

## Self-Reported Concern About Food Security --- Eight States, 1996--1998

Food security is defined as having access at all times to enough food for an active, healthy lifestyle (1,2). This definition implies that safe and nutritious foods are available and that household resources are sufficient to meet cost. Recognition that hunger and food security are problems in the United States led to the development and implementation of measures of hunger and food security on national surveys. One of the national health objectives for 2010 is to increase food security and reduce the risk for hunger among all households (objective 19-18) (1). To characterize state-level prevalence of concern about food security, data were analyzed for the eight states that used the Social Context Module of the Behavioral Risk Factor Surveillance System (BRFSS) during 1996--1998. This report summarizes the results of this analysis and indicates that approximately 4%--6% of adults reported a concern about having enough food for themselves or their family during the preceding month.

BRFSS is an ongoing, state-based, random-digit--dialed telephone survey of the civilian, noninstitutionalized U.S. population aged  $\geq 18$  years. A question on concern about food security was part of the Social Context Module, which states may choose to use in addition to the core BRFSS questionnaire. Maryland, Montana, Pennsylvania, and Virginia used this module in 1996 (n=11,485); Kansas, Louisiana, Maryland, South Carolina, and Virginia in 1997 (n=11,487); and Missouri and Virginia in 1998 (n=7100). Respondents were asked, "In the past 30 days, have you been concerned about having enough food for you or your family?" For this report, an answer of "yes" to this question was considered an indication of concern about food security. Sample estimates were weighted by sex, age, and race/ethnicity to reflect the state's noninstitutionalized civilian population, and all prevalence estimates were reported by year of data collection. To account for the complex sampling design, SUDAAN was used for data analysis.

Overall, the prevalence of a concern about food security was 6.0% in 1996, 6.2% in 1997, and 4.6% in 1998 and ranged from 3.1% to 9.4% for individual states ([Table 1](#)). This concern was higher among women than men and was highest among persons aged 18--34 years. It was lowest among non-Hispanic whites and among persons who were married, and highest among

persons who were divorced or separated or who were never married. Concern about food security increased as the number of children in the household increased; this finding was consistent when stratified by the age of the children (<5, 5--12, and 13--17 years).

Responses to the BRFSS question varied by health and nutrition indicators. Concern about food security was highest among those whose self-reported general health was fair or poor, those with 25--30 days of physical or mental health that were "not good" during the preceding month, and among those who reported lower intake of fruits and vegetables. The prevalence of concern about food security decreased as education level, annual household income, and time spent at current residence increased. The prevalence was highest among unemployed persons and lowest among retired persons. Prevalence was higher among those who reported a time when they could not afford a doctor compared with those who could and among those whose last routine checkup was >2 years ago or never compared with those who had had a checkup during the preceding 2 years.

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### **Editorial Note:**

Despite the trend toward increasing obesity in the United States (3), a small proportion of the population in these eight states reported a concern about having enough food for themselves or their family during the preceding month. This concern was related to indicators of low socioeconomic status and was highest among women, younger respondents, Hispanics and non-Hispanic blacks, unmarried, divorced, or separated persons, and households with a greater number of children. However, concern about food security was not limited to these groups.

Inadequate food in a household can have deleterious health and behavioral effects (1) and may contribute to poor nutrition (4--6). Among an adult diabetic population seeking care at an urban county hospital, a high prevalence of hypoglycemic reactions was attributed to being unable to afford food (7). The question respondents answered in this report asked about concern over having enough food for themselves and their families, but did not ask if the respondent or their family had gone hungry at any time during the preceding month. Conceptual models of food security and hunger indicate the complexity of its measurement because of its sensitive nature and the difficulty that those experiencing hunger may have in comprehending the question (8). Concern about enough food can vary for individuals and households. Parents may skip meals to leave enough food for their children. The question used to assess concern about food security in this report combines individuals and households (9). Also, an insufficient food supply can be experienced chronically or episodically (8). The question used in this report assessed the time frame of the preceding month.

The findings in this report are subject to at least six limitations. First, BRFSS data are cross-sectional and may not reflect behaviors or conditions over time. This study design does not allow for examination into whether concern about food security occurred before or after the

factors examined. Second, because the data were self-reported, the findings are subject to recall bias and inaccurate reporting of behaviors. Third, data are from selected states and may not represent the prevalence in other states. Fourth, the data may be affected by unmeasured confounding factors (e.g., household expenses and access to healthy food). Fifth, because of the sampling scheme, there were fewer older respondents; therefore, the prevalence for the oldest persons could not be addressed adequately. For example, in 1998, only 27 respondents aged 90--99 years were included in the analyses. Concern about enough food may increase at the oldest ages because these persons are less mobile, which could prevent access to lower-cost food stores (10). Finally, the study design did not allow contact with some population groups (e.g., those living on Indian reservations, homeless persons, or those without a telephone).

As state and federal governments provide social programs to meet the needs of local communities, it will be important to continue to monitor concern about food security and the population groups most affected. These data can be used to guide service planning and highlight the importance of the need for innovative planning, implementation, and evaluation of interventions designed to assure food security in the United States.

