Food Insecurity Is an Ongoing National Concern[1–3]

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ABSTRACT

Food insecurity is a leading public health challenge in the United States today. This is primarily due to the magnitude of the problem, ~50 million persons are food insecure (i.e., they were uncertain of having, or unable to acquire, enough food because they had insufficient money or other resources), and the serious negative health and other outcomes associated with being food insecure. This paper defines the measure used to delineate whether a household is food insecure. The measure, the Core Food Security Module, is based on 18 questions about a household's food situation. From the responses, a household is defined as food secure, low food secure, or very low food secure, with the latter 2 categories defined as "food insecure." I next discuss the extent of food insecurity in the US across various dimensions and the key determinants of food insecurity. The key policy tool used to address food insecurity is the Supplemental Nutrition Assistance Program (SNAP; formerly known as the Food Stamp Program). During the current economic downturn, >40 million persons are enrolled in SNAP, with total benefits of >$70 billion. This makes it the largest food assistance program and the largest near-cash assistance program in the US. After defining the eligibility criteria, I review the literature, which has demonstrated the effectiveness of SNAP in addressing its key goal, namely the alleviation of food insecurity in the US. I conclude with 4 suggestions for how SNAP can maintain and even improve its effectiveness in alleviating food insecurity. *Adv. Nutr. 4: 36–41, 2013.*

Introduction

Food insecurity is a serious public health issue in the United States today. This is primarily the case for 2 reasons.

First, the magnitude of the problem is staggering. In 2010, e.g., 14.5% of Americans were food insecure (48.8 million persons), meaning that they were "…uncertain of having, or unable to acquire, enough food because they had insufficient money or other resources" (1). About one-third of these were at a more serious level of food insecurity, "very low food security." The extent of food insecurity is at an all-time high and despite the end of the Great Recession, rates have not gone back down to the levels of 2007.

Second, there are many demonstrated negative health consequences associated with food insecurity. Here are some associated with food insecurity among households with children: higher risks of some birth defects (2), anemia (3,4), lower nutrient intakes (5), greater cognitive problems (6), higher levels of aggression and anxiety (7), higher probability of being hospitalized (8), poorer general health (8), higher probability of mental health issues (9), higher probability of asthma (10), higher probability of behavioral problems (11), and more instances of oral health problems (12). Among adults, some of the consequences of food insecurity are: lower nutrient intakes (13,14), mental health problems (15), physical health problems (16), depression (7), diabetes (17), higher levels of chronic disease (18), and worse outcomes on health exams (19). Food-insecure seniors have lower nutrient intakes (20,21), are more likely to be in poor or fair health (20,21), and are more likely to have limitations in activities of daily living (21). So, alongside the fact that tens of millions of Americans faced involuntary restrictions in their food intakes during the past year, these restrictions led to a host of adverse health outcomes.

In this paper, I begin with a definition of food insecurity in the United States and show how it is measured. Following this, I discuss the current extent of food insecurity along with some historical context and then cover the determinants of food insecurity. The primary tool used across the lifespan to reduce food insecurity is the Supplemental Nutrition Assistance Program (SNAP; formerly known as the Food Stamp Program). I therefore cover SNAP in some detail, with an emphasis on its efficacy in reducing food

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insecurity. The concluding remarks consider how SNAP can be maintained as a key component of the social safety net.

Current status of knowledge

Defining food insecurity

In 1996, to measure food insecurity, a series of questions related to food intakes first appeared in the Current Population Survey. After a series of modifications to these questions, the Core Food Security Module (CFSM) was established. [For more details about the CFSM, see (1).] The measure is based on a set of 18 questions for households with children and 10 questions for households without children. Examples of questions include: "I worried whether our food would run out before we got money to buy more," (the least severe item); "Did you or the other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food?"; "Were you ever hungry but did not eat because you couldn't afford enough food?"; and "Did a child in the household ever not eat for a full day because you couldn't afford enough food?" (the most severe item for households with children). A complete list of questions can be found in (22). Each question is qualified by the stipulation that the outcomes are due to financial issues.

