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Nutrition Information

Can It Improve the Diets of Low-Income Households?

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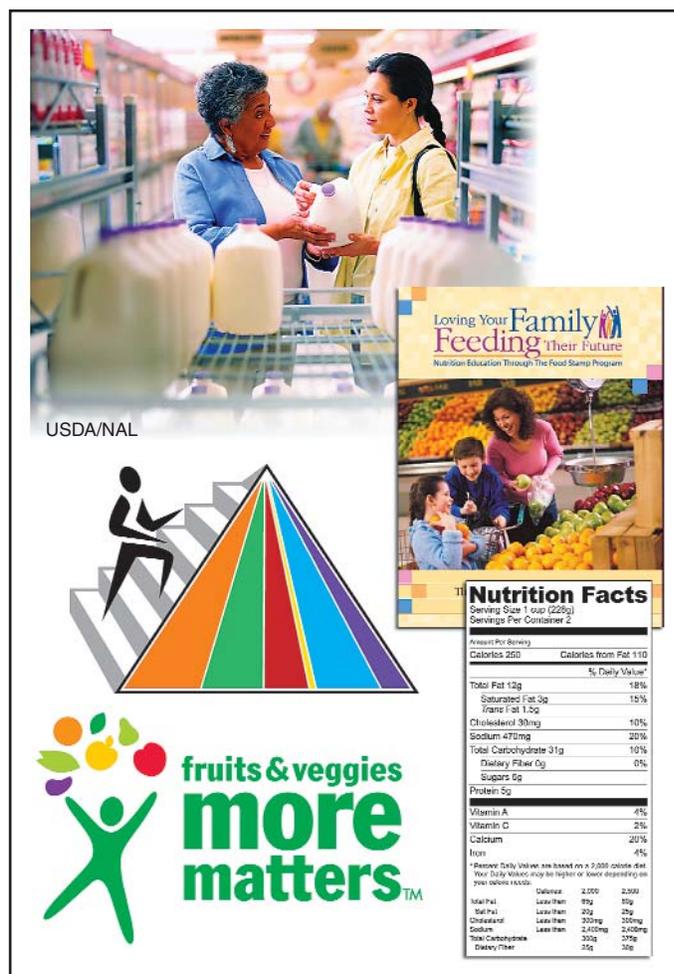
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The Food Stamp Program has a goal of improving the diets of low-income households by providing them with additional food purchasing power. Benefit levels are set to enable participants to purchase a diet that meets current Federal dietary guidance. However, participants are free to make their own food choices from among virtually all foods sold in participating grocery stores. USDA data indicate that food stamp participants' diets do not match recommendations. Fruit and vegetable intakes are low, whereas overweight and obesity rates are high.

USDA encourages food stamp participants to make nutritious food choices through its support of the Food Stamp Nutrition Education (FSNE) component of the Food Stamp Program. According to guiding principles issued by USDA's Food and Nutrition Service (FNS), which administers the Food Stamp Program, FSNE provides science-based, behaviorally focused nutrition education. The intended result of this education is for food stamp participants to make healthy food choices, as defined by the Federal Dietary Guidelines for Americans and the USDA MyPyramid, within a limited budget. Although an optional part of the Food Stamp Program, FSNE now operates in all States, with annual Federal expenditures around \$250 million. Here we examine Food Stamp Nutrition Education—how it has grown over time, funding, operational differences at the State level, and the challenges it faces in improving food choices and demonstrating its effectiveness. We consider the evidence of nutrition information as an effective strategy for dietary improvement, both for the general public and for low-income households in particular, and discuss the research and evaluation needs suggested by our findings.

Food Stamp Nutrition Education

FSNE provides nutrition education to food stamp participants and eligible nonparticipants via a partnership between USDA and States. Unlike food stamp food benefits, which are completely covered by USDA, USDA reimburses States 50 percent of allowable FSNE costs.



Although voluntary, State participation in FSNE has grown from 7 States in 1992 to 50 States, 2 Territories, and the District of Columbia in 2007, with total Federal funding also growing from \$661,076 in 1992 to \$247 million in 2006. The level of State participation varies, with 2006 budgets ranging from less than \$1 in federally approved funds per food stamp participant to more than \$50 per participant. Considering both Federal and matching State funds, on average, available funds translated to less than \$20 per participant as of fiscal 2006.

To operate FSNE, State Food Stamp Program offices subcontract with one or more FSNE-implementing agencies. More than half of these are with the Cooperative Extension Service of the State's land-grant university; other implementing agencies include State or territorial health departments and other public organizations. FNS provides guidance on the appropriate scope of FSNE and reviews State plans for consistency with guidance. Nutrition education messages must be consistent with the Federal Dietary Guidelines for Americans and USDA's MyPyramid. States are encouraged to target educational activities to women and children in participating or eligible Food Stamp Program households.

