Food Insecurity Among Veterans

Examining the Discrepancy Between Veteran Food Insecurity and Use of the Supplemental Nutrition Assistance Program (SNAP)
About This Report

Food insecurity—limited or uncertain access to adequate food—is a critical social, economic, and health challenge. Veterans in the United States sometimes face unique hardships related to their service, and numerous studies have found that veterans who are not married or partnered, who are low-income, or who are experiencing housing instability are at an increased risk of food insecurity. Recent research on working-age veterans (ages 18–64) has found that approximately 11 percent live in food-insecure households.

Compared with similar nonveterans, veterans who are food insecure have consistently lower enrollment and uptake of the Supplemental Nutrition Assistance Program (SNAP), the largest of the federal nutrition assistance programs. Low enrollment by food-insecure veterans could be the result of not meeting nutrition assistance eligibility requirements, perceived lack of eligibility, social stigma associated with SNAP participation, or negative messaging around nutrition assistance. There is a critical gap in the research on veterans’ need for food and nutrition resources, rates of nutrition assistance program participation, and barriers to participation.

This report examines food-insecure veterans and their use of nutrition assistance programs, including what factors are associated with their likelihood to enroll in nutrition assistance programs and what policy changes could help eligible veterans get the support they need.

RAND Epstein Family Veterans Policy Research Institute

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Summary

Food insecurity is a symptom of a complex set of social, economic, and health risk factors that tend to be common among veterans. For example, veterans are overrepresented among homeless and formerly homeless populations, and a disproportionate share of veterans have a mental health condition, including post-traumatic stress disorder and substance misuse, compared with their nonveteran peers. Veterans are also more likely to have a functional disability and reduced workforce participation. All these factors increase veterans’ risk of food insecurity.

Compared with similar nonveterans, veterans who are food insecure are consistently less likely to be enrolled in Supplemental Nutrition Assistance Program (SNAP). Formerly known as food stamps, SNAP is intended to help low-income households offset the cost of food purchases to maintain an adequate diet and is the largest federal nutrition assistance program. Research has long shown that low-income veterans are significantly less likely than low-income nonveterans to live in households that receive SNAP benefits. Low SNAP enrollment by food-insecure veterans could be the result of, for example, not meeting nutrition assistance eligibility requirements, perceived ineligibility, social stigma associated with SNAP participation, or negative messaging around nutrition assistance. Importantly, SNAP eligibility criteria consider disability benefits to be part of a veteran's income, so this could be another barrier to enrollment.

We sought to add to the evidence base on food-insecure veterans who do and do not enroll in SNAP, along with the factors associated with food-insecure veterans’ use of nutrition assistance programs. We also examined differences between food-insecure veterans’ and nonveterans’ reasons for starting and ending—or losing—SNAP benefits, along with patterns in these groups’ use of other safety-net programs.

The findings in this report address gaps in understanding when it comes to veterans’ need for food and nutrition resources, their rates of nutrition assistance program participation, and barriers to participation. Specifically, we explored the characteristics of food-insecure veterans who enroll in SNAP and their reasons for enrolling, ending their participation, or losing their benefits. In the process, we identified differences in the use of other safety-net programs, providing a clearer picture of the extent to which these other sources of support may be associated with differences between veterans’ and nonveterans’ levels of SNAP participation and degrees of food insecurity. Finally, given that SNAP is administered at the state level, we analyzed state SNAP policies to identify those that were associated with higher and lower SNAP enrollment among food-insecure veterans, highlighting potential facilitators and barriers to veterans’ SNAP eligibility, ability to continue receiving SNAP benefits, and long-term food security.

Characteristics of Food-Insecure Veterans and Factors Associated with SNAP Enrollment

Our analyses indicated that 7.5 percent of all veterans were food insecure, representing nearly 1.4 million veterans, yet just 4.9 percent lived in a household that received SNAP benefits. Both food insecurity and SNAP participation were higher among nonveterans, with 10.4 percent reporting food insecurity and 8.6 percent living in a household that participated in SNAP. Approximately 31 percent of food-insecure veterans and 38 percent of food-insecure nonveterans lived in households that received SNAP benefits.

When it came to reasons for SNAP enrollment, food-insecure veterans were more likely than food-insecure nonveterans to report enrolling in SNAP because of a new disability or inability to work or because they experienced a job loss or wage reduction. When veterans ended their SNAP participation or lost their benefits,
the most common reason was an increase in income, although there was not a significant difference in the frequency with which veterans and nonveterans reported this reason.

We also examined which subgroups of food-insecure veterans were least likely to participate in SNAP, identifying veterans who may be falling through the cracks in SNAP access and highlighting opportunities to better support veterans who are most likely to have unmet needs:

- SNAP participation was lower among food-insecure veterans who were not in the labor force due to a mental or physical illness (disability). We estimated their probability of being enrolled in SNAP as just 44 percent, compared with 54 percent for their similarly disabled nonveteran peers. Among food-insecure veterans who received disability benefits, those in non-SNAP households were more likely to report a more severe disability, with a rating of 70 percent or higher.
- There was a similar pattern for food-insecure veterans and nonveterans age 70 and older: a 29-percent versus 39-percent estimated probability of being enrolled in SNAP.
- Living in a state with few state-level policies that facilitated SNAP enrollment was also associated with lower SNAP enrollment, particularly for veterans. Food-insecure veterans in states with none or only one of these policies had a 27-percent estimated probability of being enrolled in SNAP.

Review of State-Level SNAP Policies and Opportunities to Improve Support for Food-Insecure Veterans

We used U.S. Census Bureau Current Population Survey Food Security Supplement data to identify the following state-level SNAP enrollment policies that were associated with greater SNAP participation among food-insecure veterans:

1. broad-based categorical eligibility, when a state uses eligibility for other assistance programs to determine SNAP eligibility (either automatically making a recipient eligible for SNAP or disqualifying an applicant from SNAP due to enrollment in another program)
2. combined application program, when a state allows potential SNAP enrollees to apply for Social Security Income benefits and SNAP with the same application
3. statewide or local call centers that serve as the primary means for SNAP enrollees to interface with their case workers.

Potential Policy and Research Directions

There are many opportunities to improve support for food-insecure veterans and prevent at-risk groups of veterans from falling through the cracks when it comes to safety-net programs, including SNAP. The following recommendations are intended to guide state and federal policymakers in revising or implementing SNAP policies in ways that improve support for food-insecure veterans:

- Reduce administrative enrollment and potential eligibility barriers (e.g., income limits) to SNAP participation for food-insecure veterans, with a particular focus on older veterans and those who are not be in the labor force because of a disability.
- Increase food-insecurity screening of disabled and older veterans in clinical settings, such as at a U.S. Department of Veterans Affairs (VA) facility, with an emphasis on these veterans’ eligibility for SNAP
and other nutrition assistance programs. More-routine screenings could help VA and case workers better identify at-risk veterans and provide the necessary education on eligibility.

- Encourage state SNAP agencies to adopt more policies that are associated with increased SNAP participation, and determine whether food-insecure veterans’ participation in VA benefit programs is rendering them ineligible for SNAP despite a persistent need for nutrition assistance.

The following recommendations are intended to guide further research into the needs of food-insecure veterans and patterns in their use or nonuse of safety-net programs:

- Commission studies to track, analyze, and report on efforts that are successful in improving veterans’ food access.
- Explore potential partnerships between government organizations that could improve veterans’ food security and prevent veterans from falling through the cracks when it comes to SNAP participation. Veterans who do not receive care through VA do not receive routine screenings. There are opportunities for better coordination among, for example, state SNAP agencies, the U.S. Department of Agriculture (USDA), the U.S. Department of Defense, and VA to identify and support food-insecure veterans.
- Conduct more research into the potential reasons for lower SNAP enrollment by food-insecure veterans to help pinpoint whether eligibility, enrollment, or other barriers are driving these gaps. The findings could guide outreach efforts, including messaging that resonates with food-insecure veterans.
- Finally, VA routinely screens veterans for food insecurity and coordinates with USDA to improve access to food for those who screen positive. A 2022 U.S. Government Accountability Office report recommended monitoring and evaluating the effectiveness of this partnership. Tracking its effectiveness over the long term would greatly enhance understanding of interventions that facilitate food-insecure veterans’ access to critical sources of support.
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CHAPTER 1

Background and Approach

Food security, as described by the U.S. Department of Agriculture (USDA), is “access by all people at all times to enough food for an active, healthy life” (USDA, 2022b). Food insecurity occurs when people have limited or uncertain access to enough food because they lack economic resources. Food security is minimally defined as follows:

- the ready availability of nutritionally adequate and safe foods—that is, without resorting to emergency food supplies, scavenging, stealing, or other coping strategies
- assured ability to acquire acceptable foods in socially acceptable ways.

Food insecurity is associated with poorly controlled hypertension, diabetes, HIV disease, and asthma, as well as a reduced ability to perform activities of daily living, poorer mental health, and increased suicide risk (Kamdar et al., 2021).

In 2021, about 34 million Americans—or one out of every ten—were food insecure or lacking consistent access to enough food for an active, healthy life (Coleman-Jensen et al., 2022). An estimated 8.2 percent of veterans live below the federal poverty level.1 Poverty among veterans has profound implications for their food security and health: An analysis of data collected between 2015 and 2019 found that 11.1 percent of veterans between the ages of 18 and 64 (i.e., working-age veterans) lived in food-insecure households, and 5.3 percent lived in households with very low food security (Rabbitt and Smith, 2021). The analysis further showed that, after adjusting for a range of characteristics, veteran status was associated with a 7.4-percent increased likelihood of living in a household with food insecurity (low or very low food security) and a 9.2-percent increased likelihood of living in a household with very low food security.2 In households with very low food security, one or more members’ food intake is reduced or disrupted because of insufficient money or other resources.

Risk Factors for Food Insecurity Among U.S. Veterans

Estimates of food insecurity among veterans have ranged from 6.4 percent to 22.5 percent across subgroups, with the highest rates (33.6 percent) among disabled working-age veterans (Pooler et al., 2021; Rabbitt and Smith, 2021). Being food insecure is a part of a complex web that includes social, economic, and health causes and consequences, but many factors that create a higher risk of food insecurity in the nonveteran population are more prevalent in the veteran population. For example, veterans who are homeless or formerly homeless...

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1 Estimates of the total number of veterans and the number of veterans living in poverty vary. The U.S. Census Bureau, U.S. Department of Veterans Affairs (VA), and others have put forward higher or lower numbers, depending on the data source.

2 Low food security and very low food security refer to standard USDA classifications. See Table A.2 in Appendix A for a list of food security levels and their definitions.
and those with a mental health condition, including posttraumatic stress disorder or substance misuse, may face an increased risk of functional disability, reduced workforce participation, and, ultimately, food insecurity (O’Toole, Roberts, and Johnson, 2017). A growing body of research has shed light on the relationship between food insecurity and risk factors for poor mental health and suicide among military personnel (Beymer et al., 2021; O’Toole, 2020). In addition, Beymer et al. (2021) found that service members’ risk of food insecurity was associated with poorer mental health, and service members with a mental health condition were more likely to report that they intended to leave active-duty service. Other research has showed that veterans living with food insecurity had a nearly fourfold increased risk of suicidal ideation (Kamdar et al., 2021). Addressing veteran food insecurity should therefore be part of a comprehensive approach to addressing veterans’ health and well-being and should be a component of public health outreach strategies to improve outcomes for all veterans.

Veterans’ Use of the Supplemental Nutrition Assistance Program

The Supplemental Nutrition Assistance Program (or SNAP, formerly known as food stamps) is the largest federal nutrition assistance program. It provides supplemental monthly funds to eligible low-income individuals and families via an electronic benefits transfer (EBT) card. The purpose of SNAP is to help low-income families, the elderly, and people with disabilities offset the cost of an adequate diet and avoid further hardship (Center on Budget and Policy Priorities, 2022). SNAP participation has been found to reduce food insecurity by up to 30 percent—and even more for some subpopulations (Carlson and Keith-Jennings, 2018). SNAP recipients can use the EBT card for food purchases at grocery stores and supermarkets, which electronically subtract purchases from the recipient’s SNAP account up to the amount that the program has deposited into the account. Almost every state has an online SNAP application, and applicants must show proof of identity, residency, and eligibility, including immigration status, household composition, income and resources, and deductible expenses. Before the benefit period ends, a household can apply for recertification, a process that is similar to the initial application. The benefit period depends on the household but can range from one month to three years.

