

## Washington State Food Security Surveys: Cross-sectional findings from survey waves 1-4, 2020-2023

### Research Brief 14

#### About the WAFOOD Surveys

The Washington State (WA) Food Security Surveys (WAFOOD) first launched as an effort to track impacts of the COVID-19 pandemic on the health, economic well-being, and food needs of Washingtonians. To date, four survey waves have been conducted:

- Wave 1: June - July 2020
- Wave 2: Dec 2020 - Jan 2021
- Wave 3: July - Aug 2021
- Wave 4: Dec 2022 - Jan 2023

The WAFOOD surveys intentionally oversample households with lower incomes and those using food assistance, to provide deeper insights on food insecurity throughout the state. This research brief presents **cross-sectional** findings from WAFOOD Waves 1-4, with data from the full sample of respondents in each wave (see Table 1 for respondent characteristics). Because the majority of respondents in each wave were new, this brief does not draw conclusions about changes over time. For more information on how to interpret these findings, see page 4 of this brief.

#### Across the Four WAFOOD Waves, Between 27% and 49% of Surveyed Households Experienced Food Insecurity

- Across WAFOOD Waves 1-4, which each captured different samples of respondents, the highest proportion of self-reported food insecurity was in Wave 4, at 49% of the sample (winter 2022-2023) (Figure 1).
- The lowest proportion of food insecurity in the first four WAFOOD surveys, 27% of the sample, was in Wave 2 (winter 2020-2021).

#### Key Findings

1. From four survey waves conducted with different samples of WA residents between June 2020 and January 2023, between 27% and 49% of households experienced food insecurity.
2. Food assistance use was more commonly reported by households experiencing food insecurity.
3. Regardless of food security status, reported food assistance use was more common during all four survey waves than estimates of pre-pandemic usage.<sup>a</sup>
4. During Waves 1 and 2, overall per-person food spending was lower than pre-pandemic estimates, with higher grocery costs and lower eating out costs. In Wave 3, participants reported the lowest food spending of all waves. In Wave 4, food spending exceeded pre-pandemic levels for both groceries and eating out.
5. In most survey waves, more than half of respondents experiencing food insecurity reported feeling depressed, anxious, or stressed.

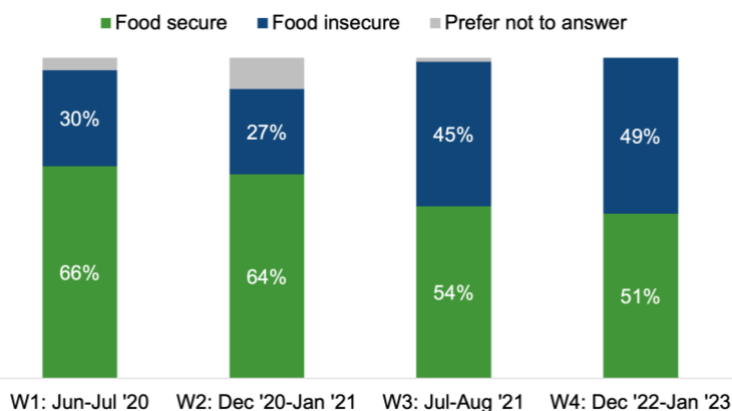


Figure 1. Percentage of WAFOOD4 households classified as food secure or food insecure in each survey wave<sup>b</sup>

