

## **Connecting saving and food security:**

### **Evidence from an asset-building program for families in poverty**

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#### **Abstract**

This project investigates the effectiveness of community-based asset-building programs for preventing childhood hunger. Our three specific objectives are: Objective 1: To identify level and changes in the level of children's food security during a family's participation in a community-based savings program (a) during program participation and in the year after asset purchase and in the longer term after program graduation (b) in comparison to program dropouts and a general population sample. Objective 2: To identify family, financial, and economic factors that affect children's level of food security in savings program families. Objective 3: To identify a set of best practices (a) for savings program participants and the non-profit agencies offering the program concerning coping strategies to ensure secure levels of children's food security in asset building programs and (b) for policy makers, program administrators, and community partners concerning program development and funding decisions.

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## **Connecting saving and food security: Evidence from an asset-building program for families in poverty**

### **Extended Abstract**

This project investigates the effectiveness of community-based asset-building programs for preventing childhood hunger. Our three specific objectives are:

Objective 1: To identify level and changes in the level of children's food security during a family's participation in a community-based savings program (a) during program participation and in the year after asset purchase and in the longer term after program graduation (b) in comparison to program dropouts and a general population sample.

Objective 2: To identify family, financial, and economic factors that affect children's level of food security in savings program families.

Objective 3: To identify a set of best practices (a) for savings program participants and the non-profit agencies offering the program concerning coping strategies to ensure secure levels of children's food security in asset building programs and (b) for policy makers, program administrators, and community partners concerning program development and funding decisions.

Data collection is currently ongoing and includes survey program providers and participants in the Assets for Independence program, a federally funded matched savings program for low-income families, to match these data with program administrative data, Census data, and to compare the data with responses of a comparison sample drawn from the Current Population Survey's Food Security Supplement. By the time of the conference in November, the data will be analyzed to test eight hypotheses that address our three major objectives.

We expect to identify situations of low and very low food security among the children of a substantial number of families who are actively saving in this program due to (1) the demographic characteristics of AFI program families matching the demographics of food insecure families, (2) the high demands of the program on families' cash flow, and (3) the psychological challenges of regular saving among low income populations.

If indeed food insecurity increases due to program participation we expect it will occur at two key time points: (1) the early stage of the program due to the high demand placed on a family's financial resources and management skills and (2) late in the program and at asset purchase after families face the expenses of moving into a new home, starting a small business, or returning to college, financial resources may be extremely tight.

In the longer term, we expect to find increasing levels of food security among families who successfully complete the program due to: (1) the intensive training in financial management, budgeting, and saving provided in the Assets for Independence program and (2) the economic, social, and psychological stability provided through the asset purchase.

The successful completion of this research is expected to contribute to our understanding of the short and longer-term effects of intensive training in financial literacy, financial management, and regular saving on children and their families' food security. Current research on savings behavior provides no concrete information on its impact on food security, and thus this research will potentially provide policy makers with critical new information on the intended and possibly unintended consequences of AFI program participation.

**Connecting saving and food security:  
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**1. Motivation**

Low-income families face numerous daily challenges. Providing an adequate and nutritious diet to children is certainly one of them. Federal and state governments recognize this challenge by providing food assistance through several food programs that target children, and also by monitoring our nation's food security. At the same time, few goals are more challenging to families at the poverty level than saving regularly. Yet, without a few thousand dollars in savings, the desire to buy a home in a safe neighborhood, capitalize a small business, or obtain a college degree is unlikely to be realized. The federal government responded to this challenge in 1998 with the Assets for Independence Act by establishing funds for community-based savings programs to match, most commonly, \$2 for every dollar saved ([acf.hhs.gov/programs/ocs/afi](http://acf.hhs.gov/programs/ocs/afi)). The Assets for Independence (AFI) program is appropriating \$24 million annually, funding the program's implementation at nearly 2,000 community organizations across the nation. Since program inception in 1998, more than 70,000 matched savings accounts, so called "Individual Development Accounts" or IDAs, were opened through AFI program, which is the largest federally funded IDA program (Office of Community Services 2010). It is a program targeted to families: seventy-five percent of all program participants live in households with at least one child at the time of enrollment; 25% lived in households with three or more children. Successful program graduates are more likely to continue saving, accumulate assets, and establish retirement and investment accounts (Loibl et al. 2010; Loibl and Red Bird 2009; Loibl, Kraybill, and DeMay 2011).