Between 2011 and 2017, 27 percent of low-income veterans lived in households that received SNAP benefits, while that figure was almost 38 percent among all low-income adults (Pooler et al., 2021). It is unclear why there is such a large discrepancy in SNAP enrollment between low-income veterans and low-income adults overall and why more veterans who could benefit from the program are not enrolled. However, reasons may include ineligibility, the social stigma associated with SNAP participation, or a prior negative experience after being deemed ineligible while serving because military housing assistance was considered income (Heflin, 2021a, 2021b). It is also important to note that SNAP eligibility criteria do not exclude disability benefits from a veteran’s income calculation (USDA, 2021). Examining participation patterns in other safety-net programs could provide insight into differences between veterans and nonveterans and those enrolled (or not enrolled) in SNAP. Overall SNAP participation varies by state (Geller et al., 2019), so state-level factors (e.g., variations in SNAP enrollment policies) could also account for why food-insecure veterans do or do not participate in the program.

We analyzed the proportion of food-insecure veterans and nonveterans enrolled in SNAP. Figure 1.1 shows that between 2011 and 2020, food-insecure veterans, or those veterans with low or very low food security, were consistently less likely to be enrolled in SNAP than food-insecure nonveterans.
Study Objectives

This report aims to fill gaps in the current knowledge base by exploring the factors associated with food-insecure veterans’ use of nutrition assistance programs, including SNAP. In addition, we examined the characteristics of food-insecure veterans who enroll in SNAP and their reasons for enrolling in the program, ending their participation, or losing their benefits. In the process, we identified differences in the use of other safety-net programs to provide a clearer picture of the extent of veterans’ participation and, potentially, whether these other sources of support are associated with differences in veterans’ and nonveterans’ levels of SNAP participation and degree of food insecurity.

Our research was guided by five primary questions:

1. What are the characteristics of food-insecure veterans and nonveterans and their SNAP participation?
2. What factors are associated with food-insecure veterans’ and nonveterans’ use of SNAP?
3. What are food-insecure veterans’ reasons for enrolling in SNAP, ending their participation, or losing their benefits, and do these reasons differ for food-insecure nonveterans?
4. Are there differences in the benefits that food-insecure veterans in SNAP- and non–SNAP-enrolled households receive, including through the Special Supplemental Program for Women, Infants, and Children (WIC); VA; and non-SNAP nutrition assistance programs?
5. What factors are associated with the duration of food-insecure veterans’ SNAP participation, and what are veterans’ long-term food-security outcomes after SNAP benefits end?

The answers to these questions can guide policy responses to address disparities in veterans’ use of SNAP and other nutrition assistance programs compared with their nonveteran counterparts and help ensure that food-insecure veterans receive the assistance they need and for which they are eligible. Our analyses also
shed light on which subgroups of food-insecure veterans were least likely to participate in SNAP, highlighting opportunities to prioritize policy changes to better support veterans who are most likely to have unmet needs.

**Methods**

We used three data sources to answer our research questions. First, to characterize food-insecure veterans and nonveterans and their SNAP participation, we used data from five years of the CPS-FSS, a nationally representative survey providing estimates of food insecurity in the 12 months prior to each survey administration. CPS-FSS provides extensive data on the sociodemographic characteristics of participants, including veteran status, as well as measures of food insecurity and use of federal nutrition assistance (including SNAP). We pooled data from 2015 to 2020 to increase our sample sizes of food-insecure veterans. We looked at descriptive statistics and then constructed covariate-adjusted regression models to examine associations between individual-level characteristics and enrollment in SNAP among food-insecure veterans and nonveterans. We were especially interested in variations in veterans’ SNAP participation by state, but even with pooled data, we did not have adequate sample sizes of food-insecure veterans to perform this analysis.

Instead, to identify factors associated with food-insecure veterans’ and nonveterans’ use of SNAP—including state-level SNAP enrollment policies—we supplemented our CPS-FSS analyses with data from the SNAP Policy Database. The SNAP Policy Database collects information on state-level SNAP enrollment policies, including eligibility criteria and recertification and reporting requirements (USDA, 2022a). We categorized states’ SNAP enrollment policies in 2015 and 2016 to identify those that were associated with food-insecure veterans’ enrollment in SNAP. We then categorized states according to the number of policies they had (none, one, two, or three). Using regression analysis controlling for confounders (i.e., adjusted), we examined food-insecure veterans’ and nonveterans’ SNAP participation in relation to both their individual-level characteristics (e.g., race/ethnicity, age, disability/not in labor force due to mental or physical illness) and state SNAP enrollment policies. We further examined variations in SNAP enrollment across subgroups of veterans and nonveterans. We weighted the CPS-FSS statistics using person-weights calculated by the U.S. Census Bureau to determine how many people were in each household that responded to the survey. We applied these weights to all adjusted analyses to ensure that the results were nationally representative.

Next, to explore food-insecure veterans’ reasons for enrolling in SNAP, ending their participation, or losing their benefits and whether these reasons differ for food-insecure nonveterans, we used pooled data from the Survey of Income and Program Participation (SIPP). SIPP is a nationally representative longitudinal survey that provides detailed data on income, employment, household composition, food insecurity, and participation in federal nutrition assistance and means-tested programs (U.S. Census Bureau, 2023). To increase our sample size of food-insecure veterans, we used monthly data collected for 2013 and 2019. We used descriptive statistics to report reasons that food-insecure veterans and nonveterans enrolled in SNAP and why their SNAP benefits ended.

To provide a clearer picture of differences in the benefits that food-insecure veterans in SNAP- and non–SNAP-enrolled households receive, we examined participation in multiple safety-net programs by food-insecure veterans in SNAP- and non–SNAP-enrolled households. (See Appendix A for details.) We used pooled cross-sectional SIPP data that included details on respondents’ program participation. All descriptive analyses were weighted using person-weights calculated by the U.S. Census Bureau and included in the SIPP data.
To examine factors associated with the amount of time food-insecure veterans participate in SNAP, we used our pooled SIPP data and estimated a negative binomial regression model tracking months of SNAP participation.

We weighted all SIPP-based analyses with person-level weights and estimated standard errors using replicate weights calculated by the U.S. Census Bureau. Appendix A provides a detailed descriptions of our data sources, the measures used in our analyses, our analytic models, and weights. Appendix B presents the full results of our statistical analyses, which are summarized in the next chapter.
CHAPTER 2

Analytic Findings

What Are the Characteristics of Food-Insecure Veterans and Nonveterans Who Participate in SNAP?

Rates of Food Insecurity and SNAP Participation Among Veterans and Nonveterans

Table 2.1 presents data on the prevalence of food insecurity among veterans and nonveterans in the pooled CPS-FSS data from 2015 to 2020, along with SNAP participation overall and among those who were food insecure. We see that 7.5 percent of veterans were food insecure, representing nearly 1.4 million veterans. Across all veterans, 4.9 percent (just under 900,000) were in a household that received SNAP benefits in the previous 12 months. Both food insecurity and SNAP participation were higher among nonveterans, with 10.4 percent reporting food insecurity and 8.6 percent living in a household that participated in SNAP. Approximately 31 percent of food-insecure veterans and 38 percent of food-insecure nonveterans lived in households that received SNAP benefits.

Demographics, Labor Force Participation, and Earnings of Food-Insecure Veterans and Nonveterans

We looked at descriptive characteristics of food-insecure veterans and nonveterans using pooled 2015–2020 CPS-FSS data and observed relatively higher proportions of food insecurity among those who were not in the labor force due to a mental or physical disability, as well as female-headed households and households with a family income less than 185 percent of the federal poverty level (Table 2.2). Veterans’ food insecurity burden was generally lower than that of nonveterans, with two exceptions: food insecurity was higher among veterans who were not in the labor force for a reason not covered by retirement or disability (15.5 percent) compared

<table>
<thead>
<tr>
<th>Food Insecurity and SNAP Participation</th>
<th>Veterans $(N = 18,311,888)$</th>
<th>Nonveterans $(N = 228,214,582)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food insecure</td>
<td>7.5% (7.1%–7.8%)</td>
<td>10.4% (10.2%–10.6%)</td>
</tr>
<tr>
<td>Household participated in SNAP in past 12 months</td>
<td>4.9% (4.6%–5.2%)</td>
<td>8.6% (8.4%–8.8%)</td>
</tr>
<tr>
<td>Food insecure and household participated in SNAP in past 12 months</td>
<td>31.0% (28.6%–33.4%)</td>
<td>38.2% (37.2%–39.1%)</td>
</tr>
</tbody>
</table>


NOTE: Veterans and nonveterans refer to individuals and not households. All differences between veterans and nonveterans are statistically significant at the < 0.01 level. Overall N represents the estimated population size after weighting the CPS-FSS. Percentages are weighted by column, and the columns reflect individual rather than household status. Figures in parentheses are the range of estimates across years. Food insecure was defined as three or more affirmative responses out of ten questions about food insecurity. A full list of these questions can be found in Appendix A.
## TABLE 2.2
### Food Insecurity Rates, by Veteran Status and Demographic Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% Who Were Food Insecure</th>
<th>Overall (N = 246,526,470)</th>
<th>Veterans (N = 18,311,888)</th>
<th>Nonveterans (N = 228,214,582)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td></td>
<td>10.2</td>
<td>7.5</td>
<td>10.4</td>
<td>&lt; 0.0001</td>
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<tr>
<td>Age (years)</td>
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<td></td>
<td></td>
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<td>12.6</td>
<td>13.2</td>
<td>12.6</td>
<td>0.6000</td>
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<tr>
<td>30–39</td>
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<td>10.8</td>
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<td>50–59</td>
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<td>5.7</td>
<td>3.5</td>
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<td>Employment status</td>
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<td>Unemployed</td>
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<td>Not in labor force, retired</td>
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<td>5.9</td>
<td>4.4</td>
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<td>Not in labor force, disabled</td>
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<td>32.4</td>
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<td>Not in labor force, other</td>
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<td>9.5</td>
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<td>12.4</td>
<td>22.1</td>
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<td>3.4</td>
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<td>8.6</td>
<td>11.3</td>
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with their nonveteran peers (12.9 percent). Food insecurity was also higher among veterans who self-reported their race/ethnicity as other, non-Hispanic (10.3 percent, versus 8.4 percent of similar nonveterans).

**What Factors Are Associated with Food-Insecure Veterans’ and Nonveterans’ Use of SNAP?**

To determine what factors might be associated with food-insecure veterans’ lower use of SNAP compared with food-insecure nonveterans, we first looked at descriptive characteristics of food-insecure veterans and nonveterans in the CPS-FSS data pooled over the years 2015–2020. We observed consistently higher SNAP enrollment among food-insecure nonveterans across nearly all characteristics (e.g., age, race/ethnicity, gender, disability), even among those with incomes less than 185 percent of the federal poverty level (see Table B.1 in Appendix B).