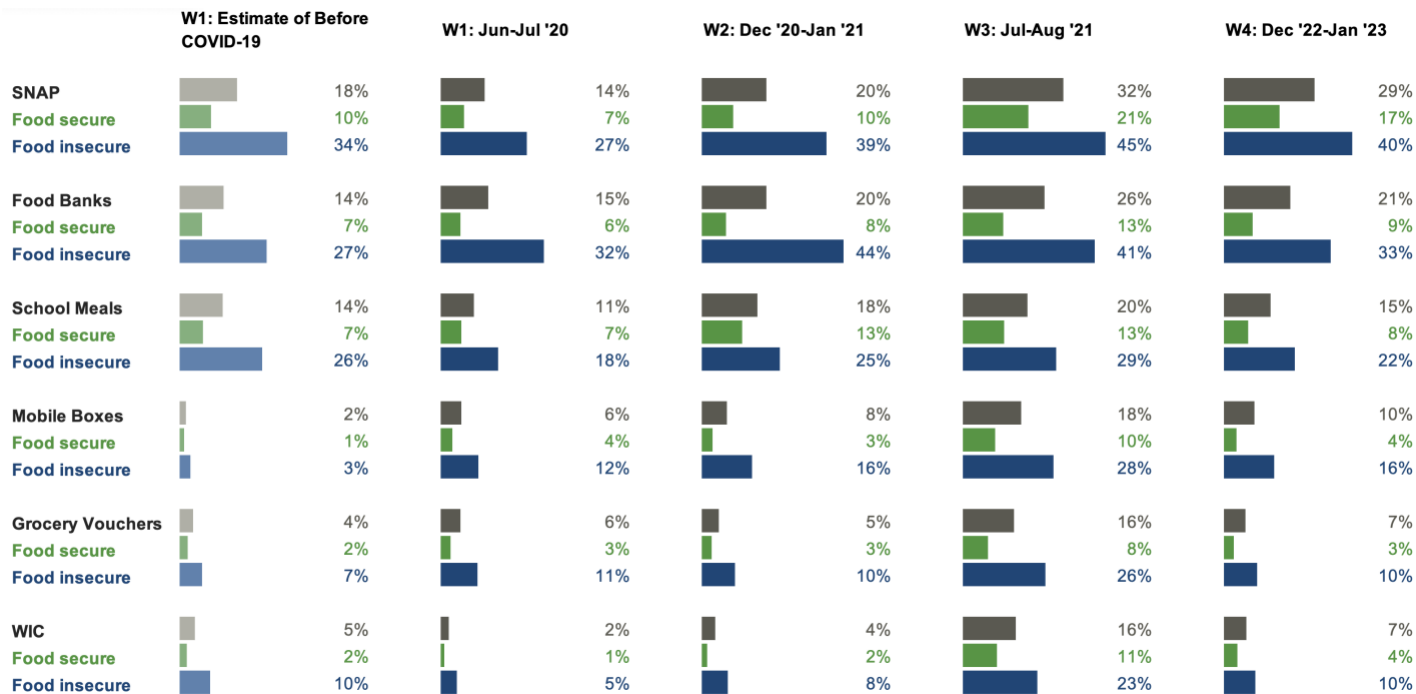


Figure 3. Reported use of food assistance programs in the past 30 days by WAFOOD households (Waves 1-4), by food security status

### In All Survey Waves, Food Insecure Households Were More Likely to Have Used Food Assistance

- Across survey waves, 60-79% of respondents in households experiencing food insecurity reported use of at least one food assistance program in the past 30 days (Figure 2).
- In all survey waves, reported use of any type of food assistance was higher among households experiencing food insecurity.
- Compared to estimates of pre-pandemic usage, reported use of any type of food assistance program was higher during all four survey waves, regardless of food security status.<sup>a</sup>

### Use Of All Food Assistance Programs Was More Common Among Households Experiencing Food Insecurity, But Varied Over Time by Type

- Among households experiencing food insecurity, food banks were the most commonly reported form of food assistance used during Waves 1 and 2, and SNAP was the most commonly reported form of food assistance used during Waves 3 and 4 (Figure 3).
- Among food secure households, SNAP use was more commonly reported than other food assistance programs (as high as 21% of food secure households in Wave 3).

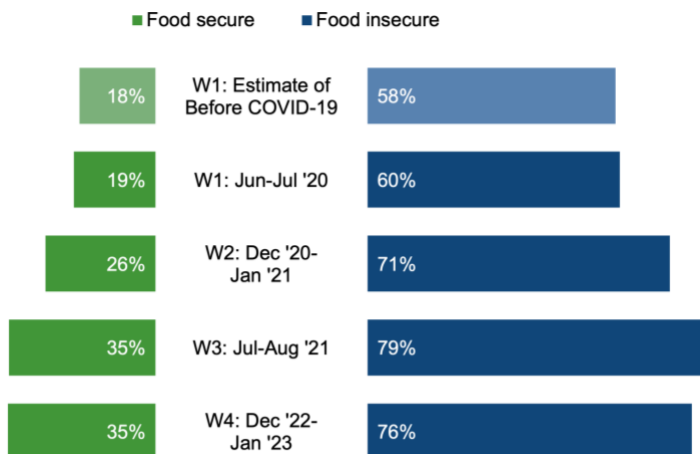


Figure 2. Reported use of at least one type of food assistance in the past 30 days (Waves 1-4), by food security status<sup>a</sup>

### Average Food Expenditures Were Lower in Waves 1-3 Compared to Pre-Pandemic Spending, but Exceeded Pre-Pandemic Spending in Wave 4

- During WAFOOD Waves 1 through 3, which took place in 2020 and 2021, total food expenditures (grocery and eating out) averaged lower than respondent-estimated pre-pandemic expenditures on a monthly per-person basis (Figure 4).