The families that participate in the AFI program closely match the demographics of food insecure in households with children (Nord 2009). There are striking similarities with regard to household income levels below the federal poverty line, single parent households, African-American and Hispanic families, educational attainment and number of children. Surprisingly, we are aware of no published studies that examine the possible link between participation in a savings program the risk of low or very low food insecurity among low-income families with children. Thus, we are currently conducting a study that builds on three streams of literature to answer these questions: the rich literature examining the Assets for Independence program, findings in the microfinance literature about the close relationship of saving and food security, and current knowledge about the causes of food insecurity among households with children. Motivated by these observations, the long-term goal of the proposed research is:

***An improved understanding of the effectiveness of community-based  
asset-building programs for preventing childhood hunger.***

In support of this overarching goal, we pursue several major objectives:

1. Identify the level and changes in the level of children's food security during a family's participation in a community-based savings program (a) during program participation and in the year after asset purchase and in the longer term after program graduation (b) in comparison to program dropouts and a general population sample.
2. Identify family, financial, and economic factors that affect children's level of food security in savings program families.
3. Identify a set of best practices (a) for savings program participants and the non-profit agencies offering the program concerning coping strategies to ensure secure levels of

children's food security in asset building programs and (b) for policy makers and community partners concerning program development and funding decisions.

We are currently in the midst of primary data collection by phone survey. It is expected to be completed by December 2013. The ACCI conference would allow us to present the full study findings for the first time.

## **2. Background**

This study proposes Family Stress Theory (Conger et al. 1990) as a framework for understanding how savings behavior is associated with food security. Family stress theory holds that economic stress is difficult for families to experience and manage, and often results in depression and low quality parenting that is associated with worse outcomes for families and children. Food insecurity is a form of economic stress, and several prior studies have used a family stress framework to examine the link between food insecurity and family and child well-being (McCurdy, Gorman, and Metallinos-Katsaras 2010). The family stress hypothesis would suggest that participation in the IDA program, while challenging at first, will give low-income families savings skills that will hopefully reduce their economic stress in the long term and their risk for food insecurity, thus improving child well-being in numerous ways, including reducing child hunger.

Food insecurity is a significant social problem that threatens the well-being of children, adolescents and adults. Prior studies have found significant associations between food insecurity and maternal depression, lower quality parenting, less secure attachment in childhood, worse child cognitive outcomes, childhood obesity, and heightened emotional distress and adjustment

problems among adolescents (Ashiabi and O’Neal 2007; Fiese 2011; McCurdy, Gorman, and Metallinos-Katsaras 2010; Zaslow et al. 2009). Recognizing the serious consequences associated with food insecurity, the USDA monitors food security annually and reports that, in 2010, 14.5% of U.S. households were food insecure, 5.4% of these had very low food insecurity, and children were food insecure in 9.8% of households with children (Coleman-Jensen et al. 2011). The prevalence of food insecurity rose steadily from 2006 through 2009 (from 10.9% to 14.9%), and remained stable between 2009 and 2010. Poverty, single parenthood, and being non-Hispanic Black and Hispanic are associated with higher rates of food insecurity (Coleman-Jensen et al. 2011).

The USDA also employs various strategies to combat food insecurity and promote nutrition. These include encouraging participation in the large-scale national food programs (SNAP, WIC, and the School Food Programs), and nutrition education programs aimed at high risk populations that teach cooking skills to make food dollars stretch further and produce nutritious meals (Coleman-Jensen et al. 2011; Fiese 2011). These programs target low-income populations that are more likely to experience low and very low food security. Few, however, have examined how family financial management practices are associated with food security. Olson et al. (2004) did closely examine food security among a sample of low-income rural families and found that those who employed financial management skills (e.g., budgeting and managing bills) were more likely to be food secure, compared to those families who did not. Thus, there is some evidence to expect that participating in a savings program that emphasizes financial literacy, financial management, and savings, such as the IDA program, could promote food security in the long term.