We explored this same question using SIPP data, looking descriptively at differences in SNAP enrollment among food-insecure veterans. The SIPP data allowed us to look at additional characteristics, including participation in such safety-net programs as means-tested transfer income and social insurance income (see Table B.2 in Appendix B). We observed that veterans in non-SNAP households were more likely to be married (48.9 percent versus 28.5 percent for food-insecure veterans in households that were enrolled in SNAP) and less likely to live alone (32.7 percent versus 43.1 percent). In weighted descriptive statistics, about half of food-insecure veterans in non-SNAP households reported receiving disability benefits, compared with less than a third of those in SNAP households. Among food-insecure veterans who received disability benefits, those in non-SNAP households were also more likely to report a disability rating of 70 percent or

---

**Table 2.2—Continued**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% Who Were Food Insecure</th>
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<tr>
<td></td>
<td>Overall (N = 246,526,470)</td>
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<tr>
<td>Annual family income</td>
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<tr>
<td>Less than $30,000</td>
<td>23.8</td>
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<tr>
<td>$30,000–$59,000</td>
<td>12.0</td>
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<td>$60,000+</td>
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<td>Used a food pantry in past 30 days</td>
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<td>Census region</td>
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<tr>
<td>Northeast</td>
<td>8.9</td>
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<td>Midwest</td>
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<td>South</td>
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<td>9.9</td>
</tr>
<tr>
<td>Non-metropolitan</td>
<td>11.9</td>
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</tbody>
</table>

**Source:** Pooled 2015–2020 CPS-FSS data.

**Note:** Veterans and nonveterans refer to individuals and not households. P-values are from a chi-square test of whether there is a statistically significant difference between the percentage of food insecurity between veterans and nonveterans. Percentages are weighted by column, and the columns reflect individual rather than household status. All values are weighted. Food insecure was defined as three or more affirmative responses out of ten questions about food insecurity. A full list of these questions can be found in Appendix A.
higher (only respondents who report receiving disability insurance are asked to report their disability rating). Food-insecure veterans in non-SNAP households had higher household incomes and were more likely to have household incomes over 200 percent of the federal poverty line (62 percent of non-SNAP households versus 20.2 percent of SNAP households). These veterans were more likely to report “other” monthly income, such as retirement, disability benefits, or child support (28 percent versus 17.5 percent) and less likely to report any means-tested transfer income (4.9 percent versus 20.7 percent). Food-insecure veterans who were not in SNAP households were also more likely to report receiving higher sums from social insurance programs, with 27.3 percent receiving more than $1,500 per month compared with 9.0 percent of those in SNAP households.

Relevant State-Level SNAP Enrollment Policies
To identify which state-level SNAP enrollment policies to include in our analyses, we first examined correlations (Pearson’s) between states’ policies and SNAP participation among food-insecure veterans in the CPS-FSS. These policies are described in detail in Table A.1 in Appendix A. There were five state-level policies designed to facilitate SNAP enrollment that were positively correlated with food-insecure veterans’ SNAP participation: broad-based categorical eligibility, face-to-face waiver, outreach, combined application program, and call centers to facilitate communication with clients (see Table B.3 in Appendix B). Vehicle exclusions and the availability of an online application were not correlated with food-insecure veterans’ SNAP participation.

We then performed logistic regression analyses to determine which state-level policies were significantly associated with food-insecure veterans’ SNAP participation after controlling for confounders. (See Appendix A for details.) Adjusting for age, lack of labor force participation due to a mental or physical illness (disability), sex, race/ethnicity, education, household structure, income, and region of the United States, we found that three of the five state-level policies designed to facilitate enrollment remained statistically significantly associated with food-insecure veterans’ SNAP participation. We retained these three policies in later models: broad-based categorical eligibility, combined application program, and call centers. We caution that states that adopt broad-based categorical eligibility also tend to adopt the combined application program and call center policies, so it is difficult to separate the effects of these policies.

Differences in SNAP Access and Enrollment and the Implications for Subgroups of Food-Insecure Veterans—Those Who Are Disabled, Older, or Living in a State with Stricter SNAP Eligibility
We examined SNAP enrollment among food-insecure veterans and nonveterans, adjusting for state-level policies and individual-level characteristics. To identify which subgroups might be less likely to participate in SNAP, we also examined subgroup interactions.

Adjusting for age, lack of labor force participation due to a mental or physical illness (disability), sex, race/ethnicity, education, household structure, income, region of the United States, and state-level policies designed to facilitate enrollment, Figure 2.1 shows that food-insecure veterans who were 70 and older were significantly less likely to enroll in SNAP than their nonveteran counterparts. (See Table B.4 in Appendix B for full results.)

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1 We calculated individual means-tested transfer income as the sum of monthly income received from means-tested transfer programs, including Supplemental Security Income (SSI), Temporary Assistance for Needy Families (TANF), General Assistance (GA), and veterans’ pensions.
Analytic Findings

FIGURE 2.1
Adjusted Probability of SNAP Enrollment, by Age and Veteran Status, Among Food-Insecure Veterans and Nonveterans

NOTE: Veterans and nonveterans refer to individuals and not households. The figure shows results from our adjusted model of interactions between age group and veteran status indicating that food-insecure veterans 70 or older are significantly less likely to enroll in SNAP (predicted probability = 0.29; confidence interval [CI] = [0.23,0.35]) compared with food-insecure nonveterans 70 and older (predicted probability = 0.39; CI = [0.37,0.41]). Bands represent 95-percent confidence intervals. Food insecure was defined as three or more affirmative responses out of ten questions about food insecurity. Full model results can be found in Table B.4.

In the adjusted model, we also examined interactions by disability and veteran status among those who were food insecure. These models showed that food-insecure veterans who were unable to work because of a physical or mental illness were significantly less likely to enroll in SNAP than similarly disabled food-insecure nonveterans, as shown in Figure 2.2.

Finally, we also identified a significant interaction between veteran status and state-level SNAP enrollment policies. Adjusted models showed that food-insecure veterans living in states with either no or just one SNAP enrollment policy were significantly less likely to enroll in SNAP than their food-insecure nonveteran counterparts, as shown in Figure 2.3. In 2015 and 2016, two states (Kansas and Wyoming) had none of the three policies, and 13 states had just one of the policies.

What Are Veterans’ Reasons for Starting, Ending, or Losing SNAP Benefits?

To explore whether food-insecure veterans’ reasons for starting and ending—or losing—SNAP benefits differed from food-insecure nonveterans’ reasons, we used pooled cross-sectional SIPP data. The SIPP included questions about respondents’ reasons for starting and ending SNAP participation. Figure 2.4 shows the distributions of reported primary reasons for SNAP uptake among food-insecure veterans and nonveterans. We found that, compared with food-insecure nonveterans, food-insecure veterans were more likely to report enrolling in SNAP because of a new disability or inability to work or because they experienced a job loss or wage reduction (p < 0.05). And, compared with nonveterans, they were less likely to report
enrolling in SNAP because of a pregnancy or new dependent child or after becoming separated, divorced, or widowed ($p < 0.01$). Food-insecure veterans were also marginally less likely to report enrolling in SNAP after just having heard about the program rather than because of a change in eligibility ($p < 0.1$).

Figure 2.5 compares the distributions of food-insecure veterans’ and nonveterans’ reported primary reasons for ending SNAP enrollment. Food-insecure veterans more frequently reported ending or losing their SNAP benefits because of an increase in income, but this difference between food-insecure veterans and nonveterans was not statistically significant. They were, however, less likely than nonveterans to report that the reason for ending SNAP was not due to eligibility but, rather, a choice not to collect benefits or an inability to collect benefits ($p < 0.05$).
Are There Differences in the Benefits That Food-Insecure Veterans in SNAP and Non-SNAP Households Receive?

To determine whether there were differences in the benefits received by food-insecure veterans in SNAP and non-SNAP households, we used pooled cross-sectional monthly SIPP data that included detailed data on respondents’ program participation. Figure 2.6 presents the number of programs in which food-insecure veterans’ households reported participating in a given month, with a focus on the 15 programs included in our analyses: SNAP, TANF, VA benefits (including disability compensation, GI Bill payments to fund education, insurance proceeds, veterans’ pensions, and “other” VA payments), WIC, free or reduced-price school meals, GA, SSI, Social Security Old-Age and Survivors Insurance, Unemployment Insurance (UI), workers’ compensation, rent subsidies, energy assistance, child-care assistance, Medicare, and Medicaid. The figure specifically compares veterans in food-insecure households that received SNAP benefits (“SNAP households”) with veterans in food-insecure households that did not receive SNAP benefits (“non-SNAP households”). Food-insecure veterans in SNAP households participated in more programs than those in non-SNAP households. The distribution of multiple program participation is centered around two programs for food-insecure veterans in non-SNAP households, with 66.5 percent receiving benefits from two or fewer programs. Meanwhile, more than 40 percent of food-insecure veterans in SNAP households participated in five or more of the 15 programs that we included in our analysis, and only 13.1 percent participated in two or fewer programs.

We then examined in greater detail which programs food-insecure veterans participated. Figure 2.7 shows food-insecure veterans’ household participation in programs by whether they participated in SNAP.
**FIGURE 2.4**
Food-Insecure Veterans’ and Nonveterans’ Reasons for Enrolling in SNAP


NOTE: Veterans and nonveterans refer to individuals and not households. The figure presents descriptive analyses showing distributions of food-insecure veterans and nonveterans reported primary reasons for beginning SNAP enrollment. In-group bars may not sum to 100 due to rounding. Food insecure was defined as two or more affirmative responses on a 6-item food security module. Significant differences between veterans and nonveterans are indicated with *** p < 0.01, ** p < 0.05, * p < 0.1.

**FIGURE 2.5**
Food-Insecure Veterans’ and Nonveterans’ Reasons for Ending SNAP Participation or Losing Benefits


NOTE: Veterans and nonveterans refer to individuals and not households. The figure presents descriptive analyses showing distributions of food-insecure veterans’ and nonveterans’ reported primary reasons for ending SNAP enrollment. Food insecure was defined as two or more affirmative responses on a 6-item food security module. Differences between veterans and nonveterans are indicated with ** p < 0.05.
Food-insecure veterans in SNAP households had statistically significant higher participation rates for many programs, including Medicaid, SSI, rent subsidies, energy assistance, and GA. Food-insecure veterans in non-SNAP households received VA benefits at statistically significant higher rates. Note that these veterans also received VA disability compensation at almost twice the rate of food-insecure veterans in SNAP households (23.6 percent versus 13 percent).

What Factors Are Associated with the Duration of Food-Insecure Veterans’ SNAP Participation?

Factors Associated with Duration of SNAP Participation

To examine factors associated with the amount of time food-insecure veterans participated in SNAP, we used pooled data from four SIPP data collection panels and employed a cross-sectional linear regression. Using the SIPP data allowed us to consider VA benefits and other non-SNAP nutrition assistance in our model to examine whether participating in these other programs was associated with differences in the duration of SNAP participation. We used months of SNAP participation over the course of the reference year—rather than
Food Insecurity Among Veterans

binary SNAP participation—as a dependent variable, allowing us to explore trends in participation within a given year. The months of SNAP participation variable was zero-inflated; that is, many food-insecure veterans had no months of SNAP participation, so we used negative binomial regression modeling. Figure 2.8 shows the results of this model for veterans who received VA disability benefits, a veterans’ pension, GI Bill benefits, VA insurance proceeds, or another type of VA benefit. Specifically, the figure shows differences in the number of months of SNAP participation by food-insecure veterans who were enrolled in a given VA benefit program with those who were not enrolled in the program, adjusting for demographic and other characteristics. We used person-weights and replicate weights calculated by the U.S. Census Bureau.

Food-insecure veterans who received VA insurance proceeds (p < 0.01) had fewer months of SNAP participation over the reference year than their counterparts who did not receive this VA benefit. Similarly, food-insecure veterans who reported “other VA benefits” (p < 0.01)—benefits other than those listed—had fewer months of SNAP participation over the year than their counterparts who did not report these other VA benefits. VA disability compensation may also be associated with lower levels of SNAP participation, but this finding was not statistically significant. Full regression results can be found in Table B.5 in Appendix B.

**FIGURE 2.7**
Benefit Program Participation Rates Among Food-Insecure Veterans in SNAP and non-SNAP Households


NOTE: The figure shows monthly program participation rates among food-insecure veterans in SNAP and non-SNAP households. Program participation is measured at the household level. SNAP households are households that receive SNAP benefits. Household program participation means that at least one household member reported receiving program benefits. Results are descriptive and unadjusted. Differences between food-insecure veterans in SNAP households and food-insecure veterans in non-SNAP households are indicated with *** p < 0.01, ** p < 0.05, * p < 0.01.
Conclusions

We sought to provide a clearer picture of the food-insecure veterans and nonveterans who enroll in SNAP and the factors associated with their use of nutrition assistance programs. We also aimed to explore differences between food-insecure veterans’ and nonveterans’ reasons for starting and ending—or losing—SNAP benefits, along with differences in these groups’ use of other safety-net programs.

