

Childhood Food Insecurity

The Mitigating Role of SNAP

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The United States is among the world's wealthiest countries, yet a considerable number of children—8.6 million, or 11.5 percent—live in households where at least one child does not receive enough food for active healthy living (Coleman-Jensen et al. 2012); analysts refer to this lack of access as being food insecure. Even more children, 16.7 million, are affected in some way by food insecurity, as one-fifth of all households with children (20.4 percent) report food insecurity for at least one adult or child member (Coleman-Jensen et al. 2012). More than one-third (36.8 percent) of female-headed households with children are food insecure.

Food is a fundamental human need, along with water, shelter, education, and health care. Consistent access to and intake of food is a prerequisite for physiological, cognitive, and emotional development and health (Cook and Frank 2008). Research has demonstrated adverse effects of food insecurity on children during the elementary school years. School-age children experiencing higher rates of food insecurity report increased anxiety, exposure to traumatic life events, chronic illness, and internalized behavior problems (Kleinman et al. 1998; Weinreb et al. 2002). Food insecurity among elementary-age children may influence their lives over extended periods; even those transitioning out of food insecurity show academic and social impairment three years later (Howard 2011).

Despite significant federal investments to reduce food insecurity—the Supplemental Nutrition Assistance Program (SNAP) alone provided \$71.8 billion in benefits to 44.7 million participants in 2011—there is still work to be

done to meet the Obama administration's goal to end child hunger by 2015.¹

This brief examines the family and community factors associated with an increased risk of food insecurity among children and finds that characteristics such as poor parental health, low social support, and parents experiencing depressive symptoms increase the likelihood that a low-income family with children will experience food insecurity among children. This brief also discusses the extent to which SNAP participation mitigates food insecurity among children living in low-income households, by shortening its duration. Results suggest that SNAP participation is associated with an increased likelihood that households with food insecurity among children will later become food secure.

Background

Factors related to food insecurity

Wide-ranging factors—individual, familial, societal, and macroeconomic—have been found to influence food insecurity (Cook and Frank 2008; Habicht et al. 2004). Food insecurity is closely related to limited household-level resources. The prevalence of food insecurity varies considerably among household types but is predominately a feature of lower-income versus middle- or upper-income households (Nord and Brent 2002).

Parental health and household structure are associated with children's well-being in various ways, including diminution of parents' energy for providing care and developmental stimulation. Parents' physical health limitations, becoming

disabled, or having a disability lasting two years have been found to be positively related to becoming or remaining food insecure (Bhargava, Jolliffe, and Howard 2008; Hofferth 2004). Low emotional well-being, mental health challenges, reduced self-esteem and skills mastery, and maternal depression have all been associated with food insecurity (Bhargava et al. 2008; Casey et al. 2004; Heflin, Corcoran, and Siefert 2007; Huddleston-Casas, Charnigo, and Simmons 2009; Whitaker, Phillips, and Orzol 2006).

Community factors may also be associated with a family's ability to access a sufficient and affordable quantity and range of food. The presence of "food deserts," or central-city and rural areas that lack supermarkets, may be related to food insecurity (Ver Ploeg 2010).

The relationship between SNAP participation and food insecurity

Considerable federal resources via SNAP are targeted toward protecting low-income families from food insecurity. In fiscal year 2011, SNAP delivered over \$71.8 billion in benefits and served an average of 44.7 million individuals each month, most of whom were children (47 percent) and the elderly (8 percent: see Eslami, Filion, and Strayer 2011). In fiscal year 2011, SNAP served an average 44.7 million individuals each month, delivering over \$71.8 billion in benefits. Average monthly benefits were \$133.85 per person, \$283.99 per household.² In 2009, 72 percent of eligible individuals participated and received benefits (Leftin 2011).