The *Food Stamp Nutrition Education Systems Review* found that States adhere to the targeting guidelines and serve primarily school-aged children and women (Bell et al., 2006). Almost all (98 percent) States offered direct education, such as group classes, and most (87 percent) offered "indirect education," such as distributing brochures and other print materials. About a third of States employed social marketing approaches, which typically deliver messages on nutrition education and changing behavior through multiple media channels, such as radio, television, newspapers, and posters, and frequently reinforce media messages with in-person activities.

Within these broadly similar categories of educational activities, States use a range of educational methods and materials. This variation in educational approach allows States to tailor their programs to the needs and interests of target audiences but makes it difficult to assess and compare the effectiveness of State activities.

Evidence for the Value of Educational Approaches to Dietary Improvement

In assessing FSNE effectiveness, it is useful to consider the extent to which evidence shows that providing nutrition information, as a general strategy, improves the diets of consumers in general and of low-income households in particular.

Research studies have provided evidence that consumers modify their food choices in response to scientific information linking diet and health (Variyam and Golan, 2002). For example, consumption of whole milk has declined over the past 60 years, while consumption of reduced-fat milk has risen more than threefold. Economic studies have shown that at least a part of this substitution—about 8 percent in one study—is explained by the information about the health effects of fats and cholesterol. Other studies suggest that increases in fat and cholesterol information led to increased consumption of fresh fruits and vegetables and decreased consumption of meats, eggs, and fats and oils.

What is less clear is whether such food substitutions lead to an improvement in overall nutritional quality of diets. Measures of diet quality, such as USDA's Healthy Eating Index (HEI), have been largely static in recent years (Basiotis et al., 2002). And obesity has continued to rise among all sociodemographic groups (Ver Ploeg et al., 2006). Still, the fact remains that, at any given time, there are wide disparities in diet quality and obesity among consumers. What ERS research and other studies suggest is that differences in nutrition knowledge may contribute to these disparities.

Diet quality is the outcome of numerous small, everyday choices.

An ERS study by Variyam and colleagues (1998), using national data from USDA's 1989-90 Continuing Survey of Food Intakes by Individuals (CSFII), showed that, after controlling for sociodemographic characteristics, meal planners' ability to answer an additional question correctly on a nutrition knowledge scale translated to a 7-percent improvement in average diet quality as measured by the HEI. Variyam (2001) also found that children have a greater likelihood of being at risk for overweight if their parents underestimate their own overweight status.

Lower nutritional literacy and poorer quality diets tend to coexist among low-income individuals. Using the 1994-96 CSFII, Gleason and colleagues (2000) found that high-income adults were 10-20 percent more likely than low-income adults to be able to answer specific nutrition questions correctly. This result may be because of the relationship of income and general education. Educational attainment exerts powerful influence on the acquisition and use of nutrition information. Holding income and other factors the same, a meal planner who completed high school is able to answer one more question correctly on a 27-point nutritional literacy test compared with meal planners who did not complete high school (Variyam et al., 1998). As noted earlier, this translates into a 7-percent improvement in the HEI.

Among low-income adults in the Gleason et al. study, food stamp participants and nonparticipants did not differ significantly in their nutritional literacy. However, these data were collected in 1994-96, before expansion of FSNE efforts. Other research suggests that targeted nutrition education, such as FSNE, may have benefits—particularly if it is designed to teach behavioral skills. Hersey and colleagues (2001) used data from the 1996 National Food Stamp Program Survey to examine the shopping practices and food

purchases of food stamp participants. They found an association between using the kinds of shopping practices taught by FSNE—reading nutrition labels, shopping with a list, etc.—and purchasing a more nutrient-rich mix of foods.

Challenges for Effective Education

These studies indicate that consumers with more nutrition information, including low-income consumers, make more nutritious food choices. However, the studies do not prove that providing nutrition education to Food Stamp Program participants will cause them to change their diets. Not all individuals are equally interested in nutrition information—for some, other factors such as taste, convenience, or price may be more important to their food choices.

Nutrition information programs have to compete with other sources of information, which may stymie their effectiveness. While nutrition education strives to elevate consumers' health preferences, consumers get information from other sources that may conflict, confuse, or elevate the salience of other preferences, such as convenience and taste. Although expenditures for FSNE have risen greatly in the past decade, they are far exceeded by amounts spent on advertising for food, beverages, and candy and for restaurant advertising (fig. 1). Conflicting information, preferences, and priorities are a special problem for diet quality because diet quality is the outcome of numerous small, everyday choices. Positive changes in some choices may be offset by other choices—for example, the healthful breakfast followed by the coffee break treat. These offsetting behaviors may explain the pattern of consumer substitutions among foods with little overall improvement in diet quality. Improving dietary quality is a challenge that requires not only information on the appropriate choice to make, but also guidance and motivation to manage conflicting preferences.

