Food Assistance and Nutrition Research Small Grants Program: Executive Summaries of 2000 Research Grants. By Ann Vandeman (editor). Food and Rural Economics Division, Economic Research Service, U.S. Department of Agriculture, Food Assistance and Nutrition Research Report No. 20.

Abstract

This report summarizes research findings from the Food Assistance and Nutrition Research Small Grants Program. The Economic Research Service created the program in 1998 to encourage new and innovative studies of food security, hunger, and public- and private-sector efforts to alleviate these problems among low-income residents of the United States through food and nutrition assistance. The report includes summaries of the second set of small grants, which were awarded for 1-year research projects in the summer and fall of 1999.

Keywords: Food assistance, nutrition

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Preface

The Economic Research Service's Food Assistance and Nutrition Research Program (FANRP) offers small grants to social science scholars to stimulate new and innovative research on food and nutrition assistance and to broaden participation in research on these issues. To administer the program, ERS partners with five academic institutions and research institutes that competitively award grants for 1-year research projects. Most grants are for $20,000 to $40,000. The Small Grants Program seeks to give junior scholars an opportunity to gain experience in conducting food security and food and nutrition assistance research, as well as to encourage more senior scholars to apply their skills and knowledge in these areas.

This report presents summaries of the research findings from the second set of small grants, which were awarded in the summer and fall of 1999. Preliminary findings were presented at a workshop at ERS in Washington, DC, on October 19 and 20, 2000. More information about the Small Grants Program partners and many of the completed research papers can be found on the Web sites of the administering institutions, listed below:

Institute for Research on Poverty, University of Wisconsin

Focus: The effects of food assistance programs on food security, income security and other indicators of well-being among low-income individuals and families.
Web address: *http://www.ssc.wisc.edu/irp/smgrants/smhome.htm*

The Joint Center for Poverty Research, University of Chicago and Northwestern University

Focus: Interactions between food assistance programs and other welfare programs, and the effects of the macroeconomy on the need for food assistance, the level of participation, and costs of food assistance programs.
Web address: *http://www.jcpr.org/*

The American Indian Studies Program, University of Arizona

Focus: The relationship between food assistance programs on reservations and family poverty.
Web address: *http://www.w3.arizona.edu/~aisp/food.html*

The Department of Nutrition at the University of California, Davis

Focus: The impact of food assistance programs on nutritional risk indicators (anthropometric, biochemical, clinical, and dietary), food purchasing practices, and food insecurity.
Web address: *http://www.nutrition.ucdavis.edu/usdaers.html*

Southern Rural Development Center, Mississippi State University

Focus: Food assistance research issues for rural people, families, and communities in the South.
Web address: *http://www.ext.msstate.edu/srdc/activities/food.htm*

Food Assistance and Nutrition Research Small Grants Program

Executive Summaries of 2000 Research Grants

Ann Vandeman, Editor

Introduction

Federal food and nutrition assistance programs—food stamps; the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); the school meals programs; and others—have been a major component of public assistance to the poor since their origins in the 1930s. Welfare reforms enacted in the mid-1990s increased the prominence of these programs in the social safety net for low-income households, and increased the demand among policymakers for accurate information on and a better understanding of program performance. The U.S. Department of Agriculture (USDA), as the Federal agency charged with administering food and nutrition assistance programs, has a particular interest in monitoring their effectiveness in alleviating food insecurity and contributing to the Federal policy goal of a healthy, well-nourished population.

In 1998, USDA's Economic Research Service (ERS) responded to the new public assistance environment and new information needs by creating the Small Grants Program for Food and Nutrition Assistance Research. The purpose of the program is to stimulate new research on food and nutrition policy issues and to broaden the participation of social science scholars in the research effort. Grant recipients come from a number of disciplines and employ a variety of approaches in their research. They include economists, sociologists, nutritionists, anthropologists, and public health professionals. Some conduct exploratory research using ethnographic methods to examine underlying factors influencing program participation and outcomes. Others use descriptive statistics to characterize the populations of interest. Still others use statistical models to analyze program behavior. All the methods employed contribute to a growing body of knowledge on the food needs, coping behaviors, and food program outcomes of low-income families and individuals.

Small Grants Program Partners

ERS created partnerships with five academic institutions and research institutes to administer the Small Grants Program. Partner institutions have the advantage of being prominent members of the research community and being closer to the particular regional and State environments that influence program delivery and outcomes. ERS chose two of the five partner institutions for their experience in conducting policy-relevant poverty research at the national level and their ability to attract prominent scholars from a variety of social science disciplines to work on poverty and hunger issues. One of these is the Institute for Research on Poverty at the University of Wisconsin (IRP). IRP has a distinguished history of research and policy evaluation, including previous involvement in administering small research grants funded by the USDA's Food and Nutrition Service. The second partner is the Joint Center for Poverty Research (JCPR) at the University of Chicago and Northwestern University. JCPR was established in 1996 with a grant from the U.S. Department of Health and Human Services (HHS) to conduct and fund research and to advise Federal policymakers on issues of poverty. Its existing small grants program with HHS and the Census Bureau served as a model for the ERS Small Grants Program.

ERS chose the remaining three of the five partner institutions for their ability to direct research either on a particular subset of food assistance and nutrition issues or on a particular subpopulation of those eligible for

food and nutrition assistance who were of policy interest to USDA. Among these, the Department of Nutrition of the University of California, Davis (UC Davis) brought to the Small Grants Program its expertise in nutrition education design and evaluation. A core group of faculty there focuses research efforts on identifying meaningful approaches to nutrition education development and evaluation for ethnically diverse, low-income families served by a variety of food assistance programs. They view multidisciplinary research as critical to effectively monitoring the outcomes of nutrition programs.

The Southern Rural Development Center (SRDC) was chosen to administer small grants because of its expertise in, and commitment to, conducting research on the problems of the rural poor in the South and its particular commitment to studying the effects of welfare reform on this population. USDA has special ties to the SRDC because of the land-grant status of the center's member institutions. The South is also of particular interest to USDA because of the large proportion of rural poor and rural African Americans who reside in the region.

American Indian families living on reservations are a significant component of the low-income rural population in many of the Western and Plains States. ERS chose the University of Arizona's American Indian Studies Program (AISP) to administer small grants for research on the food assistance and nutrition needs and problems of American Indians. AISP is the home of the only doctoral program in American Indian Studies in the country. The program maintains close ties to the tribal colleges, which were given land-grant status by Congress in 1994.

Research Overview

This year's research projects cover four broad topic areas. The first of these is food security. The development over the last several years of a widely accepted and consistent food security measure is making it possible to monitor changes in the food security status of U.S. households and individuals, and to examine the impacts of economic change and policy interventions on food security. Two of the research projects reported in this section consider food sufficiency status (a more narrowly defined concept than the USDA food security measure), assessing its relationship to physical and mental health in one case (Siefert et al.) and to nutrient intakes in the other (Connell et al.). The other two projects take up issues of food security measurement. Derrickson summarizes her research and recommendations on the use of the food security measure in Hawaii, and Palmer Keenan et al. examine the potentially unsafe means by which some families and individuals maintain food security.

A second topic area concerns nutrition and food assistance programs. In this group, Kraak et al. examine low-income women's attitudes and beliefs about nutrient supplement use and the implications of allowing the purchase of supplements with food stamps. Cason et al. examine the effect of nutrition education on nutrient intakes and food sufficiency among food stamp recipients and low-income nonrecipients. Marquis et al. consider the effects of food stamp receipt and acculturation on the diets and health of adult Hispanic Americans. The diets of Navajo preschool children are the focus of research conducted by Pareo and Bauer, in which they measure nutrient intake among children participating in the Head Start program. Perez-Escamilla and Haldeman investigate how low-income households use food labels and their knowledge of nutrition in conjunction with food stamps to affect diet quality.

The use and performance of public food assistance programs are the focus of the third topic area. Davis et al. confront the complex barriers to food assistance program use and achieving food security for residents of the Northern Cheyenne reservation. Mills et al. look for economic and programmatic explanations of Food Stamp Program exits among single female-headed families, some of whom are leaving the Temporary Aid to Needy Families (TANF) program but remain eligible for food stamps. Swenson et al. analyze the determinants of food stamp caseload changes in Texas, comparing the dynamics of caseloads in metro and nonmetro counties in that State. Brien and Swann examine the joint effects of participating in WIC, the Food Stamp Program, and Aid to Families with Dependent Children (AFDC) on birth outcomes, where previous research has focused on the impact of WIC alone.

