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# Food Insufficiency and the Use of Food Assistance Programs in the South

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**F**ood insecurity and hunger have been the targets of federal food assistance programs since the Great Depression of the 1930s [9]. John F. Kennedy's presidential campaign drew widespread attention to the problems of hunger and malnutrition in the midst of a wealthy nation. However, efforts to document the prevalence of food insecurity and hunger in the United States were hindered during the 1970s and '80s by a lack of understanding of hunger issues in industrialized nations. Reports of increasing use of emergency food assistance by families became more common in the mid-1980s, and efforts to define hunger and develop a reliable measure of its occurrence accelerated.

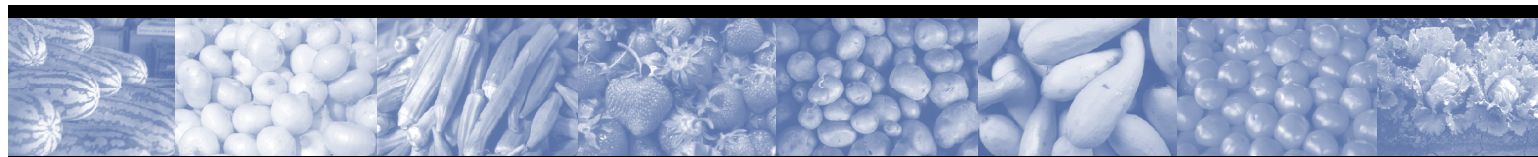
By 1990, research noted that hunger resulting from constrained resources is a progressive series of events that occurs at the household

and individual levels. Studies also showed that food insecurity consists of "quality" and "quantity" components [3,11].

During the early stages of resource-constrained hunger, adults worry that food supplies will run out before there are resources to obtain more. They may make adjustments in the quality of their food supply at this early stage (now referred to as food insecurity without hunger) without having to reduce the quantity of food they eat. Next, adults may begin to reduce the quantity of their own food intake, in addition to the quality, in order to spare food supplies for children in their families. Finally, food supplies may be limited to the point that children in the household have to reduce their amount of food intake or skip meals. Food insecurity with hunger is the term used to describe reduced food quantity or skipped meals for adults and children [13, 14].

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“ Since many areas within the South rely heavily on food assistance programs, it is important to understand factors that are related to food insecurity.”

This research led to the now commonly used definition of food insecurity: the limited or uncertain availability of nutritionally adequate and safe foods, or the limited or uncertain ability to acquire acceptable foods in socially acceptable ways [4].

In 1977, the first question addressing household food security or food sufficiency was included in the 1977-78 Nationwide Food Consumption Survey. As our understanding of resource-constrained hunger (food insecurity) became more clearly defined, modifications of this question were included in several other national nutrition surveys, such as the National Health and Nutrition Examination Survey and the Continuing Survey of Food Intake by Individuals. Through food sufficiency questions, these surveys attempted to estimate the

prevalence of food insecurity in the U.S. population [3]. The nature of these questions measured the quantity component of food insecurity rather than the quality component, but still provided useful insight into the nature of the more severe level of food insecurity (called food insufficiency in these surveys).

### Current Situation

Results from the Food Security Supplement of the Current Population Survey indicate that 9.7 percent of households in the United States (or about 10 million households) experienced periodic food insecurity between 1996-1998. Among these households, 3.5 percent or about 3.5 million households experienced food insecurity with hunger. Nine states in the Southern region (Alabama, Arkansas, Florida, Louisiana, Mississippi, Oklahoma, South Carolina, Tennessee and Texas) had levels of food insecurity that exceeded or greatly exceeded the national average during this time period, in spite of a strong and expanding