The USDA delineates households into food insecurity categories based on responses from the CFSM. This is under the assumption that the number of affirmative responses reflects the level of food hardship experienced by the family. The following thresholds are established: *1*) food security (all household members had access at all times to enough food for an active, healthy life); *2*) low food security (at least some household members were uncertain of having, or unable to acquire, enough food, because they had insufficient money and other resources for food); and *3*) very low food security (one or more household members were hungry, at least some time during the year, because they could not afford enough food). A household is said to be food insecure if they fall into the second or third category.

The extent of food insecurity

I now turn to U.S. food insecurity trends from 2001 to 2010. This is based on information from table 1*A* and *B* in (1).

In **Figure 1**, the proportions of households that are food insecure and very low food secure are displayed. Until 2007, food insecurity rates were relatively steady at ∼11% and very low food security rates were between 3 and 4%. These rates dramatically increased in 2008. The food insecurity category increased >30% (from 11.1 to 14.6%) and for the very low food security category, rates rose by almost 40% (from 4.1 to 5.7%). Rates of food insecurity remained high in 2009 and 2010. This increase, which is unprecedented since food insecurity was first measured, and the continued high rates presumably reflect the economic recession and its lingering effects (23). Even during better economic conditions, there are still a high percentage of Americans who are food insecure. As seen in Figure 1, food insecurity rates never fell below 10% despite strong economic conditions throughout most of the 2001–2010 period.

Figure 2 shows similar trends in the percent of children living in food-insecure households, food-insecure children, and very low food-secure children. (Note that Fig. 1 is based on households rather than individuals, whereas Fig. 2 is based on children.) Like Figure 1, the rates were relatively constant from 2001 to 2007. As in the full population, in 2008, the proportion of children living in food-insecure households rose >30% and there was an increase of >60% in the number of very low food-secure children. These levels remained high in 2009 with slight declines in 2010.

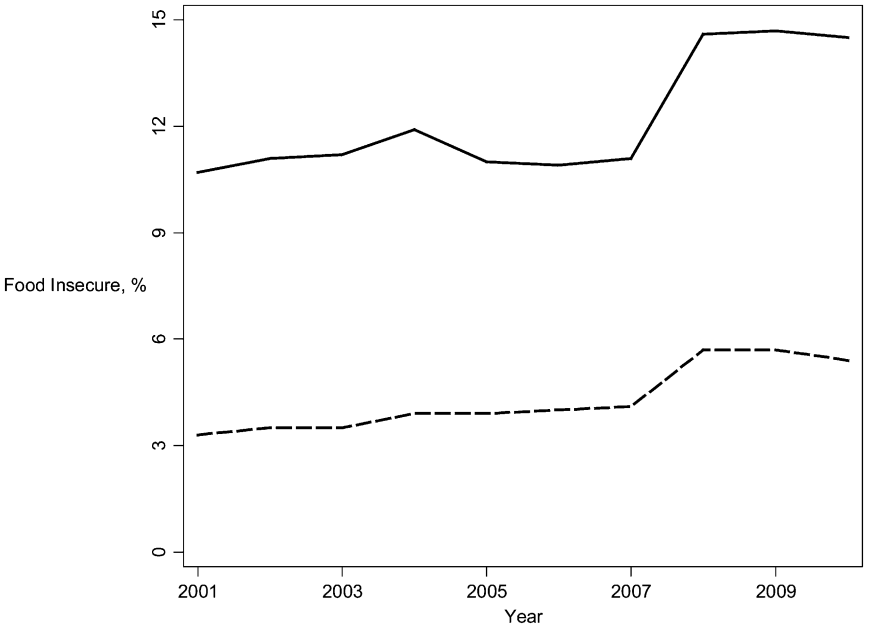

Figure 1 Household food insecurity rates in the United States, 2001–2010. Solid line, food insecurity; dashed line, very low food security. Based on data from (1).