A final study occupies the fourth topic area of private food assistance. In this, Bartowski and Regis take a critical look at faith-based private food assistance and the Charitable Choice option, whereby States may contract with local charitable organizations, including churches, to provide social services.

Executive Summaries

Food Security

Food Insecurity and Welfare Reform

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Despite economic growth over the past decade, a number of studies have found that food insecurity and hunger are significant and ongoing problems in the United States, and welfare reform has raised concerns about possible increases in their incidence among poor women and children. In 1998, an estimated 3.6 percent of all households were hungry. Poor single mothers, particularly those who are Black or Hispanic, are at especially high risk: almost a third of food-insufficient individuals live in single-woman-headed families with children. In 1998, 10.4 percent of single-woman-headed households, 8.2 percent of Black and 6.7 percent of Hispanic households, were hungry.

Recent research also has shown that an inadequate household food supply is significantly associated with low energy and low nutrient intakes. Yet few of the studies monitoring welfare reform consider its health consequences, and little is known about the health status of recipients since the passage of welfare reform. Siefert, Corcoran, and Heflin take on these issues in their investigation of the prevalence and correlates of food insufficiency and its effects on physical and mental health.

The authors use data from two waves of the Women's Employment Study, a panel survey of 753 mothers who were receiving cash assistance in an urban Michigan county in February 1997. Staff of the Survey Research Center at the University of Michigan Institute for Social Research collected the data in face-to-face, in-home, structured interviews between August and December of 1997 and again in 1998. Survey respondents were single, female U.S. citizens between 18 and 54 who claimed a racial identity of non-Hispanic White or African-American. The study uses the same definition of food insufficiency as the NHANES III, sometimes or often not enough food to eat, which is narrower than the USDA definition of food insecurity.

Food insufficiency rates were high in their sample: 35 percent of the current and former welfare recipients were food insufficient at some time during the study. Women over age 35 and those on welfare for 7 or more years were more likely to report food insufficiency in both 1997 and 1998. Women working fewer than 20 hours a week and those lacking a high school education were more likely to report food insufficiency in one or both years. The authors also found a relationship between being sanctioned while on welfare and experiencing temporary or recurrent food insufficiency. More than a quarter of the women who were food insufficient in both years and more than a third of those who were food insufficient in 1998 reported having been sanctioned by having their welfare benefits reduced.

Women who reported food insufficiency were also more likely to report limitations in physical functioning, to rate their overall health as fair or poor, to meet the diagnostic screening criteria for major depression, and to lack a high sense of mastery or control over their lives. Using logistic regression analysis and controlling for baseline health status, individual characteristics, and risk factors known to influence health, the authors found that persistent food insufficiency significantly predicted fair or poor self-rated health and lack of a high sense of mastery. Women who were food insufficient only in 1998 were also significantly more likely to meet the criteria for major depression, and less likely to report a high sense of mastery, than food-sufficient women in the sample.

The authors argue their findings are noteworthy because self-rated health is a well-validated predictor of subsequent mortality and morbidity. Their results suggest that preventing food insufficiency may lower

the risk of major depression, which is significantly associated with failure to move from welfare to work. A strong association between food insufficiency and lack of a high sense of mastery also indicates that good nutrition may be a critical factor in socioeconomic success as well as in health.

Although the authors caution that limitations of measurement and self-reported data must be considered in interpreting the results of their research, their findings add to growing evidence that household food insufficiency can adversely affect physical and mental health. They also find that the effects are not permanent if food insufficiency is short-term, implying that timely nutritional intervention may prevent or reverse adverse health effects.

Summary of 3 Years of Food Security Measurement Research in Hawaii

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Food security has been defined as "Access by all people at all times to enough food for an active, healthy life." In 1997, the Federal Government released the first national food security measure, called the Core Food Security Module (CFSM). The 18-item CFSM is designed to measure the extent and severity of household food insecurity over 12 months. It actually consists of two measures: a scale measure based on Rasch item-response theory, and a categorical measure. The categorical measure is used to estimate the prevalence of household food insecurity and hunger. Each respondent's sum of affirmative responses is used to categorize households: zero to 2 affirmative responses yields classification as food secure. For households with children, 3 to 7 affirmative responses leads to a categorization of food insecurity without hunger, 8 to 12 affirmative responses as food insecurity with moderate hunger, and 13 or more affirmative responses as food insecure with severe hunger. A subscale of six food security items has also been proposed as a food security monitoring tool. Derrickson, who received small grants in 2 consecutive years to conduct research on food security in Hawaii, has consolidated her findings and presents her recommendations here. The practical outcome of her research has been to develop an effective food security monitoring tool for use in Hawaii.

Derrickson used five samples and various methodological approaches to study food insecurity measurement in the ethnically diverse State of Hawaii, as follows:

1. A qualitative study assessing the conceptual framework of the CFSM with Caucasian, Filipino, Hawaiian and Part-Hawaiian, and Samoan charitable food recipients (n=61);
2. A pilot stability study of recent recipients of charitable food who completed the CFSM over the phone twice (n=61);
3. A series of quantitative studies used to assess the scale measure, the categorical measure, and the individual-level CFSM; this sample consisted of 1459 respondents from the 1998 Hawaii Health survey (a statewide telephone survey) and 206 charitable food recipients;
4. A qualitative study examining (1) definitions of food insecurity and hunger, (2) how hunger should be measured, (3) interpretations of reports on the CFSM and an alternative Face Valid Food Security Measure (FVFSM), and (4) the value of specific indicators among food security stakeholders in Hawaii (a sample of 19 WIC nutritionists, 10 food pantry providers, 4 foodbank board members, 4 social workers, 3 legislators, and 3 providers of food to the homeless); and
5. A statewide "food security monitoring pilot study" that used six of the CFSM indicators (n=4351).

Derrickson compared her findings to outcomes of previous food security research and to the CFSM technical research report released in 1997. Her study is the first comprehensive, independent assessment of the CFSM. She found that:

- The CFSM yields valid and reliable scale measures among Asians and Pacific Islanders in Hawaii, except possibly with American Samoans (n=18).
- The CFSM is a "face valid" measure of food security among Asians and Pacific Islanders in Hawaii.
- The CFSM categorical algorithm appears to yield inconsistent results: 27 percent of 111 households identified as food secure with one or more affirmative responses replied affirmatively to the "Unable to afford to eat balanced meals" item; only 50 percent of 64 households classified as experiencing moderate hunger responded affirmatively to "Respondent hungry" item.
- There is a need to reduce the response burden of the 18-item measure for hungry households with children.
- An alternative "face valid" categorical algorithm provided a more sensitive way to categorize affirmative responses. The alternative would classify those respondents with one affirmative response as "at risk of hunger" and those who responded affirmatively to either the "respondent hungry" item or the "adults didn't eat for a whole day" item as "adult hungry." Those who responded affirmatively to the "children hungry" item were classified as having

"child hunger" under this alternative. Compared to the CFSM, this algorithm classifies a lower percentage of households as food secure, but a similar percentage as hungry.

- An alternative "simple food security monitoring tool" based on the "face valid" algorithm had strong Rasch goodness-of-fit statistics and was more consistent with the information desired by food security stakeholders in Hawaii than the recommended six-question food security subscale. It estimates the number of households experiencing "food anxiety," hunger among adults and hunger among children, and can be used to approximate the CFSM. A similar tool was used in the Hawaii Health Survey 1999 study.

Derrickson derives a number of recommendations from her findings. First, she recommends continuing ongoing food security research efforts that: (a) examine the robustness of the CFSM across diverse population groups; (b) develop simple measures of individual-level hunger; (c) develop measures of duration of household food insecurity and individual hunger among adults and children; and (d) develop and use shorter tools that effectively capture what policymakers and food assistance program managers need to know to ameliorate household food insecurity in their local communities.

Her second set of recommendations suggests reassessing fundamental aspects of the national food security monitoring tool, including: (a) the intended purpose of food security monitoring and the definitions used; (b) the importance of measuring "food insecurity" vs. "food insufficiency"; (c) the psychological element of food insecurity (i.e., Q2 "worried"); (d) adding items to the scale measure that confirm food security; (e) the wording of the general balanced meal indicator, "unable to afford to eat balanced meals"; and (f) the "face" (i.e., content) validity of the CFSM categorical measure.

