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Household Food Security in the United States in 2017

Alisha Coleman-Jensen
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Abstract

An estimated 88.2 percent of U.S. households were food secure throughout the entire year in 2017, meaning they had access at all times to enough food for an active, healthy life for all household members. The remaining households (11.8 percent) were food insecure at least some time during the year, including 4.5 percent with very low food security, meaning that at times the food intake of one or more household members was reduced and their eating patterns were disrupted because the household lacked money and other resources for obtaining food. Declines from 2016 in food insecurity overall and in very low food security were statistically significant. The rate of food insecurity declined from 12.3 percent in 2016, and very low food security declined from 4.9 percent, continuing downward trends. Among children, changes from 2016 in food insecurity and very low food security were not statistically significant. Children and adults were food insecure in 7.7 percent of U.S. *households with children* in 2017, versus 8.0 percent in 2016. Very low food security among children was 0.7 percent in 2017, essentially unchanged from 2016. In 2017, the typical food-secure household spent 23 percent more on food than the typical food-insecure household of the same size and household composition. About 58 percent of food-insecure households participated in one or more of the three largest Federal food and nutrition assistance programs (Supplemental Nutrition Assistance Program (SNAP, formerly food stamps); Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the National School Lunch Program) during the month prior to the 2017 survey.

Keywords: food security, food insecurity, food spending, food pantry, soup kitchen, emergency kitchen, material well-being, material hardship, Supplemental Nutrition Assistance Program, SNAP, Food Stamp Program, National School Lunch Program, Special Supplemental Nutrition Program for Women, Infants, and Children, WIC

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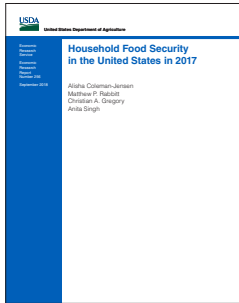
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Additional tables are available in: Coleman-Jensen, Alisha, Matthew P. Rabbitt, Christian A. Gregory, and Anita Singh. 2018. *Statistical Supplement to Household Food Security in the United States in 2017*, AP-79, U.S. Department of Agriculture, Economic Research Service.



Household Food Security in the United States in 2017

Alisha Coleman-Jensen, Matthew P. Rabbitt,
Christian A. Gregory, and Anita Singh

What Is the Issue?

Most U.S. households have consistent, dependable access to enough food for active, healthy living—they are food secure. But some households experience food insecurity at times during the year, meaning their access to adequate food is limited by a lack of money and other resources. USDA's food and nutrition assistance programs increase food security by providing low-income households access to food for a healthful diet and nutrition education. USDA monitors the extent and severity of food insecurity in U.S. households through an annual, nationally representative survey sponsored and analyzed by USDA's Economic Research Service (ERS). This report presents statistics from the survey that cover household food security, food expenditures, and use of Federal food and nutrition assistance programs in 2017.

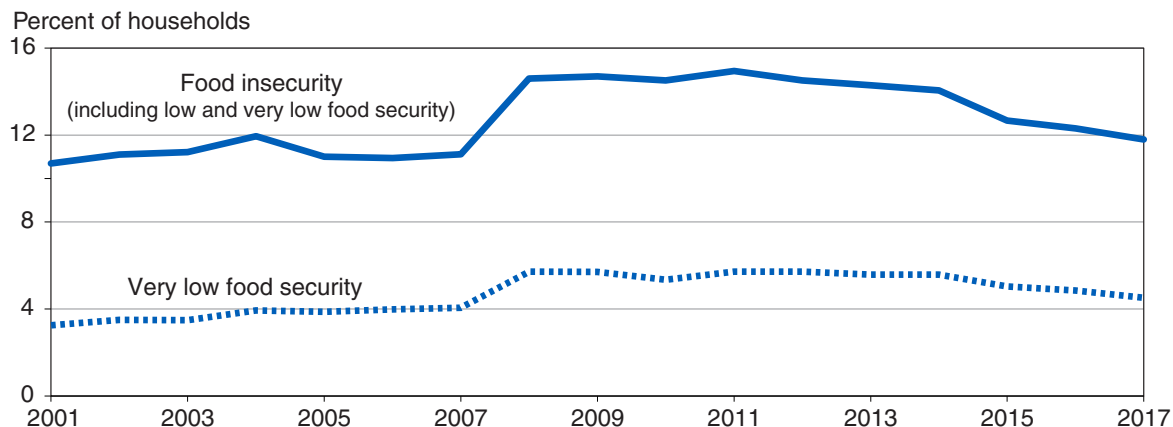
What Did the Study Find?

An estimated 11.8 percent of U.S. households were food insecure in 2017, down from 2016 and continuing a decline from a high of 14.9 percent in 2011, while still above the pre-recession (2007) level of 11.1 percent. The percentage of households with food insecurity in the severe range—very low food security—also declined.

- In 2017, 88.2 percent of U.S. households were food secure. The remaining 11.8 percent (15.0 million households) were food insecure. Food-insecure households (those with low and very low food security) had difficulty at some time during the year providing enough food for all their members due to a lack of resources. The decline from 2016 (12.3 percent) was statistically significant.
- In 2017, 4.5 percent of U.S. households (5.8 million households) had *very low food security*, down significantly from 4.9 percent in 2016. In this more severe range of food insecurity, the food intake of some household members was reduced and normal eating patterns were disrupted at times during the year due to limited resources.
- Children were food insecure at times during 2017 in 7.7 percent of U.S. households with children (2.9 million households), essentially unchanged from 8.0 percent in 2016. These households were unable at times to provide adequate, nutritious food for their children. As in 2015 and 2016, the 2017 prevalence of food insecurity among children was near the 2007 pre-recession level of 8.3 percent.

ERS is a primary source of economic research and analysis from the U.S. Department of Agriculture, providing timely information on economic and policy issues related to agriculture, food, the environment, and rural America.

Prevalence of food insecurity and very low food security in 2017 is down from 2016



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey Food Security Supplement.

- While children are usually shielded from the disrupted eating patterns and reduced food intake that characterize very low food security, in 2017 both children and adults experienced instances of very low food security in 0.7 percent of households with children (250,000 households), essentially unchanged from 0.8 percent in 2016.
- Rates of food insecurity were higher than the national average for the following groups: households with incomes near or below the Federal poverty line, all households with children and particularly households with children headed by single women or single men, women and men living alone, Black- and Hispanic-headed households, and households in principal cities and nonmetropolitan areas.
- The prevalence of food insecurity varied considerably from State to State, ranging from 7.4 percent in Hawaii to 17.9 percent in New Mexico in 2015-17. (Data for 3 years were combined to provide more reliable State-level statistics.)
- The typical (median) food-secure household spent 23 percent more for food than the typical food-insecure household of the same size and composition. These estimates include food purchases made with Supplemental Nutrition Assistance Program (SNAP) benefits.
- About 58 percent of food-insecure households in the survey reported that, in the previous month, they had participated in one or more of the three largest Federal nutrition assistance programs (SNAP; Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the National School Lunch Program).

How Was the Study Conducted?

The annual food security survey conducted by the U.S. Census Bureau covered 37,389 households, comprising a representative sample of 127 million U.S. households. The survey asked one adult respondent per household questions about experiences and behaviors that indicate food insecurity, such as being unable to afford balanced meals, cutting the size of meals, or being hungry because of too little money for food. The food security status of the household was assigned based on the number of food-insecure conditions reported.

Household Food Security in the United States in 2017

Introduction

Since 1995, the U.S. Department of Agriculture has collected information annually on food access and adequacy, food spending, and sources of food assistance for the U.S. population. The information is collected in an annual survey, the Food Security Supplement, conducted by the U.S. Census Bureau as a supplement to the nationally representative Current Population Survey.¹ A major impetus for this data collection is to provide information about the prevalence and severity of food insecurity in U.S. households. Annual monitoring of food security contributes to the effective operation of the Federal nutrition assistance programs as well as private food assistance programs and other government initiatives aimed at reducing food insecurity. Previous reports in the series are available on the ERS website.

This report updates the national statistics on food security, household food spending, and the use of Federal food and nutrition assistance by food-insecure households, using data collected in the December 2017 food security survey—the 23rd annual survey in the Nation’s food security monitoring system. Additional statistics—including the prevalence of food insecurity during the 30 days prior to the food security survey, the frequency of food-insecure conditions, and use of food pantries and emergency kitchens—are available in the Statistical Supplement to this report (Coleman-Jensen et al., 2018).

¹See Coleman-Jensen (2015) for the history of the food security measurement project and the development of the food security measures.

Household Food Security

Food security—access by all people at all times to enough food for an active, healthy life—is one of several conditions necessary for a population to be healthy and well nourished. This section provides information on food security and food insecurity in U.S. households over the course of the year ending in December 2017.

Methods

The statistics presented in this report are based on data collected in the Food Security Supplement to the Current Population Survey (CPS) conducted in December 2017. The CPS currently includes about 52,000 households and is representative, at State and national levels, of the civilian, noninstitutionalized population of the United States. In December 2017, 37,389 households completed the Food Security Supplement; the remaining households were unable or unwilling to do so. Survey sample weights were calculated by the U.S. Census Bureau to indicate how many households were represented by each household that responded to the survey.² All statistics in this report were calculated by applying the Food Security Supplement weights to responses by the surveyed households, so the statistics are nationally representative.

Unless otherwise noted, statistical differences described in the text are significant at the 90-percent confidence level.³

Household food security statistics presented here are based on a measure of food security calculated from responses to a series of questions about conditions and behaviors that characterize households when they are having difficulty meeting basic food needs.⁴ Each question asks whether the condition or behavior occurred at any time during the previous 12 months and specifies a lack of money and other resources to obtain food as the reason. Voluntary fasting or dieting to lose weight are thereby excluded from the measure. The series includes three questions about food conditions of the household as a whole and seven questions about food conditions of adults in the household; if children are present, an additional eight questions about their food conditions are included (see box, “Questions Used To Assess the Food Security of Households in the CPS Food Security Supplement,” page 3).⁵

²In 2017, 28.0 percent of households that responded to the monthly December CPS did not complete the Food Security Supplement. Reweighting of the Supplement takes into consideration income and other information about households that completed the labor-force portion of the survey but not the Food Security Supplement. This corrects, to some extent, biases that could result from nonresponse to the Supplement by households that completed only the labor-force part of the survey.

³Standard errors of national-level estimates from 2011 to the present were calculated using balanced repeated replication (BRR) methods based on replicate weights computed for the CPS Food Security Supplement by the U.S. Census Bureau. For years before 2011, standard errors of national estimates use a design factor of 1.6 based on the complex CPS sample design. State-level estimates from 2010 to the present use replicate weights computed for the CPS Food Security Supplement. Before 2010, standard errors of State-level estimates were calculated using jackknife replication methods with “month in sample” groups considered as separate independent samples. This report uses the phrase essentially unchanged to describe differences between estimates of a statistic for 2 years that are not statistically significant at the 90-percent confidence level. Standard errors of all estimates are available from the authors by request.

⁴The methods used to measure the extent and severity of food insecurity have been described in a number of studies (Hamilton et al., 1997a, 1997b; Andrews et al., 1998; Bickel et al., 1998; Carlson et al., 1999; Bickel et al., 2000; Nord and Bickel, 2002). See also the assessment of the measurement methods by a panel of the Committee on National Statistics (National Research Council, 2006). Further details on the development of the measure are provided on the ERS website.

⁵An official Spanish translation of the food security questions is used in the survey and available on the ERS website. ERS assessed the effect of interview language on Hispanics versus non-Hispanics and found no differences in the statistical properties of the food security measure (Rabbitt and Coleman-Jensen, 2017).

Questions Used To Assess the Food Security of Households in the CPS Food Security Supplement

1. “We worried whether our food would run out before we got money to buy more.” Was that often, sometimes, or never true for you in the last 12 months?
2. “The food that we bought just didn’t last and we didn’t have money to get more.” Was that often, sometimes, or never true for you in the last 12 months?
3. “We couldn’t afford to eat balanced meals.” Was that often, sometimes, or never true for you in the last 12 months?
4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn’t enough money for food? (Yes/No)
5. (If yes to question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
6. In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money for food? (Yes/No)
7. In the last 12 months, were you ever hungry, but didn’t eat, because there wasn’t enough money for food? (Yes/No)
8. In the last 12 months, did you lose weight because there wasn’t enough money for food? (Yes/No)
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? (Yes/No)
10. (If yes to question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

(Questions 11-18 were asked only if the household included children age 0-17)

11. “We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food.” Was that often, sometimes, or never true for you in the last 12 months?
12. “We couldn’t feed our children a balanced meal, because we couldn’t afford that.” Was that often, sometimes, or never true for you in the last 12 months?
13. “The children were not eating enough because we just couldn’t afford enough food.” Was that often, sometimes, or never true for you in the last 12 months?
14. In the last 12 months, did you ever cut the size of any of the children’s meals because there wasn’t enough money for food? (Yes/No)
15. In the last 12 months, were the children ever hungry but you just couldn’t afford more food? (Yes/No)
16. In the last 12 months, did any of the children ever skip a meal because there wasn’t enough money for food? (Yes/No)
17. (If yes to question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
18. In the last 12 months did any of the children ever not eat for a whole day because there wasn’t enough money for food? (Yes/No)

Responses to the 18 food security questions are reported in tables S-5 to S-7 of the Statistical Supplement (Coleman-Jensen et al., 2018). The food security status of each interviewed household is determined by the number of food-insecure conditions and behaviors the household reports. Households are classified as *food secure* if they report no food-insecure conditions or only one or two food-insecure conditions. (Food-insecure conditions are indicated by responses of “often” or “sometimes” to questions 1-3 and 11-13, “almost every month” or “some months but not every month” to questions 5, 10, and 17, and “yes” to the other questions.) They are classified as *food insecure* if they report three or more food-insecure conditions.⁶ Households are classified as having *food-insecure children* if they report two or more food-insecure conditions among the children in response to questions 11-18.⁷

Food-insecure households are further classified as having either *low food security* or *very low food security*.⁸ The very low food security category identifies households in which the food intake of one or more members was reduced and eating patterns disrupted because of insufficient money and other resources for food. Households without children are classified as having *very low food security* if they report six or more food-insecure conditions. Households with children age 0-17 are classified as having *very low food security* if they report eight or more food-insecure conditions among adults and/or children (see box, “What Is ‘Very Low Food Security’?” on page 5).⁹ They are further classified as having *very low food security among children* if they report five or more food-insecure conditions among the children (that is, if they respond affirmatively to five or more of questions 11-18).

