5.60%
\$35,000 to \$49,999	7.90%	8.60%
\$50,000 to \$74,999	13.40%	15%
\$75,000 to \$99,999	11.00%	12.80%
\$100,000 to \$149,999	19.30%	19.60%
\$150,000 to \$199,999	11.60%	12.30%
\$200,000+	21.00%	19.10%

Table 3. Reported Household Income for the Seattle-Tacoma-Bellevue Metropolitan Statistical Area (MSA) in the 2019 American Community Survey (ACS) and Household Pulse Survey.

The HPS reported 7.5% SNAP enrollment nationally and 5.6% in the Seattle-Tacoma-Bellevue MSA. However, 13% of WA residents and 12% of the US population are enrolled in SNAP.^{15,16} These data from the HPS must therefore be interpreted with caution.

Discussion

Literature Review

I found fewer studies than expected addressing the overlap between SNAP and food pantry use, for a number of reasons. Large, nationally representative datasets are easy to come by for SNAP use, but significantly more difficult for emergency food use.¹³ In particular, there may be significant underreporting of privately collected data from food pantries, as it is survey-based

and time consuming to collect for organizations that tend to rely heavily on volunteer labor.^{5,13} The heterogeneity of sampling strategies and data sources makes it difficult to compare the limited results in the literature.

How is data collected to determine SNAP and/or food pantry use?

Should SNAP users be asked about food pantry usage, or food pantry clients surveyed for SNAP enrollment? This chicken-or-egg question is approached from multiple angles in the literature. Mabli & Worthington and Walkinshaw, et al. surveyed SNAP users about food pantry use.¹⁷⁻¹⁸ Conversely, most of the remaining regional or local-level studies asked food pantry and/or meal program clients about SNAP enrollment.^{5,7,1-25} Finally, some authors looked at more general surveys, such as NHANES or city- or county-level surveys of residents with low incomes, that asked about receiving various forms of nutrition assistance.^{1,3,6}

What is the scope of the survey?

Survey scope spans from individual food pantries to cities, counties, and nation-wide. Eight studies collected their data at the level of an individual food pantry or network.^{7,19-25} Siddiqi, et al. uses neighborhood-level data from Pittsburgh, PA, Walkinshaw, et al. performed a county-level survey of SNAP participants, and Daponte combined data from two county-level surveys of low-socioeconomic status residents.^{1,3,18}

Other authors looked at SNAP or food pantry users nationally: Mabli and Worthington, Weinfield, et al., and Coleman-Jensen, et al. used nationally representative surveys of SNAP households or aggregate data from food banks.^{5,17,26-27} Health or economic surveys can also provide the information needed for this analysis: Pruitt, et al. examined National Health and Nutrition Evaluation Survey (NHANES) data.⁶ Coleman-Jensen, et al.'s report for the USDA Economic Research Service (ERS) is an annual publication since 1995.²⁶⁻²⁷ I selected two recent years (2015 and 2020); 2015 to compare with the other national-level estimates available (from 2014, 2016, and 2017) and 2020 to compare with the estimate I calculated from the 2021 Household Pulse Survey.

Interpreting Study Results

However this research question is approached, participation will be reported more accurately for the program that establishes eligibility to be surveyed. Information collected via survey will likely be underreported, as both SNAP and food pantry use are associated with stigma, privacy, and immigration concerns.^{4,5,13}

Some studies have obvious limitations. Feeding America's report includes meal program and food pantry clients, whereas all of the other studies in the literature only report food pantry use.⁵ The Feeding America report and Coleman-Jensen's USDA-ERS reports are also not peer-reviewed.^{5, 26-27}

Pruitt, et al. report 12.0% (95% CI, 10.0%–14.0%) of NHANES participants are enrolled in SNAP and access emergency food, but rely on participants to self-report both SNAP and food pantry use, with no mechanism for verifying either.⁶ Algert, et al. (15% SNAP use among food pantry clients) notably did not ask about citizenship in a population that likely had a sizeable percentage of households whose immigration status precluded from SNAP use¹⁹ Mabli & Worthington (16.6% food pantry use among SNAP recipients) specifically focused on new SNAP enrollees, who could have better information on new programs to stretch their SNAP dollars compared to legacy SNAP users.¹⁷

Broad social and economic trends also drive SNAP and food pantry participation.⁸ Food pantry use spiked nationwide during the COVID-19 pandemic, with *weekly* rates of Americans reporting emergency food use exceeding the previous *monthly* peak at the height of the 2008 recession.⁸ The COVID-19 pandemic and expanded eligibility guidelines also increased SNAP enrollment by 20% between 2019 and 2020.^{8,9} It is important to consider the historical context when interpreting study results.

HPS Data Analysis

HPS Methods and Data

Rigorous sampling strategies ensure that the Household Pulse Survey (HPS) is nationally representative. The relatively large number of respondents within the Seattle-Tacoma-Bellevue Metropolitan Statistical Area (MSA) ($n=1,695$) permits analysis of UWKC's service area. The HPS has a low response rate (<10%), and 8.9% missing or "choose not to respond" responses to questions about food resources.¹¹ Depending on the reasons for nonparticipation or unanswered questions, results may not accurately represent the population as a whole.

Possible Reasons for Lower Reported SNAP and Emergency Food System Use in the HPS

Reported concurrent SNAP and food pantry use in the HPS (1.3% nationally and 1.6% in the Seattle-Tacoma-Bellevue MSA) are significantly lower than any estimate in the literature (*Table 1, Table 2*). Low reported food pantry use appears to be common in U.S. Census Bureau surveys.⁸ Sampling methodology, unvalidated responses, and survey question wording may decrease HPS reports of SNAP and emergency food system use. The HPS uses a nationally or regionally representative sample, and both the national and Seattle-Tacoma-Bellevue average household incomes are too high to qualify for SNAP or emergency food resources.²⁸⁻²⁹ In contrast, most studies in the literature oversample low-income populations by surveying exclusively low-income, SNAP, or food pantry users.^{1,3,5-7,17-27} The HPS also relies entirely on unvalidated self-reported data. Additionally, the HPS may underreport episodic emergency food use because participants are only asked whether they used emergency food within the last seven days. Outside of U.S. Census Bureau data, the rates of SNAP and emergency food access have seen large increases in the last two years.^{8,9}

Comparing HPS to the Literature

To obtain more accurate results, many of the studies in published literature rely on surveys completed at emergency food sites or select participants from SNAP enrollment lists.^{5,7,17-25} Using these qualifiers as conditions for survey eligibility removes one layer of potential bias from inaccurate self-reporting. It is therefore not surprising that the reported use of SNAP and emergency food in the HPS is lower than in surveys designed to capture only this information.

Conclusion

Based on data collection methods, the question of overlap between SNAP and food pantry users is surprisingly difficult to answer. Despite limitations, it is likely that the true percentage of households using both SNAP and food pantries is somewhere in the middle of the range discovered in the literature, around 37%. Food pantry clients are most likely to use both SNAP and emergency food, while SNAP recipients report lower concurrent use of emergency food and SNAP (~27%), and low-income households' rates of use for both SNAP and emergency food are in between (~30%).

SNAP and emergency food system users are more similar than they are different, yet seniors are less likely to be enrolled in SNAP than other food pantry users. UWKC can focus SNAP outreach efforts on this group to increase seniors' food security.

Based on HPS data, only a small percentage of national and Seattle-Tacoma-Bellevue Metropolitan Statistical Area populations report concurrent use of SNAP and emergency food resources, but emergency food use is at a peak not seen in decades, suggesting a significant need for nutrition assistance during the COVID-19 pandemic.⁸

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