Third, she urges support for local and State food security monitoring, using a simple food security measurement tool. Derrickson suggests that monitoring be used to identify the best survey methods for ensuring the accuracy of household food security prevalence data and for screening "at risk" households.

Derrickson cautions that prudence be used when extending findings to ethnic groups and areas not studied. She argues that her findings support the need for further assessment of the purpose of food security monitoring. Future research should address effective use of food security monitoring at the State or local level to achieve the Healthy People 2010 food security objective, and ultimately to end resource-constrained hunger in the United States.

Nutrient Intakes of Food-Insufficient and Food-Sufficient Adults in the Southern Region of the United States and the Impact of Federal Food Assistance Programs

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In this study, Connell et al. examined food insufficiency, nutrient intake, and food and nutrition assistance program participation among a Southern population using NHANES III data. Five research questions guided their analysis:

1. Do food-insufficient adults have significantly different nutrient intakes than food-sufficient adults after controlling for other influences such as education level, smoking status, age, gender of the household head, and body size?
2. What is the association between food insufficiency and nutrient intakes among these adults?
3. Are there significant differences in the nutrient intakes of food-insufficient adults based on participation in food assistance programs after controlling for other influences?
4. Does the number of food assistance programs influence nutrient intake?
5. What is the association between participation in food assistance programs and nutrient intakes among these adults?

Previous studies of the impact of food insecurity and hunger on food and nutrient intakes, using both primary and secondary data, have revealed lower intakes of several nutrients among women of childbearing age, the elderly, poor Caucasian women in the Northeast, and low-income Canadian women. However, little has been done to define the food insecurity-related nutritional problems of specific regions of the United States such as the South. The authors argue that factors unique to the South, and to particular regions within the South, warrant the investigation of the effects of food insecurity on nutrient intake in this region. In addition, no published studies have attempted to determine the impact of food assistance programs on the nutrient intakes of individuals from food-insecure households in the South.

Connell et al. used data on adults 18 years and older, residing in the Southern region of the United States, for their analysis. They classified individuals as food insufficient if the household food supply was reported as "sometimes" or "often" not enough to eat (n=456, or 6.3 percent of the sample). To examine differences in nutrient intakes between demographic groups and to determine the effect of food sufficiency status and participation in food and nutrition assistance programs on nutrient intakes, they used several statistical techniques, including tests for differences in means, analysis of variance, and multiple regression.

The authors found significant demographic differences between food-sufficient and food-insufficient adults in their sample. Those most often reporting food insufficiency were young, non-White, had low levels of formal education, lived in female-headed households, or participated in only one food/nutrition assistance program.

Food-insufficient adults not participating in any food assistance programs had significantly higher incomes than program participants did. Adults with more formal education were less likely to participate. Adults in female-headed households were most likely to participate in two programs; adults over 60 were least likely to participate in any food assistance programs. Significantly lower intakes of four nutrients were found among those participating in only one food assistance program compared with those not participating, but not between those participating in one program vs. two programs or in two programs vs. no program.

The authors found a significant positive relationship between food insufficiency and percent of total calories from carbohydrates. They found a significant negative relationship between food insufficiency and intakes of 10 nutrients. Intakes of two nutrients increased with program participation.

Connell et al. caution that because the NHANES survey is intended to be nationally representative, their ability to generalize results to the Southern region is limited. In addition, regional differences in diet may

not be well represented in the data because the Southern sample was drawn only from sites in Florida and Texas. However, their findings generally agree with those of other studies using national survey data (for example, lower intakes of some nutrients among the food insufficient). Two exceptions are a higher percentage of calories supplied by carbohydrates in the sample as a whole, and a positive relationship between food insufficiency and percent of calories from carbohydrates. The authors suggest that future research investigate whether these results are influencing micronutrient intakes in the Southern population. Higher sodium intake found among program participants also deserves further investigation due to the possible adverse effects of high-sodium diets on health.

Connell et al. argue their findings emphasize the importance of food and nutrition assistance programs in continuing to promote access to affordable and nutritious food for low-income families. In addition, continued emphasis on nutrition education, such as that provided by WIC and the Family Nutrition Program, may help to improve food choices and therefore nutrient intakes. The authors suggest this will be a fruitful area for behavioral, educational, and program evaluation research in the future.

Practices Used by Limited-Resource Audiences To Maintain Food Security

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The purpose of this project was to determine whether limited-resource individuals are using unsafe practices to maintain food security. The answer has implications for how we define food security. Keenan et al. argue that people who frequently rely on unsafe practices to obtain food should not be considered food secure, and that therefore such practices should be measured explicitly in food security surveys. The USDA food security module to the Current Population Survey, used to construct State and national estimates of food insecurity, does not include information on how food is obtained.

Most of the literature on food acquisition practices among limited-resource audiences identify only conventional cost-cutting strategies—buying in bulk, using coupons and price club stores, buying food on sale, going to different supermarkets to get the best deal, and making a grocery list before shopping. These are practices used in traditional shopping venues. However, Olson, Rauschenback, Fonillo, and Kendall found that women from rural New York regularly obtained food from other sources, such as from hunting, fishing, gardening, and getting eggs, milk, and meat from relatives and friends. Ahuluwalia, Dodds, and Baligh identified food acquisition practices that threatened the health or well-being of low-income families, including delaying bill payment, skipping meals to provide food for children, and locking refrigerators and cabinets to ration food. Other studies have reported men committing crimes so they will be sent to jail, where they will have food and shelter; women stealing food for their children; and low-income men and women buying food on credit, selling blood or possessions, eating pet food, and engaging in prostitution, theft, or other illegal activities for food and money.

The research team conducted semistructured, indepth interviews with professionals (n=18) and paraprofessionals (n=33) at Rutgers Cooperative Extension Expanded Food and Nutrition Education Program (EFNEP) and Food Stamp Nutrition Education Program (FSNEP) who had worked as nutrition educators for at least 6 months. They asked educators to describe stories they had heard from limited-resource individuals regarding how they maintained food security. Questions included common ways, surprising ways, illegal ways, and ways people obtained food that appeared "unsafe." They also asked educators if and how food was "set aside" for particular household members.

The interviews revealed a number of strategies and practices used to maintain food security, including relying on community resources for food, informal support systems, increasing financial resources, lowering food costs by planning food shopping, managing food supplies, and regulating eating patterns. Specific practices included:

Relying on Community Resources for Food

- Using public food assistance (WIC, food stamps, etc.), community programs (food pantries), and help from private individuals (soup kitchens in people's homes)
- Going to restaurants and stores for free food (happy hours, free samples in stores, bakeries)

Using Informal Support Systems

- Trading forms of public assistance; selling surplus food (e.g., a turkey that cannot be stored), WIC formula, free food obtained from an employer or friend working in a store or fast food establishment; or using stolen meat to buy other food
- Asking friends or relatives for food or money; eating at others' homes

Increasing Financial Resources

- Augmenting income by begging, earning unreported income, engaging in illegal activities, providing foster care, gambling, or pawning or selling possessions
- Decreasing expenses by using multiple food pantries; hunting (e.g., deer, squirrels, turkeys, ducks); fishing (safe and unsafe waters, legally and

illegally); collecting discarded food from dumpsters; butchering animals; gardening

- Managing resources by budgeting; establishing store credit; planning payment of bills
- Moving to be closer to public assistance or better employment opportunities
- Moving to an abandoned building, living with others, or moving to less expensive housing
- Using cash assistance programs (TANF, General Assistance, SSI) to increase income
- Using subsidy programs to decrease expenses, for example, subsidized housing

Lowering Food Costs by Utilizing Shopping Plans

- Buying food from discount stores, street vendors, private individuals (including expired or stolen food), or questionable stores (stores that carry only dented cans, meat trucks)
- Shoplifting or switching price tags on foods
- Shopping for bulk foods, dented cans, expired food, inexpensive foods like Ramen noodles, nearly expired foods, and coupon and sale items

Managing Food Supply

- Removing slime from lunch meat, mold from cheese, mold and/or insects from grains, and spoiled parts from fruits and vegetables; diluting foods (stews, casseroles, soups, infant formula, juices, and milk)
- Rationing food by locking up or hiding, labeling with names, regulating amount eaten
- Preserving food by canning or freezing/refreezing
- Conserving by taking leftovers home from soup kitchens, senior dining sites, nutrition education sites, church

Regulating Eating Patterns

- Going without food ("go hungry," "fast," "starve"); limiting amounts or helpings; limiting number of eating occasions (skip meals, live off meals at soup kitchens, schools); depriving self of food (parent for child, young women for men, woman for spouse, men for women, teens eating only at school to save food at home for younger children)
- Overeating when food is available (e.g., shelter residents overeating before leaving the shelter)
- Eating from questionable food sources, such as: canned dog food instead of meat; nonfood items (paper); expired food; leftovers; food received from pantries; rancid soy flour
- Eating food left behind on other people's plates, road kill, and free samples
- Cycling monthly eating patterns, for instance, eating fresh food first and canned and packaged goods later; limiting variety at the end of the month

Many practices identified were quite ordinary; others were alarming. Keenan et al. suggest that future work confirm their list of practices and seek more examples and insights from limited-resource audiences to learn how they maintain food security. They also suggest future work to determine the prevalence of various practices that are indicative of food insecurity, and to identify practices unique to at-risk populations. Finally, unsafe practices such as rinsing the slime off meat and eating foods from dented cans need to be assessed for their food safety risk relative to each other and to the risks of food insecurity and hunger.