Food-Insecure Veterans and Nonveterans Differed, as Did Their Use of Nutrition Assistance Programs

Our pooled analysis using CPS-FSS data from 2015 to 2020 showed that approximately 7.5 percent of veterans had limited or uncertain access to enough food because of a lack of economic resources, compared with 10.4 percent of nonveterans. However, among those who were food insecure, 31 percent of veterans and 38.2 percent of nonveterans participated in SNAP. When looking at food-insecure veterans and nonveterans, we observed lower rates of SNAP enrollment across a range of individual-level characteristics.

Our pooled analysis using SIPP data from 2014, 2018, 2019, and 2020 found that about a quarter of food-insecure veterans in non-SNAP households reported receiving disability benefits, compared with less than one in seven of those in SNAP households. Among food-insecure veterans who received disability benefits, those in non-SNAP households were more likely to report a disability rating of 70 percent or higher.
Some Groups of Food-Insecure Veterans Are Falling Through the Cracks in SNAP Access

Adjusted analyses of CPS-FSS models illustrated three important subgroup interactions for food-insecure veterans compared with their food-insecure nonveteran counterparts. Food-insecure veterans who were not in the labor force due to a mental or physical illness (disability) had a lower predicted probability of participating in SNAP—45 percent versus 54 percent of similarly disabled food-insecure nonveterans.

Food-insecure veterans who were 70 and older were significantly less likely to enroll in SNAP than their food-insecure nonveteran counterparts. These veterans had a 29-percent probability of being enrolled in SNAP. In contrast, food-insecure nonveterans who were 70 and older had an estimated 39-percent probability of being enrolled in SNAP.

Food-insecure veterans who lived in a state with one or none of the policies associated with higher SNAP enrollment in our analysis were significantly less likely to participate in SNAP than their food-insecure nonveteran counterparts (27 percent versus 34 percent). We used the SNAP Policy Database to categorize states’ SNAP enrollment policies in 2015 and 2016. At that time, two states (Kansas and Wyoming) had none of the three policies, and 13 states had just one of the policies.

VA Benefits Might Affect Veterans’ SNAP Eligibility

Our adjusted regression analyses using 2014, 2018, 2019, and 2020 SIPP panel data indicated that food-insecure veterans who received VA benefits, including disability and insurance proceeds, had fewer months of SNAP participation during the prior year. Food-insecure veterans also most frequently reported that an increase in income was the reason for ending or losing their SNAP benefits. Given that state SNAP policies typically include VA benefits in income eligibility calculations, it is possible that these benefits pushed veterans’ incomes above the eligibility threshold.

Study Limitations

Although we were unable to examine the effect of VA disability benefits on food-insecure veterans’ eligibility for SNAP, we found evidence that food-insecure veterans who were not enrolled in SNAP were more likely to be receiving VA disability benefits. Future research could leverage the quasi-longitudinal nature of the CPS (two four-months interview periods separated by eight months) to examine the relationship between SNAP and VA disability benefits among food-insecure veterans. Merging the CPS-FSS sample (roughly three-quarters of CPS-participating households) with the CPS Annual and Social Economic Supplement—which collects detailed information about VA benefits received—would allow researchers to identify longitudinal relationships between receiving VA disability benefits and changes in SNAP participation among food-insecure veterans.

The CPS-FSS sample sizes were not large enough for us to examine state-level variation in food-insecure veterans’ SNAP participation. However, associations between SNAP participation and states’ SNAP enrollment policies suggest that there are actionable policy levers that could increase SNAP participation among food-insecure veterans. In addition, CPS and SIPP are limited in the information they collect on veteran status. For example, these surveys do not ask how long veterans served, and it is not clear whether or how this factor and other characteristics of a veterans’ service affect their current level of food security. Appendix A provides more information about how each data source defined veterans and what screening questions were used to identify them. In addition, although they are nationally representative surveys, neither CPS nor SIPP is nationally representative of the veteran population.

Both CPS-FSS and SIPP provide observational data based on respondents’ self-reports, which may be biased. In addition, SNAP participation is underreported in survey data. An analysis comparing CPS and
SIPP data and SNAP administrative data found that the mismatch can be substantial, something that could have biased our results (Giefer, King, and Roth, 2022; Meyer and Mittag, 2017). This underscores the importance of coordination between states and USDA to validate and track SNAP veterans’ participation.

In addition, CPS-FSS and SIPP do not include Puerto Rico, American Samoa, or the Commonwealth of the Northern Mariana Islands, so we were unable to examine the potential impact of the capped block grants that these territories receive for nutrition assistance in lieu of SNAP funding. Finally, our analyses used pooled cross-sectional data, so we could not infer causation.
CHAPTER 3

Implications for Food-Insecure Veterans and Potential Policy and Research Directions

Enhanced VA Support for Food-Insecure Veterans

Since the first briefing to Congress on veteran food insecurity in 2015 and the Veterans Health Administration’s subsequent establishment of the national Ensuring Veteran Food Security Workgroup, there has been increased recognition of the problem of food insecurity among the nation’s veterans. VA routinely screens patients for food insecurity and, through its Office of Health Equity, refers food-insecure veterans for appointments with a registered dietitian or social worker who can help them access a food pantry or other community-based resources or enroll in SNAP or other nutrition assistance programs. Given the association between food insecurity and poorer mental and physical health, including an increased risk of depression, suicidality, diabetes, and heart disease, addressing hunger among veterans has become a priority for VA. While screening at primary care visits and connecting food-insecure veterans with resources is critical, not all food-insecure veterans receive care through VA. Our finding that food-insecure veterans age 70 and older and those not in the labor force as a result of a disability had lower SNAP enrollment suggests that there is a pressing need to focus on these groups.

One challenge in identifying and addressing the needs of food-insecure veterans has been the relatively low rates of veterans who screen positive for food insecurity. In routine food-insecurity screenings during VA appointments, only 1.3 percent of men and 2.0 percent of women met the criteria for food insecurity—well below the 11 percent identified in the CPS-FSS data (Cohen et al., 2022). In the initial years of the screening initiative, the screener asked, “In the past three months, did you ever run out of food and you were not able to access more food or have the money to buy more food?” Response options were “yes” or “no” (Cohen et al., 2020). Those who screened positive for food insecurity were more likely to have medical or trauma-related comorbidities and unmet social needs, and they were more likely to be veterans of color or women (Cohen et al., 2022). The rates of positive screenings aligned with our findings of high food insecurity among veterans who were not in the labor force due to a disability, however.

In 2021, VA expanded the one-question screening to two questions to better capture the scope of food insecurity among its patient population and to connect these veterans with the support and resources they need. The screener now asks veterans how often the following situations apply to them: “Within the past 12 months, you worried whether your food would run out before you got money to buy more,” and “Within the past 12 months, the food you bought just didn’t last and you didn’t have money to get more.” The response options are “often true,” “sometimes true,” or “never true.” These types of questions have been shown to be more sensitive in detecting food insecurity than yes/no questions (Makelarski et al., 2017). In 2021, VA’s Office of Health Equity reported that it had screened approximately 7 million veterans for food insecurity (Boris et al., 2021). However, the rates of food insecurity among this population would not be generalizable to veterans overall because of differences in the samples: Not all veterans are eligible for VA care, and veterans who seek care may have more resources and a greater ability to access a VA facility.
It is unclear how successful the referrals and connections to nutrition assistance programs have been, but a new VA partnership with MAZON could help increase food-insecure veterans’ access to SNAP benefits through screening, education, and outreach. The box below provides an overview of this partnership.

MAZON: A Jewish Response to Hunger is a national nonprofit organization fighting to end hunger among people of all faiths and backgrounds in the United States and Israel.

According to Christine Going of VA’s Office of Nutrition and Food Services, online outreach efforts by VA and USDA have attempted to link veterans to program resources and SNAP information, as well as such organizations as Feeding America (U.S. House of Representatives, 2022). Initiatives have also been proposed to increase coordination between the U.S. Department of Defense and VA at the critical period when veterans transition from military to civilian life. Such a partnership could identify and support the 15 percent of active service members who may be at risk of becoming food insecure as veterans (Asch et al., 2023). For example, knowing a veteran’s household size, income, and estimated cost of living could provide a view into their financial stability. Ongoing collaborative tracking of food insecurity in the veteran population by VA and USDA would also improve the accuracy of estimates of its prevalence going forward. In 2022, the U.S. Government Accountability Office reviewed VA’s food-insecurity screenings and referrals and its coordination with USDA to support veterans’ access to food (U.S. Government Accountability Office, 2022). The report’s recommendations included monitoring and evaluating the effectiveness of the Ensuring Veteran Food Security Workgroup’s activities, referrals, enhanced collaboration, and knowledge sharing across VA facilities.

Early Interventions to Prevent Food Insecurity Among Veterans

There are several possible explanations for why food-insecure veterans participate in SNAP at lower rates than their level of need. If veterans are receiving benefits that disqualify them due to income, they may not be eligible for nutrition assistance despite being food insecure. It is also important to note that even disability benefits are not exempt from these income calculations. In other words, disabled food-insecure veterans’ disability benefits could make them ineligible for SNAP. Our findings suggest that just 45 percent of food-insecure veterans who were not in the labor force due to mental or physical illness were enrolled in SNAP, compared with 54 percent of their nonveteran peers.

Food-insecure veterans may be unaware that they are eligible for SNAP. Alternatively, they might resist participating in programs that appear to undermine their self-reliance; other reasons could include perceived stigma or a sense of altruism (U.S. House of Representatives, 2022; Weiss and Coll, 2011). We identified three SNAP policies that were associated with increased SNAP participation among food-insecure veterans: (1) broad-based categorical eligibility, (2) a combined application program, and (3) call centers. (See Table A.1 in Appendix A for descriptions of all the policies we examined.) Such policies could help overcome food-insecure veterans’ resistance to enrolling in SNAP.

Although veterans are generally more financially stable than their civilian peers (Martorell et al., 2014), the knowledge that serving in the armed forces might not mitigate existing financial hardship could be a major deterrent to recruitment and retention. Increasing SNAP access for veterans is one immediate step toward eliminating food insecurity, but it is difficult to identify all veterans in need through current population surveys and VA screenings. There is also a need for better understanding of how veterans’ experiences as service members, such as their paygrade and years of service, affect their likelihood of becoming food insecure as veterans. Additional outreach or interventions that target potentially at-risk service members during their transition to civilian life and veterans who do not receive care through VA could increase awareness of SNAP for these populations. In addition, interventions to support service members who are marginally food secure—and who are also likely experiencing poor mental health—could reduce intentions to leave active service. Such interventions could also reduce downstream food insecurity among veterans who separated from the military when they were at risk for or already experiencing food insecurity. In addition, adopting
the SNAP policies that we found to be associated with increased SNAP participation could increase food-insecure veterans’ SNAP participation. Multiple concurrent benefits would also follow increased SNAP participation by veterans in need. For example, greater food security could reduce rates of depression and suicide among veterans, and connecting more veterans to SNAP benefits could open more opportunities to provide other wraparound services, such as housing assistance (Kamdar et al., 2021).

Future research could also examine the extent to which SNAP benefits assist with addressing food insecurity. The CPS-FSS includes a question that asks whether one’s food needs could be met by spending more, the same, or less than they reported usually spending on food. This question is then followed by questions that ask how much more or less the respondent would need to spend. These amounts could be compared with self-reported SNAP benefit amounts to determine the adequacy of these benefits for meeting veterans’ food security needs.

Recommendations to Improve Support for Food-Insecure Veterans

The analyses and conclusions in this report highlight several opportunities to improve support for food-insecure veterans and prevent particularly at-risk groups of veterans from falling through the cracks when it comes to safety-net programs, including SNAP. We also highlight opportunities to strengthen future research and improve collaboration to allow earlier detection of veterans who may be at risk of food insecurity.