Though SNAP is intended as the first line of defense against hunger, early research examining the impact of SNAP on food insecurity found the opposite relationship: SNAP appeared to increase the probability of food insecurity. Most authors attributed this finding to self-selection; individuals who participated in SNAP did so because they were food insecure and needed food assistance. More recent research has sought to avoid this

endogeneity in measuring the impact of SNAP on food insecurity. Two recent studies have found an ameliorative effect of SNAP participation (Nord and Golla 2009; Ratcliffe, McKernan, and Zhang 2011). Building on this research, this study examines the extent to which SNAP participation may reduce the prevalence of food insecurity among low-income children, rather than focusing on *all* members of the household as was done in previous work.

Key Findings

Factors related to food insecurity among children

- **Based on 1999–2004 data, previous experience with food insecurity among children puts households at greater risk of subsequent food insecurity among children.** Among low-income households who reported food security among children in 2002, those who reported food insecurity among children in 1999 were twice as likely to be food insecure again in 2004 as those who reported that their children were food secure in 1999 (table 1).
- **A number of demographic and psychological/social factors are associated with an increased threat of food insecurity among children.** In households where the highest level of education received by parents is high school, the risk of children in the household becoming food insecure is greater than for children living in households with parents who have more than a high school education. Households with greater numbers of young children have increased odds of low food security among children. Parents with moderate to severe symptoms of depression and those who are in fair to poor health are more than twice as likely to have children in the household become food

Table 1. Estimated Associations between Demographic, Economic, and Psychological/Social Factors and Food Insecurity among Children (in 2004) for Low-Income Households with Children Who Were Previously Food Secure (in 2002)

	Odds ratio	Standard error
Food insecurity among children, 1999	2.16*	0.317
Number of children in the household age 0–7, 2004	1.42*	0.155
Parent worked at least 35 hours a week, 2004	0.50*	0.308
Parent highest level of education is high school or less, 2004 (more than high school, reference)	1.67*	0.211
Parent has moderate depressive symptoms, 2002 (no depressive symptoms, reference)	2.21*	0.332
Parent has severe depressive symptoms, 2002 (no depressive symptoms, reference)	2.13*	0.335
Parent is in fair to poor health, 2004	2.29**	0.302
Parent has low social support, 2002	2.27*	0.285
Sample size		3,340

Sources: Early Childhood Longitudinal Study, Kindergarten Class of 1998–99, Census Bureau, and Bureau of Labor Statistics.

Notes: Estimates are weighted using survey weights to be nationally representative of children eligible to attend kindergarten in the 1998–99 school year. Sample sizes are unweighted. Per U.S. Department of Education disclosure rules, unweighted sample sizes have been rounded to the nearest 10. Nonsignificant controls included SNAP participation in 2002 and in 2004 and the following family and community characteristics in 2004; single-parent household; number of children in the household age 8–11; number of children in the household age 12–17; whether the household resides in a rural area; the number of community food service providers located in the household’s zip code; the number of grocery stores located in the household’s zip code; and the county unemployment rate.

* Estimated coefficient significantly different from 0 at the .05 level, based on two-tailed test.

** Estimated coefficient significantly different from 0 at the .01 level, based on two-tailed test.

insecure than parents with no depressive symptoms or good health. Parents who report having little social support are more than twice as likely to have children who become food insecure than parents who report having a strong social network.

- **Full-time employment is associated with a decreased risk of children becoming food insecure.** In households where at least one parent works 35 or more hours a week, the odds of children in the household becoming food insecure are reduced by half.

The relationship between SNAP participation and food security among children

- **SNAP participation increases the chances that food-insecure children will later become food secure.** Among low-income households experiencing food insecurity among children, the odds of being food secure two years later were nearly four times higher for SNAP participants than for nonparticipants. Similar to earlier research, those households currently participating in SNAP had lower odds of being food secure than those who were not participating in SNAP (table 2).

Table 2. Estimated Associations between SNAP Participation and Food Security among Children (in 2004) for Low-Income Households with Children Who Were Previously Food Insecure (in 2002)

	Odds ratio	Standard error
SNAP participation, 2002	3.93**	0.497
Current SNAP participation, 2004	0.17**	0.545
Sample size	210	

Sources: Early Childhood Longitudinal Study, Kindergarten Class of 1998–99, Census Bureau, and Bureau of Labor Statistics.

