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## Work Conditions and Family Food Insecurity Among Adults Ages 18–64: United States, 2021

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### Abstract

*Objective*—This report describes differences in the experience of family food insecurity in the past 30 days among working adults ages 18–64 by selected work conditions.

*Methods*—Using data from the 2021 National Health Interview Survey on working adults ages 18–64, family food insecurity in the past 30 days was examined by selected work conditions, including type of work shift, work schedule inflexibilities, advance notice of work schedule, and monthly change in earnings. Bivariate associations between family food insecurity and each type of work condition were examined, and logistic regression models were used to estimate associations adjusting for age, sex, race and Hispanic origin, nativity status, marital status, presence of children in family, educational attainment, family income as a percentage of the federal poverty level, employed full time, occupation, health status, disability status, rural residence, and region. Model-adjusted prevalence of family food insecurity among working adults by type of work conditions is reported.

*Results*—In 2021, 4.4% of working adults ages 18–64 lived in families experiencing food insecurity. Differences in family food insecurity by work conditions persisted even after adjusting for potential confounders. After adjustment, those working rotating or other types of shifts were more likely to report family food insecurity (5.7%) compared with day shift workers (4.0%). Workers who reported that it was very difficult or somewhat difficult to change their work schedule were more likely to experience family food insecurity (6.3%) than workers who reported it was very easy or somewhat easy to change their work schedule (3.8%). Food insecurity also varied by monthly change in earnings, from 3.9% among workers whose earnings did not change to 5.5% among workers whose earnings changed at least a moderate amount from month to month.

**Keywords:** food security • work arrangements • job shift • earnings volatility • National Health Interview Survey (NHIS)

### Introduction

In 2021, 5.9% of adults age 18 and older in the United States experienced family food insecurity, defined as not having consistent, dependable access to a sufficient quality or quantity of food (1–3). Food insecurity is a social determinant of health (4) and is associated with poor health outcomes (5–7). Working-age adults (ages 18–64) were more likely to experience family food insecurity than adults age 65 and older in 2021 (1). Among working-age adults, food insecurity is associated with a higher likelihood of experiencing depression, diabetes, high cholesterol, and other chronic conditions, and with experiencing multiple chronic conditions (5,8). Further, for working-age adults with a family income below 200% of the federal poverty level (FPL), adverse health outcomes increase with the level of food insecurity (8).

Although employment status—including job loss, part-time work status, and unemployment—has been linked to food insecurity among working-age adults (9,10), less is known about differences in family food insecurity by specific work conditions. With the increase in nonstandard work arrangements (which may result in irregular work schedules,

schedule inflexibilities, and work and earnings instability) in the past several decades (11–14), understanding how differences in work conditions are associated with food insecurity may help inform policies to reduce health disparities.

A recent study found nonstandard (including contingent, contract, or temporary work) and informal work arrangements were associated with food insecurity and other measures of material hardship (11). Earlier quantitative studies found that households where the household head held multiple jobs or worked variable hours were more likely to experience food insecurity than households in which the household head held one job or worked set hours (9,15). Other work conditions, such as shift work, unpredictable work schedule, and earnings instability have been associated with lower earnings or less job stability (13,14,16–19) and may also be associated with food insecurity. For example, nonday shift workers were more likely to worry about running out of food than day shift workers (20), and workers with less advance notice of work schedules were more likely to experience hunger hardship (21).

Work conditions may impact food insecurity through their effect on earnings and earnings volatility, which determine the resources a family has for purchasing food and meeting other needs. Work conditions may also impact food insecurity through their effect on time. Workers with complex or unstable schedules may struggle to purchase food or to plan or prepare meals due to irregular work hours and time constraints (9,22). Some evidence indicates that workers with nonstandard hours (such as working 45 or more hours per week, working evening or night shift, or working weekend hours) rely on less nutritious food or skip meals and that irregular shift workers have lower quality diets (22–24), which may also result in food insecurity.

This report describes differences in family food insecurity in the past 30 days among working adults ages 18–64 by selected work conditions including type of work shift, work schedule flexibility, advance notice of work schedule, and monthly change in earnings using data

from the 2021 National Health Interview Survey.

## Methods

### Data source

Data from the 2021 National Health Interview Survey (NHIS) were used to describe associations between work conditions and family food insecurity. NHIS is a nationally representative household survey of the U.S. civilian noninstitutionalized population, providing annually collected information on health status, health-related behaviors, and healthcare access and use. The National Institute for Occupational Safety and Health sponsored questions on work conditions, including questions about shift work, schedule flexibility, schedule predictability (advance notice of work schedule), and income variability (monthly change in earnings) in the 2021 NHIS (25). The estimates in this report are based on data from the Sample Adult module of the 2021 NHIS, which is administered to a randomly selected adult from each household sampled (25).

Due to the impacts of the COVID-19 pandemic, 62.8% of the Sample Adult interviews in 2021 were conducted at least partially by telephone (25). The overall NHIS Sample Adult response rate was 50.9% (25). Detailed information regarding the design, content, and use of NHIS and annual sample sizes and response rates of NHIS are available in the annual NHIS Survey Description document (25).

### Family food insecurity

Family food insecurity is based on responses to a set of 10 questions: whether the respondent 1) worried that food would run out before there was money to buy more; 2) found food that was purchased did not last and did not have money to get more; 3) could not afford to eat balanced meals; 4) had to cut the size of meals or skip meals because there was not enough money for food, and 5) the number of days this happened; 6) ate less than they should because there was not enough money for food; 7) was hungry but did not eat because there

was not enough money for food; 8) lost weight because there was not enough money for food; 9) did not eat for a whole day because there was not enough money for food, and 10) the number of days this happened. The questions measure the family's food situation based on the past 30 days. Based on the responses, the NHIS public-use files categorize families as food secure, low food secure, or very low food secure. For this analysis, family food insecurity is defined using two categories: families categorized as low food secure or very low food secure are considered food insecure compared with families that are food secure (3).

### Work conditions

*Type of work shift*—Respondents were asked, “Which of the following best describes your usual hours of work at your most recent main job? Would you say day shift, evening shift, night shift, rotating shift, or some other shift?” Job shift was recoded into three categories: 1) day shift, 2) evening or night shift, and 3) rotating or other shift.

*Work schedule inflexibilities*—Respondents were asked, “How easy or difficult is/was it for you to change your work schedule to do things that are important to you or your family? Would you say very easy, somewhat easy, somewhat difficult, or very difficult?” Schedule inflexibilities was defined using two categories: 1) very easy or somewhat easy to change work schedule, or 2) very difficult or somewhat difficult to change work schedule.

*Advance notice of work schedule*—Respondents were asked, “Did your work schedule at your main job change on a regular basis?” and, if yes, respondents were asked a follow-up question: “Approximately how far in advance does your employer usually tell you the hours that you will need to work on any given day?”

In this analysis, advance notice of work schedule was recoded into three categories: 1) work schedule does not vary (if respondent reported “no” to the first question on if work schedule changes on a regular basis), 2) respondent receives at least 1 week notice of change in work schedule (if respondent reported

“yes” to the first question and indicated 1 week [7 days or more] notice to the follow-up question), and 3) respondent receives less than 1 week notice of change in work schedule (if respondent reported “yes” to the first question and indicated less than 7 days notice to the follow-up question).

#### *Monthly change in earnings—*

Respondents were asked, “How much do/did your earnings change from month to month? Would you say not at all, a small amount, a moderate amount, or a large amount?” Monthly change in earnings was defined using three categories: 1) no change in monthly earnings (monthly earnings do not vary), 2) a small change in monthly earnings, or 3) a moderate or large change in monthly earnings.

## Covariates

Covariates examined included age, sex, race and Hispanic origin, nativity status, marital status, presence of children younger than age 18 in family, educational attainment, family income as a percentage of FPL, employed full time, occupation, health status, disability status, rural residence, and region. See Technical Notes for additional information.