Recommendations for Policymakers

The following recommendations are intended to guide state and federal policymakers in revising or implementing SNAP policies in ways that improve support for food-insecure veterans. There is a critical need to reduce barriers to SNAP participation for food-insecure veterans, with a particular focus on older veterans and those who are not in the labor force due to a physical or mental illness (disability). Our analyses identified three promising paths:

- Reconsider SNAP eligibility criteria, particularly for veterans who are disabled. Food-insecure veterans in non-SNAP households were more likely than those in SNAP households to report a disability rating of 70 percent or higher.
- Increase food-insecurity screening of disabled and older veterans, with an emphasis on their eligibility for SNAP and other nutrition assistance programs. It is possible that more-routine, targeted screenings
could help VA and case workers better identify at-risk veterans and provide the necessary education on eligibility.

- Encourage states to adopt more policies that increase SNAP participation and reduce barriers to enrollment for both veterans and nonveterans. For example, broad-based categorical eligibility policy may be particularly effective in increasing food-insecure veterans’ SNAP participation because it streamlines SNAP enrollment and increases income eligibility limits. It could also be beneficial for states to determine whether food-insecure veterans’ participation in VA benefit programs is rendering them ineligible for SNAP despite a persistent need for nutrition assistance.

### Directions for Future Research

The following recommendations are intended to guide further research into the needs of food-insecure veterans and patterns in their use or nonuse of safety-net programs:

- Congress should commission studies to track, analyze, and report on efforts that are successful in improving veterans’ food access. For example, the partnership between MAZON and the Veterans Health Administration was established in 2020 to improve veterans’ nutrition and food security, as well as to enhance screening, education, and outreach.

- A related line of inquiry could explore other potential partnerships that could improve veterans’ food security and prevent veterans from falling through the cracks when it comes to SNAP participation, including those who do not receive care through VA and therefore do not receive routine screenings. For example, there is a need for better coordination between state SNAP agencies and USDA to validate and track veterans’ SNAP participation. And efforts have been proposed to increase coordination between the U.S. Department of Defense and VA to identify service members who are potentially at risk of food insecurity as they transition from military to civilian life.

- Our analyses could not definitively determine why food-insecure veterans are less likely than their nonveteran peers to enroll in SNAP, but possible factors include not meeting nutrition assistance eligibility requirements, perceived ineligibility, social stigma associated with SNAP participation, and negative messaging around nutrition assistance. More research into the potential reasons for lower SNAP enrollment by veterans would help guide outreach efforts, including messaging that resonates with food-insecure veterans.

- Finally, VA routinely screens veterans for food insecurity and coordinates with USDA to improve access to food for those who screen positive. In addition to our recommendation to increase screening, a 2022 U.S. Government Accountability Office report recommended monitoring and evaluating the effectiveness of activities, referrals, knowledge sharing across VA, along with other aspects of this partnership. Longitudinal tracking of whether these recommendations have been implemented and whether have they been effective at increasing veterans’ use of nutrition assistance programs would greatly enhance understanding of interventions that facilitate food-insecure veterans’ access to critical sources of support.
APPENDIX A

Data Sources, Measures, and Analytic Methods

Analyses of Current Population Survey Food Security Supplement (CPS-FSS) Data

To characterize food-insecure veterans and nonveterans and their SNAP participation, we used pooled CPS-FSS data from 2015 to 2020 and cross-sectional descriptive statistics to examine food insecurity among veterans and nonveterans and, subsequently, SNAP enrollment among those who indicated that they were food insecure. We applied CPS-FSS weights to all adjusted analyses ensure that the results were nationally representative.

To identify factors that are associated with food-insecure veterans’ and nonveterans’ use of SNAP, we compared the characteristics of food-insecure veterans who were and were not enrolled in SNAP (e.g., state, urbanicity, race/ethnicity, age group, disability status). We were especially interested in geographic variability, since SNAP participation varies by state (Geller et al., 2019); however, pooled annual data at the state level did not provide adequate sample sizes for reliable estimates.

Instead of looking at state-level variability, we added data from the SNAP Policy Database to our CPS-FSS analyses to examine whether states’ SNAP enrollment policies were associated with food-insecure veterans’ SNAP participation. We selected state SNAP enrollment policies in 2015–2016 that we hypothesized would influence veterans’ SNAP participation and for which we had at least one year of data. Table A.1 describes these policies. If states’ policies differed between 2015 and 2016, we used the year in which a policy was in effect. We estimated the pairwise Pearson’s correlations of the policies with food-insecure veterans’ participation for 21 states with at least 50 food-insecure veterans in the CPS-FSS data for 2015–2020.

We identified five policies that were correlated with food-insecure veterans’ SNAP participation (broad-based categorical eligibility; face-to-face waiver; outreach; combined application program; and call centers).

To determine which of these policies were independently associated with veterans’ SNAP participation, adjusting for other factors, we developed individual-level cross-sectional logistic regression models examining food-insecure veterans’ households, where SNAP participation was the dependent variable. Because states’ SNAP enrollment policies were highly correlated with each other, we tested each association between the policy and SNAP participation in separate models. These results indicated that three policies were significantly associated (p < 0.05) with SNAP participation among food-insecure veterans: broad-based categorical eligibility, a combined application program, and call centers.

We created a count variable between 0 and 3 that summed the number of policies that states had implemented. We dichotomized the number of SNAP enrollment policies (0–1 versus 2–3), because the association between a state having one policy and SNAP participation was not statistically different from having no policy. We also modeled the count of policies as continuous. We estimated two separate adjusted logistic regression models for (1) food-insecure veterans and nonveterans and (2) food-insecure veterans. We included covariates in all models. To identify subgroups of food-insecure veterans who may have lower SNAP
Food Insecurity Among Veterans

participation than food-insecure nonveterans, we assessed whether associations differed between veterans and nonveterans by testing interactions with veteran status by age, SNAP enrollment policies, and disability.

Data and Measures

Since 1995, USDA has collected information annually on food access and adequacy, food spending, and sources of nutrition assistance for the U.S. population through a supplement to the U.S. Census Bureau’s nationally representative Current Population Survey, which captures data on approximately 40,000 households annually. The CPS-FSS provides national estimates of food insecurity in the previous 12 months. All households with incomes below 185 percent of the federal poverty threshold are asked questions about their use of federal and community-based nutrition assistance programs. To minimize the burden on respondents, households with incomes above that range are not asked these questions unless they indicate some level of difficulty in meeting their food needs on the first of the preliminary screener questions.

### TABLE A.1
State SNAP Enrollment Policies

<table>
<thead>
<tr>
<th>Policy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broad-based categorical eligibility</td>
<td>The state uses broad-based categorical eligibility (eligibility for other benefit programs) to increase or eliminate the asset test or to increase the gross income limit for virtually all SNAP applicants. (Coding categorically: range = 0, 1, where 0 = no and 1 = yes)</td>
</tr>
<tr>
<td>Combined application program</td>
<td>The state operates a combined application program for SSI recipients so that these recipients can use a streamlined SNAP application process. (Coding categorically: range = 0, 1, where 0 = no and 1 = yes)</td>
</tr>
<tr>
<td>Face-to-face waiver</td>
<td>The state has been granted a waiver to use a telephone interview in lieu of a face-to-face interview at initial certification, without having to document household hardship. (Coding categorically: range = 0, 1, where 0 = no waiver and 1 = waiver applies in at least part of the state)</td>
</tr>
<tr>
<td>Call centers</td>
<td>The state operates call centers, whether the call centers service the entire state or selected regions. Call centers use phones as the primary means for clients to interface with their case workers. (Coding categorically: range = 0, 1, where 0 = no call centers, 1 = call centers available statewide or call centers available in selected parts of the state)</td>
</tr>
<tr>
<td>Online application</td>
<td>The state allows households to submit a SNAP application online. (Coding categorically: range = 0, 1, where 0 = no, 1 = available statewide or in only selected parts of the state)</td>
</tr>
<tr>
<td>Outreach</td>
<td>The sum of federal, state, and grant outreach spending in thousands of nominal dollars. This variable is derived from annual data, spread across 12 months of the relevant fiscal year. (Coding categorically: range = 0, 1,881)</td>
</tr>
<tr>
<td>All-vehicle exclusion</td>
<td>The state excludes all vehicles in the household from the SNAP asset test. (Coding categorically: range = 0, 1, where 0 = no and 1 = yes)</td>
</tr>
<tr>
<td>One-vehicle exclusion</td>
<td>The state excludes at least one but not all vehicles in the household from the SNAP asset test. (Coding categorically: range = 0, 1, where 0 = no and 1 = yes)</td>
</tr>
</tbody>
</table>

SOURCE: SNAP Policy Database (USDA, 2022a).
Veteran Status
An adult (age 17+) household member is considered a veteran if they “ever serve[d] on active duty in the U.S. Armed Forces.” We used the household respondents’ report that a veteran was a member of the household, and we focused our individual-level analyses on the veteran.

Food Insecurity
The CPS-FSS includes the validated USDA 18-item measure that asks about ability to meet basic food needs in the previous 12 months. Ten questions ask about household difficulty as a whole and adult household members’ food intake. An additional eight questions ask about children’s food intake if children are present in the household. We used questions 1–10 to capture comparable data on individual food insecurity for veterans in households with and without children. Veterans were classified as food insecure if they lived in a food-insecure household. Households were classified as food insecure if respondents gave affirmative answers to three or more of the ten questions about food insecurity. Households were classified as having low food security if they reported three to five affirmative responses, and having very low food security with six or more affirmative responses to food-insecurity questions. See Bickel et al. (2000) for a more detailed discussion.

The box below shows the ten food security questions asked in the CPS-FSS that we included in our analyses.

### Current Population Survey Food Security Supplement

1. We worried whether our food would run out before we got money to buy more
2. The food that we bought just didn’t last and we didn’t have money to get more
3. We couldn’t afford to eat balanced meals
4. In the last 12 months, did you or other adults in the household ever cut the size of your meals?
   5. If yes, how often did this happen?
6. In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money for food?
7. In the last 12 months, were you ever hungry, but didn’t eat because there wasn’t enough money for food?
8. In the last 12 months, did you lose weight because there wasn’t enough money for food?
9. In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn’t enough money for food?
   10. If yes, how often did this happen?

NOTE: Affirmative responses to the food insecurity questions are “often,” “sometimes,” “almost every month,” “some months but not every month,” or “yes.”

Categories of Food Security
Table A.2 shows how USDA defines levels of food security.

Covariates
The CPS-FSS collects data on individual and household sociodemographic characteristics that may be associated with food insecurity and veteran status: gender, age, race/ethnicity, immigration and citizen status, receipt of nutrition assistance, and labor-force participation. We included the following covariates in our
Food Insecurity Among Veterans

modeling: age in years (18–29, 30–39, 40–49, 50–59, 60–69, 70–79, 80+), gender (female, male), race/ethnicity (Black, non-Hispanic; Hispanic; other, non-Hispanic; White, non-Hispanic), employment (employed, unemployed, or not in labor force with the subcategories retired, disabled, or other), use of a food pantry in the previous 30 days (yes, no), educational attainment (less than high school, high school/GED, some college, bachelor’s degree or higher), marital status (married/partner family, unmarried family, individual), whether there are children under 18 years old in the household, household income (less than $30,000, $30,000–$59,000, $60,000 or higher), census region (Northwest, Midwest, South, West), and whether the household is in a metropolitan area.

SNAP Policy Database

The SNAP Policy Database, housed within USDA’s Economic Research Service, includes information on state SNAP enrollment policies, including eligibility criteria, recertification and reporting requirements, benefit issuance methods, availability of online applications, use of biometric technology (such as fingerprinting), and coordination with other low-income assistance programs (USDA, 2022a). The database includes information from all 50 states and the District of Columbia for each month from January 1996 through December 2016 (the most recent data at the time of this research).

We used the SNAP Policy Database to overcome the limitations of small sample sizes of veterans in our CPS-FSS sample. This helped us identify individual- and state-level factors that might be associated with food-insecure veterans’ use of SNAP.

Analyses of the Survey of Income and Program Participation (SIPP) Data

To explore whether veterans’ reasons for starting and ending—or losing—SNAP benefits differ from nonveterans’ reasons, we used detailed SIPP data on SNAP and other program participation. SIPP is a nationally representative longitudinal survey that provides detailed data on income, employment, household composition, and government program participation (U.S. Census Bureau, 2023). To increase our sample size of food-insecure veterans and to track consecutive years of respondents’ levels of food insecurity, we used data from four panels: 2014 (covering years 2013–2016), 2018 (covering years 2017–2019), 2019 (covering 2018), and 2020 (covering 2019). Using these pooled SIPP panel data (2014, 2018, 2019, and 2020), we generated descriptive statistics on food-insecure veterans’ and nonveterans’ reasons for beginning and ending or losing SNAP benefits and patterns of program participation. We also examined patterns of program participation among veterans who indicated that they were food insecure.