Low and very low food security differ in the extent and character of the adjustments the household makes to its eating patterns and food intake. Households classified as having *low food security* have reported multiple indications of food acquisition problems and reduced diet quality, but typically have reported few, if any, indications of reduced food intake. Those classified as having *very low food security* have reported multiple indications of reduced food intake and disrupted eating patterns due to inadequate resources for food. In most, but not all, households with *very low food security*, the survey respondent reported that he or she was hungry at some time during the year but did not eat because there was not enough money for food.

⁶To reduce the survey burden on higher income respondents, households with incomes above 185 percent of the Federal poverty line that give no indication of food-access problems on either of two preliminary screening questions are deemed to be food secure and are not asked the questions in the food security assessment series. The preliminary screening questions asked of all households are as follows:

- People do different things when they are running out of money for food in order to make their food or their food money go further. In the last 12 months, since December of last year, did you ever run short of money and try to make your food or your food money go further?
- Which of these statements best describes the food eaten in your household—enough of the kinds of food we want to eat, enough but not always the kinds of food we want to eat, sometimes not enough to eat, or often not enough to eat?

⁷Both qualitative and quantitative research studies have suggested that parents’ reports of their children’s food insecurity sometimes differed from adolescents’ self-reported food insecurity and that parents were sometimes unaware of the degree to which children reduced their own food intake due to household food insecurity (Fram et al., 2011; Nord and Hanson, 2012). The extent to which underreporting of children’s food insecurity may exist is unknown (see pp. 9-10 in Coleman-Jensen, McFall, and Nord (2013) for a discussion of research on parent-reported and self-reported food insecurity among children).

⁸Prior to 2006, households with low food security were described as “food insecure without hunger” and households with very low food security were described as “food insecure with hunger.” Changes in these descriptions were made in 2006 at the recommendation of the Committee on National Statistics (National Research Council, 2006) in order to distinguish the physiological state of hunger from indicators of food availability. The criteria by which households were classified remained unchanged.

⁹Implications of differences in raw score thresholds for very low food security between households with and without children are discussed in Nord and Coleman-Jensen (2014) and Coleman-Jensen, Rabbitt, and Gregory (2017).

What Is “Very Low Food Security”?

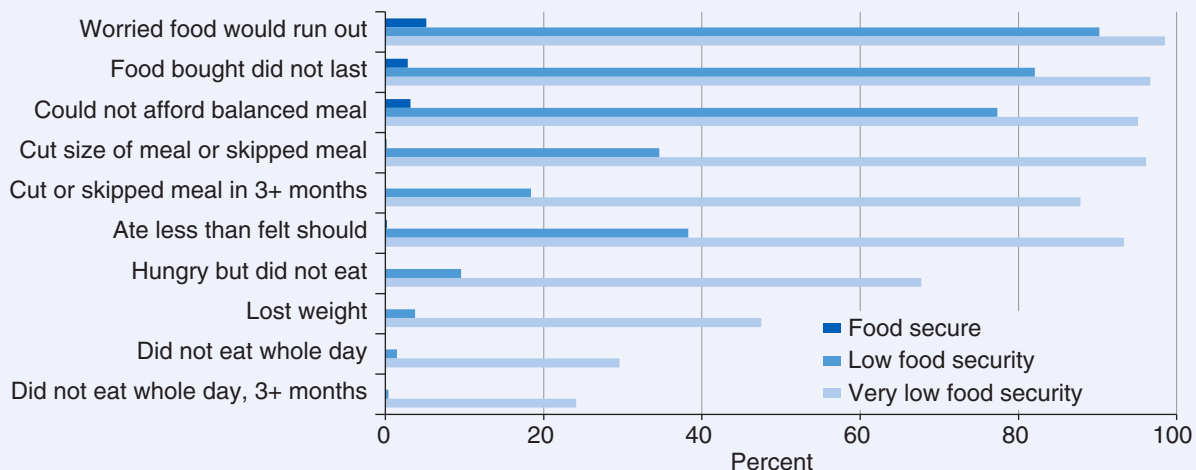
Very low food security can be characterized in terms of the conditions that households in this category reported in the food security survey. Households without children classified as having very low food security reported six or more food-insecure conditions and households with children reported eight or more food-insecure conditions, including conditions among both adults and children. Thus, the conditions reported by respondents reflect the definition of “very low food security”: at times during the year, the food intake of household members was reduced and their normal eating patterns were disrupted because the household lacked money and other resources for food. In the 2017 survey, households classified as having very low food security (representing an estimated 5.8 million households nationwide) reported the following specific conditions:

- 99 percent reported having worried that their food would run out before they got money to buy more.
- 97 percent reported that the food they bought just did not last and they did not have money to get more.
- 95 percent reported that they could not afford to eat balanced meals.

- 96 percent reported that an adult had cut the size of meals or skipped meals because there was not enough money for food; 88 percent reported that this had occurred in 3 or more months.
- 93 percent reported that they had eaten less than they felt they should because there was not enough money for food.
- 68 percent reported that they had been hungry but did not eat because they could not afford enough food.
- 48 percent reported having lost weight because they did not have enough money for food.
- 30 percent reported that an adult did not eat for a whole day because there was not enough money for food; 24 percent reported that this had occurred in 3 or more months.

As noted above, all households without children classified as having very low food security reported at least six of these conditions. The majority of households with very low food security, 67 percent, reported seven or more food-insecure conditions. (Conditions reported by households with children were similar to those without children, but the reported food-insecure conditions of both adults and children were taken into account.)

Percentage of households reporting each indicator of food insecurity, by food security status, 2017



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2017 Current Population Survey Food Security Supplement.

Prevalence of Food Insecurity—National Conditions and Trends

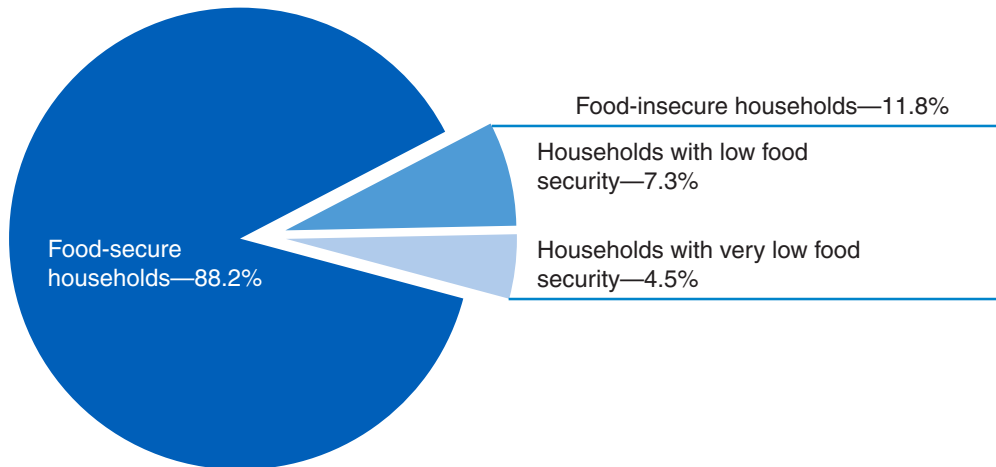
An estimated 88.2 percent of U.S. households were food secure throughout the entire year in 2017 (fig. 1, table 1A). In concept, “food secure” means that all household members had access at all times to enough food for an active, healthy life (Anderson, 1990).¹⁰ The remaining 11.8 percent (15.0 million households) were food insecure at some time during the year. That is, they were at times unable to acquire adequate food for one or more household members because they had insufficient money and other resources for food. A majority of food-insecure households—those classified as having low food security (but not very low food security)—avoided substantial reductions or disruptions in food intake, in many cases by relying on a few basic foods and reducing variety in their diets. But 4.5 percent (5.8 million households) had very low food security—that is, they were food insecure to the extent that eating patterns of one or more household members were disrupted and their food intake reduced, at least some time during the year, because they could not afford enough food.

Among U.S. households with children under age 18, 84.3 percent were food secure in 2017. The remaining 15.7 percent of households with children were food insecure at some time during the year (fig. 2, table 1B). This prevalence is essentially unchanged from 16.5 percent in 2016. Parents and caregivers often are able to maintain normal or near-normal diets and meal patterns for their children, even when the parents themselves are food insecure. In about half of food-insecure households with children in 2017, only adults were food insecure (8.0 percent of households with children). However, both children and adults were food insecure in 7.7 percent of households with children (2.9 million households) in 2017. In 0.7 percent of households with children (250,000 households), food insecurity among children was so severe that caregivers reported that children were hungry, skipped a meal, or did not eat for a whole day because there was not enough money for food. These households are described as having very low food security among children. In such households, sometimes only older children may experience the more severe effects of food insecurity, while younger children are protected from those effects (Coleman-Jensen et al., 2013; Nord, 2009a).

The food security survey is designed to measure food security status at the household level. While it is informative to examine the number of persons living in food-insecure households, these statistics should be interpreted carefully. Within a food-insecure household, each household member may be affected differently by the household’s food insecurity. Some members—particularly young children—may experience only mild effects or none at all, while adults are more severely affected. It is more precise, therefore, to describe these statistics as representing “persons living in food-insecure households” rather than as representing “food-insecure persons.” Similarly, “persons living in households with very low food security” is a more precise description than “persons with very low food security.”

¹⁰Food security statistics, as operationally measured for this report using survey data, are based on household responses to items about whether the household was able to obtain enough food to meet their needs. This operational measure does not specifically address whether the household members’ food intake was sufficient for active, healthy lives—the conceptual definition of food security. Nonetheless, research based on other data collections has found survey-based measures of food security to be statistically associated with various outcomes involving health, nutrition, and children’s development in a manner that generally supports the link between the report’s survey-based measure of food security and the conceptual definition of food security (see, for example, Gregory and Coleman-Jensen, 2017; Coleman-Jensen et al., 2013; Nord, 2009a; Nord and Hopwood, 2007; Nord and Kantor, 2006).

Figure 1
U.S. households by food security status, 2017



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2017 Current Population Survey Food Security Supplement.

Table 1A
Households and individuals by food security status of household, 1998-2017

Category and year	Total ¹	Food secure		Food insecure					
		1,000	Percent	All		With low food security		With very low food security	
	1,000	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
Households:									
2017	127,272	112,254	88.2	15,018	11.8	9,261	7.3	5,757	4.5
2016	126,401	110,850	87.7	15,551	12.3	9,413	7.4	6,138	4.9
2015	125,164	109,315	87.3	15,849	12.7	9,540	7.7	6,309	5.0
2014	124,044	106,618	86.0	17,426	14.0	10,488	8.4	6,938	5.6
2013	122,579	105,070	85.7	17,509	14.3	10,664	8.7	6,845	5.6
2012	121,546	103,914	85.5	17,632	14.5	10,679	8.8	6,953	5.7
2011	119,484	101,631	85.1	17,853	14.9	11,014	9.2	6,839	5.7
2010	118,756	101,527	85.5	17,229	14.5	10,872	9.1	6,357	5.4
2009	118,174	100,820	85.3	17,354	14.7	10,601	9.0	6,753	5.7
2008	117,565	100,416	85.4	17,149	14.6	10,426	8.9	6,723	5.7
2007	117,100	104,089	88.9	13,011	11.1	8,262	7.0	4,749	4.1
2006	115,609	102,961	89.1	12,648	10.9	8,031	6.9	4,617	4.0
2005	114,437	101,851	89.0	12,586	11.0	8,158	7.1	4,428	3.9
2004	112,967	99,473	88.1	13,494	11.9	9,045	8.0	4,449	3.9
2003	112,214	99,631	88.8	12,583	11.2	8,663	7.7	3,920	3.5
2002	108,601	96,543	88.9	12,058	11.1	8,259	7.6	3,799	3.5
2001	107,824	96,303	89.3	11,521	10.7	8,010	7.4	3,511	3.3
2000	106,043	94,942	89.5	11,101	10.5	7,786	7.3	3,315	3.1
1999	104,684	94,154	89.9	10,529	10.1	7,420	7.1	3,109	3.0
1998	103,309	91,121	88.2	12,188	11.8	8,353	8.1	3,835	3.7
All individuals (by food security status of household):²									
2017	320,418	280,374	87.5	40,044	12.5	27,159	8.5	12,885	4.0
2016	319,029	277,825	87.1	41,204	12.9	26,556	8.3	14,648	4.6
2015	316,161	273,923	86.6	42,238	13.4	27,605	8.7	14,633	4.6
2014	313,305	265,170	84.6	48,135	15.4	30,922	9.9	17,213	5.5

Continued—

Table 1A

Households and individuals by food security status of household, 1998-2017—continued