## Statistical analysis

The analytic sample for this study includes sample adults ages 18–64 who reported that they worked for pay in the week before the interview, performed seasonal or contract work in the last 12 months, or were working at a family job or business not for pay (working adults). Working adults with missing data or unknown information on work conditions, family food insecurity, or other covariates were generally excluded from the analysis unless specifically noted. Among working adults, 1.0% had missing data or unknown information on family food insecurity, and 2.0% had missing data or unknown information on other covariates. Working adults with missing or invalid responses on work condition variables included in this analysis ranged from less than 0.7% (type of work shift) to 1.7% (advance notice of work schedule). For this reason,

the unweighted sample size differs for each of the four work conditions: type of work shift ( $n = 14,665$ ), work schedule inflexibilities ( $n = 14,629$ ), advance notice of work schedule ( $n = 14,541$ ), and monthly change in earnings ( $n = 14,571$ ).

The percent distribution of family food insecurity and each work condition by selected sociodemographic, health, and geographic status characteristics is presented in [Table 1](#). Wald tests were used to evaluate the statistical significance of differences in the sociodemographic, health, and geographic characteristics for food insecure compared with food secure working adults as well as across categories for each type of work condition.

Logistic regression models were used to present unadjusted and adjusted prevalence estimates of the association of family food insecurity (food secure compared with food insecure) and each type of work condition. Adjusted models accounted for differences in sociodemographic characteristics (age, sex, race and Hispanic origin, nativity status, marital status, presence of children younger than age 18 in family, educational attainment, family income as a percentage of FPL, employed full time, and occupation), as well as health status, disability status, rural residence, and region.

All estimates reported in this analysis meet National Center for Health Statistics standards of reliability (26). The 95% confidence intervals were generated using the Korn–Graubard method for complex surveys (27). Two-tailed  $t$  tests were used to evaluate statistical differences, with statistical significance set at  $p < 0.05$  for all tests. Estimates are weighted to account for the NHIS complex survey design and are representative of the U.S. civilian noninstitutionalized population. Analyses were conducted using SAS-callable SUDAAN version 11.0.3 software (RTI International, Research Triangle Park, N.C.) within SAS version 9.3 software (SAS Institute Inc., Cary, N.C.). Terms such as “more likely” and “less likely” indicate a statistically significant difference. Lack of comment regarding the difference between any two estimates does not necessarily mean that the difference was tested and not found to be significant.

## Results

### Characteristics of working adults by family food insecurity

In 2021, 4.4% of working adults ages 18–64 lived in families experiencing food insecurity. [Table 1](#) presents the percent distribution of selected sociodemographic, health, and geographic characteristics by family food insecurity. Significant differences between those who were food insecure compared with those who were food secure were seen across most characteristics. Compared with working adults who were food secure, those who were food insecure were more likely to be younger (ages 18–34), female, non-Hispanic Black or Hispanic, not born in the United States, have family income less than 200% FPL, be in fair or poor health or with disabilities, and live in the South. In addition, those who were food insecure were less likely to be married, have a bachelor’s degree or higher, be employed full time, or live in the Northeast.

### Characteristics of working adults by work conditions

[Table 1](#) also presents the percent distribution of sociodemographic, health, and geographic characteristics for each type of work condition.

#### Type of work shift

In 2021, 79.1% of working adults ages 18–64 worked a day shift, 9.2% worked evening or night shifts, and 11.6% worked rotating or other shifts. Significant differences were seen across most characteristics including age, race and Hispanic origin, educational attainment, and health status. For example, compared with working evening or night or rotating or other shifts, adults who worked a day shift were more likely to be older (ages 50–64), White non-Hispanic, have a college degree, and have family incomes of 400% FPL or more. Day shift workers also were less likely to report health status as fair or poor compared with evening or night shift workers.

## Work schedule inflexibilities

In 2021, 22.1% of working adults reported work schedule inflexibilities (very difficult or somewhat difficult to change their work schedule). Among those with work schedule inflexibilities, a higher percentage were not born in the United States, had family income below 200% FPL, reported fair or poor health or having disabilities, and lived in the northeastern United States compared with workers who reported that it was very easy or somewhat easy to change their work schedule.

## Advance notice of work schedule

In 2021, 80.8% of working adults reported that their work schedule did not vary, 8.2% reported that their schedule changed on a regular basis and that they received 7 or more days advance notice, while 10.9% reported that their schedule changed on a regular basis and they received less than 7 days advance notice. Compared with workers whose schedules did not vary or who received 7 days or more advance notice of work schedule, those who received less than 7 days advance notice of work schedule were more likely to be ages 18–34, male, less likely to have a college degree, and have family income below 200% FPL. Workers who received less than 7 days advance notice of work schedules were also more likely to report fair or poor health or having disabilities than those whose schedules did not vary.

## Monthly change in earnings

Among working adults, 57.1% had monthly earnings that did not change, 28.9% experienced a small change in earnings from month to month, and 14.0% experienced at least moderate change in monthly earnings. Compared with workers whose earnings did not change and those who experienced a small change in monthly earnings, working adults who experienced at least a moderate change in earnings from month to month were more likely to be male, Hispanic, not born in the United States, and have family income of less than 200% FPL.

## Differences by occupation and employment

Among all four work conditions, differences were also seen by occupation and full-time employment status. Adults working day shifts were more likely to be employed in management (19.9%) or professional (27.9%) occupations and less likely to be employed in service occupations (12.2%) compared with those working evening or night or rotating or other shifts. Adults who received less than 7 days advance notice of their work schedule were more likely to be employed in service occupations (21.6%) compared with those whose schedule did not vary (14.2%). Working adults who reported at least moderate changes in monthly earnings were also more likely to be employed in service occupations (18.6%) compared with those who reported no change in monthly earnings (12.5%).

## Family food insecurity and work conditions

### Unadjusted results

Table 2 shows unadjusted estimates of the percentage of working adults ages 18–64 experiencing food insecurity by work conditions. Family food insecurity among working-age adults varied by each type of work condition. For example, day shift workers were significantly less likely to report family food insecurity (3.6%) compared with those working evening or night shifts (7.7%) or those working rotating or other shifts (7.1%). Workers with inflexible work schedules were about twice as likely to experience family food insecurity than adults who reported that it was very easy or somewhat easy to change their work schedule (7.1% and 3.6%, respectively). Workers who received less than 7 days advance notice of their work schedules also were more likely to report family food insecurity (7.3%) than other working adults. Finally, food insecurity differed by monthly change in earnings. Among workers whose earnings did not change from month to month, 3.4% reported family food insecurity, compared with 5.0% of workers reporting small changes in monthly earnings

and 6.8% of workers reporting at least moderate changes in monthly earnings.

### Model-adjusted results

To account for observed differences in sociodemographic, health, and geographic characteristics by work conditions, estimates of family food insecurity were adjusted for these characteristics in logistic regression models. Table 2 presents the model-adjusted prevalence of family food insecurity for each of the four work conditions (type of work shift, work schedule inflexibilities, advance notice of work schedule, and monthly change in earnings) after adjusting for age, sex, race and Hispanic origin, nativity status, marital status, presence of children younger than age 18 in family, educational attainment, family income as a percentage of FPL, employed full time, occupation, health status, disability status, rural residence, and region.

After adjusting for these characteristics, variation in the percentage of adults experiencing food insecurity by work condition remained. The percentage of adults experiencing family food insecurity was lower for adults working day shifts (4.0%) compared with those working rotating or other shifts (5.7%). Workers who reported it was very difficult or somewhat difficult to change their work schedule were more likely to report food insecurity (6.3%) compared with those who reported that it was very easy or somewhat easy to change their work schedule (3.8%). In addition, working adults whose schedule changed on a regular basis and who received less than 7 days advance notice of their work schedule also were significantly more likely to experience family food insecurity (5.7%) than those whose schedule did not vary (4.1%). The percentage of working adults experiencing family food insecurity who reported a moderate amount or more of changes in their monthly earnings (5.5%) remained significantly higher than the percentage of working adults who experienced no change in monthly earnings (3.9%).

