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Food Assistance and Nutrition Research Small Grants Program

Executive Summaries of 2002 Research Grants

Laura Tiehen



*Food Assistance & Nutrition
Research Program*

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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 stimulate new and innovative research on food assistance and nutrition issues and to broaden the participation of social science scholars in these issues. The report includes summaries of the research projects that were awarded 1-year grants in summer and fall 2001. The results of these research projects were presented at the October 2002 Small Grants Program conference. The projects focus on food insecurity and hunger, nutritional status and diet quality, Federal food assistance program participation, and the role of private-sector organizations in the provision of food assistance. Some projects focus on specific populations, such as people living in the rural South and those living on American Indian reservations.

Keywords: Food assistance, nutrition, vulnerable populations, food security, food insecurity, hunger, hungry, food assistance, food spending, well-being, Food Stamp Program, food stamps, National School Lunch Program, WIC, Food Assistance and Nutrition Research Program

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Preface

The Economic Research Service's (ERS) Food Assistance and Nutrition Research Program offers 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 research on food security and food and nutrition assistance programs and to encourage more senior scholars to apply their skills and knowledge in these areas as well.

This report presents summaries of the research findings from the fourth set of small grants, which were awarded in summer and fall 2001. Preliminary findings were presented at a conference at ERS in Washington, DC, on October 17 and 18, 2002, and the research projects were completed in December 2002. More information about the Small Grants Program partners, as well as many of the completed research papers themselves, is on the websites of the administering institutions listed below:

Institute for Research on Poverty, University of Wisconsin-Madison

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: 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: www.jcpr.org/usdarfp.html

The American Indian Studies Program, University of Arizona

Focus: The relationship between food assistance programs on reservations and family poverty.

Web address: info-center.ccit.arizona.edu/~aisp

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: 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: srdc.msstate.edu/focusareas/health/fa/food.htm

Food Assistance and Nutrition Research Small Grants Program

Executive Summaries of 2002 Research Grants

Laura Tiehen, Editor

Introduction

Federal food and nutrition assistance programs form a crucial component of the social safety net in the United States. Unlike many other social programs, food assistance programs provide benefits and have eligibility requirements that are uniform nationwide. The Food Stamp Program (FSP)—the largest Federal food assistance program—is, with few exceptions, available to all Americans whose income and assets fall below certain levels. Although the other food assistance programs are generally targeted to specific demographic groups, together the 15 Federal food assistance programs reach an estimated 1 in 5 Americans at some point each year. The U.S. Department of Agriculture (USDA), the Federal agency charged with administering almost all of the Federal food and nutrition assistance programs, has a particular interest in monitoring program effectiveness and contributing to the policy goal of a healthy, well-nourished population.

The purpose of the Small Grants 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 individuals' responses to policy changes. All the methods employed contribute

to a growing body of knowledge of 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 (IRP) at the University of Wisconsin-Madison. IRP has a distinguished history of research and policy evaluation, including previous involvement in administering small research grants funded by 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 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 of policy interest to USDA, either on a particular subset of food assistance and nutrition issues or on a particular

subpopulation of those eligible for food and nutrition assistance. Among these, the Department of Nutrition of the University of California at Davis brought to the Small Grants Program its expertise in nutrition education design and evaluation. A core group of faculty focuses its research efforts on identifying meaningful approaches to the design and evaluation of nutrition education for ethnically diverse, low-income families served by a variety of food assistance programs. The group views multidisciplinary research as critical to effectively monitoring the outcomes of nutrition programs.

The Southern Rural Development Center (SRDC) was chosen to administer small grants for its ability and commitment to conduct research on the problems of the rural poor in the South and its particular commitment to study the effects of welfare reform on this population. USDA has special ties to the SRDC because of the land-grant status of its 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

The research projects completed in 2002 cover six broad topic areas.

1. Food Insecurity and Hunger. The recent development of a Federal measure of food security makes it possible to monitor food-related material hardship in U.S. households and its relationship to program participation and other outcomes. Stormer and Harrison examined the association between household food security and the cognitive performance and social behavior of children entering kindergarten. Townsend and Melgar-Quinonez assessed the relationship between household food security and the prevalence of overweight and obesity in children. Two research projects examined

food security among elderly households. Salmon and Gooden documented the food security status of elderly who were placed on a waiting list to receive home-delivered meals in North Carolina, while Frongillo and Wolfe used longitudinal data to examine the effect of receiving home-delivered meals on food security among elderly people in New York.

2. The Role of the Private Sector in Providing Food Assistance. Although Federal programs provide the bulk of food assistance in the United States, many households rely on private charitable organizations in their communities to help them meet their food needs. Cashwell and coauthors assessed the knowledge of the directors of private, faith-based emergency food providers in the South about the charitable choice provision of the 1996 welfare reform legislation that allows them to compete for government funds to administer social service programs. Nichols-Casebolt, focusing on households that get food from private charitable organizations, examined how use of Federal food and cash assistance by food pantry users in Virginia has changed since passage of the 1996 welfare reform legislation. Child care providers are another type of private-sector organization that may play a role in providing food assistance to low-income households. Eligible child care providers can participate in the Child and Adult Care Food Program (CACFP), a Federal program that provides reimbursement for meals served to children and adults. Huddleston and Shobo assessed factors that influence participation in the CACFP by child care providers in Arkansas.

3. Dynamics and Life Course Patterns of Food Assistance Program Participation. Food assistance programs serve a dynamic population of low-income Americans. Many people enter and leave the programs each month, which calls for research that examines program participation over time. Rank and Hirschl used 30 years of data to assess the extent to which members of low-income households depend on the Food Stamp Program (FSP) over the course of their lives. Goetz and coauthors assessed factors contributing to FSP caseload decline during the late 1990s, with a focus on the role of county-level factors. Swann analyzed factors that influence a pregnant woman's decision to participate in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and the length of time she participates in the program.