Category and year	Total ¹	Food insecure								
		Food secure			All		With low food security		With very low food security	
		1,000	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
All individuals (by food security status of household): ²										
2013	310,853	261,775	84.2	49,078	15.8	31,974	10.3	17,104	5.5	
2012	308,361	259,395	84.1	48,966	15.9	31,787	10.3	17,179	5.6	
2011	305,893	255,773	83.6	50,120	16.4	33,232	10.9	16,888	5.5	
2010	304,034	255,202	83.9	48,832	16.1	32,777	10.8	16,055	5.3	
2009	301,750	251,588	83.4	50,162	16.6	32,499	10.8	17,663	5.9	
2008	299,567	250,459	83.6	49,108	16.4	31,824	10.6	17,284	5.8	
2007	297,042	260,813	87.8	36,229	12.2	24,287	8.2	11,942	4.0	
2006	294,010	258,495	87.9	35,515	12.1	24,395	8.3	11,120	3.8	
2005	291,501	256,373	87.9	35,128	12.1	24,349	8.4	10,779	3.7	
2004	288,603	250,407	86.8	38,196	13.2	27,535	9.5	10,661	3.7	
2003	286,410	250,155	87.3	36,255	12.7	26,622	9.3	9,633	3.4	
2002	279,035	244,133	87.5	34,902	12.5	25,517	9.1	9,385	3.4	
2001	276,661	243,019	87.8	33,642	12.2	24,628	8.9	9,014	3.3	
2000	273,685	240,454	87.9	33,231	12.1	24,708	9.0	8,523	3.1	
1999	270,318	239,304	88.5	31,015	11.5	23,237	8.6	7,779	2.9	
1998	268,366	232,219	86.5	36,147	13.5	26,290	9.8	9,857	3.7	
Adults (by food security status of household): ²										
2017	246,517	219,013	88.8	27,504	11.2	17,796	7.2	9,708	3.9	
2016	245,200	216,934	88.5	28,266	11.5	17,498	7.1	10,768	4.4	
2015	242,706	213,586	88.0	29,120	12.0	18,235	7.5	10,885	4.5	
2014	239,937	207,125	86.3	32,812	13.7	20,425	8.5	12,387	5.2	
2013	237,219	203,913	86.0	33,306	14.0	21,115	8.9	12,191	5.1	
2012	234,730	201,662	85.9	33,068	14.1	20,708	8.8	12,359	5.3	
2011	231,385	197,923	85.5	33,462	14.5	21,371	9.2	12,091	5.2	
2010	229,129	196,505	85.8	32,624	14.2	21,357	9.3	11,267	4.9	
2009	227,543	194,579	85.5	32,964	14.5	20,741	9.1	12,223	5.4	
2008	225,461	193,026	85.6	32,435	14.4	20,320	9.0	12,115	5.4	
2007	223,467	199,672	89.4	23,795	10.6	15,602	7.0	8,193	3.7	
2006	220,423	197,536	89.6	22,887	10.4	15,193	6.9	7,694	3.5	
2005	217,897	195,172	89.6	22,725	10.4	15,146	7.0	7,579	3.5	
2004	215,564	191,236	88.7	24,328	11.3	16,946	7.9	7,382	3.4	
2003	213,441	190,451	89.2	22,990	10.8	16,358	7.7	6,632	3.1	
2002	206,493	184,718	89.5	21,775	10.5	15,486	7.5	6,289	3.0	
2001	204,340	183,398	89.8	20,942	10.2	14,879	7.3	6,063	3.0	
2000	201,922	181,586	89.9	20,336	10.1	14,763	7.3	5,573	2.8	
1999	198,900	179,960	90.5	18,941	9.5	13,869	7.0	5,072	2.5	
1998	197,084	174,964	88.8	22,120	11.2	15,632	7.9	6,488	3.3	

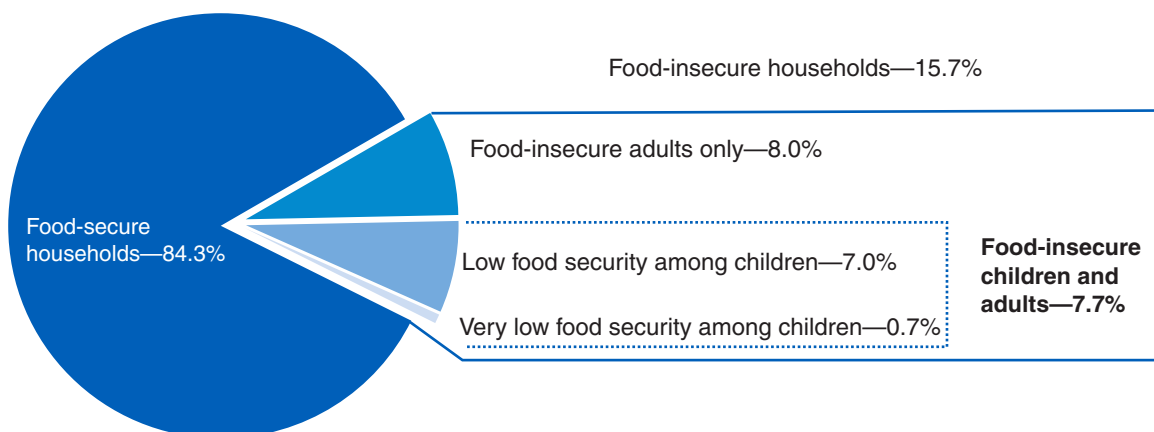
¹Totals exclude households for which food security status is unknown because household respondents did not give a valid response to any of the questions in the food security scale. In 2017, these exclusions represented 340,000 households (0.3 percent of all households).

²The food security survey measures food security status at the household level. Not all individuals residing in food-insecure households were directly affected by the households' food insecurity. Similarly, not all individuals in households classified as having very low food security were subject to the reductions in food intake and disruptions in eating patterns that characterize this condition. Young children, in particular, are often protected from effects of the households' food insecurity.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey Food Security Supplement.

Figure 2

U.S. households with children by food security status of adults and children, 2017



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2017 Current Population Survey Food Security Supplement.

In 2017, 40.0 million people lived in food-insecure households (table 1A). They constituted 12.5 percent of the U.S. civilian noninstitutionalized population and included 27.5 million adults and 12.5 million children (table 1B). About 6.5 million children (8.9 percent) lived in households in which 1 or more child was food insecure. About 9.7 million adults (3.9 percent) lived in households with very low food security (table 1A), and 540,000 children (0.7 percent) lived in households with very low food security among children (table 1B).

Statistical Supplement tables S-2 and S-3 present estimates of the number of people and the number of children in households in each food security status and household type (Coleman-Jensen et al., 2018).

When interpreting food security statistics in this report, bear in mind that households were classified as having low or very low food security based on their experience of the conditions indicated in the module at any time during the previous 12 months. The prevalence of these conditions on any given day is far below the corresponding annual prevalence. For example, the prevalence of very low food security during the 30 days prior to the survey is 2.6 percent (table S-4) and the prevalence on an average *day* during the 30-day period prior to the December 2017 survey is an estimated 0.7-0.8 percent of households (0.8 million to 1.0 million households; see box, “When Food Insecurity Occurs in U.S. Households, It Is Usually Recurrent But Not Chronic,” on page 11).¹¹ Children, along with adults, experienced very low food security in an estimated 40,000 to 44,000 households (0.11 to 0.12 percent of all U.S. households with children) on an average day during the same period.

¹¹Average daily prevalence of the various behaviors, experiences, and conditions characterizing very low food security is calculated based on the proportion of households reporting the condition at any time during the previous 30 days and the average number of days in which the condition occurred. The average daily prevalence for each condition is calculated as the product of the 30-day prevalence and the average number of days experienced divided by 30. The ratio of daily prevalence to monthly prevalence of the various indicator conditions provides the basis for approximating the average daily prevalence of very low food security during the reference 30-day period. The daily rate of very low food security is expressed as a range whose lower and upper bounds are based on the minimum and maximum ratio of daily prevalence to 30-day prevalence. See table S-9 in the online Statistical Supplement (Coleman-Jensen et al., 2018).

Table 1B

Households with children by food security status and children by food security status of household, 1998-2017

Category and year	Total ¹ 1,000	Food-secure households		Food-insecure households ²		Households with food-insecure children ³		Households with very low food security among children	
		1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
Households with children:									
2017	37,942	31,975	84.3	5,967	15.7	2,926	7.7	250	0.7
2016	38,400	32,058	83.5	6,342	16.5	3,069	8.0	298	0.8
2015	38,978	32,519	83.4	6,459	16.6	3,022	7.8	274	0.7
2014	39,079	31,590	80.8	7,489	19.2	3,665	9.4	422	1.1
2013	38,486	30,978	80.5	7,508	19.5	3,814	9.9	360	0.9
2012	39,201	31,354	80.0	7,847	20.0	3,910	10.0	463	1.2
2011	38,803	30,814	79.4	7,989	20.6	3,862	10.0	374	1.0
2010	39,419	31,447	79.8	7,972	20.2	3,861	9.8	386	1.0
2009	39,525	31,114	78.7	8,411	21.3	4,208	10.6	469	1.2
2008	39,699	31,364	79.0	8,335	21.0	4,361	11.0	506	1.3
2007	39,390	33,160	84.2	6,230	15.8	3,273	8.3	323	0.8
2006	39,436	33,279	84.4	6,157	15.6	3,312	8.4	221	0.6
2005	39,601	33,404	84.4	6,197	15.6	3,244	8.2	270	0.7
2004	39,990	32,967	82.4	7,023	17.6	3,808	9.5	274	0.7
2003	40,286	33,575	83.3	6,711	16.7	3,606	9.0	207	0.5
2002	38,647	32,267	83.5	6,380	16.5	3,456	8.9	265	0.7
2001	38,330	32,141	83.9	6,189	16.1	3,225	8.4	211	0.6
2000	38,113	31,942	83.8	6,171	16.2	3,282	8.6	255	0.7
1999	37,884	32,290	85.2	5,594	14.8	3,089	8.2	219	0.6
1998	38,036	31,335	82.4	6,701	17.6	3,627	9.5	331	0.9
Children (by food security status of household): ⁴									
2017	73,901	61,361	83.0	12,540	17.0	6,541	8.9	540	0.7
2016	73,829	60,891	82.5	12,938	17.5	6,519	8.8	703	1.0
2015	73,455	60,337	82.1	13,118	17.9	6,377	8.7	541	0.7
2014	73,368	58,045	79.1	15,323	20.9	7,949	10.8	914	1.2
2013	73,634	57,862	78.6	15,772	21.4	8,585	11.7	765	1.0
2012	73,631	57,733	78.4	15,898	21.6	8,290	11.3	977	1.3
2011	74,508	57,850	77.6	16,658	22.4	8,565	11.5	845	1.1
2010	74,905	58,697	78.4	16,208	21.6	8,458	11.3	976	1.3
2009	74,207	57,010	76.8	17,197	23.2	8,957	12.1	988	1.3
2008	74,106	57,433	77.5	16,673	22.5	9,098	12.3	1,077	1.5
2007	73,575	61,140	83.1	12,435	16.9	6,766	9.2	691	0.9
2006	73,587	60,959	82.8	12,628	17.2	7,065	9.6	430	0.6
2005	73,604	61,201	83.1	12,403	16.9	6,718	9.1	606	0.8
2004	73,039	59,171	81.0	13,868	19.0	7,823	10.7	545	0.7
2003	72,969	59,704	81.8	13,265	18.2	7,388	10.1	420	0.6
2002	72,542	59,415	81.9	13,127	18.1	7,397	10.2	567	0.8
2001	72,321	59,620	82.4	12,701	17.6	6,866	9.5	467	0.6
2000	71,763	58,867	82.0	12,896	18.0	7,018	9.8	562	0.8
1999	71,418	59,344	83.1	12,074	16.9	6,996	9.8	511	0.7
1998	71,282	57,255	80.3	14,027	19.7	7,840	11.0	716	1.0

¹Totals exclude households for which food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2017, these exclusions represented 109,000 households with children (0.3 percent of all households with children). Children are age 0-17.

²Food-insecure households are those with low or very low food security among adults or children or both.

³In some food-insecure households with children, only adults were food insecure. Households with food-insecure children are those with low or very low food security among children.

⁴The food security survey measures food security status at the household level. Not all children residing in food-insecure households were directly affected by the households' food insecurity. Similarly, not all children in households classified as having very low food security among children were subject to the reductions in food intake and disruptions in eating patterns that characterize this condition. Young children, in particular, are often protected from effects of the households' food insecurity.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey Food Security Supplement.