## Summary

In 2021, 4.4% of working-age adults experienced family food insecurity. Employment status has been linked to food insecurity among working-age adults (9,10). Less is known about differences in the experience of food insecurity by specific employment conditions. This report describes differences in the experience of family food insecurity in the past 30 days among working adults ages 18–64 by selected work conditions, including type of work shift, work schedule inflexibilities, advance notice of work schedule, and monthly change in earnings. Differences in sociodemographic and health characteristics by these work conditions also are presented.

Among the sociodemographic and health characteristics described, variations existed by type of work condition among working-age adults. Consistent with other studies (1,2), most of these characteristics also were associated with family food insecurity. However, even after adjustment for these characteristics (including age, sex, race and Hispanic origin, educational attainment, family income, occupation as well as health and disability status, rural residence and region), differences in family food insecurity by type of work condition remained. After model-based adjustment, working adults with uncertain schedules, such as adults working rotating or other types of shifts were more likely to report family food insecurity (5.7%) compared with day shift workers (4.0%). Workers who reported that it was very difficult or somewhat difficult to change their work schedule were more likely to experience family food insecurity (6.3%) than workers who did not report difficulty changing their work schedule (3.8%). Workers who received less than 7 days advance notice of their work schedule were more likely to report family food insecurity than adults with 7 days or more advance notice of their work schedule or those whose work schedule did not vary. Food insecurity also differed by monthly change in earnings, from 3.9% among workers whose earnings did not change to 5.5% among workers whose earnings changed a moderate amount or more from month to month.

Reducing household food insecurity and hunger is a Healthy People 2030 objective (28). Understanding how specific work conditions impact the experience of family food security may contribute to a better understanding of the general relationship between employment and food insecurity. Consistent with earlier research that links work conditions with food choices, coping strategies, and diet quality (22–24), working adults with inflexible, uncertain, or unstable schedules may have lower earnings than workers with flexible and stable schedules (9,11), and may also have more difficulty purchasing food during market hours, planning meals ahead of time, and consistently affording and eating a nutritious diet.

## Strengths and limitations

The primary strength of this report is that it uses nationally representative data to explore associations between an array of specific work conditions—shift work, schedule inflexibilities, advance notice of work schedule, and monthly earnings change—and food insecurity among all working adults. This analysis is not limited to a specific set of occupations (29,30) or a specific population (10,22). The focus on work conditions, rather than work hours and employment status (9,10), is timely given changes in the labor market and work conditions during and since the COVID-19 pandemic (31,32).

However, findings in this report are subject to several limitations. NHIS responses are self-reported. Despite this limitation, the measures of work conditions described reflect more objective measures of schedule inflexibilities, change in earnings, and work schedule, such as working a rotating or other shift or having less than 7 days advance notice of work schedule, rather than respondent perceptions of work conditions or job quality.

In addition, changes in the labor market and nature of work during the COVID-19 public health emergency may have impacted work conditions during 2021 when these data were collected. Work conditions in some occupations changed with increased acceptance of remote work or telework (31,32). Workers in other jobs—such as

healthcare workers—may have faced more stressful work conditions during the public health emergency (33). Further, some workers, particularly those in service and sales occupations, faced temporary layoffs during the pandemic (34). Changes to government assistance programs in response to the public health emergency (35–37) may have reduced economic insecurity and food insecurity for families during this period. As a result of these changes, the associations between work conditions and food insecurity in 2021 reported here may not reflect conditions after the lifting of the public health emergency in May 2023.

Although the analysis controlled for a wide range of characteristics, bias from omitted variables is possible. For example, NHIS does not collect data related to time use (for example, the number of and specific hours spent at work for pay, or on household tasks such as shopping for and preparing food and other household activities), so it is not possible to assess if associations between schedule inflexibilities or schedule uncertainty and food insecurity reflect time constraints or economic resources. Although Supplemental Nutrition Assistance Program (SNAP) receipt may be associated with food insecurity, it was not included in the final model. SNAP receipt is based on meeting income eligibility requirements and is highly correlated with family income as a percentage of FPL, which was included in the model. Results not shown here indicate that including SNAP receipt in the adjusted model did not substantively change the magnitude or the nature of reported associations between work conditions and food insecurity. Similarly, industry is a separate concept from occupation that may also reflect work conditions, but models reported here do not include industry as a control. Results not shown indicate that including industry did not change the magnitude or the statistical significance of the model-adjusted estimates reported here. For this reason and to preserve model power, the final model did not include industry.

Despite these limitations, results of this study show that, even after adjusting for several sociodemographic, health, and geographic characteristics, the specific conditions of employment, such as type of

work shift, schedule inflexibilities, advance notice of work schedule, and changes in monthly earnings, are associated with family food insecurity for working adults ages 18–64.

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**Table 1. Percent distribution of selected sociodemographic characteristics and health status among working adults ages 18–64, by family food insecurity and selected work conditions: United States, 2021**