Several microfinance studies aim to understand how low-income families' participation in commitment-based savings programs impact non-financial aspects of household wellbeing, in particular food security (Zeller and Sharma 2000; Karlan and Thuysbaert 2011; Banerjee and Duflo 2007). This work, however, exploits the link between commitment savings products and food security for the economic and social contexts of third world societies. None of the aforementioned research has examined implications of participation in commitment-based savings programs for families' food security in the United States.

The here presented research aims to fill this void based on the project team's unique expertise in the evaluation of asset building programs and the study of low-income populations. We expect two findings: We expect to identify situations of low and very low food security among the children of a substantial number of families who are actively saving in this program due to (1) the demographic characteristics of AFI program families matching the demographics of food insecure families, (2) the high demands of the program on families' cash flow, and (3) the psychological challenges of regular saving among low income populations.

If indeed food insecurity increases due to program participation we expect it will occur at two key time points: (1) the early stage of the program due to the high demand placed on a family's financial resources and management skills and (2) late in the program and at asset purchase after families face the expenses of moving into a new home, starting a small business, or returning to college, financial resources may be extremely tight.

In the longer term, we expect to find increasing levels of food security among families who successfully complete the program due to (1) the intensive training in financial management, budgeting, and saving provided in the Assets for Independence program and (2) the economic, social, and psychological stability provided through the asset purchase.

Program families are meeting the financial demands by reducing expenses, in addition to working additional hours, a second or third job, and/or borrowing money from family, friends, payday lenders, and other establishments of the fringe economy. Food expenses are the third highest expense item for AFI program families, after mortgage or rent and utilities (Sherraden et al. 2005). Food expenses are also the most flexible of the major expense items, compared to rent, utilities, day care, and repayment of consumer loans. As a result, most cut back on their expenses by reducing their spending on food. About half of AFI families participating in in-depth interviews reported that they were not always able to meet their basic needs, i.e., food, transportation, and childcare. One interviewee “remembered not having enough food before moving into a subsidized apartment: ‘So I was just juggling my bills just trying to . . . pay enough to keep them on, you know, and having a really hard time. I mean, we ate Ramen noodles, cereal, and hot dogs. That’s all I bought and we ate those for I don’t know how long. I didn’t even care if I ate, I was so sick of eating those.’” (Sherraden et al. 2005, p. 37). Others mentioned that they went to the grocery store as seldom as possible. A few grew some of their own food. An interviewee said “it doesn’t bother me to eat, you know, beans and sandwiches for two weeks if that’s what we gotta eat. Or just cook from scratch. Just, that’s usually where I cut back.” (Sherraden et al. 2005, p. 43).

The proposed study contributes to existing research knowledge in at least four ways. First, it will represent the first systematic investigation of food insecurity in domestic asset building programs. Most research examining the link between food security and savings have focused on microfinance projects in third-world countries. For the Assets for Independence program, it will be the first research that focuses on a key non-financial outcome of this program, food security, thus broadening the understanding of this premier federal program. Second, it will



be the first research ever focusing particularly on the effects on children in families that participate in asset building. Neither the Assets for Independence program literature nor the wider, international microfinance literature has examined the effects of families' decision to save regularly on children's welfare. Third, the proposed research will use a series of five years to help identify the role of children's food security among active savers, at asset purchase, in the longer term, and among program dropouts. This will allow us to identify changes in children's food security as their families pass through the stages of an intensive, multiyear savings program. Finally, it will be the first to systematically analyze the effectiveness of particular assistance and coping strategies among program providers and program families to avoid food insecurity among children during the program years and afterwards.

### **3. Data**

To achieve the objectives set fourth, we are currently obtaining and analyzing several new sets of data.

Survey 1 -- Savings program providers: We are currently surveying about 100 program managers, at single agency and network agencies at six savings programs across the nation, about their perceptions of the extent of children's food sufficiency and food security among program families, ways of coping with not having enough food that they perceive among program families, and recommendations program providers are making to food insecure families. These questions will mirror the participant-level questions in the General Population Survey-Food Security Supplement. In addition, questions will inquire about the role of food security in program development and fundraising.

Survey 2 -- Savings program participants: To assess how children's food security is affected by a family's savings efforts, we are currently conducting a phone survey of 1,000 AFI participants who opened their accounts in the past five years, from 2007 to 2011. We decided to limit the time frame to the past five years because the 1998 funded AFI program was well established by 2007 (federal funding established at the \$24m level, since 2006); the non-profit agencies offering the program are larger and well-managed, now having available program software for easy participant tracking and retrieval (e.g., AFI-square, Outcome Tracker IDA), and contact information of program graduates and dropouts will be relatively easier to find.