- During Waves 1 and 2, although total monthly per-person food expenditures averaged lower than pre-pandemic levels, grocery expenditures were higher and eating out expenditures were lower than pre-pandemic levels.
- During WAFOOD Wave 4 (winter 2022-2023), average per-person food expenditures exceeded pre-pandemic levels for groceries and eating out.<sup>a</sup>
- These data reflect broader trends: according to the USDA, food prices increased by about 10% in 2022 and were estimated to increase by an additional 7% in 2023.<sup>c</sup>

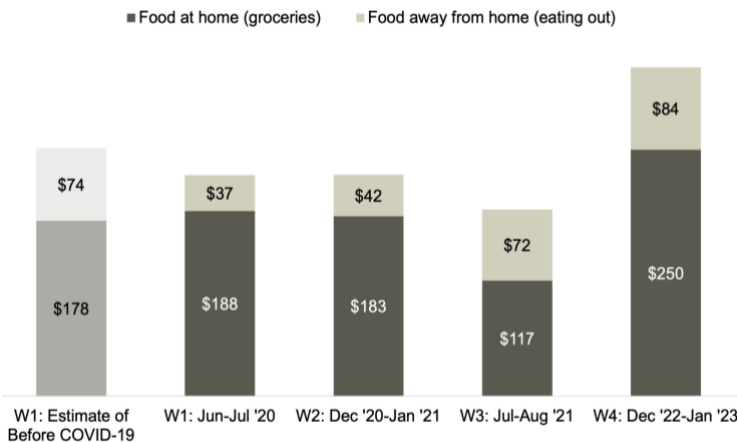


Figure 4. Food expenditures per person in the past month as reported by WAFOOD households (Waves 1-4)

## Anxiety, Depression, and Stress Higher in Households Experiencing Food Insecurity

- Although households experiencing food insecurity had a higher prevalence of depression, anxiety, and stress in Waves 1-4, food secure households also reported these experiences (45-74% in households experiencing food insecurity vs. 22-40% in food secure households) (Figures 5a-c).
- Regardless of food security status, depression, anxiety, and stress were, on average, more common in Wave 2 as compared to Wave 1.
- During Wave 4, households experiencing food insecurity reported higher prevalence of depression, anxiety, and stress compared to Wave 3.