Selected characteristic	Family food insecurity (95% CI) (n = 14,713)		Type of work shift (95% CI) (n = 14,665)			Work schedule inflexibilities (95% CI) (n = 14,629)		Advance notice of work schedule (95% CI) (n = 14,541)			Monthly change in earnings (95% CI) (n = 14,571)		
	Food insecure	Food secure	Day shift	Evening or night shift	Rotating or other shift	Very easy or somewhat easy to change work schedule	Very difficult or somewhat difficult to change work schedule	Work schedule does not vary	Advance notice of work schedule is 7 days (1 week) or more	Advance notice of work schedule is less than 7 days (1 week)	Monthly earnings do not change	Monthly earnings change a small amount	Monthly earnings change a moderate amount or more
All working adults ages 18–64 <sup>1</sup>	4.4 (4.0–4.8)	95.6 (95.2–96.0)	79.1 (78.3–80.0)	9.2 (8.6–9.9)	11.6 (11.0–12.3)	77.9 (77.1–78.7)	22.1 (21.3–22.9)	80.8 (80.0–81.6)	8.2 (7.7–8.8)	10.9 (10.3–11.6)	57.1 (56.0–58.1)	28.9 (28.0–29.9)	14.0 (13.3–14.7)
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Age group													
18–34	<sup>2</sup> 45.3 (40.8–49.8)	37.1 (36.0–38.2)	<sup>3,4</sup> 34.1 (32.9–35.2)	<sup>4</sup> 56.4 (53.0–59.7)	45.2 (42.2–48.2)	37.2 (36.0–38.4)	38.1 (36.0–40.2)	<sup>6,7</sup> 35.6 (34.5–36.7)	<sup>7</sup> 51.3 (47.7–54.8)	40.4 (37.3–43.5)	<sup>8</sup> 35.1 (33.7–36.4)	<sup>9</sup> 42.4 (40.5–44.4)	35.9 (33.4–38.5)
35–49	32.3 (28.2–36.7)	33.6 (32.7–34.5)	<sup>3,4</sup> 35.1 (34.1–36.1)	<sup>4</sup> 25.3 (22.7–28.2)	29.3 (26.9–31.8)	33.7 (32.6–34.7)	33.2 (31.4–35.0)	<sup>6,7</sup> 34.5 (33.4–35.5)	28.0 (25.1–31.0)	31.4 (28.8–34.0)	<sup>8,9</sup> 35.6 (34.4–36.8)	30.9 (29.3–32.5)	31.5 (29.3–33.8)
50–64	<sup>2</sup> 22.4 (18.8–26.3)	29.3 (28.4–30.3)	<sup>3,4</sup> 30.8 (29.8–31.8)	<sup>4</sup> 18.3 (16.1–20.7)	25.5 (23.1–28.0)	29.2 (28.1–30.2)	28.7 (26.8–30.7)	<sup>6</sup> 30.0 (29.0–31.0)	<sup>7</sup> 20.8 (18.2–23.5)	28.3 (25.7–30.9)	<sup>8,9</sup> 29.4 (28.2–30.6)	<sup>9</sup> 26.7 (25.2–28.3)	32.6 (30.2–35.0)
Sex													
Men	<sup>2</sup> 44.6 (40.2–49.1)	53.3 (52.4–54.3)	52.7 (51.6–53.7)	53.6 (50.1–57.0)	54.7 (51.7–57.6)	53.3 (52.2–54.3)	51.5 (49.4–53.6)	<sup>6,7</sup> 52.9 (51.8–54.0)	<sup>7</sup> 46.9 (43.6–50.1)	58.1 (55.1–61.0)	<sup>9</sup> 51.4 (50.1–52.6)	<sup>9</sup> 51.9 (50.0–53.7)	61.5 (59.1–63.9)
Women	<sup>2</sup> 55.4 (50.9–59.8)	46.7 (45.7–47.6)	47.3 (46.3–48.4)	46.4 (43.0–49.9)	45.3 (42.4–48.3)	46.7 (45.7–47.8)	48.5 (46.4–50.6)	<sup>6,7</sup> 47.1 (46.0–48.2)	<sup>7</sup> 53.1 (49.9–56.4)	41.9 (39.0–44.9)	<sup>9</sup> 48.6 (47.4–49.9)	<sup>9</sup> 48.1 (46.3–50.0)	38.5 (36.1–40.9)
Race and Hispanic origin <sup>10</sup>													
Asian non-Hispanic	<sup>2</sup> 3.3 (1.8–5.5)	6.4 (5.8–7.1)	6.4 (5.8–7.2)	5.1 (3.8–6.8)	5.7 (4.5–7.1)	6.3 (5.7–7.0)	6.0 (5.0–7.2)	<sup>7</sup> 6.6 (5.9–7.3)	<sup>7</sup> 5.8 (4.4–7.5)	3.7 (2.7–5.0)	<sup>8,9</sup> 7.1 (6.4–8.0)	4.9 (4.1–5.8)	5.4 (4.2–6.8)
Black non-Hispanic	<sup>2</sup> 24.6 (20.3–29.4)	10.5 (9.6–11.4)	<sup>3,4</sup> 9.7 (8.8–10.6)	17.8 (15.0–20.9)	15.2 (12.9–17.6)	11.2 (10.2–12.2)	10.7 (9.2–12.4)	11.0 (10.0–12.0)	11.0 (8.8–13.6)	12.1 (10.1–14.4)	11.3 (10.2–12.3)	10.8 (9.4–12.2)	10.7 (9.0–12.7)
White non-Hispanic	<sup>2</sup> 39.9 (34.8–45.2)	62.5 (60.8–64.3)	<sup>3,4</sup> 63.7 (62.0–65.5)	51.6 (47.8–55.3)	55.1 (51.8–58.3)	61.8 (60.0–63.6)	60.7 (58.0–63.3)	62.0 (60.2–63.7)	60.8 (57.1–64.4)	59.7 (56.1–63.2)	62.4 (60.5–64.3)	<sup>9</sup> 62.5 (60.1–64.8)	57.9 (54.8–61.0)
Other and multiple races non-Hispanic	<sup>2</sup> 5.1 (2.9–8.4)	2.6 (2.2–3.0)	<sup>3,4</sup> 2.2 (1.9–2.7)	4.9 (3.6–6.5)	4.3 (3.1–5.9)	2.5 (2.2–2.9)	3.5 (2.4–4.8)	<sup>6,7</sup> 2.4 (2.0–2.9)	4.2 (2.8–6.0)	3.7 (2.6–5.1)	<sup>9</sup> 2.3 (1.9–2.7)	3.2 (2.4–4.2)	3.4 (2.3–4.8)
Hispanic	<sup>2</sup> 27.0 (22.4–32.0)	17.9 (16.5–19.4)	17.9 (16.5–19.3)	20.6 (17.4–24.2)	19.8 (17.2–22.6)	18.1 (16.7–19.6)	19.1 (17.1–21.3)	<sup>7</sup> 18.0 (16.6–19.5)	18.2 (15.3–21.3)	20.9 (18.1–23.9)	<sup>9</sup> 16.9 (15.4–18.5)	<sup>9</sup> 18.6 (16.8–20.6)	22.6 (20.0–25.3)
Nativity status													
Not born in United States or U.S. territory	<sup>2</sup> 28.7 (24.0–33.9)	18.7 (17.6–19.9)	19.1 (17.9–20.4)	18.4 (15.8–21.2)	19.7 (17.2–22.2)	<sup>5</sup> 18.6 (17.4–19.7)	21.1 (19.1–23.3)	<sup>7</sup> 19.0 (17.8–20.2)	<sup>7</sup> 16.6 (14.0–19.6)	22.0 (19.1–25.2)	<sup>8,9</sup> 19.0 (17.7–20.4)	<sup>9</sup> 17.0 (15.4–18.6)	23.2 (20.7–26.0)
Born in United States or U.S. territory	<sup>2</sup> 71.3 (66.1–76.0)	81.3 (80.1–82.4)	80.9 (79.6–82.1)	81.6 (78.8–84.2)	80.3 (77.8–82.8)	<sup>5</sup> 81.4 (80.3–82.6)	78.9 (76.7–80.9)	<sup>7</sup> 81.0 (79.8–82.2)	<sup>7</sup> 83.4 (80.4–86.0)	78.0 (74.8–80.9)	<sup>8,9</sup> 81.0 (79.6–82.3)	<sup>9</sup> 83.0 (81.4–84.6)	76.8 (74.0–79.3)

See footnotes at end of table.



**Table 1. Percent distribution of selected sociodemographic characteristics and health status among working adults ages 18–64, by family food insecurity and selected work conditions: United States, 2021—Con.**