When Food Insecurity Occurs in U.S. Households, It Is Usually Recurrent But Not Chronic

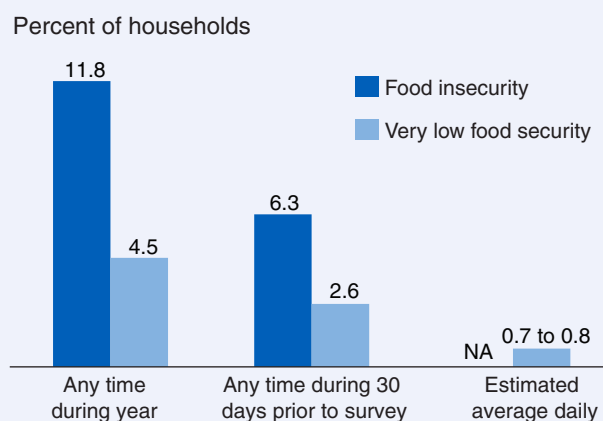
When households experience very low food security in the United States, the resulting instances of reduced food intake and disrupted eating patterns are usually occasional or episodic, but not usually chronic. The food security measurement methods used in this report are designed to register these occasional or episodic occurrences. The questions used to assess households' food security status ask whether a condition, experience, or behavior occurred at any time in the past 12 months, and households can be classified as having very low food security based on a single, severe episode during the year. Readers should be mindful of this when interpreting food insecurity statistics. Analyses of additional information collected in the food security survey on how frequently various food-insecure conditions occurred during the year, whether they occurred during the 30 days prior to the survey, and, if so, in how many days provide insight into the frequency and duration of food insecurity in U.S. households. These analyses reveal that in 2017:

- About one-fourth of U.S. households with very low food security at any time during the year experienced the associated conditions rarely or occasionally—in only 1 or 2 months of the year. For three-fourths of households, the conditions were recurrent, experienced in 3 or more months of the year.
- For about one-fourth of food-insecure households and one-third of those with very low food security, occurrence of the associated conditions was frequent or chronic. That is, the conditions occurred often, or in almost every month.
- On average, households that were food insecure at some time during the year were food insecure in 7 months during the year. During the 30-day period ending in mid-December 2017, 8.0 million households (6.3 percent of all households) were food insecure—about 54 percent of the number that were food insecure at any time during the year (see Statistical Supplement table S-4, Coleman-Jensen et al., 2018).
- Similarly, households with very low food security at some time during the year experienced the associated conditions, on average, in 7 months during the year. During the 30-day period ending in mid-December 2017, 3.3 million households (2.6 percent of all households) had very low food security—about 57 percent of the number with very low food security at some time during the year (see Statistical Supplement table S-4).

- Most households that had very low food security at some time during a month experienced the associated conditions in 1 to 7 days of the month. The average daily prevalence of very low food security during the 30-day period ending in mid-December 2017 was between 0.8 million and 1.0 million households (0.7 to 0.8 percent of all households)—about 15 to 18 percent of the annual prevalence.
- The daily prevalence of very low food security among children during the 30-day period ending in mid-December 2017 was probably between 40,000 and 44,000 households (0.11 to 0.12 percent of households with children)—about 16 to 17 percent of the annual prevalence.
- The omission of homeless families and individuals from these daily statistics biases the statistics downward, and the bias may be substantial relative to the estimates, especially for the most severe conditions.

(Statistical Supplement tables S-7 to S-9 (Coleman-Jensen et al., 2018) provide information on how often conditions indicating food insecurity occurred, as reported by respondents to the December 2017 Food Security Supplement. See Nord et al. (2000) for more information about the frequency of food insecurity. See Ryu and Bartfeld (2012) and Wilde et al. (2010) for more information about longer term patterns of food insecurity.)

Prevalence of food insecurity and very low food security, by reference period (2017)



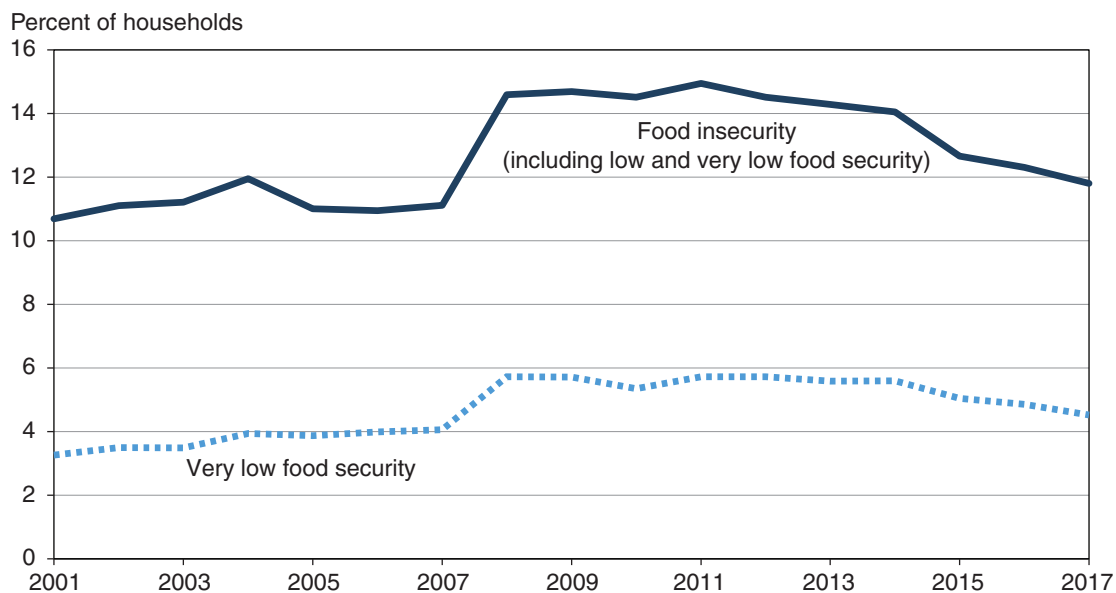
NA = Estimated average daily occurrence of food insecurity is not available because information was not collected on the number of days that less severe food-insecure conditions occurred.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2017 Current Population Survey Food Security Supplement.

From 2016 to 2017, there was a statistically significant decline in the prevalence of food insecurity from 12.3 percent to 11.8 percent. Food insecurity was essentially unchanged from 2015 to 2016 (fig. 3, table 1A). (That is, the difference was not statistically significant.) There was a statistically significant decline in food insecurity from 14.0 percent in 2014 to 12.7 percent in 2015. Before that, the prevalence of food insecurity was essentially unchanged from 2013 to 2014 and from 2012 to 2014. That is, the changes were within the range that could have resulted from sampling variation. The cumulative decline from 2011 (14.9 percent) to 2014 (14.0 percent) was statistically significant, and that downward trend continued through 2017. Over the previous decade, food insecurity had increased from 10.7 percent in 2001 to nearly 12 percent in 2004, declined to about 11 percent in 2005-07, then increased in 2008 (to 14.6 percent), and remained essentially unchanged at that level in 2009 and 2010.

There was a statistically significant decline in very low food security from 4.9 percent in 2016 to 4.5 percent in 2017 (fig. 3, table 1A). Very low food security was essentially unchanged from 2015 to 2016. The decline in very low food security from 5.6 percent in 2014 to 5.0 percent in 2015 was statistically significant. Before that, the prevalence of very low food security was essentially unchanged from 2011 (5.7 percent) through 2014. The prevalence of very low food security was also 5.7 percent in 2008 and 2009. In 2010, the prevalence of very low food security had declined to 5.4 percent. Prior to 2008, the prevalence of very low food security had increased from 3.3 percent in 2001 to 3.9 percent in 2004, and remained essentially unchanged through 2007.

Figure 3
Trends in the prevalence of food insecurity and very low food security in U.S. households, 2001-2017



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey Food Security Supplement.

Prevalence of Food Insecurity by Selected Household Characteristics

The prevalence of food insecurity varied considerably in 2017 among households with different demographic and economic characteristics (table 2). Differences in food security across demographic and geographic groups reflect, in part, differences in income across those groups; though no adjustment is made for income in the statistics presented in this report, food insecurity was strongly associated with income. For example, 36.8 percent of households with annual incomes below the official poverty line (household income-to-poverty ratio under 1.00) were food insecure, compared with 5.8 percent of those with incomes at or above 185 percent of the poverty line.¹²

Rates of food insecurity were below the national average of 11.8 percent for married-couple families with children (9.5 percent), households with more than one adult and no children (7.7 percent), households with elderly persons (7.9 percent), and elderly living alone (8.6 percent).¹³ The prevalence of food insecurity was also below the national average for White, non-Hispanic households (8.8 percent); households headed by non-Hispanics of other, or multiple, races (9.9 percent); and households with incomes above 185 percent of the poverty line (5.8 percent).

Rates of food insecurity were higher than the national average in 2017 for the following groups:

- All households with children (15.7 percent)¹⁴
- Households with children under age 6 (16.4 percent)
- Households with children headed by a single woman (30.3 percent) or a single man (19.7 percent)¹⁵ and other households with children (18.1 percent)
- Women living alone (13.9 percent) and men living alone (13.4 percent)
- Households headed by Black non-Hispanics (21.8 percent) and Hispanics (18.0 percent)
- Households with incomes below 185 percent of the poverty threshold (30.8 percent).

¹²The Federal poverty line was \$24,858 for a family of four (two adults and two children) in 2017.

¹³“Elderly” in this report refers to persons ages 65 and older.

¹⁴About 40 percent of the difference in food insecurity between households with and without children results from a difference in the measures applied to the two types of households. Responses to questions about children as well as adults are considered in assessing the food security status of households with children, but for both types of households, a total of three indications of food insecurity is required for classification as food insecure. Even with the child-referenced questions omitted from the scale, however, in 2017, 13.3 percent of households with children would be classified as food insecure (that is, as having food insecurity among adults), compared with 10.1 percent for households without children. Comparisons of very low food security are not biased substantially by this measurement issue because a higher threshold is applied to households with children, consistent with the larger number of questions taken into consideration (Nord and Coleman-Jensen, 2014). See Coleman-Jensen, Rabbitt, and Gregory (2017) for a discussion of a comparable classification method for households with and without children.

¹⁵Some households with children headed by a single woman or a single man as classified for these analyses included other adults, who may have been parents, siblings, cohabiting partners, adult children, or other relatives of the reference person or unrelated roomers or boarders.

Table 2

Households by food security status and selected household characteristics, 2017

Category	Total ¹	Food secure		Food insecure					
		1,000	1,000	Percent	All		With low food security		With very low food security
	1,000	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
All households	127,272	112,254	88.2	15,018	11.8	9,261	7.3	5,757	4.5
Household composition:									
With children < 18 yrs	37,942	31,976	84.3	5,966	15.7	4,421	11.6	1,545	4.1
With children < 6 yrs	16,200	13,551	83.6	2,649	16.4	2,008	12.4	641	4.0
Married-couple families	24,744	22,383	90.5	2,361	9.5	1,876	7.5	485	2.0
Female head, no spouse	9,561	6,663	69.7	2,898	30.3	2,038	21.3	860	9.0
Male head, no spouse	3,057	2,455	80.3	602	19.7	429	14.0	173	5.7
Other household with child ²	581	476	81.9	105	18.1	NA	NA	NA	NA
With no children < 18 yrs	89,330	80,278	89.9	9,052	10.1	4,840	5.4	4,212	4.7
More than one adult	53,107	48,997	92.3	4,110	7.7	2,357	4.4	1,753	3.3
Women living alone	19,963	17,195	86.1	2,768	13.9	1,362	6.9	1,406	7.0
Men living alone	16,260	14,087	86.6	2,173	13.4	1,120	6.9	1,053	6.5
With elderly	37,805	34,814	92.1	2,991	7.9	1,833	4.8	1,158	3.1
Elderly living alone	14,312	13,078	91.4	1,234	8.6	710	4.9	524	3.7
Race/ethnicity of households:									
White, non-Hispanic	84,548	77,083	91.2	7,465	8.8	4,389	5.2	3,076	3.6
Black, non-Hispanic	16,358	12,799	78.2	3,559	21.8	2,164	13.3	1,395	8.5
Hispanic ³	17,197	14,108	82.0	3,089	18.0	2,137	12.5	952	5.5
Other, non-Hispanic	9,169	8,263	90.1	906	9.9	572	6.3	334	3.6
Household income-to-poverty ratio:									
Under 1.00	12,871	8,135	63.2	4,736	36.8	2,641	20.5	2,095	16.3
Under 1.30	17,271	11,318	65.5	5,953	34.5	3,387	19.6	2,566	14.9
Under 1.85	27,012	18,699	69.2	8,313	30.8	4,901	18.2	3,412	12.6
1.85 and over	69,442	65,405	94.2	4,037	5.8	2,783	4.0	1,254	1.8
Income unknown	30,818	28,150	91.3	2,668	8.7	1,577	5.2	1,091	3.5
Area of residence: ⁴									
Inside metropolitan area	108,977	96,401	88.5	12,576	11.5	7,807	7.1	4,769	4.4
In principal cities ⁵	37,365	32,199	86.2	5,166	13.8	3,132	8.4	2,034	5.4
Not in principal cities	55,330	50,152	90.6	5,178	9.4	3,204	5.8	1,974	3.6
Outside metropolitan area	18,295	15,853	86.7	2,442	13.3	1,454	7.9	988	5.4
Census geographic region:									
Northeast	22,520	20,280	90.1	2,240	9.9	1,486	6.6	754	3.3
Midwest	27,581	24,346	88.3	3,235	11.7	1,909	6.9	1,326	4.8
South	48,281	41,817	86.6	6,464	13.4	3,995	8.3	2,469	5.1
West	28,890	25,811	89.3	3,079	10.7	1,871	6.5	1,208	4.2

NA = Not reported; fewer than 10 households in the survey with this characteristic had very low food security.

¹Totals exclude households for which food security status is unknown because household respondents did not give a valid response to any of the questions in the food security scale. In 2017, these exclusions represented 340,000 households (0.3 percent of all households).

²Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

³Hispanics may be of any race.

⁴Metropolitan area residence is based on 2013 Office of Management and Budget delineation. Prevalence rates by area of residence are comparable with those for 2014 and later but are not precisely comparable with those of earlier years.

⁵Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 15 percent of households in metropolitan statistical areas.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2017 Current Population Survey Food Security Supplement.

Across residential classifications, food insecurity was higher than the national average for households in principal cities of metropolitan areas (13.8 percent) and in nonmetropolitan (rural) areas (13.3 percent), and lower for households in suburbs/exurbs and other metropolitan areas outside principal cities (9.4 percent).¹⁶ Regionally, the prevalence of food insecurity was significantly higher in the South (13.4 percent) than in the other three regions. The prevalence of food insecurity was significantly higher in the Midwest (11.7 percent) than in the Northeast (9.9 percent) or the West (10.7 percent). The prevalence of food insecurity in the Northeast was not statistically different from the West.