Food, Health, and Nutrient Supplements: Beliefs Among Food Stamp-Eligible Women and Implications for Food Stamps Policy

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Several U.S. professional organizations that develop research-based dietary recommendations for the public support the position that most nutrients can and should be obtained by eating a balanced diet. In contrast to these recommendations, supplement use by the public is a growing trend. Recent legislation has considered allowing the purchase of nutrient supplements with food stamps, but little is known about nutrient supplement use among low-income Americans. This qualitative study investigated the attitudes and beliefs of an ethnically and regionally diverse sample of food stamp-eligible women concerning the relationship between food, health, nutrient supplementation, and associated lifestyle factors. The research team conducted semi-structured interviews with 72 women from New York City, Fort Smith, Arkansas, and San Francisco, San Jose, and Oakland, California. They interviewed approximately equal numbers of African-American, Asian, Hispanic, and White women in each site.

The authors report that the majority of women in their study held general philosophies about nutrient supplementation that were influenced by a variety of factors. These factors included their views about the nutritional adequacy of food by itself, the feasibility of achieving a healthful diet, personal health status or special needs, perceived benefits of supplements, personal experience (positive or negative) with taking supplements in the past, and their concept of what constitutes a supplement. The women's philosophies appeared malleable and/or negotiable, depending upon the degree of self-reflection, the clarification of existing information, the addition of new information, and changes in health status or income.

Many of the women interviewed view supplements as something that could replace or substitute for a healthful diet, but the sample was divided over the desirability of using supplements in this way. Most women acknowledged the difficulties of maintaining a healthful diet for themselves and their families, in part for reasons beyond their control, and they view supplements as a practical way to compensate. A smaller group expressed concern that not all dietary needs can be met in this way and that some people may not make wise decisions if the policy is changed. However, the majority feel this decision should be left to food stamp recipients themselves.

While the interviews revealed a strong preference on the part of food stamp-eligible women for changing the policy on supplement purchase, the authors point to some countervailing considerations. Specifically, they argue that the health benefits of a policy change may be quite limited because dietary deficiencies are rare in this population; that the potential exists for an unintended decline in the quality of food intake; and that there are imperfections and asymmetries in the information available on supplements and healthy eating.

The authors conclude that their findings suggest adopting a broad set of criteria in considering supplement-related policies for the Food Stamp Program, including anticipated impacts on food access, health promotion, and personal autonomy. They also recommend using a broader set of strategies to improve the nutritional health of the food stamp-eligible population.

A Comparison of Demographic Variables, Food/Nutrient Intakes, Level of Food Sufficiency, and Food/Nutrient Changes with Intervention Among Food Stamp Recipients and Nonrecipients in South Carolina, Tennessee, and Virginia

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The nutritional status and food sufficiency of low-income individuals and their relationship to individual, dietary, and environmental factors are not well understood, but they are basic to improving the health and well-being of low-income individuals and families. In this study, Cason et al. examined the effects of food assistance receipt, nutrition education, and mother's workforce participation on the dietary patterns of rural households in South Carolina, Tennessee, and Virginia. They used food and nutrient intake data collected from 6,969 participants in the Expanded Food and Nutrition Education Program (EFNEP) and 3,552 Food Stamp Nutrition Education Program (FSNEP) participants in the three States during 1999/2000. They compared food stamp recipients with nonrecipients on relative dietary adequacy, recommended food-related behaviors, and other factors.

EFNEP and FSNEP are nutrition education programs targeted to low-income families and youth that teach how to make healthy food choices, prepare food safely, and manage resources to reduce food insecurity. EFNEP focuses on nutrition education for families with children; FSNEP focuses on education for families eligible for food stamps and serves food stamp recipients and nonrecipients. The Extension Service administers EFNEP and FSNEP programs at each university. Subjects in this study were participants in EFNEP or FSNEP at Clemson University in South Carolina, The University of Tennessee, and Virginia Tech. To be included in the study, participants must have received education targeted to adult learners.

Demographic Comparisons

- The EFNEP group was 57 percent White, 40 percent African-American, and 3 percent Hispanic. Most (78 percent) were 19-50 years of age; another 18 percent were 18 years old or younger. The mean monthly income (not including the value of food stamps) was $378, with 65-year-olds reporting the highest monthly incomes ($437) and those 18 and under reporting the lowest ($126). Food stamp recipients reported lower monthly incomes ($349) than nonrecipients ($649). Participation in the Food Stamp Program varied by age group. It was highest among 19-50 year olds (57 percent) and lowest among those 18 and under (22 percent).
- The racial and ethnic composition of the FSNEP group was similar to the EFNEP group, with a slightly larger percentage being African-American and a smaller percentage White. Most were either 65 years old or older (48 percent) or between 19 and 50 years old (34 percent). Monthly incomes were similar as well, except that those 18 and under had a higher average monthly income than the youngest EFNEP group ($293). Food stamp participation rates were the same as for the EFNEP group among 19 to 50 year olds (56 percent), but higher than for the EFNEP group among those 18 and under (35 percent).

Food Security

- ***South Carolina*—**Twenty-nine percent of all South Carolina EFNEP and FSNEP households were food insecure during the 12 months ending in August 2000. Nearly 12 percent had one or more household members who were hungry due to inadequate resources for food at some time during the year.
- ***Tennessee*—**The authors found significant, but weak, associations between receiving food stamps and cutting the size of children's meals or adults cutting or skipping meals because there was not enough money to buy food. They also found that families on food stamps, particularly those living in farm and rural areas and in central cities, were more likely than nonrecipients to report running out of food before the end of the month with no money to buy more and being unable to afford balanced meals.

Diets and Food-Related Behaviors Before Nutrition Education

- ***EFNEP Participants*—**A comparison of the food and nutrient intakes of food stamp recipient and nonrecipient households revealed that food stamp recipients consumed more meat (2.3 versus 2.0 servings), less milk (1.2 versus 1.4 servings), and more fat (71.7 versus 67.9 grams) than nonrecipients. A comparison of responses to a 10-question food behavior checklist revealed significant differences for 4 of the 10 behaviors. Food stamp recipients more often reported planning meals ahead of time (20.3 percent versus 18.7 percent) and running out of food before the end of the month (10.3 percent versus 8.2 percent). Food stamp recipients were less likely than nonrecipients to report refrigerating meat and dairy foods within 2 hours of serving (45.7 versus 47.9 percent) and thawing frozen food correctly (34.0 versus 37.5 percent).
- ***FSNEP Participants*—**In this group, food stamp recipients consumed more fat (62.4 versus 56.3 grams) and had higher energy intakes (1,565.7 versus 1,490 calories) than nonrecipients. Food stamp recipients were less likely to report practicing food safety behavior by properly thawing frozen food than nonrecipients (33.7 versus 44.8 percent). Also, a lower percentage of food stamp recipients reported using the "nutrition facts" on food labels to make food choices (9.9 versus 14.9 percent).