Selected characteristic	Family food insecurity (95% CI) (n = 14,713)		Type of work shift (95% CI) (n = 14,665)			Work schedule inflexibility (95% CI) (n = 14,629)		Advance notice of work schedule (95% CI) (n = 14,541)			Monthly change in earnings (95% CI) (n = 14,571)		
	Food insecure	Food secure	Daytime shift	Evening or night shift	Rotating or other shift	Very easy or somewhat easy to change work schedule	Very difficult or somewhat difficult to change work schedule	Work schedule does not vary	Advance notice of work schedule is 7 days (1 week) or more	Advance notice of work schedule is less than 7 days (1 week)	Monthly earnings do not change	Monthly earnings change a small amount	Monthly earnings change a moderate amount or more
<b>Marital status</b>													
Married . . . . .	<sup>2</sup> 36.3 (31.8–41.0)	53.1 (52.1–54.2)	<sup>3,4</sup> 55.5 (54.4–56.6)	<sup>4</sup> 34.0 (30.7–37.4)	45.5 (42.6–48.4)	52.5 (51.3–53.6)	52.3 (50.2–54.4)	<sup>6,7</sup> 53.6 (52.4–54.7)	45.4 (42.0–48.9)	49.0 (46.1–51.9)	<sup>8</sup> 54.7 (53.4–56.1)	<sup>9</sup> 47.8 (46.0–49.6)	52.4 (49.6–55.2)
Living with partner . . . . .	12.3 (9.3–15.9)	10.6 (9.9–11.2)	10.5 (9.8–11.2)	12.0 (10.0–14.3)	10.9 (9.2–12.9)	10.5 (9.8–11.2)	11.3 (10.1–12.7)	<sup>6</sup> 10.3 (9.7–11.0)	13.2 (10.9–15.7)	11.8 (9.8–14.0)	<sup>8</sup> 9.7 (9.0–10.5)	12.2 (11.0–13.6)	11.5 (9.9–13.3)
Widowed, divorced, or separated . . . . .	<sup>2</sup> 15.3 (12.6–18.3)	9.6 (9.1–10.1)	9.8 (9.3–10.4)	10.5 (8.9–12.4)	9.6 (8.2–11.1)	9.6 (9.1–10.2)	10.5 (9.4–11.7)	<sup>6</sup> 10.2 (9.6–10.7)	7.7 (6.2–9.4)	8.9 (7.5–10.4)	10.0 (9.4–10.7)	9.3 (8.4–10.2)	10.3 (9.0–11.7)
Never married . . . . .	<sup>2</sup> 36.1 (31.9–40.4)	26.7 (25.7–27.7)	<sup>3,4</sup> 24.2 (23.2–25.2)	<sup>4</sup> 43.4 (39.9–47.0)	34.0 (31.1–37.0)	27.4 (26.3–28.5)	25.9 (24.0–27.8)	<sup>6,7</sup> 26.0 (24.9–27.0)	33.8 (30.5–37.1)	30.3 (27.5–33.3)	<sup>8</sup> 25.5 (24.2–26.7)	<sup>9</sup> 30.7 (28.9–32.5)	25.7 (23.3–28.3)
<b>Presence of children in family</b>													
No children . . . . .	<sup>2</sup> 54.1 (49.2–58.9)	59.2 (58.1–60.2)	58.9 (57.8–60.0)	59.3 (55.8–62.7)	60.0 (57.1–62.9)	59.5 (58.3–60.5)	57.5 (55.4–59.6)	59.3 (58.2–60.4)	56.1 (52.8–59.4)	59.5 (56.5–62.5)	59.3 (58.0–60.6)	59.4 (57.6–61.3)	57.4 (54.8–59.9)
One or more children . . . . .	<sup>2</sup> 45.9 (41.1–50.8)	40.8 (39.8–41.9)	41.1 (40.0–42.2)	40.7 (37.3–44.2)	40.0 (37.1–42.9)	40.5 (39.5–41.7)	42.5 (40.4–44.6)	40.7 (39.6–41.8)	43.9 (40.6–47.2)	40.5 (37.5–43.5)	40.7 (39.4–42.0)	40.6 (38.7–42.4)	42.6 (40.1–45.2)
<b>Educational attainment</b>													
Less than high school . . . . .	<sup>2</sup> 19.0 (14.9–23.6)	5.9 (5.3–6.6)	<sup>3</sup> 6.1 (5.4–6.8)	<sup>4</sup> 10.2 (8.0–12.7)	6.2 (4.9–7.8)	6.3 (5.6–7.0)	7.1 (6.0–8.3)	<sup>7</sup> 6.2 (5.5–6.9)	<sup>7</sup> 5.2 (3.8–7.1)	10.0 (8.2–12.1)	<sup>8,9</sup> 5.5 (4.8–6.2)	7.1 (6.0–8.2)	8.6 (7.0–10.5)
High school graduate including GED . . . . .	<sup>2</sup> 31.9 (27.5–36.5)	25.5 (24.5–26.6)	<sup>3,4</sup> 23.9 (22.9–25.0)	<sup>4</sup> 37.0 (33.6–40.4)	29.3 (26.5–32.3)	25.4 (24.3–26.5)	27.1 (25.1–29.1)	<sup>7</sup> 25.1 (24.0–26.2)	<sup>7</sup> 23.2 (20.2–26.4)	32.6 (29.7–35.5)	<sup>8,9</sup> 22.9 (21.6–24.2)	30.0 (28.2–31.8)	29.1 (26.5–31.7)
Some college . . . . .	29.8 (25.6–34.3)	25.8 (24.8–26.7)	<sup>3,4</sup> 24.3 (23.3–25.4)	33.6 (30.6–36.7)	31.4 (28.8–34.1)	26.1 (25.1–27.2)	25.5 (23.6–27.4)	<sup>6</sup> 25.3 (24.3–26.3)	<sup>7</sup> 32.4 (29.5–35.4)	26.1 (23.6–28.8)	<sup>8,9</sup> 22.6 (21.4–23.7)	<sup>9</sup> 31.5 (29.8–33.3)	28.6 (26.2–31.0)
Bachelor's degree or higher . . . . .	<sup>2</sup> 19.3 (15.8–23.3)	42.8 (41.5–44.0)	<sup>3,4</sup> 45.6 (44.3–47.0)	<sup>4</sup> 19.2 (16.6–22.1)	33.0 (30.5–35.7)	42.2 (40.8–43.5)	40.4 (38.2–42.5)	<sup>6,7</sup> 43.4 (42.1–44.8)	<sup>7</sup> 39.2 (36.3–42.2)	31.3 (28.5–34.1)	<sup>8,9</sup> 49.1 (47.6–50.7)	31.4 (29.7–33.2)	33.7 (31.3–36.2)
<b>Family income</b>													
Less than 200% of federal poverty level . . . . .	<sup>2</sup> 62.9 (58.4–67.2)	18.7 (17.7–19.8)	<sup>3,4</sup> 17.9 (16.9–19.0)	33.1 (29.6–36.7)	29.0 (26.0–32.0)	<sup>5</sup> 19.8 (18.7–21.0)	23.0 (21.0–25.1)	<sup>6,7</sup> 19.1 (18.0–20.1)	<sup>7</sup> 23.8 (20.9–27.0)	29.4 (26.3–32.6)	<sup>8,9</sup> 17.3 (16.1–18.5)	<sup>9</sup> 22.8 (21.1–24.6)	28.5 (26.0–31.1)
200%–399% of federal poverty level . . . . .	26.4 (22.4–30.6)	29.2 (28.2–30.2)	<sup>3</sup> 28.3 (27.2–29.4)	<sup>4</sup> 35.5 (32.1–39.0)	29.6 (26.9–32.4)	28.7 (27.6–29.8)	30.6 (28.6–32.6)	28.9 (27.8–30.0)	30.4 (27.1–33.9)	29.3 (26.6–32.2)	<sup>8</sup> 26.6 (25.3–28.0)	<sup>9</sup> 33.9 (32.3–35.6)	28.8 (26.4–31.4)
400% of federal poverty level or more . . . . .	<sup>2</sup> 10.7 (8.0–14.0)	52.1 (50.8–53.4)	<sup>3,4</sup> 53.8 (52.4–55.2)	<sup>4</sup> 31.5 (28.3–34.7)	41.4 (38.6–44.3)	<sup>5</sup> 51.5 (50.1–52.8)	46.5 (44.3–48.7)	<sup>6,7</sup> 52.1 (50.7–53.5)	45.8 (42.2–49.3)	41.3 (38.2–44.3)	<sup>8,9</sup> 56.1 (54.5–57.8)	43.3 (41.5–45.1)	42.6 (39.9–45.4)
<b>Employment status</b>													
Employed full time . . . . .	<sup>2</sup> 74.3 (69.8–78.4)	82.5 (81.6–83.4)	<sup>3,4</sup> 85.2 (84.3–86.0)	<sup>4</sup> 67.9 (64.3–71.3)	72.7 (70.0–75.3)	<sup>5</sup> 80.6 (79.6–81.6)	87.6 (86.1–88.9)	<sup>6,7</sup> 85.0 (84.1–85.9)	72.6 (69.4–75.7)	69.0 (66.1–71.8)	88.1 (87.2–89.0)	76.5 (74.7–78.1)	70.4 (67.8–72.8)

See footnotes at end of table.

