

Table 1. Food security items referenced to past 12 months and to past 30 days in the Current Population Survey Food Security Supplements of 1998 and later

Item ¹	Past 12 months		Past 30 days	
	Ever?	How many months?	Ever?	How many days?
Worried food would run out before (I/we) got money to buy more	X			
Food bought didn't last and (I/we) didn't have money to get more	X			
Couldn't afford to eat balanced meals	X			
Relied on few kinds of low-cost food to feed child(ren)	X			
Couldn't feed child(ren) balanced meals	X			
Child(ren) were not eating enough	X			
Adult(s) cut size of meals or skipped meals	X	X	X	X
Respondent ate less than felt he/she should	X	X ²	X	X
Respondent hungry but didn't eat because couldn't afford	X	X ²	X	X
Respondent lost weight	X		X	
Adult(s) did not eat for whole day	X	X	X	X
Cut size of child(ren)'s meals	X	X ²	X	X
Child(ren) were hungry	X		X	X
Child(ren) skipped meals	X	X	X	X
Child(ren) did not eat for whole day	X		X	³

¹The actual wording of each item included explicit reference to resource limitation, e.g., "...because (I was/we were) running out of money to buy food," or "...because there wasn't enough money for food," as well as to the reference period (past 12 months or past 30 days).

²Respondents reporting that these behaviors and experiences occurred at any time in the previous 12 months are asked in how many months they occurred, but responses are not included in the 12-month scale.

³In the 1995, 1996, and 1997 CPS-FSS, respondents who reported that, at some time during the previous 30 days, children did not eat for a whole day because there wasn't enough money for food were asked how many days this occurred. This follow-up item was included in the original 30-day scale developed by Hamilton et al. (1997). However, beginning in the 1998 CPS-FSS, this follow-up was dropped from the questionnaire because it was affirmed only very rarely and was reported to be emotionally difficult for some respondents to answer.

Source: Current Population Survey Food Security Supplement, August 1998.

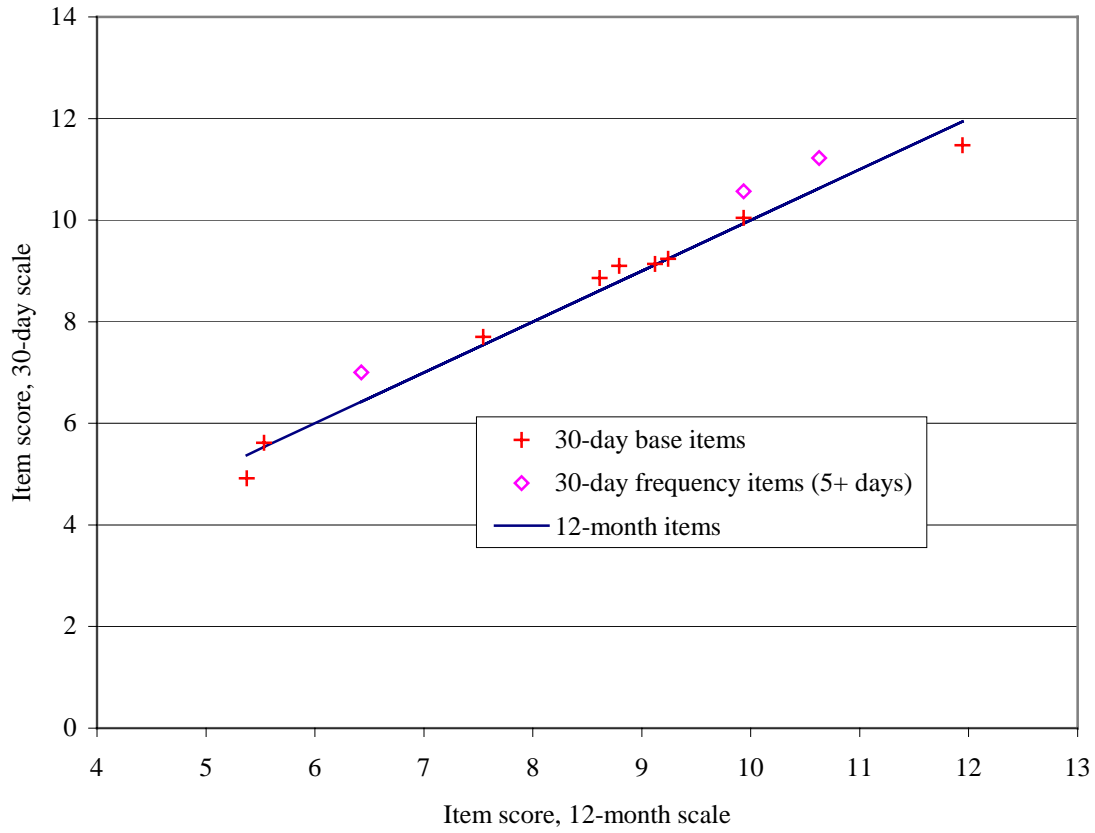
Table 2. Items in the original and revised 30-day scale