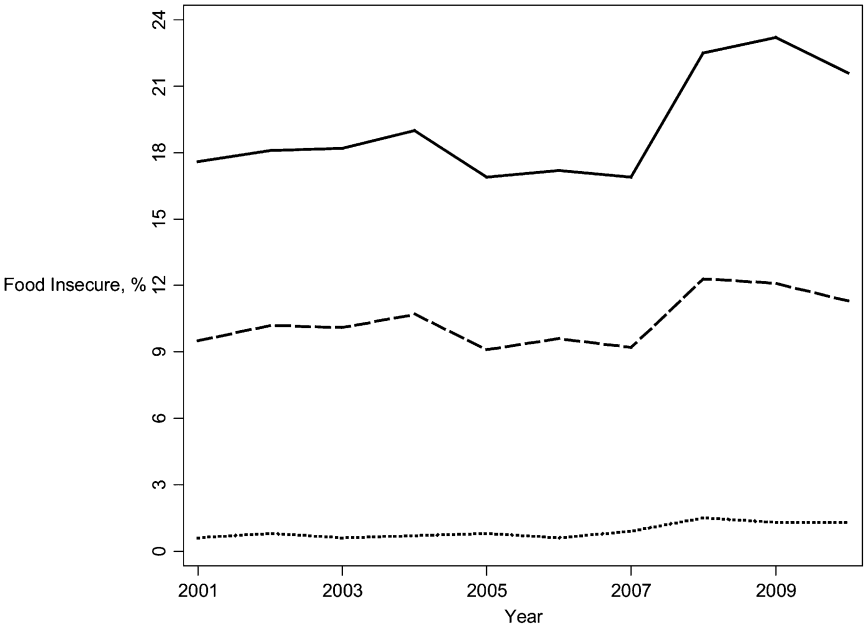

Figure 2 Food insecurity among children in the United States, 2001–2010. Solid line, food insecurity-household; dashed line, food insecurity-children; short dashed line, very low food security-children. Based on data from (1).

Turning to the opposite end of the lifespan, millions of seniors in the United States also experience food insecurity. In 2010, 8.0% of those aged >60 y were food insecure and 2.7% were very low food secure. Of particular note is that although food insecurity rates declined very slightly among the general population from 2009 to 2010, they increased among seniors from 7.6 to 8.0%.

The determinants of food insecurity

The socioeconomic and demographic factors associated with food insecurity in the United States has been well established. As seen in Coleman-Jensen et al. (1), e.g., African Americans, Hispanics, never-married persons, divorced or separated persons, renters, younger persons, and those with less education are all more likely to be food insecure than their respective counterparts. These characteristics of the food-insecure population hold even after controlling for other factors.

One of the most important additional factors, is income. **Figure 3** displays the association between food insecurity and income (divided by the poverty line) using data from the 2009 December Supplement of the Current Population Survey. Three key things can be deduced from this figure. First, food insecurity is inversely related to income. Second, poverty is not the same as food insecurity. This is seen in the high proportions of households that are food secure with incomes below the poverty line. Third, conversely, a large number of households with incomes above the poverty line are food insecure.

SNAP

SNAP is far and away the largest food assistance program in the US. It provided benefits to ~40.3 million people in 2010, with total benefits of $68.3 billion. SNAP benefits can be used for the purchase of food in authorized retail food outlets. The amount of benefits is determined by income and household size. The maximum benefit level was $668 in 2012. SNAP is funded by the federal government.

Eligibility. Eligibility for SNAP is based on the household, which is defined as a unit containing people who live together and purchase and prepare meals together. To be eligible for SNAP, households first have to meet a monthly gross income test. Under this criterion, a household's income (before any deductions) must be <130% of the poverty line. As an example, in 2010, a SNAP household with 3 persons and a monthly income <$1984 would be gross income eligible. There are exceptions; for instance, households with at least one elderly member or one disabled member are not subject to the gross income test. Although the federal gross income cutoff is 130% of the poverty line, some states have set higher gross income thresholds.

Households then have to pass the net income criteria, defined as gross income minus certain deductions. The allowable deductions include: a standard deduction for all households; a 20% earned income deduction; a dependent care deduction when care is necessary for work, training, or education; child support payments deduction; a medical costs deduction for elderly and disabled people; and an excess shelter cost deduction. To be eligible for SNAP, this net income must be less than the poverty line. As an example, in 2010, a SNAP household with 3 persons and a net income <$1526/mo would be net income eligible. Households in which all members receive Supplemental Security Income or Temporary Assistance for Needy Families are automatically eligible for SNAP and do not have to pass the gross or net income tests. Although the vast majority of households that have incomes <130% of the poverty line are also net income eligible, many households that are gross income eligible under higher state-specific thresholds are not net income eligible.