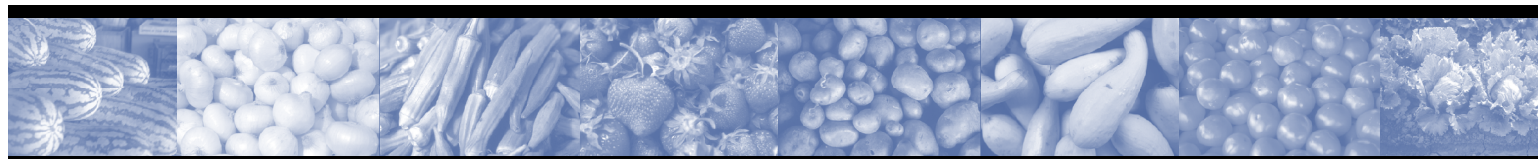
economy [10]. Seven of the nine states also exceeded the national average for Food Stamp Program participation during this time. Since many areas within the South rely heavily on food assistance programs, it is important to understand factors that are related to food insecurity. This may help state and local agencies provide more targeted services to families at risk for food insecurity.

The purpose of this document is to describe the socio-economic factors related to food insufficiency among adults living in the Southern region of the United States. In addition, it addresses differences among food-insufficient adults who participate in the Food Stamp Program (FSP) and the Special Supplemental Program for Women, Infants and Children (WIC) and those who do not.

The data for this study were taken from the third National Health and Nutrition Examination Survey (NHANES III). This national survey was conducted from 1988-1994 and included a representative sample of adults and children from the four geographic regions of the United States. The survey included food sufficiency questions about the household food supply, as well as the use of federal social assistance and food programs [8]. Only adults living in the Southern region of the United States who participated in NHANES III were selected for this study. Socio-economic differences between food-sufficient and food-insufficient adults living in the Southern region were analyzed.

**Table 1: Characteristics of Food-Sufficient and Food-Insufficient Adults Residing in the Southern Region (NHANES III 1988-1994)**

<u>Characteristic</u>	<u>Average</u>	<u>Number of People Reporting</u>
<b>Age (years)</b>		
Food Sufficient	42.3	6741
Food Insufficient	35.8	456
<b>Household Size</b>		
Food Sufficient	3.1	6741
Food Insufficient	3.9	456
<b>Poverty Income Ratio</b>		
Food Sufficient	2.9	6151
Food Insufficient	1.6	407



**Table 2: Percentage of Adults Reporting Food Sufficiency and Food Insufficiency by Demographic Characteristics**

Characteristic	Food-Sufficient		Food-Insufficient	
	N	%	N	%
<b>Race*</b>				
White	4173	61.9	225	49.3
Non-white	2568	38.1	231	50.7
<b>Education*</b>				
<High School	2982	44.5	266	59.4
High School	2043	30.5	123	27.5
>High School	1675	25.0	59	13.1
<b>Head of Household*</b>				
Male	3217	47.7	196	42.9
Female	3524	52.3	260	57.1
<b>Food Program Participation*</b>				
None	5375	80.0	263	58.2
One Program	995	14.8	138	30.5
Two Programs	348	5.2	51	11.3
<b>Age Group*</b>				
18-39 years	2848	42.3	247	54.2
40-59 years	1809	26.8	112	24.6
60 + years	2084	30.9	97	21.2

\*Significant at the  $p \leq .05$  level

### Socio-economic differences between food-sufficient and food-insufficient adults

Of the 7,197 people included in this study, 456 (6.3 percent) described the food in their household as “sometimes” or “often” not enough to eat. These individuals were classified as food-insufficient. The remainder (6,741) were classified as food-sufficient. Comparisons of select demographic characteristics of the food-sufficient (FS) to the food-insufficient (FI) groups residing in the Southern region of the United States are shown in Table 1. The average age of the FI group was significantly younger than the average age of the FS group. Moreover, the average household size of the FI group was somewhat larger than that of the FS group. In addition, the average poverty income ratio of the FI group was significantly lower compared to that of the FS group.

The poverty income ratio is an overall indicator of poverty that takes into account not only income of the family, but also the size of the family in relation to the federal poverty levels [8, a]. As expected, those reporting insufficient food due to limited resources were much poorer than those not reporting food insufficiency. Others have reported that food insecurity is closely related to poverty, but that the relationship does not fully explain food insecurity [7,10].