Item (Shaded items are dropped from the revised scale.)	Item score (original scale)*	Item score (first revision)*
Adult cut size of meal or skipped meal	4.92	4.92
Respondent ate less than they felt they should ----- hunger threshold -----	5.60	5.62
Adult cut size of meal or skipped meal, 5+ days	6.98	7.01
Respondent ate less than they felt they should, 5+ days	7.16	
Respondent hungry but didn't eat	7.69	7.70
Respondent hungry but didn't eat, 5+ days	8.80	
Respondent lost weight	8.87	8.86
Cut size of child's meal	9.11	9.10
Adult did not eat for whole day	9.16	9.14
Child was hungry	9.24	9.24
Cut size of child's meal, 5+ days	10.00	
Child skipped meal	10.05	10.05
Child was hungry, 5+ days	10.36	
Adult did not eat for whole day, 5+ days	10.56	10.56
Child skipped meal, 5+ days	11.20	11.22
Child did not eat for whole day	11.45	11.47

*Scales were adjusted to mean and standard deviation of corresponding items in the 12-month scale (base items only, not including frequency items) so that thresholds are directly comparable among the three scales.

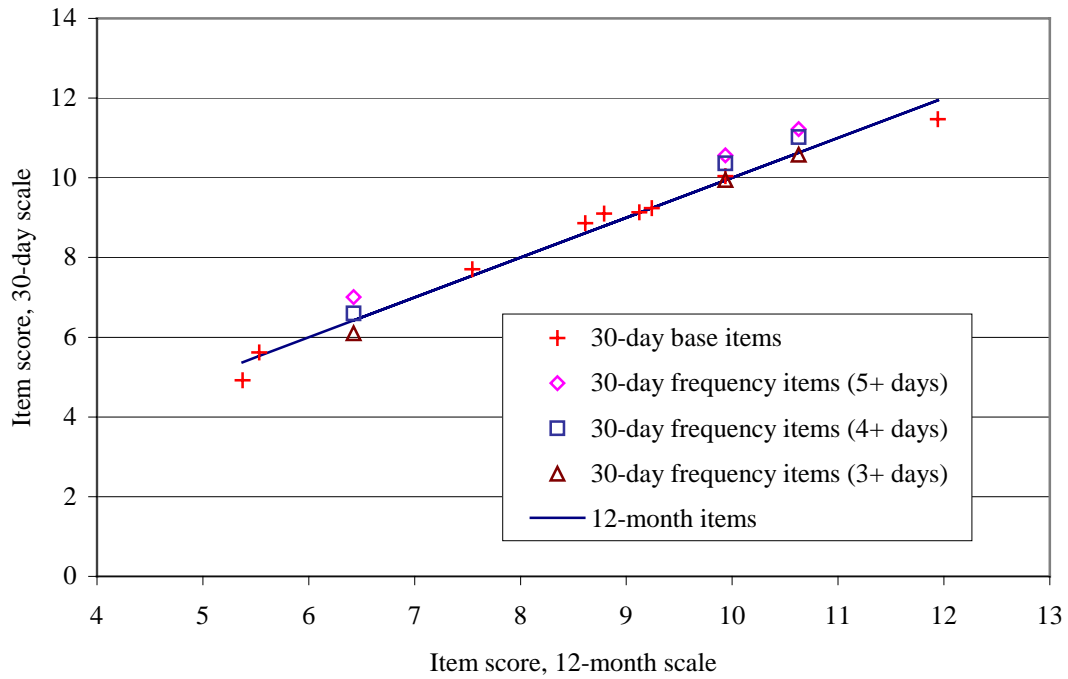
Source: Prepared by ERS using data from Current Population Survey Food Security Supplements, August 1998 and April 1999.

Figure 1. Comparison of item scores in 30-day scale to corresponding items in 12-month scale (metric adjusted by base items only)



Source: Prepared by ERS using data from Current Population Survey Food Security Supplements, August 1998 and April 1999.

Figure 2. Effect on relative severity of item scores in 30-day scale of setting "recurrence" threshold at 5+, 4+, or 3+ days (metric adjusted by base items only)



Note: The three scales were estimated separately. The differences in scores of the base items among the three scales were negligible.

Source: Prepared by ERS using data from Current Population Survey Food Security Supplements, August 1998 and April 1999.

