

The Association Between Consumer Competency and Supplemental Nutrition Assistance Program Participation on Food Insecurity

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ABSTRACT

Objective: To examine whether *Supplemental Nutrition Assistance Program* (SNAP) participants exhibited lower food insecurity when they also demonstrated desirable behaviors in the areas of financial management, nutrition literacy, and conscientious food shopping.

Design: Using data from the US Department of Agriculture's newly launched National Household Food Acquisition and Purchase Survey, this study examined whether consumer competency is a factor that affects food insecurity.

Participants: A total of 4,158 participants were included. Sampling weights were applied to represent the population better.

Main Outcome Measure(s): Very low food insecurity was the dependent variable. Important independent variables were participants' financial management skills, nutrition literacy, and conscientious shopping.

Analysis: Logit and 2-staged least-squares models were used for empirical analyses. The significance of models was tested at .05, .01, and .001.

Results: Consumer competency-related factors such as financial management ability, not defaulting on bill payments within the previous 6 months, and using the nutrition panel frequently when shopping were negatively associated with food insecurity and very low food security after controlling for a number of other demographic, socioeconomic, and behavioral characteristics.

Conclusions and Implications: Policies that focus solely on consumer competency programs such as SNAP-Education might marginally achieve program goals but the effect would be modest owing to the unique challenges that SNAP participants may face. Further investigations are needed to understand better why SNAP participants do not benefit successfully from competent consumer practices.

Key Words: food insecurity, *Supplemental Nutrition Assistance Program*, household finance, conscientious consumption, financial literacy (*J Nutr Educ Behav.* 2017;49:657-666.)

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INTRODUCTION

Millions of Americans are challenged with food insecurity. In 2014, 14% of US households (17.4 million households) were food insecure, meaning that their members did not always have access to enough food owing to lack of resources.¹ This included 5.6% of households with very low food security, in which "the food intake of one or

more members was reduced and eating patterns disrupted"¹ because of resource insufficiency. Furthermore, food insecurity was associated with increased risk of obesity² and various chronic diseases.^{3,4}

Although poverty and income reduction are among strongest determinants of food insecurity, income is hardly a definitive determinant of the risk of food insecurity. In 2014, 14% of households were food insecure, but

6.3% of households whose incomes were >185% of the poverty level were food insecure.¹ Apart from income, behavior signaling consumer competency, such as financial management, food resource management (eg, food shopping, food budgeting), and nutrition literacy, was linked to food insecurity.^{5,6} Households (including those with an income < 200% of the family poverty level [FPL]) that have better financial management practices were less likely to be food insecure than others.⁷ In addition, consumer attitudes and perceived effectiveness toward sustainable food consumption were associated with desirable food consumption behavior.⁸ Food budgeting and food shopping were also linked to adequate food access.^{7,9} In addition, better resource management skills were associated with reduced food insecurity among *Supplemental Nutrition Assistance Program*

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(SNAP) recipients.¹⁰ A recent study found a causal effect of financial literacy on the probability of a household being food insecure or experiencing very low food insecurity.⁶ In addition, nutrition literacy, “the degree to which individuals have the capacity to obtain, process, and understand nutrition information and skills needed to make appropriate nutrition decisions,”¹¹ was also linked to better overall health outcomes. Another study found that the ability to read nutrition labels led to better health and nutrition outcomes.¹²

Whereas those studies suggested the importance of consumer practices as a potential strategy to reduce food insecurity, another study reported that a substantial number of low-income families already engaged in various thrifty food-shopping practices and efforts to maximize food dollars, often sacrificing the nutritional quality of their diet.¹³ Substantial evidence indicated that SNAP participants’ poor resource management was a factor in chronic cycles of overeating followed by food insufficiency within a benefit month, a phenomenon referred to as the SNAP cycle effect.¹⁴ Another study argued that both SNAP participation and education on food resource management were needed to reduce food insecurity.¹⁰