Diets and Food-Related Behaviors After Nutrition Education

- ***EFNEP Participants*—**The authors found significant increases among food stamp recipients and nonrecipients for all food and nutrient intakes measured at the completion of nutrition education. However, they note that significant increases in servings of fats/sweets and in the total amount of fat may represent undesirable changes. Following nutrition intervention, recipients increased their intake of fruit and vitamin C significantly above that of nonrecipients. In South Carolina and Virginia, all EFNEP graduates made improvements in several food and nutrition-related behaviors following intervention. A greater percentage planned meals ahead of time, compared prices when buying food, reported running out of food before the end of the month less often, shopped with a grocery list, refrigerated meat and dairy foods within 2 hours of serving, thawed frozen food correctly, thought of healthy food choices when deciding what to feed their families, prepared foods without adding salt, and ate something in the morning within 2 hours of waking. Graduates who received food stamps were more likely to thaw frozen food correctly than nonrecipients were.
- ***FSNEP Participants*—**Unlike the EFNEP participants, following intervention, FSNEP clients did not appear to make the undesirable increases in fats and sweets while they increased other dietary components. Food stamp recipients significantly increased their intakes of vitamins A and B6 compared with nonrecipients. FSNEP graduates also made improvements in food and nutrition-related practices. A greater percentage of all FSNEP participants planned meals ahead of time, compared prices when buying food, reported running out of food before the end of the month less often, shopped with a grocery list, refrigerated meat and dairy foods within 2 hours of serving, thawed foods correctly, thought of healthy food choices when deciding what to feed their families, prepared foods without adding salt, used "nutrition facts" on food labels to make food choices, and ate something in the morning within 2 hours of waking. Food stamp recipients differed from nonrecipients after intervention only in that they were less likely to eat something in the morning within 2 hours of waking.

Cason et al. note that although food stamps increase food purchasing power, they do not appear to ensure consumption of nutritionally adequate diets. They did not find substantial differences in the diets of food stamp recipients and nonrecipients at the time they enroll in EFNEP and FSNEP. They found food insecurity and hunger among both groups, and they found few differences between the groups after nutrition education. However, both groups consumed more nutritious diets and improved their food-related behaviors when they received nutrition education.

One goal of the Food and Nutrition Service is to help food stamp recipients bring their food choices and food preparation practices more in line with broadly accepted recommendations for healthful eating. Butler and Raymond (1996) indicated that adequate income was no guarantee of adequate nutrition, and reported that "even rudimentary knowledge of nutrition can increase nutrient intake considerably." The results of this study suggest that low-income individuals do benefit from the nutrition education provided through EFNEP and FSNEP.

Cason et al. conclude that all food stamp recipients would benefit from a long-term, sustained nutrition education program, which would complement the income subsidy provided by food stamps. Without such a program, they argue, access to supplemental food through food stamps may not promote healthier diets or reduce disease risks. They recommend that food stamp recipients be enabled to make healthy food choices by increasing their nutrition knowledge and their awareness of increased health risk from inadequate or excessive food intakes.

The Effect of Acculturation, Social Integration, and the Food Stamp Program on Diet, Nutritional Status, and Food Insufficiency in the Adult U.S. Hispanic Population

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This study examined the determinants of dietary adequacy, nutritional status, and food insufficiency among Hispanic Americans residing in the United States between 1988 and 1994. The authors focused on how acculturation, social integration, and Food Stamp Program participation influenced these nutritional outcomes. The results provide a foundation for future research on health, dietary behaviors, and food insecurity of U.S. Hispanics. In addition, these results can assist public and private food assistance and social service programs in providing services to improve the health, nutritional status, and food security of low-income, marginalized populations.

A primary goal of Healthy People 2010 is to decrease the health disparities that exist between population groups in the United States. Hispanic Americans have higher rates of overweight and obesity than non-Hispanic Whites, reaching 42 percent among adult Hispanic women. Rates of some nutrition-related chronic diseases, such as diabetes, are several times higher among Hispanics than the general adult population. The determinants of dietary patterns and disease outcomes are complex. Cultural norms often support a healthy diet. However, low income, poor education and language skills, and a lack of social support, among other factors, may undermine traditional dietary patterns. In addition, lack of nutrition and health services may place this population at increased risk of poor nutritional status, disease and disease-related complications, and mortality.

The authors use the NHANES III sample for their analysis, including data on a total of 5,787 Hispanic individuals. The outcome variables of interest include dietary intake, food insufficiency, and body mass index. Explanatory variables for these outcomes included acculturation (language used at home, birthplace, and age at arrival in the United States), social integration (communication with social partners and participation in church or club), food stamp receipt, and individual and household characteristics.

Most sample individuals were married and lived in metropolitan areas. One-fifth of sample households were female-headed. Almost half of the sampled adults completed high school, but 15 percent had no formal education past fifth grade. The distribution of income was nearly bi-modal, with most adults living in households with incomes of less than 130 percent (43 percent of adults) or more than 185 percent of poverty (42 percent of adults). Almost one-fifth of households received food stamps at the time of the interview.

Nine percent of adults stated that they sometimes or often did not have enough to eat. Fourteen percent had cut the size of an adult's meal and 8 percent a child's meal because of a lack of money to buy food. Households receiving food stamps were more likely to report not having enough food and cutting the size of adults' and children's meals than nonrecipient households, even when controlling for income.

Among individuals with incomes of less than 185 percent of poverty, less acculturation (i.e., a later age at arrival in the United States) was associated with a better diet. For individuals arriving as adults, both the percent of energy as fat and saturated fat met Dietary Guidelines recommendations. These percentages increased, however, as time in the United States increased. Among those with incomes greater than 185 percent of poverty, Spanish-speaking individuals who came to the United States as children had the poorest quality diets (highest intakes of energy, protein, cholesterol, sodium, and percent of energy as saturated fat). A later age at arrival was associated with a decreased intake of grains but increased intake of fruits and lower percentage of energy intake as fat and saturated fat.

In regression models, the acculturation variables often acted independently. Spanish language was associated

with lower intakes of energy, vitamin A, percent energy as fat, and an improved diet. Arrival in the United States as an adult was negatively related to percent of energy as fat and saturated fat and to body mass index. Spanish-speaking individuals who came to the United States as adults had higher intakes of folate and vitamin A. These results again show less acculturation was associated with a better diet. Socioeconomic status showed little association with dietary outcomes, suggesting that economic effects may be captured by other factors.

Social integration and use of food stamps also influenced some nutrition outcomes. Church attendance was associated with increased cholesterol and percent energy as fat, and a poorer quality diet. However, no-involvement in either church or clubs was associated with lower intakes of energy calcium, folate, and vitamin A. Living in a household that received food stamps was associated with a small increase in intakes of energy, protein, sodium, and zinc. However, BMI was also higher for individuals in food stamp households.

Finally, the authors found increased risk of food insufficiency among those with less than a high school education, less social integration, low incomes, and food stamps receipt. Risk factors for adult meal size reduction included low education, low income, and employment in agriculture. Cutting the size of a child's meal was related to low income, early age at arrival in the United States, and weak-to-low social integration. These results demonstrate the importance of education and income and the probable role of social networks in combating hunger and food insecurity.

This study demonstrates that within the Hispanic population, acculturation, social integration, and Food Stamp Program participation affect diet, nutritional status, and food insufficiency. Other factors were also important. Intakes of calcium and folate were generally very low, demonstrating widespread deficiencies of these nutrients in the Hispanic population at the time of the study. Less acculturation was associated with lower fat intakes, which is important in the fight against obesity and chronic diseases. Low income was a strong predictor of food insufficiency; being foreign-born also increased the risk of child hunger. Although the effects of socialization were less strong, they suggest that being integrated into the community is associated with better dietary outcomes. Food stamp receipt was associated with food insufficiency; however, further research would be necessary to determine causality. The authors conclude that food and nutrition assistance outreach should encourage individuals and their social networks to maintain traditional dietary patterns, as these were generally healthier.

Monitoring the Nutritional Status of Navajo Preschoolers

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The purposes of this project are to determine the nutritional status of Navajo preschoolers and to document the impact of recent food assistance changes on the nutritional and socioeconomic well-being of Navajo children and their families. Pareo and Bauer assert that the dietary patterns of preschool children are an important object of study because they directly reflect the food choices made by children's caregivers, providing indicators of the use of nutrition knowledge and of the need for nutrition interventions. Also, preschool children are themselves emerging nutritional decision-makers, becoming increasingly assertive about their food preferences and affecting the family's shopping/food procurement approach.

The authors' specific aims are to:

- determine the proportion of children's diets that are made up of USDA food assistance program products;
- determine the patterns and strategies used by families to obtain food—use of food supplementation programs, shopping strategies, and decision-making about the use of these food sources;
- investigate the effects of employment, residence, and other factors on the above; and
- provide a dataset that can be used to inform discussion of policy and funding changes contemplated for food assistance programs, as well as to provide information on the effectiveness of nutritional intervention strategies among Navajo families.