The AFI participant survey instrument collects data on: Food Security (General Population Survey-Food Security Supplement); Family financial situation (Survey of Consumer Finances); Utilization of federal nutrition programs; Psychological and Social Characteristics; Demographic information (General Population Survey); Questions specific to people who successfully graduated from the savings program; and Questions specific to program dropouts. The questions are drawn from established secondary datasets: the Current Population Survey (food security, demographic measures), the Survey of Consumer Finances (financial measures), and the Health and Retirement Survey (financial literacy). We will complement these measures with indicators of children's food security and family financial wellbeing drawn from the established literature.

Administrative data 1: Savings program account-level data: In addition to the surveys, account-level data are being collected from the AFI program agencies. Data include: current IDA balance (current participants), IDA balance at dropout, amount of matched withdrawal (graduates) and emergency withdrawals, target/purchased asset; date of account opening and closing/dropout (following Mills et al. 2008).

Administrative data 2: Non-profit agency data: Data collected from AFI agencies include: agency type (e.g., Community Action Agency, Human Services Organization, Community Development Corporation, Local United Way), maximum savings matched, match rate, maximum savings period, minimum required hours of financial education (following Mills et al. 2008).

Secondary data 1: County-level data from the 2010 Census: County-level data from the 2010 census will be used to describe the economic conditions in the area where participants and non-participants live, including median annual household income, household poverty rate, and unemployment rate (following Mills et al. 2008).

Secondary data 2: Current Population Survey: We plan to match the national sample of 1,000 AFI participants with a corresponding national sample of AFI-eligible nonparticipants in the general U.S. population. The data source for the nonparticipant sample will be the Current Population Survey, a nationally representative monthly labor force survey of about 50,000 households conducted by the Census Bureau for the Bureau of Labor Statistics. The Current Population Survey Food Security Supplement (CPS-FSS) is the source of national and state-level data on food insecurity used in USDA's annual reports on household food security. Once each year, after answering the labor force questions, the same households are asked a series of questions (the Food Security Supplement) about food security, food expenditures, and use of food and nutrition assistance programs. Food security data have been collected by the CPS-FSS each year since 1995. We will use the latest available wave that includes the 18-item CPS-FSS,

the December 2012 wave. We will select a comparison sample from the CPS that will match the AFI program participants on key characteristics using a weighted sampling approach. It will provide a robust baseline for the food security of the AFI-eligible nonparticipant general population and will allow examining the effects of AFI program participation. We acknowledge that there is a small chance an AFI program participant included in our survey of savings program participants could also appear in the CPS survey. However, we believe that the sampling frame of AFI program participants is so small relative to the sampling frame for the CPS that such overlap will be negligible.

The 2012 CPS data is the best-suited data source for this analysis, compared to other survey data, because it is the general population survey to collect data on children's food security closest to our own survey year. We investigated other secondary data sets that include the FSS measure (SIPP, PSID, SPD) and the years of FSS data availability didn't match our data collection plans. There will be about a twelve-month difference between the CPS and survey data collection. This calendar difference can be of concern as a source of bias should major economic shifts occur during this period. If this is the case, we will make necessary statistical adjustments to the data.

Weighted sampling will be used to select a subsample of the 2012 CPS that closely matches the AFI participant sample. The criteria on which AFI-eligible nonparticipants will be matched will include: gender, race/ethnicity, age, marital status, education, ownership of a checking or savings account, homeownership, business ownership, employment status, household income, receipt of means-tested benefits, and geographic location (by metropolitan/nonmetropolitan status and USDA rural-urban continuum code).

#### 4. Hypotheses and First Results

The current analysis of our preliminary data address Objective 1. Objectives 2 and 3 will be addressed once data collection is completed and access to the CPS-FSS and Census data restored once the government shut-down has ended.

##### Objective 1:

Identify the level and changes in the level of families' and children's food security during a family's participation in a community-based savings program during program participation, after program completing and after dropping out of the program.

##### Descriptive Analysis

As of September 30, 2013, 427 completed and valid responses of savings program participants have been collected by phone survey.