The statistics in table 2 show the prevalence of food insecurity across characteristics; these statistics can also be used to calculate the share that each group contributes to the population of food-insecure households. Among all food-insecure households in 2017, 19.3 percent were female-headed households with children and 15.7 percent were married-couple households with children.¹⁷ About 60 percent of all food-insecure households were adult-only households with no children. Low-income households with reported incomes below 185 percent of the poverty threshold made up the majority of food-insecure households, 55 percent. Households with reported incomes at or above 185 percent of poverty made up about 27 percent of all food-insecure households in 2017.

The prevalence of very low food security in various types of households followed a pattern similar to that observed for food insecurity (table 2). Percentages were lower than the 2017 national average of 4.5 percent for married couples with children (2.0 percent); multiple-adult households with no children (3.3 percent); households with elderly persons (3.1 percent); elderly living alone (3.7 percent); White, non-Hispanic households (3.6 percent); households headed by non-Hispanics of other, or multiple, races (3.6 percent); households with incomes above 185 percent of the poverty line (1.8 percent); households in suburbs and exurbs outside principal cities within metropolitan areas (3.6 percent); and households in the Northeast (3.3 percent).

The prevalence of very low food security was significantly higher than the national average (4.5 percent) for the following groups:

- Households with children headed by a single woman (9.0 percent)
- Women living alone (7.0 percent) and men living alone (6.5 percent)
- Black, non-Hispanic households (8.5 percent) and Hispanic households (5.5 percent)
- Households with incomes below 185 percent of the poverty line (12.6 percent)
- Households located in principal cities (5.4 percent) and outside metropolitan areas (5.4 percent)
- Households in the South (5.1 percent).

¹⁶Revised metropolitan statistical areas (MSAs) and principal cities within them were delineated by the Office of Management and Budget in 2013, based on revised standards developed by the U.S. Census Bureau in collaboration with other Federal agencies. The revised delineations were implemented beginning with the 2014 Current Population Survey Food Security Supplement. Food security prevalence statistics by area of residence for 2014 and later are comparable, but are not precisely comparable with corresponding statistics from earlier years. Principal cities include the incorporated areas of the largest city in each MSA and other cities in the MSA that meet specified criteria based on population size and commuting patterns.

¹⁷For example, the fraction of food-insecure households that are female-headed households with children can be calculated as $(2,898/15,018) = 0.193$. Similarly, the fraction of food-insecure households that are married-couple households with children is $(2,361/15,018) = 0.157$.

In 7.7 percent of households with children, one or more child was food insecure (table 3).¹⁸ Among household categories, the percentage of households with food-insecure children was lower in married-couple households (4.3 percent); White, non-Hispanic households (5.6 percent); households headed by non-Hispanics of other, or multiple, races (5.8 percent); households with incomes above 185 percent of the poverty line (2.8 percent); and metropolitan households located in suburbs and exurbs outside of principal cities (5.9 percent). The percentage of households with food-insecure children was higher for female-headed households (16.1 percent); Black, non-Hispanic households (13.1 percent); Hispanic households (10.7 percent); low-income households with incomes below 185 percent of the poverty line (17.9 percent); households in principal cities (9.7 percent); and households in nonmetropolitan areas (9.3 percent).

Compared with the prevalence for all households with children (0.7 percent), very low food security among children was less prevalent in married-couple families (0.3 percent) and in households located outside principal cities in metropolitan areas (0.4 percent). Very low food security among children was more prevalent in households headed by a single woman (1.7 percent) and households with incomes below 185 percent of the poverty line (1.9 percent).

For most population subgroups in 2017, year-to-year changes in the prevalence of food insecurity were not statistically significant.¹⁹ There was a statistically significant decline in food insecurity for households residing outside metropolitan areas (nonmetropolitan) from 15.0 percent in 2016 to 13.3 percent in 2017 (fig. 4). There were no statistically significant increases in food insecurity.

The prevalence of very low food security (fig. 5) declined significantly from 2016 to 2017 among all households with children (from 4.8 percent in 2016 to 4.1 percent in 2017), households with children under age 6 (5.0 percent to 4.0 percent), married-couple families with children (2.5 percent to 2.0 percent), female-headed families with children (10.5 percent to 9.0 percent), men living alone (7.5 percent to 6.5 percent), and households living in nonmetropolitan areas (6.6 percent to 5.4 percent). There were no statistically significant increases in very low food security.

Prevalence of Food Insecurity by State

The prevalence of food insecurity varies considerably from State to State. In addition to household-level characteristics such as income, employment, and household structure, the prevalence of food insecurity is also affected by State-level characteristics such as average wages, cost of housing, unemployment and State-level policies that affect access to unemployment insurance, the State Earned Income Tax Credit, and access to/participation in nutrition assistance programs (Bartfeld et al., 2006; Bartfeld and Men, 2017). Prevalence rates for 3 years, 2015-17, were averaged to provide more reliable statistics at the State level (table 4). Estimated prevalence rates of food insecurity during this 3-year period ranged from 7.4 percent in Hawaii to 17.9 percent in New Mexico; estimated prevalence rates of very low food security ranged from 2.9 percent in Hawaii to 7.1 percent in Alabama and Louisiana.²⁰

¹⁸Households are classified as having food insecurity among children if they report two or more food-insecure conditions among children in response to questions 11-18 in box on page 3.

¹⁹Estimates of food insecurity and very low food security for 2016 were published in *Household Food Security in the United States in 2016* (Coleman-Jensen et al., 2017).

²⁰A map of the States showing the prevalence of food insecurity for 2015-17 is available for download on the ERS website.

Table 3

Prevalence of food security and food insecurity in households with children by selected household characteristics, 2017

Category	Total ¹	Food-secure households		Food-insecure households ²		Households with food-insecure children ³		Households with very low food security among children	
		1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
All households with children	37,942	31,975	84.3	5,967	15.7	2,926	7.7	250	0.7
Household composition:									
With children < 6 yrs	16,200	13,551	83.6	2,649	16.4	1,273	7.9	82	0.5
Married-couple families	24,744	22,383	90.5	2,361	9.5	1,062	4.3	63	0.3
Female head, no spouse	9,561	6,662	69.7	2,899	30.3	1,542	16.1	164	1.7
Male head, no spouse	3,057	2,455	80.3	602	19.7	263	8.6	NA	NA
Other household with child ⁴	581	476	81.9	105	18.1	59	10.2	NA	NA
Race/ethnicity of households:									
White, non-Hispanic	21,451	18,891	88.1	2,560	11.9	1,206	5.6	101	0.5
Black, non-Hispanic	5,065	3,745	73.9	1,320	26.1	661	13.1	59	1.2
Hispanic ⁵	8,101	6,395	78.9	1,706	21.1	866	10.7	81	1.0
Other, non-Hispanic	3,325	2,943	88.5	382	11.5	194	5.8	NA	NA
Household income-to-poverty ratio:									
Under 1.00	4,940	2,795	56.6	2,145	43.4	1,134	23.0	134	2.7
Under 1.30	6,779	4,096	60.4	2,683	39.6	1,415	20.9	157	2.3
Under 1.85	10,744	7,017	65.3	3,727	34.7	1,927	17.9	205	1.9
1.85 and over	19,646	18,351	93.4	1,295	6.6	541	2.8	NA	NA
Income unknown	7,553	6,607	87.5	946	12.5	459	6.1	NA	NA
Area of residence: ⁶									
Inside metropolitan area	32,902	27,888	84.8	5,014	15.2	2,458	7.5	210	0.6
In principal cities ⁷	10,401	8,432	81.1	1,969	18.9	1,006	9.7	96	0.9
Not in principal cities	17,770	15,650	88.1	2,120	11.9	1,040	5.9	75	0.4
Outside metropolitan area	5,041	4,088	81.1	953	18.9	468	9.3	40	0.8
Census geographic region:									
Northeast	6,291	5,402	85.9	889	14.1	415	6.6	NA	NA
Midwest	7,917	6,699	84.6	1,218	15.4	607	7.7	70	0.9
South	14,427	11,848	82.1	2,579	17.9	1,210	8.4	102	0.7
West	9,308	8,027	86.2	1,281	13.8	694	7.5	44	0.5

NA = Not reported; fewer than 10 households in the survey with this characteristic had very low food security among children.

¹Totals exclude households for which food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2017, these exclusions represented 109,000 households with children (0.3 percent of all households with children).

²Food-insecure households are those with low or very low food security among adults or children or both.

³In some food-insecure households with children, only adults were food insecure. Households with food-insecure children are those with low or very low food security among children.

⁴Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

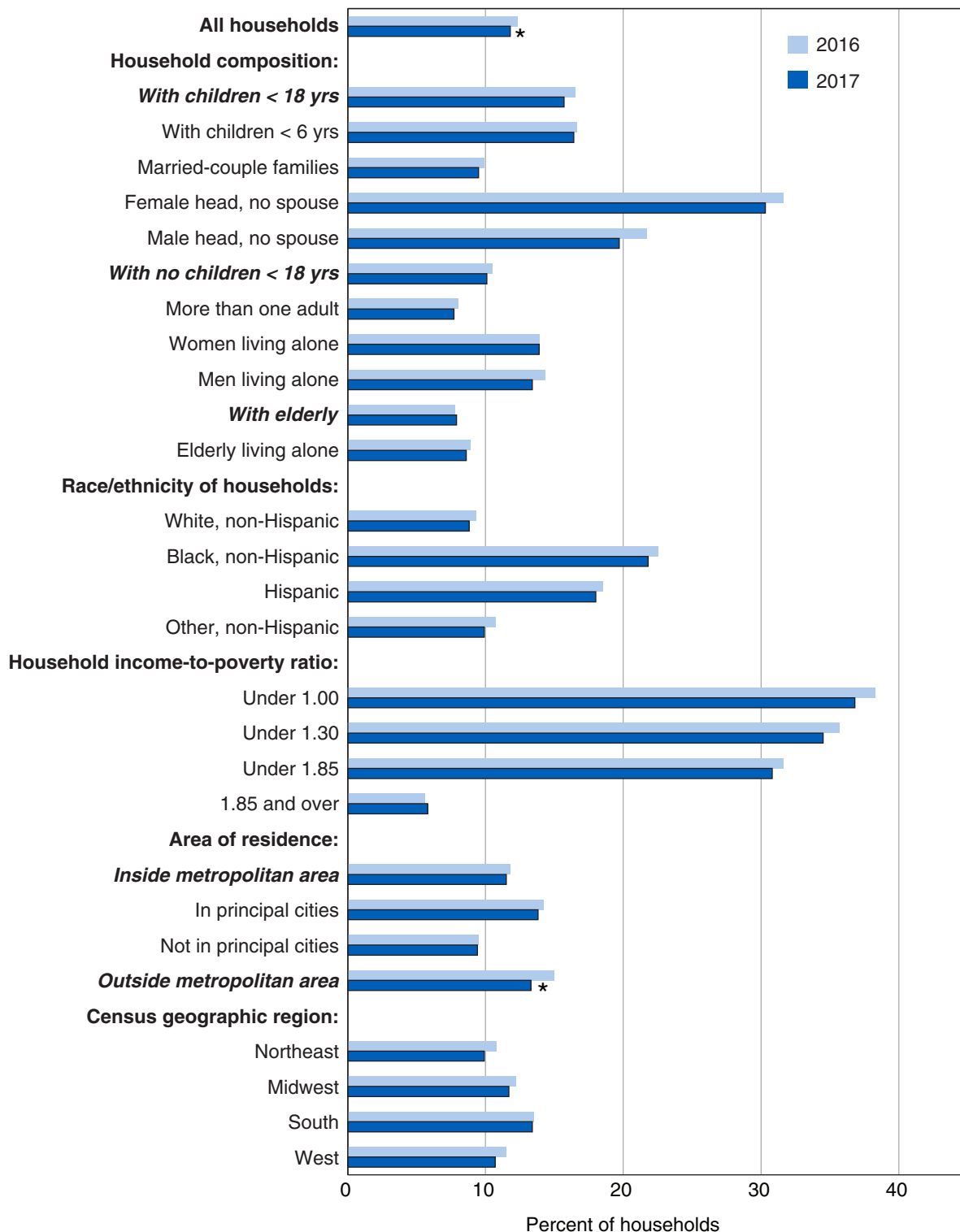
⁵Hispanics may be of any race.

⁶Metropolitan area residence is based on 2013 Office of Management and Budget delineation. Prevalence rates by area of residence are comparable with those for 2014 and later but are not precisely comparable with those of earlier years.

⁷Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 14 percent of households with children in metropolitan statistical areas.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2017 Current Population Survey Food Security Supplement.