**Table 1. Percent distribution of selected sociodemographic characteristics and health status among working adults ages 18–64, by family food insecurity and selected work conditions: United States, 2021—Con.**

Selected characteristic	Family food insecurity (95% CI) (n = 14,713)		Type of work shift (95% CI) (n = 14,665)			Work schedule inflexibility (95% CI) (n = 14,629)		Advance notice of work schedule (95% CI) (n = 14,541)			Monthly change in earnings (95% CI) (n = 14,571)		
	Food insecure	Food secure	Daytime shift	Evening or night shift	Rotating or other shift	Very easy or somewhat easy to change work schedule	Very difficult or somewhat difficult to change work schedule	Work schedule does not vary	Advance notice of work schedule is 7 days (1 week) or more	Advance notice of work schedule is less than 7 days (1 week)	Monthly earnings do not change	Monthly earnings change a small amount	Monthly earnings change a moderate amount or more
<b>Occupation</b>													
Management and business and financial operations . . . . .	<sup>2</sup> 7.1 (5.0–9.8)	18.0 (17.2–18.8)	<sup>3,4</sup> 19.9 (19.0–20.8)	4.7 (3.3–6.4)	12.0 (10.2–13.8)	<sup>5</sup> 19.0 (18.0–19.9)	12.7 (11.4–14.1)	<sup>6,7</sup> 18.7 (17.8–19.6)	<sup>7</sup> 10.4 (8.5–12.4)	14.9 (12.8–17.2)	<sup>8,9</sup> 22.0 (20.9–23.2)	<sup>9</sup> 10.0 (9.0–11.1)	15.5 (13.7–17.4)
Professional and related . . . . .	<sup>2</sup> 14.4 (11.4–17.8)	26.5 (25.6–27.4)	<sup>3,4,27,9</sup> 26.5 (27.0–28.9)	416.2 (13.7–18.9)	20.6 (18.5–22.9)	<sup>5</sup> 24.8 (23.9–25.8)	30.2 (28.4–32.1)	<sup>7,27,1</sup> 30.2 (26.1–28.1)	<sup>7,28,1</sup> 28.1 (25.2–31.2)	16.1 (14.0–18.3)	<sup>8,9,30,8</sup> 16.1 (29.6–32.0)	<sup>9,21,4</sup> 16.4 (20.0–22.9)	16.4 (14.6–18.3)
Service . . . . .	<sup>2</sup> 28.5 (24.5–32.8)	14.9 (14.2–15.7)	<sup>3,4,12,2</sup> 14.9 (11.4–12.9)	<sup>4,32,6</sup> 14.9 (29.3–36.1)	24.7 (22.1–27.4)	15.5 (14.6–16.4)	15.7 (14.2–17.2)	<sup>6,7,14,2</sup> 15.7 (13.4–15.1)	20.2 (17.3–23.3)	21.6 (19.0–24.3)	<sup>8,9,12,5</sup> 21.6 (11.5–13.6)	19.8 (18.3–21.4)	18.6 (16.6–20.7)
Sales and related . . . . .	7.2 (5.0–10.0)	8.5 (8.0–9.1)	<sup>4,7,7</sup> 8.5 (7.1–8.3)	48.4 (6.4–10.7)	13.9 (12.0–16.1)	<sup>5,9,0</sup> 13.9 (8.3–9.6)	6.8 (5.8–8.0)	<sup>6,7,7,2</sup> 6.8 (6.6–7.8)	<sup>7,16,2</sup> 16.2 (13.6–19.1)	12.1 (10.3–14.1)	<sup>8,9,6,2</sup> 12.1 (5.6–6.8)	<sup>9,10,0</sup> 12.1 (8.9–11.2)	14.7 (13.0–16.7)
Office and administrative support . . . . .	13.2 (10.1–16.7)	10.8 (10.2–11.5)	<sup>4,11,6</sup> 10.8 (10.9–12.3)	49.9 (8.1–12.0)	7.3 (5.9–8.9)	<sup>5,11,3</sup> 7.3 (10.7–12.0)	9.7 (8.4–11.0)	<sup>6,7,11,7</sup> 9.7 (11.0–12.4)	9.2 (7.3–11.4)	6.8 (5.4–8.4)	<sup>9,11,4</sup> 6.8 (10.6–12.2)	<sup>9,11,7</sup> 6.8 (10.6–12.8)	7.7 (6.4–9.2)
Farming, forestry, and fishing . . . . .	1.7 (0.4–4.6)	0.7 (0.5–0.9)	<sup>3,0,8</sup> 0.7 (0.6–1.0)	0.2 (0.0–0.7)	0.7 (0.3–1.3)	0.7 (0.6–1.0)	0.7 (0.4–1.1)	0.7 (0.5–0.9)	0.5 (0.2–1.2)	1.0 (0.5–1.7)	0.6 (0.4–0.8)	0.7 (0.5–1.2)	1.1 (0.5–2.2)
Construction and extraction . . . . .	6.1 (4.0–8.9)	5.2 (4.7–5.7)	<sup>3,4,6,0</sup> 5.2 (5.5–6.6)	40.7 (0.3–1.3)	3.6 (2.6–4.9)	5.3 (4.8–5.8)	5.2 (4.2–6.2)	<sup>6,7,4,8</sup> 5.2 (4.3–5.3)	73.0 (2.0–4.3)	9.9 (8.1–12.0)	<sup>8,9,3,8</sup> 9.9 (3.3–4.4)	9.2 (5.2–7.0)	9.2 (7.7–10.8)
Installation, maintenance, and repair . . . . .	2.4 (1.2–4.1)	2.9 (2.5–3.2)	<sup>3,4,3,1</sup> 2.9 (2.7–3.5)	2.1 (1.3–3.2)	1.8 (1.2–2.6)	2.7 (2.4–3.1)	3.1 (2.4–3.9)	<sup>6,2,9</sup> 3.1 (2.6–3.3)	71.5 (0.8–2.5)	3.0 (2.1–4.0)	2.6 (2.2–3.0)	3.2 (2.6–3.8)	3.3 (2.5–4.3)
Production . . . . .	<sup>2,8,2</sup> 8.2 (5.8–11.2)	5.2 (4.8–5.8)	<sup>3,5,0</sup> 5.2 (4.5–5.6)	410.4 (8.5–12.6)	3.7 (2.5–5.2)	<sup>5,4,6</sup> 3.7 (4.1–5.2)	7.9 (6.8–9.1)	<sup>6,7,5,9</sup> 7.9 (5.3–6.5)	2.6 (1.7–4.0)	3.7 (2.6–5.1)	<sup>8,5,0</sup> 3.7 (4.4–5.6)	6.3 (5.3–7.4)	4.9 (3.9–6.2)
Transportation and material moving . . . . .	<sup>2,11,3</sup> 11.3 (8.5–14.5)	7.1 (6.5–7.8)	<sup>3,4,5,8</sup> 7.1 (5.2–6.3)	415.0 (12.3–17.9)	11.7 (9.8–13.9)	7.0 (6.4–7.7)	8.1 (6.9–9.4)	<sup>7,6,7</sup> 8.1 (6.1–7.3)	78.2 (6.3–10.5)	11.0 (9.2–13.0)	<sup>8,9,5,0</sup> 11.0 (4.4–5.7)	<sup>9,10,9</sup> 11.0 (9.7–12.2)	8.5 (7.0–10.2)
Military specific . . . . .	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Health status</b>													
Fair or poor . . . . .	<sup>2</sup> 21.4 (17.8–25.2)	6.2 (5.7–6.7)	<sup>3,6,5</sup> 6.2 (6.0–7.1)	9.1 (7.3–11.3)	7.4 (6.0–9.1)	<sup>5,6,0</sup> 7.4 (5.5–6.6)	9.7 (8.5–11.1)	<sup>7,6,7</sup> 9.7 (6.1–7.3)	75.9 (4.3–7.7)	8.7 (7.1–10.6)	<sup>9,6,5</sup> 8.7 (5.9–7.2)	<sup>9,6,7</sup> 8.7 (5.8–7.6)	8.6 (7.2–10.1)
Excellent, very good, or good . . . . .	<sup>2,7,8,6</sup> 78.6 (74.8–82.2)	93.8 (93.3–94.3)	<sup>3,9,3,5</sup> 93.8 (92.9–94.0)	90.9 (88.7–92.7)	92.6 (90.9–94.0)	<sup>5,9,4,0</sup> 92.6 (93.4–94.5)	90.3 (88.9–91.5)	<sup>7,9,3,3</sup> 90.3 (92.7–93.9)	794.1 (92.3–95.7)	91.3 (89.4–92.9)	<sup>9,9,3,5</sup> 91.3 (92.8–94.1)	<sup>9,9,3,3</sup> 91.3 (92.4–94.2)	91.4 (89.9–92.8)
<b>Disability status</b>													
With disabilities . . . . .	<sup>2,9,2</sup> 9.2 (6.7–12.2)	2.9 (2.6–3.3)	<sup>4,3,0</sup> 2.9 (2.6–3.3)	3.7 (2.5–5.1)	4.3 (3.3–5.5)	<sup>5,2,9</sup> 4.3 (2.5–3.3)	4.1 (3.3–5.1)	<sup>7,2,9</sup> 4.1 (2.5–3.3)	72.9 (1.8–4.2)	5.4 (4.1–7.0)	<sup>8,9,2,6</sup> 5.4 (2.3–3.1)	3.5 (2.8–4.1)	4.6 (3.6–5.8)
Without disabilities . . . . .	<sup>2,9,0,8</sup> 90.8 (87.8–93.3)	97.1 (96.8–97.4)	<sup>9,7,0</sup> 97.1 (96.7–97.4)	96.3 (94.9–97.5)	95.7 (94.5–96.7)	<sup>5,9,7,1</sup> 95.7 (96.7–97.5)	95.9 (94.9–96.7)	<sup>7,9,7,1</sup> 95.9 (96.7–97.5)	797.1 (95.8–98.2)	94.6 (93.0–95.9)	<sup>8,9,7,4</sup> 94.6 (96.9–97.7)	<sup>9,6,6</sup> 94.6 (95.9–97.2)	95.4 (94.2–96.4)
<b>Rurality of residence</b>													
Urban . . . . .	86.8 (82.9–90.1)	88.0 (86.6–89.2)	87.9 (86.6–89.2)	87.5 (84.4–90.3)	88.2 (86.2–90.1)	88.0 (86.7–89.3)	87.6 (85.7–89.3)	87.7 (86.4–89.0)	87.8 (85.1–90.1)	89.9 (87.4–92.0)	<sup>8,9</sup> 88.2 (86.8–89.5)	<sup>9,8,6,2</sup> 88.2 (84.2–88.0)	90.7 (88.6–92.4)
Rural . . . . .	13.2 (9.9–17.1)	12.0 (10.8–13.4)	12.1 (10.8–13.4)	12.5 (9.7–15.6)	11.8 (9.9–13.8)	12.0 (10.7–13.3)	12.4 (10.7–14.3)	12.3 (11.0–13.6)	12.2 (9.9–14.9)	10.1 (8.0–12.6)	<sup>8,9,11,8</sup> 10.1 (10.5–13.3)	<sup>9,13,8</sup> 10.1 (12.0–15.8)	9.3 (7.6–11.4)