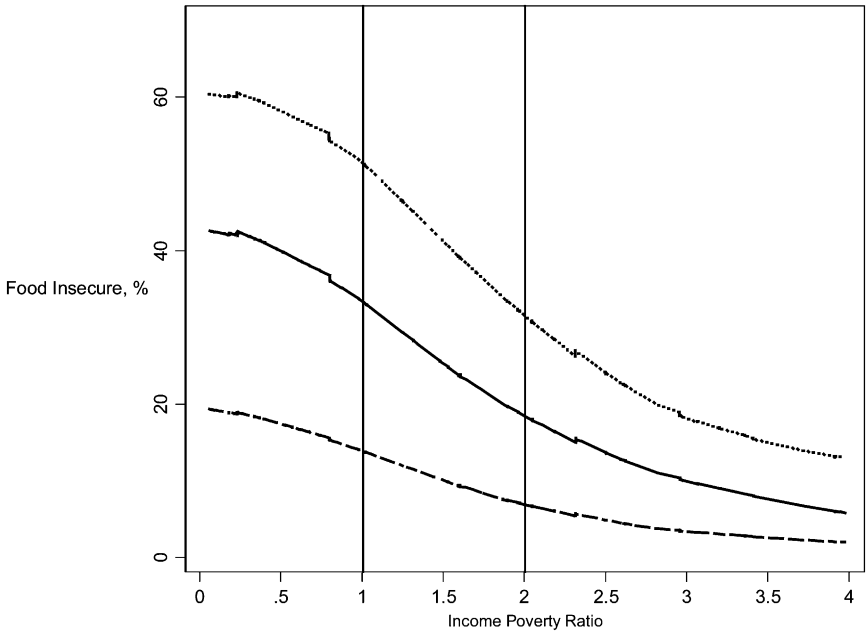

Figure 3 Relationship between food insecurity and income, 2009. Solid line, food insecurity; dashed line, very low food security; short dashed line, marginal food insecurity. Authors' calculations based on data from the December Supplement of the 2009 Current Population Survey.

The final test for SNAP eligibility is the asset test. As defined at the federal level, the total assets of a household must be <$2000. Some resources are not counted, such as one's home and up to $4650 of the fair market value of one car per adult household member. Similarly, one car per teenaged household member may be deducted if the teenager is using it for work, and a vehicle's value is not counted if it is needed to transport a disabled household member. There are 3 exceptions to the asset test. First, households with an elderly or disabled person have a higher asset limit of $3000. Second, households where everyone receives Supplemental Security Income or Temporary Assistance for Needy Families benefits are not subject to the asset test. Third, states have the discretion to waive the asset test. Currently, ∼80% of states do waive the asset test for all individuals.

Finally, able-bodied adults between the ages of 18 and 50 y without dependents must be employed to receive SNAP benefits. If they are not employed, they can lose their SNAP benefits. In areas with particularly high unemployment rates or limited employment opportunities, this so-called able-bodied adult without dependents requirement is waived. This waiver is not automatic; states must make this request of the USDA. [See (24) for a discussion of this requirement and subsequent implications for SNAP caseloads.]

Impacts on food insecurity. Before turning to a discussion of the relationship between SNAP and food insecurity, it is worth considering why many persons choose not to participate in SNAP. This choice is made despite, as discussed above, the high monetary benefits of receiving the SNAP, benefits that are high enough to have a nontrivial influence on poverty in the United States [see, e.g., (25)]. Nonparticipation is often ascribed to 3 main factors. First, there can be stigma due to the receipt of SNAP benefits (26–29). More recently, some SNAP recipients have reported being stigmatized due to their weight status when using SNAP benefits. This is due to the discrimination experienced by overweight persons in the United States more broadly. Second, transaction costs can discourage participation. These costs are faced on a repeated basis whenever eligibility must be recertified (30). Third, the benefit level can be low, as low as $10/mo for some families. Given the inverse relationship between income and SNAP benefit levels, this explains why many households with incomes closer to the SNAP eligibility threshold are less likely to participate.

As discussed above, SNAP has a central goal of reducing food insecurity. It is then disconcerting that food insecurity rates among recipients are about twice those of eligible nonrecipients (1), higher rates that remain even after controlling for observed factors (31). This is counterintuitive from a theoretical standpoint (how can giving families more money for food lead to an increase in food insecurity?) and an empirical standpoint (Fig. 3).