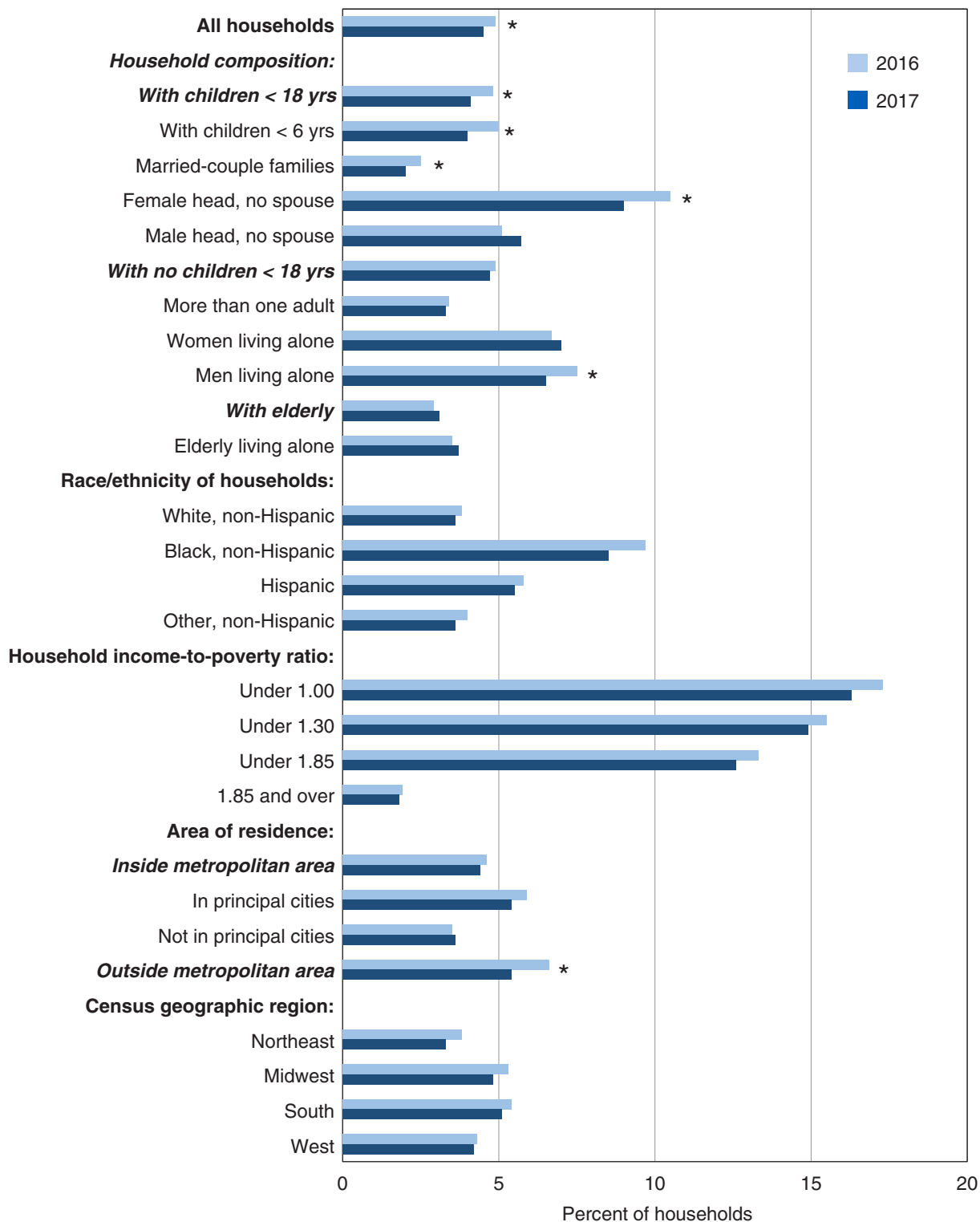
Figure 4
Prevalence of food insecurity, 2016 and 2017



* Change from 2016 to 2017 was statistically significant with 90-percent confidence ($t > 1.645$).

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2016 and 2017 Current Population Survey Food Security Supplement.

Figure 5
Prevalence of very low food security, 2016 and 2017



* Change from 2016 to 2017 was statistically significant with 90-percent confidence ($t > 1.645$).

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2016 and 2017 Current Population Survey Food Security Supplement.

Table 4

Prevalence of household food insecurity and very low food security by State, average 2015-17

States	Number of households		Food insecurity (low or very low food security)		Very low food security	
	Average 2015-17 ¹	Interviewed	Prevalence	Margin of error ²	Prevalence	Margin of error ²
	<i>Number</i>	<i>Number</i>	<i>Percent</i>	<i>Percentage points</i>	<i>Percent</i>	<i>Percentage points</i>
U.S.	126,279,000	118,213	12.3	0.19	4.8	0.12
AK	267,000	1,389	11.6	1.64	3.7 *	0.90
AL	1,961,000	2,332	16.3 *	1.88	7.1 *	1.15
AR	1,214,000	2,143	17.4 *	1.97	6.5 *	1.31
AZ	2,650,000	1,851	13.1	1.47	5.7	0.98
CA	13,967,000	9,034	11.2 *	0.76	4.1 *	0.44
CO	2,359,000	1,327	9.2 *	1.50	3.8	0.99
CT	1,420,000	1,012	12.2	2.00	4.7	1.40
DC	321,000	2,609	11.2	1.15	4.5	0.87
DE	381,000	1,290	11.1	1.54	3.5 *	0.92
FL	8,373,000	4,978	11.9	0.83	4.2 *	0.55
GA	4,015,000	2,783	13.0	1.40	4.4	0.62
HI	485,000	1,504	7.4 *	1.30	2.9 *	0.74
IA	1,297,000	1,464	10.5 *	1.60	4.3	1.07
ID	636,000	1,848	11.0	1.53	4.0	0.82
IL	5,039,000	3,460	11.2	1.04	4.7	0.66
IN	2,650,000	2,024	13.6 *	1.26	5.7	0.94
KS	1,188,000	1,565	13.3	2.27	5.6	1.33
KY	1,777,000	1,586	14.7	2.86	6.1	1.55
LA	1,837,000	2,816	17.3 *	1.32	7.1 *	0.78
MA	2,791,000	2,310	10.2 *	1.21	3.8 *	0.77
MD	2,294,000	1,408	10.4 *	1.73	4.3	1.19
ME	574,000	1,195	14.4	2.66	6.4 *	1.61
MI	4,033,000	2,610	13.6	1.41	6.0 *	0.92
MN	2,209,000	1,571	9.5 *	2.06	3.7	1.10
MO	2,470,000	1,818	12.8	2.02	4.8	1.07
MS	1,167,000	2,445	17.2 *	1.58	6.6 *	0.87
MT	446,000	2,620	11.4	1.04	4.6	0.84
NC	4,096,000	2,655	14.4 *	1.69	5.6	1.10
ND	319,000	1,887	9.0 *	1.10	3.5 *	0.75
NE	759,000	1,443	13.5	1.73	5.4	1.19
NH	538,000	1,688	9.4 *	1.46	3.4 *	0.80
NJ	3,389,000	2,270	8.6 *	1.13	3.0 *	0.63
NM	833,000	2,296	17.9 *	1.38	6.6 *	1.19
NV	1,131,000	1,503	12.4	1.83	5.1	1.17
NY	7,888,000	4,584	10.9 *	0.91	3.9 *	0.48
OH	4,664,000	3,268	13.7 *	1.33	6.1 *	0.81
OK	1,570,000	1,781	15.0 *	1.85	6.4 *	1.41
OR	1,645,000	1,761	12.9	1.45	5.4	1.11
PA	5,199,000	3,130	12.1	1.25	4.0 *	0.70
RI	437,000	1,053	12.4	2.02	5.6	1.32
SC	2,053,000	1,880	11.7	1.74	4.2	0.93
SD	353,000	1,455	11.4	1.82	4.3	1.12
TN	2,673,000	2,377	12.9	1.41	5.7 *	0.87
TX	10,177,000	5,998	14.0 *	0.93	5.8 *	0.66
UT	1,001,000	1,604	10.7	2.07	3.9	1.69
VA	3,208,000	2,258	10.1 *	1.17	4.4	0.86
VT	260,000	1,752	9.8 *	1.25	3.6 *	0.77
WA	2,888,000	2,203	10.8 *	1.21	4.1	0.76
WI	2,380,000	1,937	10.0 *	1.41	3.8 *	0.84
WV	762,000	2,604	14.9 *	1.80	6.2 *	0.75
WY	233,000	1,834	13.2	1.79	5.1	1.07

*Difference from U.S. average was statistically significant with 90-percent confidence ($t > 1.645$). Standard error of differences assumes that there is no correlation between national and individual State estimates.

¹Totals exclude households for which food security status is unknown because household respondents did not give a valid response to any of the questions in the food security scale. These exclusions represented about 0.3 percent of all households in 2015, 0.3 percent in 2016, and 0.3 percent in 2017.

²Margin of error with 90-percent confidence (1.645 times the standard error of the estimated prevalence rate). Standard errors were estimated using balanced repeated replication (BRR) methods based on replicate weights for the CPS Food Security Supplement.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2015, 2016, and 2017 Current Population Survey (CPS) Food Security Supplements.

The margin of error for State food insecurity rates should be considered when interpreting these statistics, especially when comparing prevalence rates across States. The margin of error reflects sampling variation—the uncertainty associated with estimates that are based on information from a limited number of households in each State. The margins of error presented in table 4 indicate the range (above or below the estimated prevalence rate) that is 90 percent likely to include the true prevalence rate. For example, considering the margins of error, it is not certain that the prevalence of very low food security was higher in Alabama and Louisiana than in the States with the next nine highest prevalence rates.

Taking into account margins of error of the State and U.S. estimates, the prevalence of food insecurity was higher (i.e., statistically significantly higher) than the national average in 11 States (AL, AR, IN, LA, MS, NC, NM, OH, OK, TX, and WV) and lower than the national average in 15 States (CA, CO, HI, IA, MA, MD, MN, ND, NH, NJ, NY, VA, VT, WA, and WI).²¹ In the remaining 24 States and the District of Columbia, differences from the national average were not statistically significant. The prevalence of very low food security was higher than the national average in 12 States (AL, AR, LA, ME, MI, MS, NM, OH, OK, TN, TX, and WV), lower than the national average in 13 States (AK, CA, DE, FL, HI, MA, ND, NH, NJ, NY, PA, VT, and WI), and not significantly different from the national average in 25 States and the District of Columbia.

State-level rates of food insecurity and very low food security for 2015-17 are compared with 2012-14 and 2005-07 averages in table 5. The prevalence rates for the immediately preceding 3-year period, 2012-14 are from *Household Food Security in the United States in 2014* (Coleman-Jensen et al., 2015). The 2005-07 rates are from *Household Food Security in the United States, 2007* (Nord et al., 2008) and are presented as a baseline to assess changes in State-level food security conditions over the past decade.²²

There was a statistically significant percentage-point increase (5.6) in the prevalence of food insecurity from 2012-14 to 2015-17 in 1 State (NM), while food insecurity declined significantly in 18 States (AZ, CA, CO, FL, GA, HI, ID, MO, MS, NJ, NV, NY, OH, OR, TN, TX, VT, and WA) and the District of Columbia (table 5). During the same period, the prevalence of very low food security increased significantly in 1 State (NM) and declined significantly in 12 States (CA, CO, FL, GA, HI, MO, NH, NJ, NY, OH, VT, and WA). There was a statistically significant percentage-point increase in the prevalence of food insecurity from 2005-07 to 2015-17 in 18 States, with no statistically significant declines. The prevalence of very low food security increased significantly from 2005-07 to 2015-17 in 19 States, with no statistically significant declines. Changes not marked as statistically significant (*) in table 5 were within ranges that could have resulted from sampling variation (that is, a non-zero difference between sample estimates, based on the households that happen to be chosen for the sample, which is consistent with no actual change in food security in the State's general population).

²¹Standard error of difference assumes that there is no correlation between national and individual State estimates.

²²Prevalence rates for 1996-98 reported in *Prevalence of Food Insecurity and Hunger, by State, 1996-1998* (Nord et al., 1999) are not directly comparable with the rates reported here because of differences in screening procedures in the CPS Food Security Supplements from 1995 to 1998. Statistics for 1996-98, adjusted to be comparable with those for recent years, are presented in *Statistical Supplement to Food Security in the United States in 2010*, table S-4. Standard errors of State-level estimates for 2005-07 were calculated using jackknife replication methods with “month-in-sample” groups considered as separate independent samples (see Nord et al., 1999).

Table 5

Change in prevalence of household food insecurity and very low food security by State, 2015-17 (average), 2012-14 (average), and 2005-07 (average)¹