See footnotes at end of table.

**Table 1. Percent distribution of selected sociodemographic characteristics and health status among working adults ages 18–64, by family food insecurity and selected work conditions: United States, 2021—Con.**

Selected characteristic	Family food insecurity (95% CI) (n = 14,713)		Type of work shift (95% CI) (n = 14,665)			Work schedule inflexibility (95% CI) (n = 14,629)		Advance notice of work schedule (95% CI) (n = 14,541)			Monthly change in earnings (95% CI) (n = 14,571)		
	Food insecure	Food secure	Daytime shift	Evening or night shift	Rotating or other shift	Very easy or somewhat easy to change work schedule	Very difficult or somewhat difficult to change work schedule	Work schedule does not vary	Advance notice of work schedule is 7 days (1 week) or more	Advance notice of work schedule is less than 7 days (1 week)	Monthly earnings do not change	Monthly earnings change a small amount	Monthly earnings change a moderate amount or more
Region													
Northeast .....	<sup>2</sup> 12.5 (9.7–15.7)	17.3 (16.0–18.8)	<sup>3</sup> 17.7 (16.3–19.1)	14.3 (11.7–17.3)	15.6 (13.3–18.1)	<sup>5</sup> 16.4 (15.1–17.9)	19.2 (17.2–21.4)	<sup>6</sup> 17.6 (16.3–19.0)	<sup>7</sup> 12.9 (10.4–15.9)	16.4 (13.8–19.2)	<sup>8,9</sup> 18.6 (17.2–20.2)	15.1 (13.2–17.1)	14.9 (12.9–17.1)
Midwest .....	19.4 (15.9–23.2)	21.9 (20.4–23.5)	<sup>4</sup> 21.9 (20.3–23.5)	<sup>4</sup> 24.6 (21.3–28.0)	19.4 (17.1–21.9)	21.7 (20.2–23.2)	22.4 (20.3–24.5)	21.9 (20.4–23.4)	23.5 (20.5–26.7)	20.5 (17.7–23.5)	<sup>8</sup> 21.3 (19.7–22.9)	<sup>9</sup> 24.4 (22.1–26.7)	19.8 (17.4–22.4)
South .....	<sup>2</sup> 45.1 (40.1–50.2)	36.4 (34.6–38.2)	36.3 (34.5–38.2)	37.2 (33.3–41.2)	39.2 (36.1–42.4)	<sup>5</sup> 37.5 (35.6–39.3)	34.5 (32.1–37.0)	36.7 (34.9–38.5)	35.5 (32.0–39.2)	38.5 (35.0–42.0)	<sup>8</sup> 37.5 (35.6–39.4)	<sup>9</sup> 34.3 (31.9–36.8)	38.7 (35.7–41.8)
West .....	23.1 (18.5–28.1)	24.3 (22.6–26.2)	24.1 (22.3–26.0)	23.9 (20.3–27.9)	25.8 (22.9–28.8)	24.4 (22.6–26.4)	23.8 (21.7–26.1)	<sup>6</sup> 23.8 (22.1–25.7)	28.0 (24.6–31.7)	24.7 (21.7–27.8)	<sup>8,9</sup> 22.6 (20.9–24.4)	26.2 (23.7–28.9)	26.6 (24.0–29.4)

--- Data not available.

<sup>1</sup>Excludes working adults with missing data or unknown information on family food insecurity.

<sup>2</sup>Statistically different from food secure ( $p < 0.05$ ).

<sup>3</sup>Statistically different from evening or night shift ( $p < 0.05$ ).

<sup>4</sup>Statistically different from rotating or other shift ( $p < 0.05$ ).

<sup>5</sup>Statistically different from very difficult or somewhat difficult to change work schedule ( $p < 0.05$ ).

<sup>6</sup>Statistically different from advance notice of work schedule is 7 days (1 week) or more ( $p < 0.05$ ).

<sup>7</sup>Statistically different from advance notice of work schedule is less than 7 days (1 week) ( $p < 0.05$ ).

<sup>8</sup>Statistically different from monthly earnings change a small amount ( $p < 0.05$ ).

<sup>9</sup>Statistically different from monthly earnings change a moderate amount or more ( $p < 0.05$ ).

<sup>10</sup>Adults categorized as Hispanic may be of any race or combination of races. Adults categorized as Asian non-Hispanic, Black non-Hispanic, and White non-Hispanic indicated one race only. Non-Hispanic adults of multiple or other races are combined in the other and multiple races non-Hispanic category.

NOTES: CI is confidence interval. Family food insecurity was determined based on a composite recode of responses to 10 questions developed by the U.S. Department of Agriculture to measure if adults had problems with eating patterns or access to and quality, variety, and quantity of food in the past 30 days. In the National Health Interview Survey, food insecurity was calculated at the family level, and families that reported low food security or very low food security (three or more problems) were considered to be food insecure. Estimates are based on household interviews of a sample of the U.S. civilian noninstitutionalized population. Percentages may not sum to 100 because of rounding.

SOURCE: National Center for Health Statistics, National Health Interview Survey, 2021.