Sample characteristics:

	N of sample	% of sample	Food secure, family	Food insecure, family	Food secure, children	Food insecure, children	Range
Food secure, family	264	61.83					0/1
Food secure, children	346	81.03					
Active savers	165	38.5					0/1
Graduated savers	189	44.2					0/1
Dropped out savers	74	17.3					0/1

Male	78	18.27			0/1	
Age					23-68	
Married	217	50.82			0/1	
Partnered	18	4.22			0/1	
Widowed	7	1.64			0/1	
Divorced	85	19.91			0/1	
Separated	17	3.98			0/1	
Single, never married	80	18.74			0/1	
College degree	152	35.60			0/1	
Hispanic	98	22.95			0/1	
White	257	60.19			0/1	
Black	82	19.20			0/1	
Other	88	20.61			0/1	
Household income			\$36,500 (\$22,909)	\$27,724 (\$13,547)	\$34,542 (\$21,305)	\$27,206 (\$13,867)

**Logistic regression analysis:** We are working on these analyses and will present them at the conference.

Objective 2 and 3 will be addressed once data collection is completed and access to the CPS-FSS and Census data restored once the government shut-down has ended.

## Objective 2

Identify family, financial, and economic factors that affect children's level of food security in savings program families. We hypothesize that several issues could drive children's food security levels in savings program families.

H3: Differences in families' financial situation, psychological and social characteristics, and demographic parameters have an impact on children's food security.

H4: Differences in current savings, savings behaviors, and savings program characteristics have an impact on children's food security.

H5: Differences in the general economic environment in which the families live in different areas in the United States have an impact on children's food security.

To test H3 to H5, we will combine participant survey data, program administrative data, and census data to form a single analysis database at the participant level. Separate proportional odds models will be created for each of the three groups of participants in the AFI program: current participants, successful program graduates, and program dropouts. Within each of these groups, separate models will be created for two dependent variables: absolute food security score and relative food security score. Each of these models will include independent variables described on p. 11. In addition, we will consider inclusion of cohort year in the model as an independent variable, including possible interactions with other independent variables. However, this variable (or associated interactions) will be eliminated from the model if they are not found to be significant.

### **Objective 3**

Identify a set of best practices (a) for savings program participants and the non-profit agencies offering the program concerning coping strategies to ensure secure levels of children's food security in asset building programs and (b) for policy makers and community partners concerning program development and funding decisions.

- H6: Differences in food-security related coping strategies distinguish program dropouts from currently active program participants and successful program graduates.
- H7: Differences in AFI agencies' food-related support system impact AFI program families' children food security.
- H8: AFI agencies' awareness about children's food insecurity of AFI program families increases the number of financial and educational support programs offered by the agencies.

To test H6, we will construct a multinomial logistic regression model using AFI participant group (current participant, dropout, or graduate) as the dependent variable. The dropout group will be used as the baseline group. This model will use questions about ways of coping with not having enough food, food expenditures, minimum spending needs to have enough food, and food program participation as independent variables. We expect to find that each of the independent variables is significant in differentiating the likelihood of an individual falling into the dropout group from the likelihood of an individual falling into either of the other groups.

For H7 and H8, we will combine data from the approximately 100 AFI program managers at the 25 program agencies that will provide access to account-level data with survey responses from program participants, dropouts, and graduates. All models for H7 and H8 will be built using data aggregated to the agency level. For each agency, we will obtain a summary of "children's food security scores" by calculating the fraction of served families in each of the three categories of food security. In addition, within each agency we will average program managers' awareness levels and identify the agency's primary support system related to their program families' food security. For H7, we will construct three ANOVA models, a separate one for each of the three fractions describing the categories into which families fall. As an example,



one of these models will use the fraction of families in the “very low” category as the dependent variable. The independent variable in these models will be the agency’s primary support system, and we will test to see if different support systems have different average fractions of families in the category being used as the dependent variable. For H8, we will construct a regression model using the number of financial and educational support programs as the dependent variable and the fraction of agency families in the “high/marginal” category and fraction of families in the “low” category as independent variables.