Table A.2

<table>
<thead>
<tr>
<th>Degree of Food Security</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>“No reported indications of food-access problems or limitations.”</td>
</tr>
<tr>
<td>Marginal</td>
<td>“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.”</td>
</tr>
<tr>
<td>Low</td>
<td>“Reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.”</td>
</tr>
<tr>
<td>Very low</td>
<td>“Reports of multiple indications of disrupted eating patterns and reduced food intake.”</td>
</tr>
</tbody>
</table>

SOURCE: USDA, 2022b.
To examine differences in the benefits that food-insecure veterans in SNAP and non-SNAP households receive, we constructed a count of the number of programs that each household participated in each month. As with SNAP household participation, we considered a household to “participate” in a given program if any individual in the household received benefits from the program in a given month. We examined 15 programs in total: SNAP, TANF, VA benefits (including disability compensation, GI Bill payments, insurance proceeds, veterans’ pensions, and “other” VA payments), WIC, free or reduced-price school meals, GA, SSI, Social Security Old-Age and Survivors Insurance, UI, workers’ compensation, rent subsidies, energy assistance, child-care assistance, Medicare, and Medicaid. All descriptive analyses were weighted using person-weights calculated by the U.S. Census Bureau and included in the SIPP data. For significance testing, we used replicate weights to generate standard errors that were nationally representative and accounted for the SIPP’s sampling design.

To examine factors associated with the duration of food-insecure veterans’ SNAP participation, we used pooled SIPP data from the 2014, 2018, 2019, and 2020 panels, covering 2013–2019. We constructed a cross-sectional negative binomial regression model to examine food-insecure veterans’ receipt of SNAP benefits using reference year–level observations. Rather than estimating the discrete outcome of whether veterans’ households received SNAP benefits, we estimated a continuous dependent variable equal to the number of months that the veterans’ household received SNAP benefits in the reference year. The variable “months of SNAP participation” was zero-inflated; that is, many food-insecure veterans had no months of SNAP participation, so we used negative binomial regression modeling. Covariates of interest included receipt of veterans’ benefits, and we also controlled for individual demographic and household characteristics. The adjusted regression analysis was weighted using person-weights calculated by the U.S. Census Bureau and provided by the SIPP. For significance testing, we used replicate weights to generate standard errors that were nationally representative and accounted for the SIPP’s sampling design.

Data and Measures

Again, SIPP is a nationally representative longitudinal survey that provides detailed data on income, employment, household composition, and government program participation (U.S. Census Bureau, 2023). The same individuals are interviewed for one to four years to collect data on changes in household and family composition and economic circumstances over time, with data reported monthly. We pulled data from the 2014, 2018, 2019, and 2020 panels. Approximately 14,000–53,000 households participate in each panel (U.S. Census Bureau, 2023).

Veteran Status

In addition to asking about military service at any point in time, the SIPP asks whether working-age household members are currently serving in the U.S. armed forces. It also collects information on service era, receipt of benefits from VA, and service-connected disability rating. For the purposes of our analysis, we defined veterans as working-age respondents who reported service in the U.S. armed forces but were not currently serving, as well as respondents age 65+ who reported any military service.

Specifically, we used two variables in the SIPP to define our veteran population:

- “Did this person ever serve on active duty in the U.S. Armed Forces?” (asked for all individuals 17 and older in households where anyone had ever served on active duty, which is asked of all households).
- “Is this person currently on active duty in the U.S. Armed Forces?” (asked of those younger than 65 who responded positively to ever serving)
We defined a veteran in the SIPP as either of the following:

- an individual age 65 or older who had ever served (yes to the first question)
- an individual younger than 65 who reported serving in the past but not currently (yes to the first question, no to the second)

This approach might have caused us to inappropriately classify individuals 65 or older as veterans when they are, in fact, actively serving in the military. However, the impact should have been minimal, given mandatory retirement ages, and we believe that the small risk in including this population in our analysis is outweighed by the value of capturing veterans over 65.

Food Insecurity

The SIPP includes USDA’s six-item short form household food-security survey module that asks about the ability to meet basic food needs in the 12 months of the reference period. For example, the 2020 SIPP, which has 2019 as its reference year, asked about food security circumstances in 2019 to construct a food-security measure for that year. This allowed us to observe respondents’ food security alongside individual and household characteristics, income, and program participation in the same reference period. The survey uses USDA guidelines to assess degrees of food insecurity, depending on respondents’ answers to screening questions: high or marginal food security, low food security, or very low food security (USDA, 2012). We classified households as food insecure if they reported low or very low food security.

The box below shows the food-security questions used in SIPP.

### SIPP Food Security Questions

- The food that (I/we) bought just didn’t last, and (I/we) didn’t have money to get more. Was that *often*, *sometimes*, or *never* true for (you/your household) in [reference year]?
- (I/we) couldn’t afford to eat balanced meals. Was that *often*, *sometimes*, or *never* true for (you/your household) in [reference year]?
- In [reference year], did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn’t enough money for food?
- [IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
- In [reference year], did you ever eat less than you felt you should because there wasn’t enough money for food?
- In [reference year], were you ever hungry but didn’t eat because there wasn’t enough money for food?

**NOTE:** Affirmative responses to the food insecurity questions are “often,” “sometimes,” “almost every month,” “some months but not every month,” or “yes.”

SNAP Participation

The SIPP measures annual and monthly rates of SNAP participation. Annual participation indicates that a respondent was enrolled for at least one month in the year. For this reason, the annual SNAP participation indicator will have a consistent value across monthly observations in the same reference period, while the monthly SNAP participation indicator may vary from month to month. For example, if an individual received SNAP benefits in June–August 2018, the monthly indicator will flag receipt in the sixth, seventh,
and eighth month of 2018, while the annual indicator will reflect SNAP participation for all of 2018 (see Figure A.1). We primarily used monthly SNAP measures in our analyses.

Because SNAP benefits affect household finances and food security, we focused on SNAP benefits at the household rather than individual level. We considered a household to have received SNAP benefits in a given month if any member of the household reported receiving SNAP benefits in that month. Table A.3 summarizes the data we used in our SIPP analyses to classify SNAP participation.

FIGURE A.1
Illustration of How Monthly and Annual SNAP Indicators Differ in the SIPP Data

<table>
<thead>
<tr>
<th>Monthly SNAP indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 0 0 0 0 1 1 1 0 0 0 0</td>
</tr>
<tr>
<td>1 1 1 1 1 1 1 1 1 1 1 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual SNAP indicator</th>
</tr>
</thead>
</table>

TABLE A.3
SNAP Participation Questions in the Survey of Income and Program Participation