The data are similar to those collected in the 1992 Navajo Health and Nutrition Survey (NHNS) through a collaborative effort by the Indian Health Service, the Navajo Nation Division of Health, and the U.S. Centers for Disease Control and Prevention. Results of that survey, published in 1997, applied to adults and children over the age of 12. Currently, there are no similar data available on Navajo preschoolers.

The authors began their research in this area in 1998 (through a small grant entitled "Monitoring Health and Nutrition on the Navajo Nation") with a focus on the accessibility and affordability of healthy, nutritious foods for Navajo people living in various parts of the Navajo Nation. They sought first to determine to what extent and in what areas the healthy choices being promoted by nutrition education programs such as WIC are available and affordable. In the current project, they extend their study to examine dietary intakes.

Pareo and Bauer collected data on a random sample of 171 students who participated in the Head Start program in the Shiprock Agency of the Navajo Nation in 1999. Their sample includes children attending Head Start centers or participating in the Head Start home base program within the Northeast portion of the Navajo Nation, including parts of New Mexico and Arizona. Trained Navajo interviewers administered a 24-hour dietary recall and a nutrition behavior survey during a home visit. They interviewed the caregiver who had observed everything the child consumed the day before the interview. The nutrition behavior survey included questions about the child's food preferences, the family's food preferences, the family's food choices and strategies for obtaining food, and demographics.

An interviewer coded and entered the diet recall data into the Food Intake Analysis System (FIAS, version 3.99). FIAS uses a subset of the USDA Nutrient Database for Food Consumption Surveys. The interviewer and data collection supervisor reviewed all food records for accuracy and coding consistency. The outcomes include:

1. Mean daily intakes of macronutrients and micronutrients;
2. Percent of nutrients contributed by food groups;
3. Meal patterns;
4. Foods consumed that were provided by food assistance programs; and
5. Percent of mean daily intakes of macronutrients and micronutrients contributed from foods provided by food assistance programs.

The authors reported on completed analyses of 84 interviews, with a goal of completing approximately 150 interviews in total.

Their preliminary data show that most respondents reported not participating in food assistance programs. The authors note, however, that participation may be underestimated because many respondents were uncomfortable with the question. About 50 percent of the households reported the mother as the primary caregiver. Many others reported both parents as the primary caregiver. Over 25 percent of the households were more than 50 miles from a grocery store. Over 70 percent of the households included two adults; about one-quarter had more than two. Most adults other than parents were children over 18. About 30 percent of households had two children. Approximately 52 percent of the respondents were not employed.

The median energy intake for preschool children in the sample was 1,800 Kcal; about 10 percent reported intakes greater than 2,900 Kcal. Protein intakes were well above recommended levels. About 35 percent of calories were from fat. Three nutrients—vitamin A, calcium, and iron—stood out as of particular concern. Vitamin A intakes were very skewed—nearly 50 percent of children sampled did not meet the recommended intakes, and nearly 25 percent were well below this level. Twenty-five percent consumed less than the recommended intakes of calcium and iron. The foods most frequently consumed were flour tortillas; fried potatoes; fruit-flavored beverages such as Kool-Aid, Hi-C, and Gatorade; spaghetti; Hamburger Helper; and bananas.

The authors also plan to examine differences in nutrient intakes by age and to measure nutrient density. They note that high energy intakes found in the preliminary results do not indicate nutritional adequacy. They also plan to merge their dietary data with a Head Start database that includes anthropometric measures.

The authors caution that their data may not accurately represent the dietary intake of preschool children. Interviewers reported difficulty administering the dietary recall because respondents did not understand the language or concepts used. Interviewers also questioned whether respondents reported a child's actual consumption or what was served.

Seasonal factors are also likely to have affected their results. Most of the interviews were conducted in the late summer when Head Start is not in session, and thus most of the foods reported were prepared at home. This is also the time of year when most fresh fruits and vegetables are available at lower cost; even so, few fruits and vegetables were reported.

Though the analysis is preliminary, Pareo and Bauer note several implications of their early results. First, they identify specific food behaviors that could be addressed in education programs targeting parents and Head Start staff. Increasing fruit and vegetable intake and increasing the variety of foods in the diet are possible areas for attention. High-energy intakes found for some children also indicate a need to address the risk of overweight at very young ages. The low reported use of food assistance in this sample also warrants further investigation. Finally, Head Start program administrators and parents are very interested in the findings and in using the results to improve food assistance and nutrition services in the Head Start program.

Do Poverty, Food Stamps, Food Label Use, and Nutrition Knowledge Affect Dietary Quality among Adults? Results from the 1994-96 CSFII/DHKS

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The Food Stamp Program has enormous potential for assisting with improved dietary behaviors in low-income households. The program places very few restrictions on the types of foods that people can buy. With the exception of alcohol and hot meals, food stamp recipients are allowed to purchase any of the thousands of products available to them in the many supermarkets and food outlets that accept food stamps. The main objective of this study is to examine: (a) the relationship of dietary quality to food label use and nutrition knowledge among low-income groups, and (b) whether food stamp receipt or income level modifies this relationship.

The authors analyze recent data from the 1994-96 Diet and Health Knowledge Survey (DHKS) and the Continuing Survey of Food Intake by Individuals (CSFII). They focus on 20- to 60-year-old respondents (N=2950) and the subsample of these respondents with incomes below 130 percent of the poverty line (N=767) who were household meal preparers, meal planners, or food shoppers. They used multivariate logistic regression to estimate their model of dietary quality (measured as a Healthy Eating Index (HEI) below vs. above the median). Their main independent variables were socioeconomic and demographic characteristics, food stamp receipt, food label use, nutrition knowledge, and several interactive terms.

The authors found that dietary quality increased with the levels of income and education, and that it was also higher among White subjects and those whose interviews were conducted in Spanish. After adjusting for these factors, food label use and nutrition knowledge were independently and positively associated with dietary quality. The key finding from the interactive models was that the influence of income on dietary quality is mediated by food label use. Specifically, wealthier individuals (or population segments) who do not use food labels are as likely as low-income individuals not using the labels to have suboptimal dietary quality. In other words, dietary quality appears to be determined simply not by income, but also by the use of nutrition information tools such as food labels. The authors also found that, among food label users, income does make a difference in dietary quality and that food label use partially compensates for the influence of lower income on dietary quality. Their analyses of adults below 130 percent of the poverty line indicate that among nonusers of food labels, a significantly higher proportion of food stamp recipients than nonrecipients have an HEI score above the median. Similarly, among those not receiving food stamps, a significantly higher proportion of those using food labels have HEI scores above the median. The authors argue that nutrition information tools such as food labels are likely to be essential to making healthy food choices in the United States. They conclude that their results support a priority role for nutrition education as a component of food assistance programs like the Food Stamp Program.

Is the Food Stamp Program an Adequate Safety Net for American Indian Reservations? The Northern Cheyenne Case

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In this second year of their small grant funding, the authors set out to:

- Clarify the impact of recent food assistance changes, in particular food stamp eligibility requirements and duration of benefits, on the role of the Food Stamp Program in the social safety net serving the Northern Cheyenne reservation.
- Clarify the role of food stamps in relation to the larger range of formal and informal services and resources available to economically vulnerable Cheyenne.
- Identify, using both qualitative and quantitative data, how tribal, community, county, and State agencies contribute to the social safety net; determine how each of these resources relates to the larger social and cultural context in which clients are struggling to adapt to new food assistance program requirements.

The research team used several methods to collect and analyze data, including indepth, face-to-face interviews with program clients, food assistance program directors, and employers at sites where TANF recipients do required work hours. They also conducted participant observation of food stamp recipient experiences with this program and analyzed secondary data from food assistance programs.

The authors began their research with the premise that many expect the Food Stamp Program to play a major role in meeting the food assistance needs of reservation residents participating in FAIM, the Montana income assistance program. They found that a number of clients are grateful for the benefits they receive. Of particular value to these clients is the flexibility provided by the Food Stamp Program to purchase the kinds of foods that their families want. However, clients also identified major problems with their reliance on food stamps to feed their families. One of these problems is lack of transportation (access to a vehicle and money for gasoline) to shop off the reservation, where prices are lower. Another is making their food last through the month. Since many clients lacked these resources and skills, extra "work" is required—beyond meeting the work-hour requirements to participate in FAIM—to feed their families. This typically involves seeking out sources of emergency food through their local network of family, churches, and food banks. Thus, because the food stamp system relies on retail food markets to distribute food, and because these markets are often difficult for reservation residents to reach, using food stamps is an additional hardship for recipients. The data from Northern Cheyenne recipients indicate that their safety net has been stretched thin.