This counterintuitive result is presumably due to the fact that SNAP participation is endogenous and that SNAP recipients and nonrecipients differ across unobserved factors. Scholars have identified this selection effect. Misreporting of SNAP participation status can also prevent researchers from accurately ascertaining the degree to which SNAP affects food insecurity. Participation in SNAP is underreported in major surveys, with errors of omission much more likely than errors of commission (32,33). As a result, a correlation between SNAP and food insecurity that is positive should be viewed as credible only to the extent a researcher is willing to place a great deal of confidence in the reporting of SNAP participation within the data being used.

Using sophisticated econometric techniques, Kreider et al. (34) addressed both the selection effect and the measurement

error. In this work, they considered the following comparison: what would the food insecurity rate be if all eligible households with children received SNAP benefits and what would the food insecurity rate be if no eligible households with children received SNAP benefits? They then take the difference between these 2 estimates to arrive at what is known as the average treatment effect. To make their results comparable with other work in the area, I consider the case where there is assumed to be no measurement error. This is consistent with virtually all previous work on this topic where measurement error is assumed to not exist. [The only exception is (35) but they did not address the selection effect.] They found that SNAP participants are between 14.9 and 36.6 percentage points less likely to be food insecure than SNAP nonparticipants. This range generally includes results from other recent work on this topic (e.g., 36–39).

Conclusion

Food insecurity is a serious public health issue with implications across the lifespan. As discussed above, the United States has a program, SNAP, that has been enormously successful at reducing food insecurity and its attendant consequences. I conclude this paper with a discussion of 5 ways that SNAP can be made even more effective.

First, the current structure of SNAP leads to reductions in food insecurity. Because this is its central goal, it is quite successful as a program. This should be remembered when changes to the structure of SNAP are proposed. Of particular concern is the fact that some persons have proposed changes that SNAP recipients be restricted in the types of food they can purchase. The goal of these proposals is to improve nutrient intakes among SNAP participants. Nevertheless, the effectiveness of SNAP would be compromised, because more restricted food options would discourage participation and, consequently, there would be an increase in food insecurity. Given SNAP's explicit goal to reduce food insecurity and its success in meeting this goal, proposals to modify the program should carefully weigh the serious negative consequences, including an increase in food insecurity rates in the US.

Second, as described above, the negative outcomes due to food insecurity are well established. So, along with the direct benefits associated with reducing food insecurity (e.g., in our country we may wish to ensure children do not go to bed hungry due to economic constraints), potential reductions in medical expenditures due to reductions in food insecurity should be incorporated into benefit-cost considerations of SNAP. In particular, whenever cutbacks in SNAP are considered and/or changes to the structure of the program, one should point out that any possible cost-savings may be outweighed by the increase in medical care and other costs associated with the increase in food insecurity that would follow when SNAP benefits are reduced and/or SNAP participation is curtailed.

Third, offering opportunities to SNAP participants to learn more about financial management skills is worth pursuing. A recent study (39) using data from the *Survey of Household Finances and Childhood Obesity* demonstrated that those with better financial management skills are far less likely to be food insecure than those with worse financial management skills. This finding, which holds even after controlling for relevant covariates, offers the opportunity for educational programs in this area. Previous research has established that teaching financial management skills through the Expended Food and Nutrition Education Program and other programs can lead to improvements in financial literacy (40–42).

Fourth, along with ensuring the continuing structure and pointing out the benefits of SNAP, enabling higher participation rates in SNAP continues to be important. This can be done indirectly through the encouragement of policies that reduce the transactions costs associated with applying for and recertifying for SNAP benefits. It can also be done through things such as efforts by food banks to enroll eligible households into the program.

Fifth, helping to remove the stigma associated with SNAP receipt is also important. As mentioned above, an increased source of stigma for SNAP recipients and potential recipients is associated with weight status. As a society, we should strive to become kinder to those who struggle with their weight and reduce the unhealthy obsession some have regarding weight status. A side benefit to this would be to reduce the stigma associated with using SNAP. This would then lead to increases in participation in SNAP, a program that leads to reductions in obesity, especially among children (e.g., 34).

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