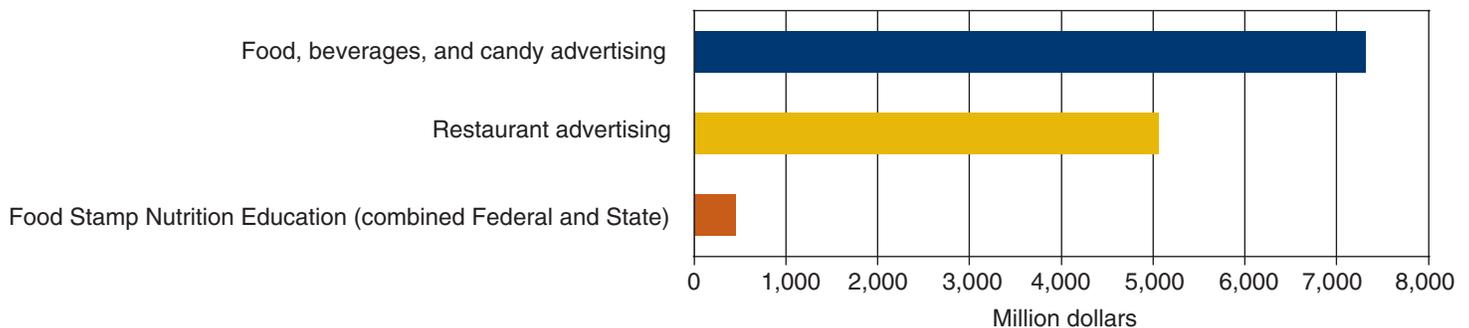
It is important to develop evaluation methods capable of answering the question of whether FSNE, as it exists now, is effective or whether it could be made more effective. A major barrier to answering that question has been the lack of standardized outcome data. The Flexible Consumer Behavior Survey (FCBS), which ERS is sponsoring as an addition to the National Health and Nutrition Examination Survey (NHANES), should provide some help in addressing the basic question of the benefits of nutrition information to food stamp participants. The FCBS includes questions on consumers' diet-related knowledge, attitudes, and behaviors, as well as food stamp participation status, income, and food expenditures. These data, coupled with the dietary quality, measured body weight, and health status data obtained from NHANES, will provide more information on the association between nutrition information and food choices, diet quality, and health in this population. Although these cross-sectional survey data show associations rather than cause and effect, obtaining such data on an ongoing basis will help policy and program officials assess whether progress is being made in educating consumers and improving diets.

This information, although valuable, will not meet all the needs of State FSNE program managers and decisionmakers. The NHANES' costly methods of data collection do not permit a sample size large enough to generate State-level estimates. ERS is working, in close collaboration with FNS and with input from nutrition educators and State FSNE directors, to develop a relatively simple, inexpensive, standardized measure of behaviors associated with dietary quality (Guthrie et al., 2006). This measure could be administered across the United States among adult populations who are eligible for or who are receiving food assistance. As such, it would be a feasible means of collecting sufficient data to generate State-level, other subnational, and national estimates. If we are successful in developing this measure,

Figure 1

Spending on food advertising and Food Stamp Nutrition Education (FSNE), 2005

Although spending on FSNE has grown, it is still dwarfed by food and restaurant advertising



Sources: Advertising spending data: *Advertising Age, Special Report: 100 Leading National Advertisers*, June 26, 2006, accessed at: <http://adage.com/images/random/lna2006.pdf>. Data on FSNE spending: Federal expenditures obtained from Food and Nutrition Service, USDA; total obtained by assuming a 50-percent State funding match.

it could be used to assess progress in improving diets of food stamp participants. It also could be useful in assessing differences in dietary-quality-related behaviors of food assistance program participants at the regional or State level that can guide development and evaluation of more effective nutrition education activities conducted with food assistance program funds.

On a broader front, we need a better understanding of the sustained effectiveness of nutrition information programs. This kind of research requires long-term data on interventions and outcomes. The outlook is encouraging as more such data become available for research. For example, recent ERS research has used several years' worth of data to examine the effect of information provided through nutrition labeling on dietary outcomes, finding positive effects for dietary fiber, protein, and iron intakes (Variyam, 2004).

Finally, research to identify more effective strategies for creating long-term, consistent changes in food choices can enhance the benefits of informational programs. New theories of behavior generated by behavioral economics and consumer psychology suggest promising new approaches that are being more fully explored by ERS researchers.

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