The authors found that high unemployment makes the FAIM incentives to leave welfare and join the labor force ineffective within this rural reservation population. Because of the lack of employment opportunities, most clients do not foresee that they will be able to obtain even minimum wage jobs. Even if they are able to find jobs, they see the resulting decline in benefits increasing the hardship on their families when transportation and childcare needs are not met.

Leaving the reservation to find work is equally problematic; most work opportunities in nearby cities are not much better than those on the reservation. In addition, many Cheyenne are concerned about encountering discrimination and about their lack of financial and social resources for coping with the demands they

will face in an urban setting. The authors conclude that unless clients obtain local jobs, most will continue to participate in FAIM for as long as possible.

Because few private sector businesses offer work opportunities for FAIM participants, most work in public sector jobs, thus providing a source of subsidized labor for public agencies. Public sector agencies on the Northern Cheyenne reservation benefit from the FAIM program while helping FAIM participants to develop new job skills. In turn, the tribal government, local tribal resources, and the reservation community assume responsibility for Northern Cheyenne FAIM participants who cannot feed their families. This responsibility falls primarily on the Tribal Food Distribution program, which is better able than Federal and State programs to meet some of the most important food needs of reservation residents. The authors argue that the effect of Federal and State assistance programs is to place the responsibility for care of the poorest of the poor on the tribe. The tribe must then either directly care for those in need or push them off the reservation.

The data collected in this and the previous research project suggest several reasons for these outcomes. First, the expectation that reservation residents can meet program requirements, utilize FAIM program benefits, enhance their work skills, and obtain access to jobs that will move them out of poverty is, in fact, unrealistic. Even using food stamps to adequately feed their families is problematic where lack of transportation and childcare prevents clients from meeting program requirements and from reaching more reasonably priced food stores. Even more unrealistic, the authors argue, is the assumption that clients can use newly acquired work skills to access jobs in a labor market currently accommodating less than 50 percent of the adults who need jobs. Second, the program does not adequately address the needs of the poorest Cheyenne who want to remain in their community because it is their ancestral home, who want to support their families by working in locally relevant and productive jobs, and who want the freedom to follow Cheyenne cultural traditions and norms even while participating in FAIM. Local FAIM and other social service program directors are aware of the problems and needs of Northern Cheyenne clients. Nevertheless, under the current program requirements, they can do little to improve the ability of the FAIM program to meet the unique needs of this population. The authors conclude with recommendations for future research to measure the effect of current policy on the food security and nutritional status of low-income Cheyenne.

Food Stamp Program Exits During the Implementation of Welfare Reform Measures

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The Food Stamp Program (FSP) is the remaining major entitlement program in the U.S. social safety net. Thus, caseload declines, such as those experienced during the latter half of the 1990s, generate concern when they arise from decreasing program participation among still-eligible and needy families. Recent research suggests that caseload declines can be linked to changing eligibility restrictions, to economic gains among poor and near-poor families otherwise unaffected by new eligibility restrictions, and to declining program participation among still-eligible and needy families. Historically, fewer families have participated in the FSP than are eligible. Low participation rates are commonly attributed to stigma and transaction costs associated with program participation. Because there may be a less-than-proportionate increase in stigma and transaction costs associated with participation in both the FSP and Temporary Aid to Needy Families (TANF) compared with each program individually, reform measures that induce a family to leave TANF may also induce it to leave the FSP. A recent survey of families initially in the FSP finds that families leaving Aid to Families with Dependent Children (AFDC)/TANF have higher rates of exit from the FSP than families not initially receiving cash assistance. However, TANF exits and FSP exits may both be responses to changes in earnings.

In this paper, the authors first examine the changing roles of pubic assistance and earnings in the total incomes of poor and near-poor single female-headed families with children. They then examine the effects that changes in family earnings, economic conditions, State TANF caseload declines, and family exits from TANF have had on the decision to terminate FSP participation. They focus their study on single female-headed families because these families contain a majority of the Nation's children living in poverty and are the largest single recipient group of TANF funds. Further, while these families have been affected by changes in eligibility for public cash assistance, they have been relatively unaffected by concurrent changes in FSP eligibility.

Data from the 1993 and 1999 March annual demographic files of the Current Population Survey (CPS) reveal that total per capita incomes of poor and near-poor single female-headed families in the Nation as a whole showed only a modest 1.3-percent increase from 1992 to 1998. However, per capita earnings of these poor and near-poor families increased by 41.7 percent over the period. These earnings increases were offset by a decrease in average AFDC/TANF payments of 53.5 percent. As a result, AFDC/TANF payments as a share of total income for these families declined from 22.4 percent to 10.3 percent between 1992 and 1998. FSP benefits showed a smaller decline, from 14.0 to 9.9 percent of total income. In the nonmetropolitan South, total per capita incomes were $338 lower than the national average in 1992. However, this gap was virtually eliminated by 1998, with only a $60 difference in per capita incomes. Interestingly, the reduction in the total income gap was not due to more rapid growth in earned income in the nonmetropolitan South, but to smaller reductions in initially low AFDC/TANF benefits. Average per capita AFDC/TANF benefits declined by only $113 in the nonmetropolitan South compared with $323 for the Nation. However, the declines in average per capita FSP benefits between 1992 and 1998 were virtually the same for poor and near-poor single female-headed families in the nonmetropolitan South and the Nation.

The authors estimated a probit model of FSP exits using the rotating panel component of the 1997 to 1999 Current Population Surveys. Their results suggest that FSP departures are, in part, a response to the strengthening of family economic conditions. Specifically, changes in earnings are, on average, positive in the sample, and these positive changes strongly influence exits from the FSP. The results also indicate that after controlling for earnings shocks, area economic conditions, and other factors, a departure from TANF increases the likelihood of leaving the FSP by almost half. This finding supports suspicions that TANF reform measures may have indirectly fostered FSP exits among families that remain below 130 percent of the poverty line and are still eligible for

food assistance. However, FSP participation has not been disproportionately affected in States that have aggressively cut TANF caseloads. The authors find that high rates of State TANF caseload declines actually mitigate the influence that leaving TANF has on family FSP exits.

The authors suggest that further research is needed to identify specific constraints to continued participation in the FSP by families leaving TANF. For example, if families do not receive complete information on FSP eligibility when leaving TANF, additional resources to support local caseworker counseling may be needed. If, on the other hand, FSP exit is in response to cumbersome procedures to retain certification for FSP benefits when TANF benefits are lost, efforts to further streamline procedures for continued program participation may be warranted.

Food Stamp Utilization Patterns in Nonmetropolitan Counties in Texas: A Multilevel Analysis of the Micro- and Macro-level Determinants of Caseload Dynamics

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In this report, Swenson, White, and Murdock examine and contrast food stamp caseload changes occurring in metro and nonmetro areas in Texas. Their primary objectives are to identify economic, sociodemographic, and policy factors associated with the dynamics of food stamp utilization and to examine the effects of such factors on the decline in the food stamp caseload. Much of the research on the dynamics of the food stamp caseload in the welfare reform period has used aggregate caseload or national survey data. These findings demonstrate that marginal economic and policy effects on the food stamp caseload decline nationally. Yet few regional studies or comparisons of metro and nonmetro areas within a State have been completed. Because nonmetro areas have distinct demographic and socioeconomic characteristics in Texas as elsewhere, an examination of economic and policy effects on nonmetro caseloads in Texas may provide useful information for rural areas throughout the South.

The authors use descriptive and analytical methods to evaluate the micro- and macro-level factors associated with the food stamp caseload in Texas from September 1995 through December 1999. They examined monthly administrative food stamp data by county, along with data on county socioeconomic conditions. Using multilevel models, they estimate the effects of micro- and macro-level factors on exit probabilities and caseload decline.

Changes in the food stamp caseloads of metro and nonmetro areas in Texas suggest that both economic and policy factors may be affecting the rates of decline. From September 1995 to December 1999, caseload decline was substantial, dropping 47.6 percent in metro counties and 37.0 percent in nonmetro counties. Both metro and nonmetro caseloads experienced relatively greater rates of decline following the passage of welfare reform legislation. The nonmetro caseload had a larger relative increase in its rate of decline following welfare reform. A decrease in the number of entries was the primary cause of caseload decline in metro counties. In nonmetro counties, the decline has been a function of an increase in the number of exits from the Food Stamp Program. The metro caseload began to drop prior to welfare reform, and the number of entries has dropped faster in the post-reform period, suggesting that economic conditions may be more important than policy in reducing metro participation rates. In contrast, though the nonmetro caseload declined slightly prior to welfare reform, the substantial increase in the exit rate following reform suggests a larger role for policy-related processes in these areas.