### Depression

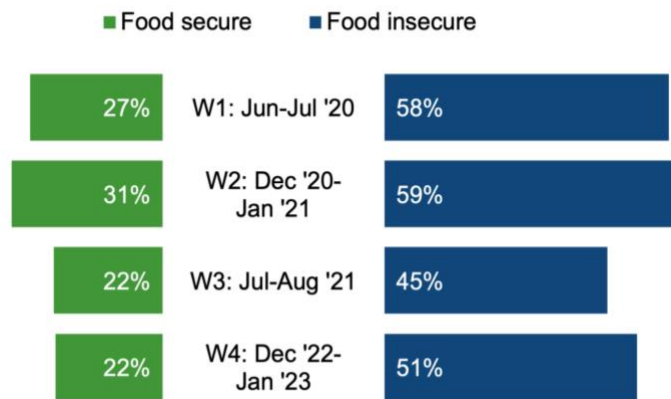


Figure 5a

### Anxiety

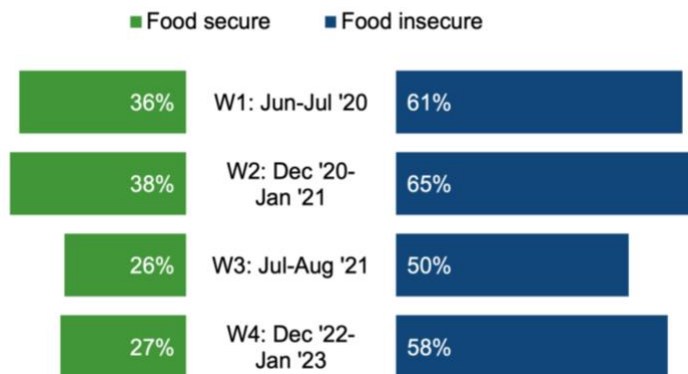


Figure 5b

### Stress

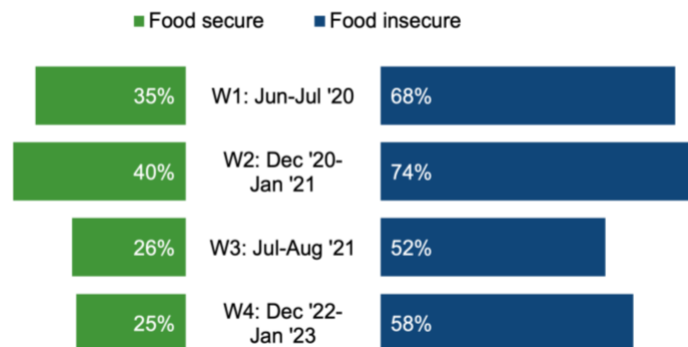


Figure 5c

Figures 5a-c. Reported depression (5a), anxiety (5b), or stress (5c) in the past month by WAFOOD households (Waves 1-4), by food security status<sup>d</sup>

Table 1: Characteristics of respondents in WAFOOD Survey Waves 1-4 compared to overall demographics of Washington State<sup>†</sup>

Dates data were collected:	WAFOOD1 Respondents Jun - Jul 2020	WAFOOD2 Respondents Dec 2020 - Jan 2021	WAFOOD3 Respondents Jul - Aug 2021	WAFOOD4 Respondents Dec 2022 - Jan 2023	Washington State Jun - Jul 2020
<b>Total number of individuals:</b>	<b>2,615</b>	<b>3,501</b>	<b>3,074</b>	<b>5,052</b>	<b>7,614,893</b>
<b>Age (years)</b>					
18 to 34	24%	21%	30%	24%	31%
35 to 54	43%	44%	41%	41%	33%
55 and older	32%	34%	28%	34%	36%
<b>Gender identity</b>					
Woman	81%	83%	72%	77%	50%
Man	15%	13%	23%	19%	50%
Transgender, nonbinary, or self-described	3%	3%	4%	3%	--
<b>Race and/or ethnicity</b>					
Non-Hispanic White	73%	75%	58%	70%	67%
Non-Hispanic Black	4%	3%	4%	5%	4%
Hispanic or Latinx	8%	8%	25%	12%	13%
Non-Hispanic Asian	6%	5%	5%	4%	9%
AI/AN, NH/OPI, or self-described <sup>‡</sup>	5%	5%	6%	5%	11%
<b>Bachelor's degree or higher</b>					
Some college or less	43%	49%	50%	56%	63%
Bachelor's degree or higher	54%	50%	49%	43%	37%
<b>Annual household income</b>					
<\$35,000	30%	32%	41%	40%	20%
\$35,000 to \$74,999	27%	29%	24%	30%	27%
\$75,000+	33%	29%	25%	24%	52%
<b>Married</b>					
	49%	48%	52%	54%	50%
<b>Children in household</b>					
One or more children	42%	44%	53%	46%	30%
No children	56%	56%	46%	54%	70%

<sup>†</sup>US Census Bureau 2019 American Community Survey 1-year estimates.

<sup>‡</sup>AI/AN=American Indian or Alaskan Native, NH/OPI=Native Hawai'ian or Other Pacific Islander.

## How to Interpret These Findings

The WAFOOD surveys intentionally oversampled households with lower incomes and those using food assistance, in order to provide deeper insights on food insecurity throughout the state. All survey waves used a mix of convenience and recontact sampling. For the convenience sample, the research team, together with a diverse network of partner organizations across WA, recruited new respondents via social media, email, and text. For the recontact sample, the research team asked individuals who completed prior surveys and agreed to be recontacted to participate in newer waves directly via email. All four WAFOOD surveys were conducted online.

The limitations of convenience sampling and an online format mean that some groups of Washingtonians could have been overrepresented, underrepresented, or in some cases—such as those without access to computers, tablets, smart phones, or the internet—missed entirely. In interpreting these findings, it is important to remember that WAFOOD data reflect those who responded to the surveys, but do not necessarily represent WA's population as a whole; Table 1 shows how respondent demographics compared to the state overall. Nevertheless, WAFOOD data enable an important examination of economic and food needs among WA residents.