Notes: Estimates are weighted using survey weights to be nationally representative of children eligible to attend kindergarten in the 1998–99 school year. Sample sizes are unweighted. Per U.S. Department of Education disclosure rules, unweighted sample sizes have been rounded to the nearest 10. Coefficient estimates were derived from logistic regression models that included a full set of family and neighborhood controls listed in table 1.

** Estimated coefficient significantly different from 0 at the .01 level, based on two-tailed test.

Implications for Policy and Future Research

Building on the work of Ratcliffe, McKernan, and Zhang (2011) and Nord and Golla (2009), this study provides additional evidence that SNAP participation has an ameliorative effect on food insecurity among children as well as adults. Among children living in low-income households, those who experienced food insecurity and participated in SNAP were more likely to later become food secure than those households with food-insecure children who did not receive SNAP benefits. Also consistent with earlier research, families with children with severe food needs seek out SNAP.

Though SNAP is a critical line of defense against food insecurity among children, large numbers of children still experience food insecurity. Additional research is needed to understand why some children remain food insecure. Do these children lack access to SNAP? If so, are they not eligible for benefits, or are they eligible, but their parents or guardians have not applied for benefits? We do know that in 2009, 85 percent of eligible individuals living in households with children participated in SNAP (Leftin, Eslami, and Strayer 2011). Are SNAP benefit levels too low to cover the food needs of children in these households?

Other factors such as untreated parental depression may weaken a household’s ability to properly feed children. This study found that

children in low-income households with a parent experiencing depressive symptoms had increased chances of becoming food insecure. Access to quality mental health services may present a challenge for families experiencing food insecurity among children (Golden and Fortuny 2011).

Public investments in preventing and eliminating food insecurity are vital for a healthy society. SNAP has proven successful in reducing food insecurity. There is considerable work to be done to prevent households from becoming food insecure in the first place. And though SNAP reduces the risk of food insecurity among children, many children remain food insecure, indicating that more effort is needed to understand why SNAP is not enough.

Methodology

Data and Sample

Child-level data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K) are employed. The ECLS-K collects longitudinal data on a nationally representative sample of about 22,000 children who were enrolled in kindergarten during the 1998–99 school year. Data from the kindergarten (1999), 3rd-grade (2002), and 5th-grade (2004) rounds of the survey are used. The sample for this study is limited to children who lived in low-income households at some point between kindergarten and 5th grade; low income is defined as having an annual household income of less than

\$40,000, which is approximately twice the poverty level for a family of four.

Of relevance to this study, the ECLS-K uses the USDA's Household Food Security Module to assess the degree of food security or food insecurity—the most valid measure of food security currently available. Food security is a household concept, so while individual-level data are used, generalizations cannot be made about the focal children in the survey. SNAP participation of the household is also assessed.

Restricted-use data were used to merge in measures of the neighborhood food and economic environment at the zip code and county levels. Survey weights are used to account for the complex survey design of the ECLS-K.

Estimation Strategy

A multivariate logistic regression model is used to estimate the relationship between family and neighborhood characteristics and *food insecurity* among low-income children. The probability of food insecurity among low-income children in 2004 is regressed against family demographic and community characteristics in 2002 and 2004 and food insecurity among low-income children in 1999 for a subsample of low-income children who were food secure in 2002.

A second multivariate regression model estimates the relationship between SNAP participation and *food security* among low-income children. The probability of food security among low-income children in 2004 is regressed against SNAP participation in 2002 and 2004 for a subsample of low-income children who were food insecure in 2002, controlling for other demographic, economic, and psychological/social factors. The relationship between SNAP and food security is likely understated by this model, as it is unlikely that adverse selection has been entirely accounted for by the control variables.

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Notes

¹ U.S. Department of Agriculture, Food and Nutrition Service, "Supplemental Nutrition Assistance Program Participation and Costs," <http://www.fns.usda.gov/pd/SNAPsummary.htm> (accessed February 23, 2012).

² USDA, Food and Nutrition Service, "Supplemental Nutrition Assistance Program Participation and Costs."

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