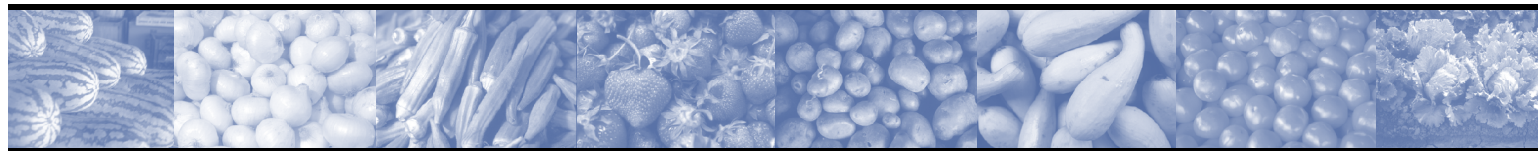
Results presented in Table 2 indicate that other factors also have played a role in food insufficiency among adults living in the Southern region. Those reporting food insufficiency were more likely to: (1) belong to a minority race; (2) have less than a high school education; (3) be participating in only one food assistance program; and (4) be younger than those who reported

food sufficiency. Those in the oldest age group (60 + years) were least likely to report food insufficiency. In addition, households headed by males were less likely to report food insufficiency. These findings are consistent with results from other studies using national or region-specific survey data [1,5,12]. Surprisingly, 58 percent of those reporting food insufficiency did not participate in either the FSP or WIC.

### Characteristics of food-insufficient participants and non-participants in food assistance programs

As noted previously, 263 of the 452 food-insufficient adults (58 percent) were not participating in either the FSP or WIC programs. Table 3 shows some characteristics of food-insufficient adults based on program participation. When comparing the characteristics of food-insufficient adults participating in none, one, or two food/nutrition assistance programs, there are some interesting findings. Even though it appears that the average household size was larger among those participating in either one or two food/nutrition assistance programs, the small number of people participating in these programs made the differences statistically non-significant. Next, the average poverty income ratio (PIR) was significantly higher among those not participating in any program (1.9) compared to those participating in





one (.98) or two programs (.71). One of the criteria for participation in food assistance programs is an income that is within a defined limit of the federal poverty line. This limit is  $\leq 185$  percent of poverty ( $PIR \leq 1.85$ ) for participation in WIC and  $\leq 130$  percent of poverty ( $PIR \leq 1.3$ ) for participation in FSP. Consequently, many of those not participating in FSP or WIC but reporting food insufficiency were not eligible for the programs. At the same time, the average PIR of 1.9 was only slightly higher than the 1.85 cut-off level for participation in WIC. Therefore, some households with food insufficiency may have barely missed being able to participate in a program that could have helped their home food situation.

As Table 4 illustrates, those most likely to participate in FSP or WIC were in younger, female-headed households or those with less than a high school education. However, participation or non-participation differed between white and non-white individuals in our study. Non-whites were slightly more likely to be involved in one program, while whites had a greater involvement in two programs.

The strong economic growth of the 1990s was accompanied by a decline in food insecurity rates from 10.3 percent of U.S. households in 1995 to 8.7 percent of U.S. households in 1999 [13]. The decline in rates of food insecurity in the nine Southern states mentioned earlier was not enough to meet the national

average for food insecurity. Therefore, it appears that this region of the country may not have profited from the economic expansion as much as other areas of the country did [7,10]. During the same time period, welfare

“Some households with food insufficiency may have barely missed being able to participate in a program that could have helped their home food situation.”

reform brought about reductions in the number of families participating in the FSP. The decline in FSP participation between 1995 and 1999 in the nine Southern states with high food insecurity rates ranged from 7 percent to 35.5 percent. The largest decline in FSP participation occurred in Mississippi, the Southern state with the highest rate of food insecurity and the highest rate of

poverty in the region (and the second highest rate of food insecurity in the nation) [6].

Information from food-insufficient adults living in the Southern region makes this dramatic drop in FSP participation disturbing. Our study indicates that low-income families experiencing food insufficiency will utilize food assistance programs such as the FSP and WIC. However, 58 percent of those in our study who reported food insufficiency were not utilizing either the FSP or WIC. There are no data available in the NHANES III survey to investigate the question of whether or not these adults had applied for assistance from FSP or WIC and been denied due to incomes barely above the eligibility criteria; however, this may be a possibility.