Table 3. Scale scores (calibrations) and fit statistics of items in the revised 30-day scale

Item	Item score ¹	Error	Infit ²	Outfit ³
Adult cut size of meal or skipped meal	5.00	0.04	0.90	1.46
Respondent ate less than they felt they should	5.69	0.04	1.18	1.58
----- hunger threshold -----	-----	-----	-----	-----
Adult cut size of meal or skipped meal, 3+ days	6.17	0.04	0.85	1.12
Respondent hungry but didn't eat	7.74	0.04	0.87	0.99
Respondent lost weight	8.89	0.05	1.17	1.77
Cut size of child's meal	9.13	0.08	1.21	2.04
Adult did not eat for whole day	9.17	0.06	0.91	1.78
Child was hungry	9.26	0.09	0.90	0.68
Adult did not eat for whole day, 3+ days	9.96	0.07	0.87	0.59
Child skipped meal	10.05	0.11	0.86	2.49
Child skipped meal, 3+ days	10.58	0.13	0.91	0.37
Child did not eat for whole day	11.46	0.18	0.94	1.17

¹Scales were adjusted to the mean and standard deviation of corresponding items in the 12-month scale (base items and frequency items) so that thresholds are directly comparable between the two scales.

²Item infit is an information weighted fit statistic that compares the observed responses of all households to an item to the responses expected under the assumptions of the Rasch model. It is calculated as follows:

$$\text{INFIT}_i = \text{SUM} [(X_{i,h} - P_{i,h})^2] / \text{SUM}[P_{i,h} - P_{i,h}^2]$$

where:

$X_{i,h}$ is the observed response of household h to item i (1 if response is yes, 0 if response is no);
 $P_{i,h}$ is the probability of an affirmative response by household h to item i under Rasch assumptions, given the item calibration and the estimated level of severity of food insecurity in the household.

The expected value of each item's infit statistic is 1.0 if the data conform to Rasch model assumptions. Values above 1.0 indicate that the item discriminates less sharply than the average of all items in the scale.

³Item outfit is an outlier-sensitive fit statistic that compares the observed responses of all households to an item to the responses expected under the assumptions of the Rasch model. It is calculated as the average across households of the squared error divided by the expected squared error:

$$\text{OUTFIT}_i = \text{SUM} [(X_{i,h} - P_{i,h})^2 / (P_{i,h} - P_{i,h}^2)] / N$$

where:

$X_{i,h}$ is the observed response of household h to item i (1 if response is yes, 0 if response is no);
 $P_{i,h}$ is the probability of an affirmative response by household h to item i under Rasch assumptions, given the item calibration and the estimated level of severity of food insecurity in the household;
 N is the number of households.

The expected value of each item's outfit statistic is 1.0 if the data conform to Rasch model assumptions. Values above 1.0 indicate a higher than expected proportion of "erratic" responses—affirmative responses to a severe item by households that affirmed few other items or denials of a low-severity item by households that affirmed many other items.

Source: Prepared by ERS using data from Current Population Survey Food Security Supplements, August 1998 and April 1999.

Table 4. Household scale scores and food security status based on the revised 30-day scale

Number of “yes” responses (raw score)		Household scale score*	Standard error of household scale score	Food security status category
Household with child	Household with no child			
0	0	0.0**		Food secure, or low-severity level of food insecurity
		3.25		Threshold—food insecurity
1		4.90	1.03	
	1	4.92	1.04	
2		5.96	.90	Food insecure without hunger
	2	6.02	.93	
		6.38		Threshold--hunger
3		6.87	.86	
	3	7.04	.94	
4		7.68	.78	
	4	8.06	.91	
5		8.33	.70	
6		8.86	.65	
	5	9.02	.90	
7		9.35	.63	Food insecure with hunger
8		9.82	.64	
	6	10.07	1.03	
9		10.33	.67	
	7	10.85**	NA	
10		10.93	.76	
11		11.77	.97	
12		12.49**	NA	

Notes:

*Scale metric is adjusted so that mean and standard deviation of all items are equal to those of the corresponding items in the 12-month scale so that the thresholds are directly comparable to those in the 12-month scale.

**Scale scores for extreme households--i.e., those affirming no items or all items--cannot be calculated under Rasch model assumptions. Here the score of 0 for no affirmatives is arbitrary and researchers should omit the category from linear analyses or use appropriate techniques to allow the implied scale value to be estimated in the equation. Very few households affirm all items. Scores for those households are calculated at 11.5 affirmatives for households with children and 6.5 affirmatives for households without children. These values can be used in most linear models without distorting the fit of the model. Standard errors for these scores cannot be calculated.

Source: Prepared by ERS using data from Current Population Survey Food Security Supplements, August 1998 and April 1999.

Table 5. Prevalence of food security with hunger in U.S. households during the 12 months and 30 days prior to the food security survey, by year

Year	Total ¹	Food insecure with hunger				Ratio of prevalence during last 30 days to last 12 months
		During 12 months prior to survey		During 30 days prior to survey		
	<i>1,000</i>	<i>1,000</i>	<i>Percent</i>	<i>1,000</i>	<i>Percent</i>	<i>Percent</i>
1998	103,309	3,835	3.7	2,793	2.7	72.8
1999	104,684	3,109	3.0	2,055	2.0	66.1
2000	106,043	3,315	3.1	2,467	2.3	74.4

¹Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale.

Sources: Calculated by ERS using data from the August 1998, April 1999, and September 2000 Current Population Survey Food Security Supplements.