## References

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**See Table 1 on following page**

**TABLE 1. Prevalence of self-reported concern about food security among persons aged  $\geq 18$  years during the 30 days preceding the survey, by selected characteristics — Behavioral Risk Factor Surveillance System, eight states, 1996–1998**

Characteristic	1996			1997			1998		
	No.*	Concern about food security (95% CI) <sup>†</sup>		No.	Concern about food security (95% CI)		No.	Concern about food security (95% CI)	
<b>State</b>									
Kansas	— <sup>§</sup>	—	—	1,916	3.1	( $\pm 0.8$ )	—	—	—
Louisiana	—	—	—	1,647	9.4	( $\pm 1.7$ )	—	—	—
Maryland	4,405	4.3	( $\pm 0.8$ )	2,323	4.0	( $\pm 1.0$ )	—	—	—
Missouri	—	—	—	—	—	—	3,646	5.3	( $\pm 1.0$ )
Montana	1,802	6.9	( $\pm 1.3$ )	—	—	—	—	—	—
Pennsylvania	3,390	6.6	( $\pm 1.0$ )	—	—	—	—	—	—
South Carolina	—	—	—	2,155	5.9	( $\pm 1.2$ )	—	—	—
Virginia	1,888	6.1	( $\pm 1.3$ )	3,446	6.2	( $\pm 1.7$ )	3,454	4.1	( $\pm 1.0$ )
<b>Age (yrs)</b>									
18–34	3,198	7.9	( $\pm 1.3$ )	3,286	8.3	( $\pm 1.3$ )	1,966	5.7	( $\pm 1.7$ )
35–54	4,709	5.9	( $\pm 0.9$ )	4,576	6.1	( $\pm 1.4$ )	2,798	4.7	( $\pm 0.9$ )
55–74	2,681	4.0	( $\pm 1.1$ )	2,673	4.2	( $\pm 1.0$ )	1,694	3.6	( $\pm 1.2$ )
$\geq 75$	827	4.7	( $\pm 2.3$ )	859	2.7	( $\pm 1.3$ )	614	2.0	( $\pm 1.2$ )
<b>No. children in household</b>									
0	7,144	4.5	( $\pm 0.7$ )	7,382	5.0	( $\pm 0.7$ )	4,333	3.7	( $\pm 0.8$ )
1	1,692	7.9	( $\pm 1.7$ )	1,779	7.3	( $\pm 2.7$ )	1,147	5.7	( $\pm 1.7$ )
$\geq 2$	2,607	8.9	( $\pm 1.6$ )	2,292	8.7	( $\pm 1.6$ )	1,604	5.9	( $\pm 1.7$ )
<b>General health</b>									
Excellent or very good	6,889	4.5	( $\pm 0.7$ )	6,763	4.3	( $\pm 1.0$ )	3,926	2.4	( $\pm 0.6$ )
Good	3,083	7.2	( $\pm 1.3$ )	3,036	7.4	( $\pm 1.3$ )	2,021	6.8	( $\pm 1.9$ )
Fair or poor	1,490	10.5	( $\pm 2.0$ )	1,647	12.1	( $\pm 2.3$ )	1,132	9.4	( $\pm 2.1$ )
<b>No. days physical health not good</b>									
0	7,922	4.9	( $\pm 0.7$ )	8,012	5.1	( $\pm 0.9$ )	4,578	3.6	( $\pm 0.9$ )
1–6	2,023	6.6	( $\pm 1.4$ )	1,940	6.1	( $\pm 1.5$ )	1,330	4.6	( $\pm 1.4$ )
7–24	724	9.6	( $\pm 3.0$ )	755	8.8	( $\pm 2.3$ )	549	8.1	( $\pm 2.5$ )
25–30	627	12.2	( $\pm 3.4$ )	573	14.3	( $\pm 4.1$ )	493	11.2	( $\pm 3.4$ )
<b>No. days mental health not good</b>									
0	8,063	4.3	( $\pm 0.7$ )	8,581	4.5	( $\pm 0.8$ )	4,635	3.1	( $\pm 0.8$ )
1–6	1,929	7.0	( $\pm 1.5$ )	1,532	6.8	( $\pm 1.7$ )	1,317	4.2	( $\pm 1.2$ )
7–24	788	11.3	( $\pm 2.8$ )	730	12.3	( $\pm 3.3$ )	618	10.0	( $\pm 3.3$ )
25–30	519	17.0	( $\pm 4.2$ )	468	20.4	( $\pm 4.9$ )	381	15.7	( $\pm 4.6$ )
<b>Fruit and vegetable servings per day</b>									
$\geq 5$	2,833	3.8	( $\pm 0.9$ )	2,193	4.6	( $\pm 1.4$ )	1,720	3.3	( $\pm 1.4$ )
3– $<5$	4,820	5.1	( $\pm 0.9$ )	3,182	4.4	( $\pm 1.8$ )	2,796	3.8	( $\pm 1.0$ )
1– $<3$	3,465	8.2	( $\pm 1.3$ )	2,295	7.7	( $\pm 1.6$ )	2,325	6.4	( $\pm 1.3$ )
$<1$	352	12.3	( $\pm 4.0$ )	250	12.6	( $\pm 4.6$ )	257	4.7	( $\pm 2.4$ )
<b>Total</b>	<b>11,485</b>	<b>6.0</b>	<b>(<math>\pm 0.6</math>)</b>	<b>11,487</b>	<b>6.2</b>	<b>(<math>\pm 0.7</math>)</b>	<b>7,100</b>	<b>4.6</b>	<b>(<math>\pm 0.7</math>)</b>

\* Numbers may not add to total because of missing data.

<sup>†</sup> Confidence interval.

<sup>§</sup> Question was not asked for this year.

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