States	Food insecurity (low or very low food security)					Very low food security				
	Average	Average	Average	Change	Change	Average	Average	Average	Change	Change
	2015-17	2012-14	2005-07	2015-17	2015-17	2015-17	2012-14	2005-07	2015-17	2015-17
	Percent			Percentage points		Percent			Percentage points	
U.S.	12.3	14.3	11.0	-2.0*	1.3*	4.8	5.6	4.0	-0.8*	0.8*
AK	11.6	12.0	12.4	-0.4	-0.8	3.7	4.3	4.8	-0.6	-1.1
AL	16.3	16.8	11.9	-0.5	4.4*	7.1	7.2	4.3	-0.1	2.8*
AR	17.4	19.9	14.4	-2.5	3.0*	6.5	8.1	4.9	-1.6	1.6
AZ	13.1	15.4	12.0	-2.3*	1.1	5.7	6.2	4.6	-0.5	1.1
CA	11.2	13.5	10.2	-2.3*	1.0	4.1	5.1	3.5	-1.0*	0.6
CO	9.2	13.6	11.0	-4.4*	-1.8	3.8	5.2	4.6	-1.4*	-0.8
CT	12.2	13.9	8.8	-1.7	3.4*	4.7	6.0	3.2	-1.3	1.5*
DC	11.2	13.2	11.9	-2.0*	-0.7	4.5	4.9	3.8	-0.4	0.7
DE	11.1	12.1	8.6	-1.0	2.5*	3.5	4.6	3.3	-1.1	0.2
FL	11.9	13.8	9.0	-1.9*	2.9*	4.2	5.5	3.4	-1.3*	0.8*
GA	13.0	15.7	13.0	-2.7*	0.0	4.4	6.2	5.0	-1.8*	-0.6
HI	7.4	12.3	8.4	-4.9*	-1.0	2.9	4.0	2.9	-1.1*	0.0
IA	10.5	11.4	11.7	-0.9	-1.2	4.3	4.6	4.5	-0.3	-0.2
ID	11.0	14.1	11.4	-3.1*	-0.4	4.0	5.3	3.4	-1.3	0.6
IL	11.2	11.7	9.5	-0.5	1.7*	4.7	4.4	3.5	0.3	1.2*
IN	13.6	14.6	10.2	-1.0	3.4*	5.7	6.4	3.6	-0.7	2.1*
KS	13.3	15.9	13.0	-2.6	0.3	5.6	6.4	4.7	-0.8	0.9
KY	14.7	17.5	12.7	-2.8	2.0	6.1	7.0	4.5	-0.9	1.6
LA	17.3	17.6	11.7	-0.3	5.6*	7.1	7.1	4.6	0.0	2.5*
MA	10.2	9.6	8.0	0.6	2.2*	3.8	4.1	3.2	-0.3	0.6
MD	10.4	12.5	8.6	-2.1	1.8	4.3	4.8	3.4	-0.5	0.9
ME	14.4	16.2	13.3	-1.8	1.1	6.4	7.5	5.9	-1.1	0.5
MI	13.6	14.7	11.8	-1.1	1.8	6.0	6.3	4.5	-0.3	1.5*
MN	9.5	10.4	9.5	-0.9	0.0	3.7	4.2	3.7	-0.5	0.0
MO	12.8	16.8	12.9	-4.0*	-0.1	4.8	7.9	4.9	-3.1*	-0.1
MS	17.2	22.0	17.4	-4.8*	-0.2	6.6	7.3	7.0	-0.7	-0.4
MT	11.4	11.5	9.5	-0.1	1.9*	4.6	5.4	3.8	-0.8	0.8
NC	14.4	16.7	12.6	-2.3	1.8	5.6	6.4	4.0	-0.8	1.6*
ND	9.0	8.4	6.5	0.6	2.5*	3.5	2.9	2.2	0.6	1.3*
NE	13.5	13.9	9.5	-0.4	4.0*	5.4	5.5	3.4	-0.1	2.0*
NH	9.4	10.0	7.7	-0.6	1.7*	3.4	4.7	2.3	-1.3*	1.1*
NJ	8.6	11.7	8.8	-3.1*	-0.2	3.0	4.9	2.7	-1.9*	0.3
NM	17.9	12.3	15.0	5.6*	2.9*	6.6	4.6	4.9	2.0*	1.7
NV	12.4	15.2	10.4	-2.8*	2.0	5.1	6.3	4.0	-1.2	1.1
NY	10.9	14.4	9.9	-3.5*	1.0	3.9	4.9	3.3	-1.0*	0.6*
OH	13.7	16.9	12.2	-3.2*	1.5	6.1	7.5	4.5	-1.4*	1.6*
OK	15.0	16.5	13.0	-1.5	2.0	6.4	6.6	4.7	-0.2	1.7*
OR	12.9	16.1	12.4	-3.2*	0.5	5.4	6.3	5.5	-0.9	-0.1
PA	12.1	11.3	10.0	0.8	2.1*	4.0	4.6	3.4	-0.6	0.6
RI	12.4	12.7	10.9	-0.3	1.5	5.6	4.7	3.9	0.9	1.7*
SC	11.7	13.9	13.1	-2.2	-1.4	4.2	5.3	5.0	-1.1	-0.8
SD	11.4	11.9	9.7	-0.5	1.7	4.3	4.8	3.6	-0.5	0.7
TN	12.9	16.3	12.8	-3.4*	0.1	5.7	6.2	4.2	-0.5	1.5*
TX	14.0	17.2	14.8	-3.2*	-0.8	5.8	6.2	5.0	-0.4	0.8
UT	10.7	13.3	12.5	-2.6	-1.8	3.9	4.7	5.1	-0.8	-1.2
VA	10.1	10.1	8.0	0.0	2.1*	4.4	4.3	3.0	0.1	1.4*
VT	9.8	12.6	10.2	-2.8*	-0.4	3.6	6.0	4.6	-2.4*	-1.0
WA	10.8	13.7	10.1	-2.9*	0.7	4.1	5.5	3.5	-1.4*	0.6
WI	10.0	11.4	9.0	-1.4	1.0	3.8	4.9	3.5	-1.1	0.3
WV	14.9	15.3	10.7	-0.4	4.2*	6.2	5.9	4.0	0.3	2.2*
WY	13.2	14.0	9.9	-0.8	3.3*	5.1	5.3	3.3	-0.2	1.8*

*Change was statistically significant with 90-percent confidence ($t > 1.645$).

¹Percentages exclude households for which food security status is unknown because household respondents did not give a valid response to any of the questions in the food security scale.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey Food Security Supplements.

Household Spending on Food

This section provides information on how much households spent on food, as reported in the December 2017 Food Security Supplement. Food insecurity is a condition that arises from lack of money and other resources to acquire food. In most households, the majority of food consumed by household members is purchased, either from supermarkets or grocery stores, to be prepared and eaten at home; some food also comes from cafeterias, restaurants, or vending machines to be eaten outside the home. The amount of money a household spends on food thus indicates how adequately the household is meeting its food needs.²³ When a household reduces food spending below some minimum level, such as USDA's Thrifty Food Plan, because of constrained resources, disrupted eating patterns and reduced food intake may result.

Methods

The household food expenditure statistics in this report are based on usual weekly spending for food, as reported by respondents after reflecting on the household's actual food spending during the previous week. Respondents were first asked to report the amounts of money their households had spent on food in the week prior to the interview, including any purchases made with SNAP benefits (formerly called food stamps) at:

- supermarkets and grocery stores;
- stores other than supermarkets and grocery stores, such as meat markets, produce stands, bakeries, warehouse clubs, and convenience stores;
- restaurants, fast-food places, cafeterias, and vending machines; and
- "...any other kind of place."²⁴

Total spending for food, based on responses to this series of questions, was verified with the respondent, and the respondent was then asked how much the household usually spent on food during a week.²⁵ ERS analyses have shown that usual food expenditures estimated from data collected by this method were consistent with estimates from the Consumer Expenditure Survey (CES)—the

²³Food spending is only an indirect indicator of food consumption. It understates food consumption in households that receive food from in-kind programs, such as the National School Lunch and School Breakfast Programs, WIC, meal programs for children in childcare and for the elderly, and private charitable organizations. Purchases with SNAP benefits, however, are counted as food spending in the CPS Food Security Supplement. Food spending also understates food consumption in households that acquire a substantial part of their food supply through gardening, hunting, or fishing, as well as in households that obtain groceries from friends or relatives or eat more meals at friends' or relatives' homes than they provide to friends or relatives. Food spending also understates food consumption in geographical areas with relatively low food prices and overstates consumption in areas with relatively high food prices.

²⁴For spending in the first two categories of stores, respondents were also asked how much of the amount was for "non-food items such as pet food, paper products, alcohol, detergents, or cleaning supplies." These amounts are subtracted from total spending at each of these stores to arrive at spending for food.

²⁵Beginning with the 2015 Current Population Survey Food Security Supplement, food-spending amounts are categorized in public-use data. Categorizing the dollar amounts reduces the risk of disclosure and is now standard for data collected by the U.S. Census Bureau. ERS analysis suggests this change has little effect on the estimates of median food spending reported here. The tables presented in this section are based on the categorical food-spending data and are comparable to the 2016 estimates but are not precisely comparable with estimates published in prior annual food security reports. Changes in food spending from 2016 described in the text are based on comparable estimates of 2016 categorical food-spending data published in Coleman-Jensen et al. (2017).

principal source of data on U.S. household expenditures for goods and services (Oliveira and Rose, 1996; Nord, 2009b).

Food spending was adjusted for household size and composition in two ways. First, we divided each household's usual weekly food expenditure by the number of household members, yielding the "usual weekly food spending per person" for that household. The second adjustment accounts more precisely for the different food needs of households by comparing each household's usual food spending to the estimated cost of the Thrifty Food Plan for that household in December 2017.²⁶ The Thrifty Food Plan (TFP)—developed by USDA—serves as a national standard for a nutritious, minimal-cost diet. It represents a set of "market baskets" of food that people in specific age and gender categories could consume at home to maintain a healthful diet that meets current dietary standards, taking into account the food consumption patterns of U.S. households (U.S. Department of Agriculture, Center for Nutrition Policy and Promotion, 2007).²⁷ Each household's reported usual weekly food spending was divided by the household-specific cost of the TFP, based on the age- and gender-specific cost of the TFP for each household member and the number of persons in the household (U.S. Department of Agriculture, Center for Nutrition Policy and Promotion, 2018).²⁸

The medians of each of the two food-spending measures (spending per person per week and spending relative to the cost of the TFP) were estimated at the national level and for households in various categories. Medians are reported rather than averages (means) because medians are not unduly affected by the few unexpectedly high values of usual food spending that are believed to be reporting or data entry errors. Thus, the median better reflects what a typical household spent.

About 6.8 percent of households interviewed in the CPS Food Security Supplement did not respond to the food-spending questions (or reported zero usual food spending) and were excluded from the analysis. As a result, the total number of households represented in tables 6 and 7 is somewhat smaller than that in tables 1 and 2, and food-spending estimates may not be fully representative of all households in the United States.²⁹

Food Expenditures by Selected Household Characteristics

In 2017, the typical U.S. household spent \$50.00 per person each week for food (table 6). Median household food spending relative to the cost of the TFP—which adjusts for food price inflation and adjusts more precisely for the food needs of persons in different age-gender categories—was 1.24, essentially unchanged from 1.22 in 2016 (Coleman-Jensen et al., 2017). That is, in 2017, the typical household spent 24 percent more on food than the cost of the TFP for that household.

²⁶The cost of the TFP is revised each month to account for inflation in food prices. For this report, TFP costs are estimated by ERS separately for Alaska and Hawaii, using adjustment factors calculated from USDA's TFP costs for those States for the second half of 2017. USDA's TFP costs for Alaska and Hawaii are available on USDA's Center for Nutrition Policy and Promotion website.

²⁷The TFP, in addition to its use as a research tool, is used as a basis for setting the maximum SNAP benefit amounts.

²⁸The cost of a TFP for a household is calculated under the assumption that all household members purchase and prepare food together.

²⁹Households that were unable or unwilling to report food spending were less likely to be food insecure than those that did report food spending (8.2 percent compared with 12.1 percent). Food spending may, therefore, be slightly underestimated from these data.

Table 6

Weekly household food spending per person and relative to the household cost of the Thrifty Food Plan (TFP), 2017

Category	Number of households ¹	Median weekly food spending	
		Per person	Relative to cost of TFP
	<i>1,000</i>	<i>Dollars</i>	<i>Ratio</i>
All households	117,398	50.00	1.24
Household composition:			
With children < 18 yrs	35,851	40.00	1.12
At least one child < 6 yrs	15,312	37.50	1.15
Married-couple families	23,497	40.00	1.17
Female head, no spouse	8,970	37.50	1.04
Male head, no spouse	2,843	40.00	1.04
Other household with child ²	539	40.00	1.09
With no children < 18 yrs	81,548	60.00	1.32
More than one adult	49,109	50.00	1.21
Women living alone	17,852	60.00	1.37
Men living alone	14,587	80.00	1.56
With elderly	33,702	50.00	1.19
Elderly living alone	12,354	60.00	1.29
Race/ethnicity of households:			
White, non-Hispanic	78,088	50.00	1.32
Black, non-Hispanic	14,990	50.00	1.11
Hispanic ³	15,852	45.00	1.13
Other, non-Hispanic	8,468	50.00	1.20
Household income-to-poverty ratio:			
Under 1.00	11,878	40.00	0.98
Under 1.30	16,009	40.00	0.98
Under 1.85	25,279	40.00	0.99
1.85 and over	66,634	60.00	1.39
Income unknown	25,485	50.00	1.19
Area of residence: ⁴			
Inside metropolitan area	100,407	50.00	1.28
In principal cities ⁵	34,071	50.00	1.29
Not in principal cities	51,198	50.00	1.29
Outside metropolitan area	16,992	50.00	1.13
Census geographic region:			
Northeast	20,243	50.00	1.32
Midwest	25,511	50.00	1.19
South	44,698	50.00	1.20
West	26,946	50.00	1.29

¹Totals exclude households that did not answer the questions about spending on food or reported zero usual food spending. These exclusions represented 8.0 percent of all households.

²Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

³Hispanics may be of any race.

⁴Metropolitan area residence is based on 2013 Office of Management and Budget delineation.

⁵Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 15 percent of households in metropolitan statistical areas.

Note: These estimates are based on categorical food spending data rather than on continuous data that were used in 2014 and earlier years. Beginning with the 2015 Current Population Survey Food Security Supplement, food spending amounts are categorized in public-use data. ERS analysis suggests that this change has little effect on the estimates of median food spending reported here.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2017 Current Population Survey Food Security Supplement.

Households with children under age 18 generally spent less for food, relative to the household cost of the TFP, than those without children. The typical household with children spent 12 percent more than the cost of the TFP on food, while the typical household with no children spent 32 percent more. Median household food expenditures relative to the cost of the TFP were lower for households with children headed by single women (1.04) and single men (1.04) than for married couples with children (1.17). Median food expenditure relative to the cost of the TFP was highest for men living alone (1.56).

Median food expenditures relative to the cost of the TFP were lower for Black non-Hispanic (1.11) and Hispanic households (1.13) than for White non-Hispanic households (1.32). This pattern is consistent with the lower average incomes and higher prevalence rates of food insecurity for these racial and ethnic minorities.

As expected, households with higher incomes spent more money on food than lower income households.³⁰ The typical household with income below the poverty line spent about 2 percent less than the cost of the TFP, while the typical household with income above 185 percent of the poverty line spent 39 percent more than the cost of the TFP. Sub-TFP food spending may be inadequate since the TFP was designed to be a minimal-cost nutritious diet.