This research brief presents repeated **cross-sectional data** from respondents of WAFOOD Waves 1-4, respectively, with data from the full sample of respondents in each wave. Table 1 shows the demographic characteristics of Wave 1-4 participants alongside the demographic characteristics of WA overall. Though some respondents participated in multiple survey waves, the samples were not identical across waves. In other words, each WAFOOD survey wave included a different pool of respondents. Because the majority of respondents in each wave were new, this brief does not draw conclusions about changes over time. For longitudinal data on the participants who completed multiple survey waves, see [Research Brief 15](#).

## Recommendations for Future Research

The four waves of the Washington State Food Security Survey (WAFOOD) conducted between June 2020 and January 2023 have been instrumental in identifying trends in the health, economic well-being, and food needs of Washington households during the COVID-19 pandemic. Though the federal public health emergency declaration ended in May 2023, COVID-19 continues to have global impacts, and the financial repercussions of the pandemic are unlikely to be short-lived.

Existing national food security monitoring does not provide the resolution or breadth of data needed to identify trends, disparities, and actionable strategies for state and local stakeholders, particularly as pandemic funding related to food security ends. **To support the needs of Washington households we recommend continued and expanded WAFOOD efforts to advance the following goals:**

1. By continuing to monitor food security, economic needs, and well-being among Washingtonians, we can **track evolving food and assistance needs**, especially following the end of federal pandemic boosts to food assistance in March 2023.
2. By collecting additional WAFOOD data that oversample lower-income households, we can **pick up on important trends among households that are disproportionately vulnerable to continued economic impacts** and identify strategies for assistance and support.
3. By gathering additional WAFOOD data from a demographically representative sample, we can **provide estimates of the prevalence of food insecurity** that better reflect the state's whole population. The addition of alternative survey formats (such as telephone) would help reach more of the state's population.
4. By obtaining additional qualitative data, we can **contextualize survey data with people's stories and experiences**. What critical information is easily missed by survey questions but essential to our understanding of how to better support Washington families?
5. By conducting deeper analyses of existing WAFOOD data—for example, to assess geographic trends or factors linked with transitioning out of food insecurity—we can **better understand the nuances of food insecurity within Washington**.
6. By implementing analyses that link WAFOOD data to external data sources, such as food bank inventory or food assistance enrollment, we can **better understand how food insecurity is linked to other indicators**.



## Technical Notes

- a. In Wave 1, participants were asked to report both their current and their pre-pandemic experiences ("Before COVID-19"), where pre-pandemic was defined as any time before March 15, 2020.
- b. In this brief, food security is always presented in aggregate and refers to *high food security* and *marginal food security*. Food insecurity, where presented in aggregate, is the sum of *low food security* and *very low food security*. The USDA food security scale categories, based on the USDA 18-item food security scale, are:
  - 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.
- c. USDA findings on food price increases in 2022 and 2023 can be found here: <https://www.ers.usda.gov/data-products/food-price-outlook/summary-findings/>.
- d. Depression and anxiety were measured using the Patient Health Questionnaire-4 (PHQ-4) subscales.

## Acknowledgements

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## Abbreviations

SNAP = Supplemental Nutrition Assistance Program  
 USDA = United States Department of Agriculture  
 WA = Washington State  
 WAFOOD = Washington State Food Security Survey  
 WIC = Special Supplemental Nutrition Program for Women, Infants, and Children

## Further Information

For more information and prior WAFOOD briefs:

- The WAFOOD project page <https://nutr.uw.edu/cphn/wafood/>
- The Washington State Food System Assessment [https://nutr.uw.edu/cphn\\_project/washington-state-food-systems-assessment/](https://nutr.uw.edu/cphn_project/washington-state-food-systems-assessment/)

## About the WAFOOD Team

The WAFOOD survey is a joint effort between the University of Washington (UW) and Washington State University (WSU). The WAFOOD4 team comprises **Jennifer J. Otten**, Associate Professor, Nutritional Sciences Program (NSP) and DEOHS at the UW School of Public Health (SPH); **Marie L. Spiker**, Assistant Professor, NSP, Epidemiology, and DEOHS at UWSPH; **Jane Dai**, PhD Student, Health Systems and Population Health at UWSPH; **Ashley S. Tseng**, PhD Candidate, Epidemiology at UWSPH; **James H. Buszkiewicz**, Research Investigator, Epidemiology at University of Michigan SPH; **Shawna Beese**, Assistant Professor of Rural Health Promotion at WSU Health Sciences; **Sarah M. Collier**, Assistant Professor, NSP and DEOHS at UWSPH; and **Alan Ismach**, Research Coordinator, DEOHS at UWSPH.

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