The goal of SNAP is to decrease food insecurity for low-income individuals while improving the quality of their diets.² Although SNAP participants tend to have higher levels of food insecurity compared with those who are eligible but do not participate, studies that accounted for such an endogenous correlation showed that a 10 percentage point cut in SNAP participation rates increased the risk of food insecurity by 5%.^{15,16} However, more needs to be understood regarding how some low-income households are food secure whereas others are not. Estimating the impacts of SNAP in addressing food insecurity was challenged with endogeneity or selection.^{15,16} Moreover, according to the findings of a recent study, SNAP participation reduced the likelihood of being food insecure by 30%.¹⁶ State and local policies related to eligibility matter in SNAP participation rates. Research found that food stamp participation increased with the leniency of eligibility rules such as vehicle exemption policies, lengths of recertification periods, and expansion of broad-based categorical eligibility and simplified re-

porting formats.^{17,18} The association between SNAP and food insecurity is complicated by differences in eligibility criteria at the state level.¹⁸

A number of factors such as race/ethnicity, marital status, education, age, home ownership, presence of children, income, and asset ownership also need consideration when examining the association between SNAP and food insecurity, according to existing studies.^{13,16,19} In addition, individuals’ health and diet conditions have a bidirectional relationship with food insecurity. Furthermore, food access and food environment are considered to influence nutrition and health.¹³ Participation in other assistance programs such as *Special Supplemental Nutrition Program for Women, Infants, and Children* or the *National School Lunch Program* were also found to ameliorate food insecurity.^{16,20}

Based on findings from previous studies, it appears that consumer competency, as demonstrated by better resource management and nutrition literacy, may be associated with better health and well-being outcomes. It is therefore possible that desirable and competent consumer behavior will also have a role in reducing food insecurity among income-constrained consumers. However, there is little literature available that examined the association between SNAP and food insecurity while considering consumer competency. The purpose of this study was to extend the literature by examining whether SNAP participants experienced lower food insecurity when they also demonstrated desirable behaviors in the areas of financial management, nutrition literacy, and conscientious food shopping. Using data from the US Department of Agriculture’s (USDA’s) National Household Food Acquisition and Purchase Survey (FoodAPS), this study provides policy implications with more complete knowledge of how consumer competency serves as a tool for low-income households in dealing with food insecurity.

METHODS

Data

This study used the USDA’s FoodAPS data set,²⁰ a nationally representative survey of households that included responses from participating households’ main food shoppers or meal planners. The data contained detailed informa-

tion on households’ sociodemographic characteristics, food shopping behavior, observed shopping practices, food security status, nutrition knowledge, program use, food access, and acquisition and consumption behavior. Among the main household data files, household file, individual file, and food-at-home event file were used. The researchers extracted relevant food environmental information at the Census block group and county levels along with state-level policy variables. These geographic files were linked to household main data using household geocodes.

Among the 4,826 participating households, 667 observations were dropped owing to nonresponse or missing values. A total of 4,158 households constituted the final sample for analysis. Sampling weights were applied to represent the population by applying main household weights, strata, and pseudo-identifiers for primary sampling units as instructed in the FoodAPS documentation.¹⁹ For some analyses, the sample was reduced to households with incomes < 185% of the federal poverty line. This study was reviewed and approved by the Internal Review Board at the University of Mississippi.

Variables

Food insecurity. Food insecurity status was determined by the number of affirmative responses to 10 questions from the USDA’s 30-day adult food security scale.¹ This study used food insecurity and very low food security as dependent variables. Food insecurity was a dichotomous indicator of reporting ≥ 3 food-insecure conditions during the past 30 days. Very low food security was a dichotomous indicator of reporting ≥ 6 food-insecure conditions.

Supplemental Nutrition Assistance Program. Participation in SNAP was coded as 1 if anyone in the household currently received SNAP benefits, and 0 otherwise.

Consumer competency. This study investigated 3 competency areas, including financial management, nutrition literacy, and conscientious buying. First, financial management was a continuous variable, which was the mean of responses to 4 items: how often household reviews bills for accuracy, how often household pays bills on time,

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