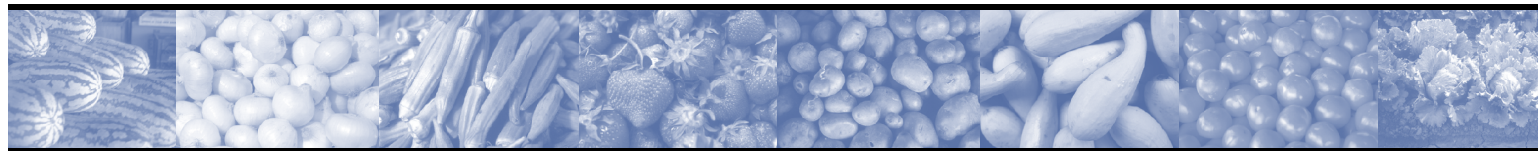
The findings that those reporting food insufficiency were more often female-headed households, had a larger household size, or had less than a

**Table 3: Characteristics of Food-Insufficient Adults Participating in Food Assistance Programs**

Characteristic	Average	Number of People Reporting
<b>Age (years)</b>		
No Program	35.9	263
One Program <sup>a</sup>	36.9	138
Two Programs <sup>b</sup>	28.9	51
<b>Household Size</b>		
No Program	3.6	263
One Program <sup>a</sup>	4.3	138
Two Programs <sup>b</sup>	4.7	51
<b>Poverty Income Ratio</b>		
No Program	1.9	236
One Program <sup>a</sup>	.98	123
Two Programs <sup>b</sup>	.71	45

<sup>a</sup>Those participating in either FSP or WIC

<sup>b</sup>Those participating in both FSP and WIC



high school education suggest two policy considerations. First, applying different income eligibility criteria for female-headed households may encourage enrollment of these households in the FSP. In general, female-headed households are the youngest and frequently contain young children. Perhaps allowing child care expenses to be deducted from the income requirement would result in

greater participation in the FSP and WIC, as well as result in better child care and nutritional care for the children. The result of better nutritional care and food access would be better health outcomes for both the children and the adults.

Second, the large number of non-participants with less than a high school education suggests the need for a very simple food

assistance application process. The current application process should be reviewed from the perspective of a low-literate, time-constrained audience. Perhaps USDA Food and Nutrition Service could interview non-participants about the reasons they do not participate in these programs and use these findings to simplify the application process.



## Endnotes

[a] The poverty income ratio (PIR) was computed for participants in NHANES III by dividing the midpoint of the reported family income category by the Census Bureau's poverty threshold for the calendar year the family was interviewed and the age of the family reference person. The lower the number, the greater the level of impoverishment.

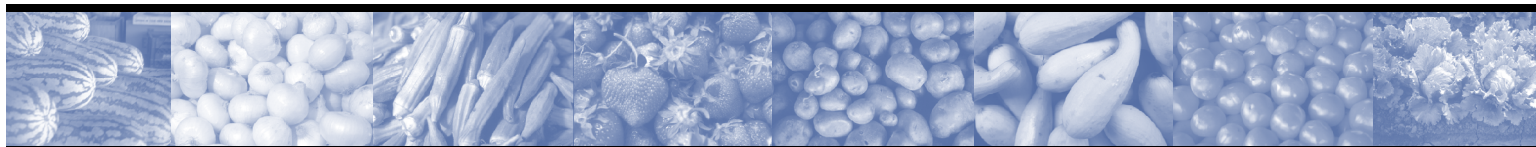
**Table 4: Percentage of Food-Insufficient Adults Participating in Food Assistance Programs by Demographic Characteristics**