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNAP coverage in at least one month of the reference year (recode)</td>
<td>Yes/no</td>
</tr>
<tr>
<td>SNAP coverage this month (recode)</td>
<td>Yes/no</td>
</tr>
<tr>
<td>Owner of the SNAP benefit this month</td>
<td>Owner of the SNAP benefit this month (person in whose name the benefits are received)</td>
</tr>
<tr>
<td>Begin month of SNAP receipt</td>
<td>January–December</td>
</tr>
<tr>
<td>End month of SNAP receipt</td>
<td>January–December</td>
</tr>
<tr>
<td>First reason SNAP receipt began</td>
<td>1. New child (or other dependent) or pregnancy 2. Separation, divorced, or widowed 3. Job loss/layoff or wages reduced 4. Loss or reduction of other income 5. Became disabled or otherwise unable to work 6. No change—just decided it was time 7. No change—just heard about the program 8. Needed to recertify 9. Other</td>
</tr>
<tr>
<td>First reason SNAP receipt ended</td>
<td>1. Became ineligible because of an increase in income 2. Became ineligible because of family changes (e.g., family member left, over age limit) 3. Still eligible but could not/chose not to collect 4. Became ineligible because program requirements were not met (e.g., did not attend school, job training) 5. Eligibility ran out because of time limits 6. The money/benefits were not worth the trouble to continue enrollment 7. Other</td>
</tr>
<tr>
<td>Value of SNAP benefits received this month</td>
<td>Numeric, $1–$9,999</td>
</tr>
</tbody>
</table>
Covariates
The SIPP includes individual and household sociodemographic characteristics that may be associated with food security, veteran status, and SNAP participation: gender, age, race/ethnicity, marital status, receipt of nutrition assistance and VA benefits, income, and household composition, including whether there are children under age 18 and elders over age 65. Questions about nutrition assistance beyond SNAP ask whether respondents received money, vouchers, or certificates to buy food; bags of groceries or packaged food; meals from a shelter, soup kitchen, Meals on Wheels, or another charity; or some other non-SNAP nutrition assistance. Questions about VA benefits ask about benefits for a service-connected disability, veterans’ pensions, GI Bill benefits, insurance proceeds, or other VA payment. Additional covariates are gender (female, male), age in years (18–24, 25–34, 35–44, 45–54, 55–64, 65+), race/ethnicity (Black, non-Hispanic; Hispanic; other, non-Hispanic; White, non-Hispanic), educational attainment (less than high school, high school/GED, some college/associate’s degrees, bachelor’s degree, master’s degree or above), income as a percent of the federal poverty level (0–50%, 50–100%, 100–130%, 130–200%, 200%+), and service-connected disability rating (0–20%, 30–40%, 50–60%, 70% or more). We were unable to discern exact disability ratings between 70 and 100 percent. We note that only individuals who reported receiving disability benefits were asked for their disability rating.
Table B.1 shows our unadjusted estimates of food-insecure veterans’ and nonveterans’ SNAP participation, by demographic characteristics in the CPS-FSS dataset.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Overall</th>
<th>Veterans</th>
<th>Nonveterans</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N = 25,200,573)</td>
<td>(N = 1,370,201)</td>
<td>(N = 23,830,372)</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>37.8</td>
<td>31.0</td>
<td>38.2</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18–29</td>
<td>37.4</td>
<td>34.6</td>
<td>37.5</td>
<td>0.0392</td>
</tr>
<tr>
<td>30–39</td>
<td>41.0</td>
<td>32.6</td>
<td>41.3</td>
<td>0.0003</td>
</tr>
<tr>
<td>40–49</td>
<td>36.1</td>
<td>31.1</td>
<td>36.4</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>50–59</td>
<td>38.1</td>
<td>37.9</td>
<td>38.1</td>
<td>0.3789</td>
</tr>
<tr>
<td>60–69</td>
<td>37.4</td>
<td>30.1</td>
<td>38.3</td>
<td>0.0007</td>
</tr>
<tr>
<td>70+</td>
<td>34.4</td>
<td>20.4</td>
<td>36.4</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>27.2</td>
<td>23.6</td>
<td>27.3</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Unemployed</td>
<td>49.2</td>
<td>49.8</td>
<td>49.2</td>
<td>0.0101</td>
</tr>
<tr>
<td>Not in labor force, retired</td>
<td>34.1</td>
<td>24.5</td>
<td>35.5</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Not in labor force, disabled</td>
<td>59.6</td>
<td>44.3</td>
<td>60.8</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Not in labor force, other</td>
<td>45.6</td>
<td>39.6</td>
<td>45.7</td>
<td>0.9865</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>34.5</td>
<td>30.7</td>
<td>35.0</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Female</td>
<td>40.4</td>
<td>32.4</td>
<td>40.5</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Race and ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>43.4</td>
<td>36.9</td>
<td>43.7</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Hispanic</td>
<td>35.8</td>
<td>26.5</td>
<td>36.0</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Other, non-Hispanic</td>
<td>35.7</td>
<td>42.9</td>
<td>35.3</td>
<td>0.6007</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>36.5</td>
<td>28.7</td>
<td>37.1</td>
<td>&lt; 0.0001</td>
</tr>
</tbody>
</table>
We observed higher SNAP enrollment among nonveterans across nearly every characteristic (e.g., age, race/ethnicity, gender, disability), even among those with incomes less than 185 percent of the federal poverty level. Table B.2 presents weighted characteristics of food-insecure veterans’ households by their SNAP enrollment status.
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>In a Household Not Enrolled in SNAP (N = 17,394 Person-Months Observed)</th>
<th>In a Household Enrolled in SNAP (N = 6,764 Person-Months Observed)</th>
<th>Difference Between Those in Households Not Enrolled and Enrolled in SNAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household composition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>32.7</td>
<td>43.1</td>
<td>−10.4</td>
</tr>
<tr>
<td>Two</td>
<td>33.7</td>
<td>23.7</td>
<td>10.0</td>
</tr>
<tr>
<td>Three</td>
<td>14.2</td>
<td>12.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Four</td>
<td>10.0</td>
<td>12.8</td>
<td>−2.8</td>
</tr>
<tr>
<td>Five</td>
<td>5.4</td>
<td>4.9</td>
<td>0.5</td>
</tr>
<tr>
<td>Six or more</td>
<td>4.0</td>
<td>2.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Elderly person (age 65+) in household</td>
<td>33.5</td>
<td>23.9</td>
<td>9.6</td>
</tr>
<tr>
<td>Minor child in household</td>
<td>25.3</td>
<td>23.8</td>
<td>1.5</td>
</tr>
<tr>
<td>Minor child under age 6 in household</td>
<td>2.5</td>
<td>2.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>11.5</td>
<td>13.4</td>
<td>−1.9</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>48.9</td>
<td>28.5</td>
<td>20.4</td>
</tr>
<tr>
<td>Widowed</td>
<td>6.5</td>
<td>6.2</td>
<td>0.3</td>
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<tr>
<td>Divorced</td>
<td>26.2</td>
<td>37.9</td>
<td>−11.7</td>
</tr>
<tr>
<td>Separated</td>
<td>4.6</td>
<td>5.5</td>
<td>−0.8</td>
</tr>
<tr>
<td>Never married</td>
<td>13.8</td>
<td>21.6</td>
<td>−7.9</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>0.9</td>
<td>0.2</td>
<td>0.8</td>
</tr>
<tr>
<td>Black</td>
<td>20.5</td>
<td>18.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>7.8</td>
<td>7.8</td>
<td>−0.1</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>64.5</td>
<td>66.1</td>
<td>−1.6</td>
</tr>
<tr>
<td>Another race</td>
<td>7.6</td>
<td>8.5</td>
<td>−0.9</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18–24</td>
<td>2.5</td>
<td>0.9</td>
<td>1.6</td>
</tr>
<tr>
<td>25–34</td>
<td>13.4</td>
<td>7.0</td>
<td>6.4</td>
</tr>
<tr>
<td>35–44</td>
<td>10.9</td>
<td>12.5</td>
<td>−1.6</td>
</tr>
<tr>
<td>45–54</td>
<td>18.8</td>
<td>22.2</td>
<td>−3.4</td>
</tr>
<tr>
<td>55–64</td>
<td>23.4</td>
<td>36.4</td>
<td>−13.0</td>
</tr>
<tr>
<td>65+</td>
<td>31.0</td>
<td>21.0</td>
<td>10.0</td>
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</table>
Table B.2—Continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% of Food-Insecure Veterans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In a Household Not Enrolled in SNAP (N = 17,394 Person-Months Observed)</td>
</tr>
<tr>
<td>Disability rating</td>
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<tr>
<td>Non-disabled veteran</td>
<td>75.7</td>
</tr>
<tr>
<td>0–20%</td>
<td>5.9</td>
</tr>
<tr>
<td>30–40%</td>
<td>3.6</td>
</tr>
<tr>
<td>50–60%</td>
<td>4.0</td>
</tr>
<tr>
<td>70%+</td>
<td>10.7</td>
</tr>
<tr>
<td>Received VA health care</td>
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</tr>
<tr>
<td>Yes</td>
<td>35.5</td>
</tr>
<tr>
<td>Income and poverty level</td>
<td></td>
</tr>
<tr>
<td>Total household income (monthly)</td>
<td></td>
</tr>
<tr>
<td>Under $500</td>
<td>4.2</td>
</tr>
<tr>
<td>$500–$999</td>
<td>3.1</td>
</tr>
<tr>
<td>$1,000–$1,999</td>
<td>18.0</td>
</tr>
<tr>
<td>$2,000–$2,999</td>
<td>17.1</td>
</tr>
<tr>
<td>$3,000–$3,999</td>
<td>15.3</td>
</tr>
<tr>
<td>$4,000–$4,999</td>
<td>12.1</td>
</tr>
<tr>
<td>$5,000–$5,999</td>
<td>9.4</td>
</tr>
<tr>
<td>$6,000–$7,499</td>
<td>7.9</td>
</tr>
<tr>
<td>$7,500–$9,999</td>
<td>6.7</td>
</tr>
<tr>
<td>$10,000–$14,999</td>
<td>3.5</td>
</tr>
<tr>
<td>$15,000+</td>
<td>2.6</td>
</tr>
<tr>
<td>Household income-to-poverty ratio (monthly)</td>
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</tr>
<tr>
<td>[0%, 50%]</td>
<td>4.7</td>
</tr>
<tr>
<td>(50%, 100%)</td>
<td>4.9</td>
</tr>
<tr>
<td>(100%, 150%)</td>
<td>6.0</td>
</tr>
<tr>
<td>(150%, 200%)</td>
<td>22.4</td>
</tr>
<tr>
<td>(200%, inf.)</td>
<td>62.0</td>
</tr>
<tr>
<td>Total individual income (monthly)</td>
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</tr>
<tr>
<td>Under $500</td>
<td>10.5</td>
</tr>
<tr>
<td>$500–$999</td>
<td>6.0</td>
</tr>
<tr>
<td>$1,000–$1,999</td>
<td>28.6</td>
</tr>
<tr>
<td>$2,000–$2,999</td>
<td>22.2</td>
</tr>
<tr>
<td>$3,000–$3,999</td>
<td>13.2</td>
</tr>
<tr>
<td>$4,000–$4,999</td>
<td>7.8</td>
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</table>
## Table B.2—Continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>In a Household Not Enrolled in SNAP (N = 17,394 Person-Months Observed)</th>
<th>In a Household Enrolled in SNAP (N = 6,764 Person-Months Observed)</th>
<th>Difference Between Those in Households Not Enrolled and Enrolled in SNAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5,000–$7,499</td>
<td>7.4</td>
<td>1.0</td>
<td>6.4</td>
</tr>
<tr>
<td>$7,500–$9,999</td>
<td>2.1</td>
<td>0.2</td>
<td>1.9</td>
</tr>
<tr>
<td>$10,000+</td>
<td>2.2</td>
<td>0.5</td>
<td>1.6</td>
</tr>
<tr>
<td>Other individual income (monthly)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>72.0</td>
<td>82.5</td>
<td>−10.5</td>
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<tr>
<td>Under $200</td>
<td>8.7</td>
<td>6.8</td>
<td>2.0</td>
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<tr>
<td>$201–500</td>
<td>4.7</td>
<td>2.2</td>
<td>2.6</td>
</tr>
<tr>
<td>$501–$1,000</td>
<td>4.4</td>
<td>3.9</td>
<td>0.6</td>
</tr>
<tr>
<td>$1,001–$1,500</td>
<td>3.8</td>
<td>1.6</td>
<td>2.2</td>
</tr>
<tr>
<td>$1,501–$2,500</td>
<td>2.8</td>
<td>2.6</td>
<td>0.2</td>
</tr>
<tr>
<td>$2,501–$3,500</td>
<td>1.7</td>
<td>0.4</td>
<td>1.3</td>
</tr>
<tr>
<td>$3,501–$5,000</td>
<td>1.2</td>
<td>0.0</td>
<td>1.2</td>
</tr>
<tr>
<td>&gt; $5,000</td>
<td>0.6</td>
<td>0.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Individual means-tested transfer income (monthly)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>95.1</td>
<td>79.3</td>
<td>15.7</td>
</tr>
<tr>
<td>Under $200</td>
<td>0.9</td>
<td>4.3</td>
<td>−3.4</td>
</tr>
<tr>
<td>$201–$500</td>
<td>1.0</td>
<td>5.2</td>
<td>−4.2</td>
</tr>
<tr>
<td>$501–$1,000</td>
<td>1.9</td>
<td>9.8</td>
<td>−8.0</td>
</tr>
<tr>
<td>&gt; $1,000</td>
<td>1.2</td>
<td>1.3</td>
<td>−0.1</td>
</tr>
<tr>
<td>Individual social insurance income (monthly)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>43.4</td>
<td>48.1</td>
<td>−4.7</td>
</tr>
<tr>
<td>Under $500</td>
<td>6.3</td>
<td>4.9</td>
<td>1.3</td>
</tr>
<tr>
<td>$501–$1,000</td>
<td>7.7</td>
<td>13.9</td>
<td>−6.2</td>
</tr>
<tr>
<td>$1,001–$1,500</td>
<td>15.4</td>
<td>24.1</td>
<td>−8.7</td>
</tr>
<tr>
<td>$1,501–$2,500</td>
<td>20.6</td>
<td>8.0</td>
<td>12.6</td>
</tr>
<tr>
<td>&gt; $2,500</td>
<td>6.7</td>
<td>1.0</td>
<td>5.7</td>
</tr>
</tbody>
</table>

**SOURCE:** SIPP, 2014–2020 data.

**NOTE:** Weighted descriptive characteristics of food-insecure veteran individuals in SNAP and non-SNAP households. Column 2 (“Not Enrolled in SNAP”) shows the percentage of food-insecure veterans in households that were not enrolled in SNAP who match the characteristic for that row. Total household income is the sum of monthly earnings and income received by household members age 15 and older, as well as SSI payments received by children under age 15. Total individual income is the sum of personal monthly earnings and income for people age 15 and older, as well as children under age 15 who received SSI payments. Other individual income is the sum of reported monthly amounts received by an individual from other income sources, such as survivor benefits, retirement benefits, disability benefits, foster child care payments, child support payments, lump sum payments, alimony payments, deferred payments from a prior job, life insurance payments, and miscellaneous income sources. Individual social insurance income is the sum of reported monthly amounts received by an individual from VA benefits (except veterans’ pension), workers’ compensation, unemployment compensation, or social security. Individual means-tested transfer income is the sum of monthly income received from means-tested transfer programs (including SSI, TANF, GA, and veterans’ pension).
Table B.3 shows correlations between state-level policies that are designed to facilitate SNAP enrollment and the probability of SNAP participation by food-insecure veterans. Five policies were positively correlated with SNAP enrollment by this group: broad-based categorical eligibility, face-to-face waiver, outreach, combined application program, and call centers to facilitate communication with clients. Our analysis did not detect a positive correlation for online applications or vehicle exclusions.

Table B.4 shows the results from our adjusted regression model of state-level policies and individual-level characteristics, which we used to identify patterns of SNAP participation among food-insecure veterans and nonveterans. We examined subgroup interactions to identify which subgroups of veterans might be food-insecure but less likely to participate in SNAP. After adjusting for age, lack of labor force participation due to a disability, sex, race/ethnicity, education, household structure, income, region of the United States, and state-level policies designed to facilitate enrollment, we found that food-insecure veterans who were 70 and older were significantly less likely to enroll in SNAP than their nonveteran counterparts. See Table A.1 in Appendix A for an explanation of continuous versus categorical policies and the differences in how they were coded in our analysis.

We examined the amount of time food-insecure veterans participated in SNAP using pooled data from four SIPP panels: 2014 (covering the years 2013–2016), 2016 (covering the years 2015–2017), 2018 (covering the years 2017–2019), and 2020 (covering 2019 only). We then employed a cross-sectional linear regression to examine factors potentially associated with the duration of food-insecure veterans’ SNAP participation. The SIPP data allowed us to consider VA benefits and other non-SNAP nutrition assistance in our model. Thus, we were able to examine whether food-insecure veterans’ participation in these other programs was associated with differences in the duration of their SNAP participation. We used months of SNAP participation over the course of the reference year—rather than binary SNAP participation—as a dependent variable, allowing us to explore trends in participation within a given year. The months of SNAP participation variable was zero-inflated; that is, many food-insecure veterans had no months of SNAP participation, so we used negative binomial regression modeling. The data included person-weights and replicate weights calculated by the U.S. Census Bureau.