Demographic differences between metro and nonmetro food stamp recipients mirror those of all metro and nonmetro residents. The nonmetro caseload is older and ethnically more Anglo, has a lower average level of education, a larger percentage of working recipients, more long-term recipients, and fewer able-bodied adults without dependents (ABAWDs) than the metro caseload. After reform, the proportion of long-term recipients, recipients with severe work impediments, and ABAWDs decreased in both metro and nonmetro areas. There were increases in the percentage of recipients able to obtain work without assistance, recipients with a medical incapacity, disqualified heads of household, and food stamp-only cases (those not also receiving TANF). The level of employment in the metro caseload increased after reform, but remained relatively constant in the nonmetro caseload. In metro counties, recipients remaining after welfare reform on average had lower education levels and less work experience. In contrast, the demographic and socioeconomic characteristics of the nonmetro caseload remained relatively constant.

Swenson et al. found that the probability of an individual's exiting the Food Stamp Program was affected by different economic factors in the pre- and post-reform periods in nonmetro areas. The probability of exit was associated with declines in unemployment in 1995 and increases in wages in 1999. By contrast, declining unemployment and rising wages affected the probability of exiting the metro caseload in both time periods. In 1995, the effect of declining unemployment on the probability of exit was about 2.7 times greater in metro than in nonmetro counties. In 1999, increasing the frequency of recertification, which is required to continue receiving food stamps, increased the probability of exit by twice as much in metro as in nonmetro counties.

The overall rates of decline in the food stamp caseload were affected by both economic and policy factors, but the magnitudes of these effects were also significantly different in nonmetro and metro areas. Reducing unemployment decreased the size of the food stamp caseload by almost twice as much in metro as in nonmetro areas. Similarly, increasing the frequency of recertification for food stamp receipt resulted in much larger caseload declines in metro than nonmetro areas. Even with the 37-percent decline, the nonmetro caseload experienced little change in demographic composition and probability of employment. Because of this, the factors examined explain less of the decline in the nonmetro caseload. The authors conclude that the lower rates of decline observed in the nonmetro areas of Texas are best explained by differences in the demographic characteristics of the recipients and the economic conditions they face.

Does Participation in Multiple Welfare Programs Improve Birth Outcomes?

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The United States has relatively high rates of low-weight births, preterm births, and infant mortality compared with other Western industrial countries. A number of Federal programs—WIC, Food Stamp, Medicaid, and AFDC—have provided benefits to help improve birth outcomes. In spite of the fact that many women participate in more than one of these programs, previous research has only considered the effect of participation in one program at a time. Such analysis may lead to misleading conclusions if women participate in multiple programs and if some programs are effective while others are not. It also ignores the possibility of synergies among programs. In this paper, Brien and Swann consider whether participation in more than one program improves birth outcomes. They allow for possible synergies among programs in their analysis, and attempt to control for nonrandom selection into the programs.

Brien and Swann used data from the National Maternal and Infant Health Survey, conducted in 1988. The survey includes information about welfare program participation, birth outcomes, and sociodemographic characteristics of mothers and families for almost 19,000 women. The authors restrict their analysis to 3,451 low-income, single women for whom the dataset contained complete information on all the relevant variables.

The authors use a number of techniques to evaluate the impact of program participation on birth outcomes, including simple descriptive statistics comparing average birth outcomes of women who participate in different combinations of programs; ordinary least squares regressions controlling for observed characteristics but not for the selection of women into the various programs; and a more complex model of the decision to participate in each of the four programs and the resulting birth outcome. Highlights of their findings include the following:

- The descriptive analysis shows that WIC recipients can expect better birth outcomes than nonrecipients. Women who participate in the other programs can generally expect worse birth outcomes than nonparticipants, suggesting possible adverse selection into these programs.
- After controlling for observed characteristics such as age and education, WIC participation continues to improve birth weights by approximately 230 grams, on average.
- When allowing for synergies among programs, WIC continues to be effective. Though there appear to be some synergies, there is no consistent pattern across all bundles of choices.
- The positive effect of WIC participation on birth weights is statistically insignificant after controlling for nonrandom selection into the programs.

In future work, Brien and Swann plan to refine their method of determining program eligibility and attempt to better understand the participation decisions for the possible bundles of programs.

Can Religious Congregations Satisfy Those Who Hunger and Thirst for Justice? An Assessment of Faith-based Food Assistance Programs in Rural Mississippi

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In the wake of welfare reform, many States have considered utilizing local religious communities as a point of social service delivery for relief previously offered through State entitlement programs. "Charitable Choice," Section 104 of the 1996 Personal Responsibility and Work Opportunity Reconciliation Act, forbids States that contract for social services with local voluntary associations from discriminating against faith-based organizations seeking to provide such services. In this study, Bartkowski and Regis examine the current food assistance strategies of a heterogeneous sample of religious communities in Mississippi's Golden Triangle Region. Their study situates rural Mississippi's faith-based food assistance efforts within the broader context of congregational poverty relief programs. Where appropriate, they draw comparisons between faith-based food assistance and the service delivery mechanisms utilized in public assistance programs.

The authors investigate the social processes underlying faith-based food assistance through their analysis of over 600 pages of transcribed indepth interviews. These data, collected from 1997 to 1999, were culled from religious leaders representing 30 local congregations in rural northeast Mississippi. The authors also conducted observational research at a subsample of four religious congregations and tracked various para-church food assistance and relief efforts on the local scene. They set the context for the qualitative investigation by providing an overview of Charitable Choice legislation and a summary snapshot of social life in rural Mississippi. They then analyze four key organizational strategies through which rural Mississippi congregations provide food assistance to food-insecure populations. These congregational relief strategies include:

- *intensive food assistance*, entailing sustained interpersonal contact between congregants and local needy populations (e.g., highly active onsite food pantries, particularly those complemented by a hot meal program);
- *intermittent direct food assistance*, consisting of congregational programs that foster periodic contact between churchgoers and the hungry (e.g., holiday food baskets);
- *para-church food initiatives*, involving collaboration among local congregations (e.g., food provided through interfaith relief agencies); and
- *distant missions of food provision*, where local congregations sponsor group mission trips to severely disadvantaged areas of a State, a region, or another country (e.g., weeklong food provision and poverty relief undertaken in the Mississippi Delta, Appalachia, or Central America).

The authors focus on the distinguishing features of food assistance strategies and the congregational contexts in which they are used. They also highlight congregational motivations for adopting particular food relief strategies, and evaluate the advantages and disadvantages of each, as follows:

Intensive food relief, which places the provider and recipient of relief in a sustained relationship with one another, often challenges social barriers (e.g., racial divisions and class-based hierarchies). However, intensive food relief requires a considerable investment of time and resources, leading some congregations to prefer *intermittent direct food assistance*. Given its more bounded timeframe, intermittent direct food assistance can provide short-term relief from episodic

food insecurity. However, this kind of assistance does not facilitate the same enduring social bonds as intensive engagement with the poor. *Para-church* collaborations can provide food assistance efficiently (i.e., in a centralized fashion) to local disadvantaged populations—particularly those facing short-term food insecurity. Yet if they operate as liaison organizations, para-church agencies can reinforce social distance between local congregants and the poor. *Distant missions of food provision* give congregants direct exposure to poverty and hunger and personalize poverty. However, given their emphasis on geographical travel and short-term spiritual pilgrimage, distant missions do not guarantee a transposition of social action into one's home community.

The authors argue that if religious communities are to become more involved in local food assistance efforts, it is imperative that policymakers understand the range of food assistance strategies that congregations have chosen and the social context in which such programs are undertaken. Government officials and community development specialists should also be aware of the cultural meanings that religious communities invest in food and of the organizational motivation behind the particular food assistance strategies they adopt. Bartkowski and Regis conclude that religious communities can be a valuable ally in society's effort to redress food insecurity. At the same time, they urge that faith-based food assistance initiatives implemented under Charitable Choice be structured with an awareness of the opportunities and the limitations likely to accompany such programs.