## **5. Expected Results**

The results of the proposed research will be used to inform (a) the academic community, (b) non-profit agencies that implement community-based asset building programs, and (c) the program directors and policy makers charged with developing and evaluating poverty reduction initiatives more broadly. Contributions to existing research will include:

- 1) Insights about the role of financial knowledge, financial management skills, and regular saving for children’s food security in low-income families, contributing a personal-finance aspect to the literature examining the prevalence of food insecurity. It is a topic that has received little attention in the past, except for the work of Olson et al. (2004).
- 2) Insights about the family, financial, and economic factors that affect children’s level of food security in savings program families to inform the asset-building literature. Informal focus groups during the American Dream Demonstration have indicated the risk of very low food security for program families and their children. Yet, the established asset-building literature has ignored concerns about food security, even though it focuses on the optimal design of such programs (Schreiner, Ng, and Sherraden 2006; Schreiner and Sherraden 2005), the

characteristics of successful participants (Grinstein-Weiss and Sherraden 2006; Sherraden et al. 2004), and the long-term financial outcomes of this type of savings program (Loibl et al. 2010; Grinstein-Weiss et al. 2011). The proposed project will introduce food security as a potential key contributor for the success of asset-building efforts in the United States.

- 3) Insights concerning the role of food insecurity for the understanding of the effectiveness of commitment savings products will contribute to the research in behavioral economics. Recent themes in this growing literature include the analysis of psychological biases that affect regular savings (Thaler and Benartzi 2004; Duflo et al. 2006), the effectiveness of incentives and prize-linked savings products (Tufano and Schneider 2008), and the role of institutions for encouraging regular saving among low-income families (Schreiner and Sherraden 2007; Tufano and Schneider 2007). Except for microfinance literature, examining food security in third-world contexts, none of the aforementioned research has examined food security as a factor that directs the savings behavior of low-income families.

Asset building programs will receive hands-on guidance for the design of savings programs and program support system. Information gained from the proposed research will address:

- 1) The prevalence and severity of very low food security among children of participating families. Findings on household characteristics will allow programs to better target their program enrollment in order to reduce dropout and to assist at-risk families during critical times in the savings program.
- 2) A reliable time line for critical points during and after program participation that may trigger very low food security. Typical IDA program structure does little to provide structured feedback and support to participants. Although case managers receive regular IDA bank

statements, feedback is random and frequently delayed by several weeks. With the proposed research, we will provide a reliable, critical time line to IDA program providers based on a representative national sample of AFI program participants.

- 3) Successful coping and support strategies employed by program families and program providers to prevent or alleviate very low food security among children.
- 4) Programs to assist families engaged in debt repayment efforts. Debt Management Plans, a product of the credit counseling industry, allow distressed borrowers to consolidate their debt, thereby facilitating debt repayment in much the same way as IDA programs facilitate regular saving. The Debt Management Plan industry has grown by over 50% in the past year alone, serving over 3.2 million Americans. Despite potential advantages, Debt Management Plan dropout rates are as high as 40%. Dr. Loibl is connected to these agencies through her work with the National Foundation for Credit Counseling.

Program directors and policy makers charged with developing and evaluating poverty reduction initiatives will gain a more detailed understanding of how program design can reduce food insecurity among children and their families and which strategies work in assisting families at risk of very low food security. Results of the proposed research will inform:

- 1) Policymakers and program administrators working to improve federal nutrition programs. While these programs, such as FNP, include education on food resource management targeted toward the planning of food purchases, they typically do not provide training in financial management and asset building. The proposed research will shed light on the potential benefits of this training for children and their families' food security.

- 2) Federal efforts to improve program saving and retention in AFI programs. Should food security emerge as a key contributor to program success, program development efforts may include an awareness campaign directed to AFI grantees, a teaching module on food security for group workshops and one-on-one counseling, to complement financial education, and technical support for AFI grantees to assess food security during program intake, program graduation, and, if possible, during post-graduation follow-ups.
- 3) Employers designing workplace-based retirement savings programs for low-income employees. Depending on the results of the proposed research, the design of successful financial planning programs may include educational efforts addressing federal nutrition programs and coping strategies for at-risk families.
- 4) The success of national awareness strategies as conducted by the President's Advisory Council on Financial Capability, the U.S. Department of the Treasury to define "Financial Education Core Competencies," or the Consumer Federation of America's "America Saves" campaign. Messages about federal nutrition programs and coping strategies for at-risk families might be added to such campaigns to increase public awareness.

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