### Table B.3

<table>
<thead>
<tr>
<th>Policy</th>
<th>Correlation Coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broad-based categorical eligibility (BBCE)</td>
<td>0.23</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Combined Application Program (CAP)</td>
<td>0.34</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Call centers</td>
<td>0.43</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Face-to-face waiver</td>
<td>0.26</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Outreach</td>
<td>0.16</td>
<td>0.001</td>
</tr>
<tr>
<td>One-vehicle exclusion</td>
<td>-0.02</td>
<td>0.53</td>
</tr>
<tr>
<td>All-vehicle exclusion</td>
<td>0.02</td>
<td>0.83</td>
</tr>
<tr>
<td>Online application</td>
<td>-0.05</td>
<td>0.27</td>
</tr>
</tbody>
</table>

**SOURCE:** Pooled 2015–2020 CPS-FSS data; SNAP Policy Database (USDA, 2022a).

**NOTE:** N = 504 food-insecure veterans. The table shows Pearson pairwise correlations at both the individual level (SNAP participation among food-insecure veterans) and the state level (SNAP enrollment policies). We looked at states that had the largest populations of food-insecure veterans to better observe correlations between food-insecure veterans’ SNAP participation and state-level SNAP policies. All variables were binary except the outreach variable, which was modeled continuously in dollars.
### TABLE B.4
Regression Model Estimates of SNAP Participation for Food-Insecure Veterans and Nonveterans

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Odds Ratio Food-Insecure Veterans and Nonveterans Receiving SNAP Benefits</th>
<th>Odds Ratios Food-Insecure Veterans Receiving SNAP Benefits</th>
<th>Continuous Policies</th>
<th>Categorical Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonveteran</td>
<td>ref.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Veteran</td>
<td>0.768</td>
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</tr>
<tr>
<td>Veteran interactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of policies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–1</td>
<td>ref.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2–3</td>
<td>1.561**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18–29</td>
<td>ref.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30–39</td>
<td>0.816</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40–49</td>
<td>0.931</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50–59</td>
<td>1.247</td>
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<tr>
<td>60–69</td>
<td>0.840</td>
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<tr>
<td>70+</td>
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<td>Disability status</td>
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</tr>
<tr>
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<td>ref.</td>
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<td></td>
</tr>
<tr>
<td>Disability</td>
<td>0.642**</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>State policies</td>
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</tr>
<tr>
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<tr>
<td>0–1</td>
<td>ref.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2–3</td>
<td>1.277***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>ref.</td>
<td>ref.</td>
<td>ref.</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1.116***</td>
<td>0.881</td>
<td>0.881</td>
<td></td>
</tr>
<tr>
<td>Disability</td>
<td>2.593***</td>
<td>1.638***</td>
<td>1.624***</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the 0.05 level
**Significant at the 0.01 level
***Significant at the 0.001 level
### Table B.4—Continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Odds Ratio Food-Insecure Veterans and Nonveterans Receiving SNAP Benefits</th>
<th>Odds Ratios Food-Insecure Veterans Receiving SNAP Benefits</th>
<th>Continuous Policies</th>
<th>Categorical Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race and ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>ref.</td>
<td>1.000</td>
<td>1.000</td>
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</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>1.125*</td>
<td>1.301</td>
<td>1.277</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.923*</td>
<td>0.843</td>
<td>0.843</td>
<td></td>
</tr>
<tr>
<td>Other, non-Hispanic</td>
<td>1.059</td>
<td>1.547</td>
<td>1.600</td>
<td></td>
</tr>
<tr>
<td>Educational attainment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>ref.</td>
<td>1.000</td>
<td>1.000</td>
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</tr>
<tr>
<td>High school/GED</td>
<td>0.864***</td>
<td>1.269</td>
<td>1.262</td>
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<tr>
<td>Some college</td>
<td>0.753***</td>
<td>1.021</td>
<td>1.015</td>
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</tr>
<tr>
<td>Bachelor's degree or higher</td>
<td>0.554***</td>
<td>0.835</td>
<td>0.836</td>
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</tr>
<tr>
<td>Household composition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married partner family</td>
<td>ref.</td>
<td>ref.</td>
<td>ref.</td>
<td></td>
</tr>
<tr>
<td>Unmarried family</td>
<td>2.097***</td>
<td>1.820**</td>
<td>1.818**</td>
<td></td>
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<tr>
<td>Individual</td>
<td>1.012</td>
<td>1.023</td>
<td>1.024</td>
<td></td>
</tr>
<tr>
<td>With children under 18 years old</td>
<td>1.854***</td>
<td>1.648*</td>
<td>1.661*</td>
<td></td>
</tr>
<tr>
<td>Annual family income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $30,000</td>
<td>ref.</td>
<td>ref.</td>
<td>ref.</td>
<td></td>
</tr>
<tr>
<td>$30,000–$59,000</td>
<td>0.400***</td>
<td>0.390***</td>
<td>0.386***</td>
<td></td>
</tr>
<tr>
<td>$60,000+</td>
<td>0.300***</td>
<td>0.251***</td>
<td>0.246***</td>
<td></td>
</tr>
<tr>
<td>Used food pantry in past 30 days</td>
<td>2.373***</td>
<td>2.158***</td>
<td>2.181***</td>
<td></td>
</tr>
<tr>
<td>Very low food security</td>
<td>1.269***</td>
<td>1.386*</td>
<td>1.393*</td>
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<tr>
<td>Census region</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>ref.</td>
<td>ref.</td>
<td>ref.</td>
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<tr>
<td>Midwest</td>
<td>0.976</td>
<td>1.135</td>
<td>1.017</td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>0.898*</td>
<td>0.977</td>
<td>1.001</td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>0.859*</td>
<td>1.249</td>
<td>1.095</td>
<td></td>
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<tr>
<td>Metropolitan</td>
<td>0.976</td>
<td>1.118</td>
<td>1.135</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.415***</td>
<td>0.180***</td>
<td>0.204***</td>
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</tbody>
</table>

**SOURCE:** Pooled 2015–2020 CPS-FSS data.

**NOTE:** * p < 0.05, ** p < 0.01, *** p < 0.001. Regressions used robust standard errors clustered on the household. Dashes indicate characteristics that were not included in the models.
As shown in Table B.5, food-insecure veterans who received VA insurance proceeds ($p < 0.01$) had fewer months of SNAP participation over the reference year than their counterparts who did not receive this VA benefit, as did those who received VA benefits not otherwise identified (categorized as “other”; $p < 0.01$). VA disability compensation was only marginally significantly associated with fewer months of SNAP participation ($p < 0.1$).

**TABLE B.5**

**Regression Model Estimates of Months of SNAP Participation Among Food-Insecure Veterans**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Negative Binomial Regression Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Household characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>$-0.453^{***}$</td>
</tr>
<tr>
<td>Minor present</td>
<td>0.227</td>
</tr>
<tr>
<td>Elder present</td>
<td>0.120</td>
</tr>
<tr>
<td>Female-headed</td>
<td>0.0463</td>
</tr>
<tr>
<td><strong>VA benefits</strong></td>
<td></td>
</tr>
<tr>
<td>VA disability benefit</td>
<td>$-0.295$</td>
</tr>
<tr>
<td>Veterans’ pension</td>
<td>$-0.152$</td>
</tr>
<tr>
<td>GI Bill benefit</td>
<td>0.874</td>
</tr>
<tr>
<td>VA insurance proceeds</td>
<td>$-26.61^{***}$</td>
</tr>
<tr>
<td>Other VA benefit</td>
<td>$-0.999^{**}$</td>
</tr>
<tr>
<td><strong>Non-SNAP nutrition assistance</strong></td>
<td></td>
</tr>
<tr>
<td>Other food assistance (voucher or money)</td>
<td>0.313</td>
</tr>
<tr>
<td>Bags of food</td>
<td>$0.438^{***}$</td>
</tr>
<tr>
<td>Soup kitchen, other charity</td>
<td>$0.426^{**}$</td>
</tr>
<tr>
<td>Other food assistance</td>
<td>0.469</td>
</tr>
<tr>
<td><strong>Income-to-poverty ratio (ref: 200% or more)</strong></td>
<td></td>
</tr>
<tr>
<td>Poverty ratio [0–50%]</td>
<td>$1.332^{***}$</td>
</tr>
<tr>
<td>(50, 100%]</td>
<td>$1.534^{***}$</td>
</tr>
<tr>
<td>(100, 130%]</td>
<td>$1.471^{***}$</td>
</tr>
<tr>
<td>(130, 200%]</td>
<td>$1.002^{**}$</td>
</tr>
<tr>
<td><strong>Race/ethnicity (ref: White, non-Hispanic)</strong></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>$-0.793$</td>
</tr>
<tr>
<td>Black</td>
<td>$-0.0671$</td>
</tr>
<tr>
<td>Hispanic</td>
<td>$-0.212$</td>
</tr>
<tr>
<td>Other race</td>
<td>$-0.309$</td>
</tr>
</tbody>
</table>
Table B.5—Continued

<table>
<thead>
<tr>
<th>Variables</th>
<th>Negative Binomial Regression Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years) (ref: 18–24)</strong></td>
<td></td>
</tr>
<tr>
<td>25–34</td>
<td>0.847</td>
</tr>
<tr>
<td>35–44</td>
<td>1.294**</td>
</tr>
<tr>
<td>45–54</td>
<td>1.382**</td>
</tr>
<tr>
<td>55–64</td>
<td>1.492***</td>
</tr>
<tr>
<td>65+</td>
<td>0.971</td>
</tr>
<tr>
<td><strong>Education (ref: less than high school)</strong></td>
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</tr>
<tr>
<td>High school</td>
<td>−0.106</td>
</tr>
<tr>
<td>Some college/associate’s degree</td>
<td>−0.193</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>−0.382</td>
</tr>
<tr>
<td>Master’s degree or above</td>
<td>0.00674</td>
</tr>
<tr>
<td>Constant</td>
<td>−0.106</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>2,013</td>
</tr>
<tr>
<td>Ln alpha</td>
<td>1.696***</td>
</tr>
</tbody>
</table>


NOTE: The table shows predictors of months of SNAP participation over the reference year for food-insecure veterans, estimated using a negative binomial regression. *** p < 0.01, ** p < 0.05, * p < 0.1.
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPS-FSS</td>
<td>Current Population Survey Food Security Supplement</td>
</tr>
<tr>
<td>EBT</td>
<td>electronic benefits transfer</td>
</tr>
<tr>
<td>GA</td>
<td>General Assistance</td>
</tr>
<tr>
<td>SIPP</td>
<td>Survey of Income and Program Participation</td>
</tr>
<tr>
<td>SNAP</td>
<td>Supplemental Nutrition Assistance Program</td>
</tr>
<tr>
<td>SSI</td>
<td>Supplemental Security Income</td>
</tr>
<tr>
<td>TANF</td>
<td>Temporary Assistance for Needy Families</td>
</tr>
<tr>
<td>UI</td>
<td>unemployment insurance</td>
</tr>
<tr>
<td>USDA</td>
<td>U.S. Department of Agriculture</td>
</tr>
<tr>
<td>VA</td>
<td>U.S. Department of Veterans Affairs</td>
</tr>
<tr>
<td>WIC</td>
<td>Special Supplemental Nutrition Program for Women, Infants, and Children</td>
</tr>
</tbody>
</table>
References


MAZON, “This Is Hunger,” webpage, undated. As of July 7, 2023: https://mazon.org/hunger-in-america/this-is-hunger


O’Toole, Thomas, Senior Medical Adviser, Office of the Assistant Deputy Under Secretary for Health for Clinical Operations, Veterans Health Administration, statement before the U.S. House of Representatives, Subcommittee on Veterans’ Affairs, Subcommittee on Economic Opportunity, January 9, 2020.


USDA—See U.S. Department of Agriculture.


USDA—See U.S. Department of Agriculture.