Median food spending relative to the cost of the TFP was lower for households in nonmetropolitan areas (1.13) than for those inside metropolitan statistical areas (1.28). Regionally, median spending on food relative to the cost of the TFP was lower in the Midwest (1.19) and South (1.20) than in the West (1.29) and Northeast (1.32).

Food Expenditures and Household Food Security

Food-secure households typically spent more on food than did food-insecure households. Median food spending relative to the cost of the TFP was 1.28 among food-secure households, compared with 1.04 among food-insecure households (table 7). Taking into account estimated food need, the median food-secure household spent approximately 23 percent more for food than the median food-insecure household in 2017 (estimated as $1.28/1.04=1.23$).³¹

³⁰However, food spending does not rise proportionately with income, so high-income households actually spend a smaller proportion of their income on food than low-income households.

³¹The pattern of higher food spending among food-secure households compared with food-insecure households was also found in USDA's National Household Food Acquisition and Purchase Survey (FoodAPS) data (Tiehen et al., 2017).

Table 7

Weekly household food spending per person and relative to the cost of the Thrifty Food Plan (TFP) by food security status, 2017

Category	Number of households ¹	Median weekly food spending	
		Per person	Relative to cost of TFP
	<i>1,000</i>	<i>Dollars</i>	<i>Ratio</i>
All households	117,398	50.00	1.24
Food security status:			
Food-secure households	103,061	50.00	1.28
Food-insecure households	14,201	40.00	1.04
Households with low food security	8,789	40.00	1.06
Households with very low food security	5,412	40.00	1.01

¹Total for all households excludes households that did not answer the questions about spending on food or reported zero usual spending for food. These represented 8.0 percent of all households. Totals in the bottom section also exclude households that did not answer any of the questions in the food security scale.

Note: These estimates are based on categorical food spending data rather than on continuous data that were used in 2014 and earlier years. Beginning with the 2015 Current Population Survey Food Security Supplement, food spending amounts are categorized in public-use data. ERS analysis suggests that this change has little effect on the estimates of median food spending reported here.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2017 Current Population Survey Food Security Supplement..

Federal Food and Nutrition Assistance Programs and Food Security

Households with limited resources use a variety of methods to help meet their food needs. Some participate in Federal food and nutrition assistance programs or obtain food from emergency providers in their communities to supplement the food they purchase. Households that turn to Federal and community food and nutrition assistance programs typically do so because they are having difficulty meeting their food needs. The use of such programs by low-income households provides insight into the extent of these households' difficulties in obtaining enough food. The relationship between food security status and use of food and nutrition assistance programs also provides insight into the ways low-income households cope with difficulties in acquiring adequate food.

This section presents information about the food security status of households that participated in the three largest Federal food and nutrition assistance programs: SNAP, the National School Lunch Program, and WIC (see box, "Federal Food and Nutrition Assistance Programs," p. 29). It also provides information about the extent to which food-insecure households participated in these programs. Total participation in the Federal food and nutrition assistance programs, participation rates of eligible households in those programs, and characteristics of participants in the programs are not described in this report. Extensive information on those topics is available from USDA's Food and Nutrition Service (FNS).³²

Statistical Supplement tables S-11 to S-16 provide information on food spending by participants and low-income nonparticipants in selected Federal and community food and nutrition assistance programs and about the extent to which households obtained assistance from community food pantries and emergency kitchens (Coleman-Jensen et al., 2018).

Methods

The December 2017 CPS Food Security Supplement included questions about the use of Federal food and nutrition assistance programs. All households with reported annual incomes below 185 percent of the Federal poverty threshold were asked these questions. To minimize respondent burden, households with annual incomes above that range were not asked the questions unless they indicated some level of difficulty in meeting their food needs on the first of the two preliminary screener questions asked of all households (listed in footnote 6, p. 4). The questions analyzed in this section are:

- During the past 12 months...did anyone in this household get SNAP or food stamp benefits?³³

Households that responded affirmatively were then asked:

- In which months were SNAP benefits received?
- On what date did you last receive them?

³²Additional research findings on the operation and effectiveness of these programs are available from the ERS website.

³³The Food Stamp Program was renamed the Supplemental Nutrition Assistance Program (SNAP) in October 2008. Both names were mentioned in the survey question, as well as the State's name for the program in States that used a different name.

Federal Food and Nutrition Assistance Programs

The U.S. Department of Agriculture's Food and Nutrition Service (FNS) administers 15 domestic food and nutrition assistance programs. The three largest programs are:

- The Supplemental Nutrition Assistance Program (SNAP), formerly the Food Stamp Program. The program provides monthly benefits to eligible low-income households to purchase food items at SNAP-authorized retailers. SNAP is available to all individuals who meet financial and nonfinancial eligibility criteria. In an average month of fiscal year 2017 (October 1, 2016, through September 30, 2017), SNAP provided benefits to nearly 42.2 million people in the United States (about 13 percent of individuals). The average benefit was about \$126 per person per month, and Federal expenditures for the program were nearly \$68 billion that year.
- The National School Lunch Program. The program operates in over 100,000 public and nonprofit private schools and residential childcare institutions. All meals served under the program receive Federal subsidies, and free or reduced-price lunches are available to low-income students. In fiscal year 2017, the program provided lunches to an average of 30.0 million children each school day. Two-thirds (67 percent) of the lunches served in 2017 were free, and an additional 7 percent were provided at reduced prices.
- The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The program is a federally funded preventive nutrition program that provides grants to States to support distribution of supplemental foods, healthcare referrals, and nutrition education for low-income pregnant, breastfeeding, and nonbreastfeeding postpartum women; for infants in low-income families; and for children in low-income families who are younger than age 5 and who are found to be at nutritional risk. Most State WIC agencies provide vouchers that participants use to acquire supplemental food packages at authorized food stores. In fiscal year 2017, WIC served 7.3 million participants per month at an average monthly cost for food (after rebates to WIC from manufacturers) of about \$41 per person.

(For more information, see Oliveira, 2018.)

Information from the three questions was used to identify households that received SNAP benefits in the 30 days prior to the survey.³⁴

Additional questions about Federal food and nutrition assistance programs analyzed here are:

- During the past 30 days, did any children in the household...receive free or reduced-price lunches at school? (Only households with children between the ages of 5 and 18 were asked this question.)
- During the past 30 days, did any women or children in this household get food through the WIC program? (Only households with a child under age 5 or a woman age 15-45 were asked this question.)

³⁴The CPS household does not always match the SNAP unit. In some households, only some members are eligible for SNAP (Czajka et al., 2012; Scherpf et al., 2015).

Prevalence rates of food security, food insecurity, and very low food security were calculated for households reporting use of each food and nutrition assistance program and for comparison groups of nonparticipating households with incomes and household compositions similar to those of food assistance recipients. Statistics for participating households excluded households with annual incomes above the ranges specified for the comparison groups.³⁵ The proportions of food-insecure households participating in each of the three largest Federal food and nutrition assistance programs—SNAP, the National School Lunch Program, and WIC—were calculated, as well as the proportion that participated in any of the three programs. These analyses were restricted to households with annual incomes below 185 percent of the poverty line because most households with incomes above this range were not asked whether they participated in these programs.

Food Security of Households That Received Food and Nutrition Assistance

The relationship between food security and the use of food and nutrition assistance programs is complex. There are reasons to expect that households that report using food and nutrition assistance programs in a one-time survey can either be more food secure or less food secure than low-income households not using those programs. Since the programs provide food and other resources to reduce the severity of food insecurity, households are expected to be more food secure after receiving program benefits than they were before. On the other hand, it is the more food-insecure households—those having greater difficulty meeting their food needs—that seek assistance from the programs.³⁶ In 2017, an estimated 50.1 percent of households that received SNAP benefits were food insecure, as were 41.7 percent of households that received free or reduced-price school lunches and 38.2 percent of those that received WIC benefits (table 8).

The prevalence of very low food security among households participating in SNAP was more than double that of nonparticipating households in the same low-income range (22.0 percent versus 9.8 percent). For households that received free or reduced-price school lunches, the prevalence of very low food security was also double that of nonparticipating households with school-age children in the same income range (13.2 percent versus 6.6 percent).

A possible complicating factor in interpreting table 8 is that food insecurity was measured over a 12-month period. An episode of food insecurity may have occurred at a different time during the year than the use of a specific food and nutrition assistance program. A similar tabulation using a 30-day measure of food insecurity largely overcomes this potential problem because measured food insecurity and reported use of food and nutrition assistance programs are more likely to refer to concurrent conditions when both are referenced to the previous 30 days. That tabulation shows patterns of food insecurity and the use of food and nutrition assistance programs that are similar to those in table 8, although 30-day food insecurity prevalence rates were lower than the corresponding 12-month rates (see Statistical Supplement table S-15, Coleman-Jensen et al., 2018).

³⁵Some program participants reported annual incomes that were higher than 12 times the program eligibility criteria, which are based on monthly income (relative to poverty). They may have had monthly incomes below the monthly eligibility threshold during part of the year, or subfamilies within the household may have had incomes low enough to have been eligible.

³⁶This “self-selection” effect is evident in the association between food security and food program participation observed in the food security survey. Participating households were less food secure than similar nonparticipating households. More complex analysis, using methods to account for this self-targeting, is required to assess the extent to which the programs improve food security (see Gregory et al., 2015, for a review of this literature and these methods; also see Mabli et al., 2013; Nord, 2013; Nord, 2012; Nord and Prell, 2011; Ratchliffe and McKernan, 2011; Nord and Golla, 2009; Yen et al., 2008; Wilde and Nord, 2005; Gundersen and Oliveira, 2001; Gundersen and Gruber, 2001; Nelson et al., 1998). Overall, these studies find that SNAP improves food security.

Table 8

Percentage of households by food security status and participation in selected Federal food and nutrition assistance programs, 2017

Category	Food secure	Food insecure		
		All	With low food security	With very low food security
<i>Percent</i>				
Income less than 130 percent of poverty line:				
Received SNAP ¹ benefits previous 12 months	49.9	50.1	28.1	22.0
Received SNAP benefits all 12 months	51.2	48.8	26.1	22.7
Received SNAP benefits 1 to 11 months	47.2	52.8	32.4	20.4
Did not receive SNAP benefits previous 12 months	76.6	23.4	13.6	9.8
Income less than 185 percent of poverty line; school-age children in household:				
Received free or reduced-price school lunch previous 30 days	58.3	41.7	28.5	13.2
Did not receive free or reduced-price school lunch previous 30 days	74.2	25.8	19.2	6.6
Income less than 185 percent of poverty line; children under age 5 in household:				
Received WIC ² previous 30 days	61.8	38.2	27.9	10.3
Did not receive WIC previous 30 days	72.0	28.0	22.1	5.9

¹SNAP = Supplemental Nutrition Assistance Program, formerly the Food Stamp Program.

²WIC = Special Supplemental Nutrition Assistance Program for Women, Infants, and Children.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2017 Current Population Survey Food Security Supplement.

Participation in Federal Food and Nutrition Assistance Programs by Food-Insecure Households

About 58 percent of food-insecure households reported receiving assistance from one or more of the three largest Federal food and nutrition assistance programs during the month prior to the December 2017 food security survey (table 9). SNAP provided assistance to 43.1 percent of food-insecure households; children in 30.5 percent of food-insecure households received free or reduced-price school lunches; and women or children in 9.4 percent of food-insecure households received WIC food vouchers.³⁷ An estimated 56.3 percent of households classified as having very low food security reported participating in one or more of the three largest Federal food and nutrition assistance programs, with the largest share (46.5 percent) participating in SNAP.³⁸

³⁷These statistics may be biased downward. It is known from comparisons between household survey data and administrative records that food program participation is underreported by household survey respondents, including those in the CPS (Meyer and George, 2011; Parker, 2011; Meyer et al., 2009). This is probably true for food-insecure households as well, although the extent of underreporting by these households is not known. Statistics are based on the subsample of households with annual incomes below 185 percent of the poverty line. Not all of these households were eligible for certain programs. (For example, many households without pregnant women or children and with incomes above 130 percent of poverty would not have been eligible for any of the programs.)

³⁸The statistics in table 9 were also calculated for households that were food insecure during the 30-day period prior to the survey. In principle, that analysis is preferable because food security status and use of programs are more certainly contemporaneous than when food insecurity is assessed over a 12-month period. However, the results differed only slightly from those in table 9 and are not presented in a separate table. In 2017, an estimated 59.6 percent of households that were food insecure during the 30-day period prior to the survey participated in SNAP, free or reduced-price school lunch, or WIC during that same period. Among households that experienced very low food security in the 30-day period prior to the survey, 55.9 percent participated in SNAP, free or reduced-price school lunch, or WIC during that same period.

Table 9

Participation of food-insecure households in selected Federal food and nutrition assistance programs, 2017

Program	Share of food-insecure households that participated in the program during the previous 30 days ^{1,2}	Share of households with very low food security that participated in the program during the previous 30 days ^{1,2}
	<i>Percent</i>	
SNAP ³	43.1	46.5
Free or reduced-price school lunch	30.5	23.3
WIC ⁴	9.4	6.6
Any of the three programs	58.4	56.3
None of the three programs	41.6	43.7

¹Analysis is restricted to households with annual incomes less than 185 percent of the poverty line because most households with incomes above that range were not asked whether they participated in food assistance programs.

²These statistics understate the extent of food and nutrition program participation because program participation is underreported by household survey respondents, see footnote 37.

³SNAP = Supplemental Nutrition Assistance Program, formerly the Food Stamp Program.

⁴WIC = Special Supplemental Nutrition Assistance Program for Women, Infants, and Children.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2017 Current Population Survey Food Security Supplement.

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