Characteristic	None		One Program		Two Programs	
	N	%	N	%	N	%
<b>Race</b>						
White	132	50.2	74	46.4	22	56.9
Non-white	131	49.8	64	53.6	29	43.1
<b>*Education</b>						
< High School	137	53.1	97	70.8	30	60.0
High School	74	28.7	32	23.4	16	32.0
>High School	47	18.2	8	5.8	4	8.0
<b>*Head of Household</b>						
Male	130	49.4	51	37.0	14	27.5
Female	131	50.6	87	63.0	37	72.5
<b>*Age Group</b>						
18-39 years	142	54.0	65	47.1	39	76.5
40-59 years	60	22.8	40	28.9	10	19.6
60 + years	61	23.2	33	24.0	2	3.9

\*Significant at  $p < .05$

## References

- [1] Alaimo, Katherine, Ronette R. Briefel, Edward A. Frongillo and Christine M. Olson. 1998. "Food insufficiency exists in the United States: Results from the Third National Health and Nutrition Examination Survey (NHANES III)." *American Journal of Public Health* 88:419-426.
- [2] Andrews, Margaret, Mark Nord, Gary Bickel and Steven Carlson. 2000. "Household food security in the United States, 1999." *Measuring Food Security in the United States*. Research Report Number 8. Washington, DC: U.S. Department of Agriculture.
- [3] Bickel, Gary, Margaret Andrews and Bruce Klein. 1996. "Measuring food security in the U.S.: A supplement to the CPS." *Nutrition and Food Security in the Food Stamp Program*. Alexandria, VA: U.S. Department of Agriculture.
- [4] Campbell, Cathy C. 1991. "Food insecurity: A nutritional outcome or a predictor variable?" *Journal of Nutrition* 121:408-415.
- [5] Cristofar, Sharron P. and P. Peter Basiotis. 1992. "Dietary intakes and selected characteristics of women ages 19-50 years and their children ages 1-5 years by reported perception of food sufficiency." *Journal of Nutrition Education* 24:53-58.
- [6] Food and Nutrition Service. 2001. *Food Stamp Program: Average Monthly Participation (Households)*. Retrieved February 22, 2001 on the World Wide Web: <http://www.fns.usda.gov/pd/fsfyhh.htm>.
- [7] Hamilton, William L., John T. Cook, William W. Thompson, Lawrence F. Buron, Edward A. Frongillo Jr., Christine M. Olson and Cheryl A. Wehler. 1997. "Household food security in the United States in 1995: Summary report of the food security measurement project." *Measuring Food Security in the United States*. Alexandria, VA: U.S. Department of Agriculture.
- [8] National Center for Health Statistics. 1996. Third National Health and Nutrition Examination Survey, 1988-1994, NHANES III Reference Manuals and Reports (CD-ROM). Vital Health Stat. (Public Use Data File Documentation Number 76200). Hyattsville, MD: U.S. Department of Health and Human Services.



- [9] Nestle, Marion and Sally Guttmacher. 1992. "Hunger in the United States: Rationale, methods, and policy implications of state hunger surveys." *Journal of Nutrition Education* 24:18s-22s.
- [10] Nord, Mark, Kyle Jemison and Gary Bickel. 1999. "Prevalence of food insecurity and hunger, by state, 1996-1998." *Measuring Food Security in the United States*. Food Assistance and Nutrition Research Report Number 2. Washington, DC: U.S. Department of Agriculture.
- [11] Poppendieck, Janet E. 1992. "Hunger and public policy: Lessons from the Great Depression." *Journal of Nutrition Education* 24:6s-11s.
- [12] Olson, Christine M., Barbara S. Rauschenbach, Edward A. Frongillo Jr. and Anne Kendall. 1997. "Factors contributing to household food insecurity in a rural upstate New York county." *Family Economics Review* 10:2-17.
- [13] Radimer, Kathy L., Christine M. Olson and Cathy C. Campbell. 1990. "Development of indicators to assess hunger." *Journal of Nutrition* 120:1544-1548.
- [14] Radimer Kathy L., Christine M. Olson, Jennifer C. Greene, Cathy C. Campbell and Jean-Pierre Habicht. 1992. "Understanding hunger and developing indicators to assess it in women and children." *Journal of Nutrition Education* 24:36s-45s.

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