**Table 2. Percentage of working adults ages 18–64 experiencing family food insecurity, by selected work conditions: United States, 2021**

Selected work conditions	Unadjusted model <sup>1</sup>			Adjusted model <sup>2</sup>		
	Percent	Standard error	95% confidence interval	Percent	Standard error	95% confidence interval
<b>Model 1: Type of work shift</b>						
Day shift . . . . .	<sup>3,4</sup> 3.6	0.2	3.2–4.0	<sup>4</sup> 4.0	0.3	3.6–4.5
Evening or night shift . . . . .	7.7	0.9	6.1–9.7	5.0	0.6	4.0–6.4
Rotating or other shift . . . . .	7.1	0.7	5.7–8.7	5.7	0.6	4.6–7.1
<b>Model 2: Work schedule inflexibilities</b>						
Very easy or somewhat easy to change work schedule . . . . .	<sup>5</sup> 3.6	0.2	3.2–4.1	<sup>5</sup> 3.8	0.2	3.4–4.3
Very difficult or somewhat difficult to change work schedule . . . . .	7.1	0.5	6.1–8.2	6.3	0.5	5.5–7.3
<b>Model 3: Advance notice of work schedule</b>						
Work schedule does not vary . . . . .	<sup>6</sup> 3.9	0.2	3.5–4.4	<sup>6</sup> 4.1	0.3	3.7–4.7
Advance notice of work schedule is 7 days (1 week) or more . . . . .	<sup>6</sup> 5.0	0.8	3.7–6.7	4.7	0.7	3.5–6.3
Advance notice of work schedule is less than 7 days (1 week) . . . . .	7.3	0.8	5.9–8.9	5.7	0.6	4.6–7.0
<b>Model 4: Monthly change in earnings</b>						
No monthly change in earnings . . . . .	<sup>7,8</sup> 3.4	0.2	3.0–3.9	<sup>8</sup> 3.9	0.3	3.4–4.4
Monthly earnings change a small amount . . . . .	<sup>8</sup> 5.0	0.4	4.3–6.0	4.6	0.4	3.9–5.4
Monthly earnings change a moderate amount or more . . . . .	6.8	0.8	5.4–8.4	5.5	0.6	4.4–6.9

<sup>1</sup>Estimates of the percentage of working age adults experiencing food insecurity for each type of work condition.

<sup>2</sup>Estimates of the percentage of working age adults experiencing food insecurity for each type of work condition adjusted for sociodemographic characteristics (including age, sex, race and Hispanic origin, nativity status, marital status, presence of children in family, educational attainment, family income as a percentage of federal poverty level, employed full time, occupation, health status, disability status, rural residence, and region).

<sup>3</sup>Statistically different from evening or night shift ( $p < 0.05$ ).

<sup>4</sup>Statistically different from rotating or other shift ( $p < 0.05$ ).

<sup>5</sup>Statistically different from very difficult or somewhat difficult to change work schedule ( $p < 0.05$ ).

<sup>6</sup>Statistically different from less than 7 days (1 week) advance notice of work schedule ( $p < 0.05$ ).

<sup>7</sup>Statistically different from monthly earnings change a small amount ( $p < 0.05$ ).

<sup>8</sup>Statistically different from monthly earnings change a moderate amount or more ( $p < 0.05$ ).

NOTES: Family food insecurity was determined based on a composite recode of responses to 10 questions developed by the U.S. Department of Agriculture to measure if adults had problems with eating patterns or access to and quality, variety, and quantity of food in the past 30 days. In the National Health Interview Survey, food insecurity was calculated at the family level, and families that reported low food security or very low food security (three or more problems) were considered to be food insecure. Estimates are based on household interviews of a sample of the U.S. civilian noninstitutionalized population.

SOURCE: National Center for Health Statistics, National Health Interview Survey, 2021.

## Technical Notes

### Covariates

*Age*—Categorized as 18–34, 35–49, and 50–64 years in this analysis.

*Sex*—Defined as men and women in this analysis.

*Race and Hispanic origin*—Adults were classified into five race and Hispanic-origin groups: Asian non-Hispanic (subsequently, Asian), Black non-Hispanic (subsequently, Black), White non-Hispanic (subsequently, White), other and multiple races non-Hispanic (subsequently, other and multiple races), and Hispanic. Adults categorized as Hispanic may be of any race or combination of races. Adults categorized as Asian, Black, or White indicated one race only. Non-Hispanic adults of other or multiple races who did not identify as Asian, Black, White, or Hispanic, or who identified as more than one race, were combined into the other and multiple races category.

*Nativity status*—Respondents were asked, “Were you born in the United States or a U.S. territory?” Nativity status was defined as U.S. born if respondents answered “yes,” and foreign born if respondents answered “no.”

*Marital status*—Respondents were asked to report their current marital status. Marital status was defined as married; not married and living with partner; widowed, divorced, or separated; or never married.

*Presence of children younger than age 18 in family*—Based on the number of children younger than age 18 in the respondent’s family. Presence was defined as one if respondent reported one or more children younger than 18 in the family and zero if respondent reported no children younger than 18 in the family.

*Educational attainment*—Categories are based on years of school completed or the highest degree obtained and are defined as less than high school, high school diploma, some college, and bachelor’s degree or higher. The high school diploma category includes those who have a GED.

*Family income as a percentage of federal poverty level (FPL)*—Based on the ratio of the family’s income in the previous calendar year to the appropriate

FPL threshold (given the family’s size and number of children) as defined by the U.S. Census Bureau (38). Respondents were classified into three groups based on their family income: less than 200% of FPL, 200%–399% of FPL, and 400% or more of FPL. Family income in the National Health Interview Survey was imputed for about 22% of respondents (39).

*Employed full time*—Adults were classified as working full time if they reported usually working 35 hours or more per week. Working adults who were not working full time were classified as working part time.

*Occupation*—Defined using 11 broad occupation groups based on the 2018 Standard Occupational Classification system:

1. Management and business and financial operations occupations
2. Professional and related occupations:
  - Computer and mathematical
  - Architecture and engineering
  - Life, physical, and social science
  - Community and social service
  - Legal
  - Education, training, and library
  - Arts, design, entertainment, sports, and media
  - Healthcare practitioners and technical
3. Service occupations:
  - Healthcare support
  - Protective service
  - Food preparation and serving related
  - Building and grounds cleaning and maintenance
  - Personal care and service
4. Sales and related occupations
5. Office and administrative support occupations
6. Farming, fishing, and forestry occupations
7. Construction and extraction occupations
8. Installation, maintenance, and repair occupations
9. Production occupations
10. Transportation and material moving occupations
11. Military specific occupations (40)

*Health status*—Respondents were asked, “Would you say your health in general is excellent, very good, good,

fair, or poor?” Health status was defined as fair or poor if respondents answered “fair” or “poor,” and good, very good, or excellent if they answered “good,” “very good,” or “excellent.”

*Disability status*—Categorized by the level of difficulty reported in the Washington Group Short Set on Functioning (41) questions. The six domains of functioning include: seeing (even if wearing glasses), hearing (even if wearing hearing aids), mobility (walking or climbing stairs), communication (understanding or being understood by others), cognition (remembering or concentrating), and self-care (such as washing all over or dressing). Adults who reported “a lot of difficulty” or “cannot do at all” to at least one of the six functional domains were considered to have disabilities. Disability status is defined as with disabilities and without disabilities.

*Urban–rural residence*—Based on the 2013 National Center for Health Statistics Urban–Rural Classification Scheme for Counties. This classification is based on metropolitan statistical area status as defined by the Office of Management and Budget according to published standards that are applied to U.S. Census Bureau data. The National Health Interview Survey public-use data file presents the National Center for Health Statistics urban–rural classification in four categories: 1) large central metropolitan (similar to inner cities), 2) large fringe metropolitan (similar to suburbs), 3) medium and small metropolitan, and 4) nonmetropolitan. Large metropolitan areas have populations of 1 million or more. Metropolitan areas with populations of less than 1 million were classified as medium (250,000–999,999 population) or small (less than 250,000 population) (42). The three metropolitan categories are collapsed into an urban category, and nonmetropolitan counties are defined as rural.

*Region*—Corresponds to the U.S. regions recognized by the U.S. Census Bureau and defined as Northeast (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont); Midwest (Kansas, Illinois, Indiana, Iowa, Michigan, Minnesota,

Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin); South (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia); and West (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming).

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