4. Nutritional Status and Diet Quality. Reliable measures of nutritional outcomes are needed to assess whether food assistance programs improve the nutritional well-being of low-income households. Siega-Riz and Kranz designed a tool to assess the quality of American preschoolers' diets. Bhattacharya and coauthors examined changes in the nutritional well-being of low-income households during cold-weather periods as part of their investigation of the "heat or eat" phenomenon—when families cut back on food expenditures. Parrish examined the nutritional content of the food available to the Keweenaw Bay Ojibwa residents of the L'Anse Reservation in northern Michigan and the eating and exercise patterns of a sample of elders on the reservation.

5. Food Security and Food Assistance Programs in the Community Context. A household's participation in food assistance programs and its level of food security are likely to be influenced by the characteristics of the community in which it lives. Lopez and coauthors examined the availability of traditional foods on the Tohono O'odham Reservation and assessed how receptive food assistance recipients on the reservation would be to eating traditional foods if they were available. Bentley and coauthors, in partnership with a sample of residents of predominately minority neighborhoods in Durham, NC, conducted an analysis of the community factors related to household food security.

6. Welfare Reform and Food Assistance Programs. The 1996 welfare reform legislation introduced major changes to the cash welfare system in the U.S. These changes are likely to have affected FSP participation because, historically, many cash welfare recipients also received food stamps. Davis and coauthors examined the use of food assistance among Northern Cheyenne families in the post welfare reform environment. The welfare reform law also eliminated eligibility of most legal immigrants to receive food stamps.¹ Bollinger and Hagstrom examined the distinct patterns of FSP participation of refugees, who were exempted from the eligibility restrictions, and nonrefugee immigrants. White and coauthors examined whether factors other than the eligibility restrictions contribute to the decline in FSP participation among noncitizen households in Texas.

¹Subsequent legislation in 1997 allowed legal immigrants who were disabled, elderly, or children living in the United States in August 1996 to regain eligibility for the Food Stamp Program. More recently, the 2002 Farm Act restored food stamp eligibility to legal noncitizens who have lived in the United States for at least 5 years or who are children or disabled, regardless of how long they have lived in the United States.

Executive Summaries

Food Insecurity and Hunger

Does Household Food Insecurity Affect Cognitive and Social Development of Kindergartners?

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This study explored the relationships between household food insecurity and the cognitive performance and social behavior in U.S. children entering kindergarten. Earlier studies have found that hunger is associated with poor school performance, such as more school absences, tardiness, and increased probability of repeating grades. There is also some evidence of compromised social and emotional functioning among adolescents in food-insecure households. The authors focused on children entering kindergarten in order to examine cumulative childhood development prior to schooling. In addition, readiness for school is a powerful predictor of later success and development for children.

The authors used data from the 1998 Early Childhood Longitudinal Study of Kindergartners (ECLS-K). The ECLS-K is a nationally representative cluster sample of approximately 20,000 children in both public and

private schools. The survey includes the 18 questions used to construct the Federal measure of household food security. The authors examined the links between household food insecurity, teacher- and parent-reported social skills, teacher-reported cognitive ability, and an independent direct assessment of children's cognitive abilities in math, reading, and general knowledge. These measures constitute an unusually extensive evaluation of children's cognitive and social skills. Additionally, the authors investigated the associations between household food insecurity and children's height and weight when they entered kindergarten.

The authors used factor analysis to reduce the cognitive and social data to five summary measures, and multiple linear regression analysis to examine the prediction of these measures by a large number of potential independent variables, including sociodemographic characteristics, school and home environment characteristics, parental and teacher characteristics, day care and preschool experience, and household and child participation in Federal assistance programs.

The study results show that household-level food insecurity is not a significant independent predictor of cognitive performance, whether assessed by teachers or by an independent observer. However, food insecurity is significantly and negatively related to parents' rating of their children's emotional state and social interaction skills and to teachers' rating of children's social skills. Food insecurity is not a significant independent predictor of short stature, overweight, or underweight among kindergarten children. Physical activity is a significant predictor of overweight status among children. The amount of time spent watching TV on weekends is positively associated with being overweight, while the teacher-rated activity level during free play is negatively associated with being overweight.

Hunger, Food Insecurity, and Child Obesity

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While the prevalence of obesity is increasing among children of all socioeconomic groups, obesity is most common among children of low socioeconomic status. At the same time, many low-income households with children report that they have difficulty in meeting their food needs. The development of a Federal measure of food security has made it possible to consistently monitor the difficulties that households experience in meeting their food needs. In 2001, about 13 million children lived in food-insecure households, in which, according to the Federal definition, availability of food was limited or uncertain because of financial constraints. Recent studies have found a positive association between food-related material hardship and overweight among U.S. women. This study considered whether a positive association between overweight and food-related material hardship also exists among children.

The authors examined the relationship between a measure of food-related material hardship and child overweight for Mexican-American, non-Hispanic Black and non-Hispanic White boys and girls ages 2-19. They combined several years of data from the Continuing Survey of Food Intakes for Individuals (CSFII) to examine a nationally representative sample of 6,473 children. The data provide information on the reported height and weight for each child. The authors adjusted the values of height and weight to account for the error typically found in self-reported measures, and used the adjusted values to calculate an indicator of whether the child was overweight or at risk of becoming overweight.

Surveyed households reported whether they had (1) enough of the kinds of food they wanted to eat, (2) enough but not always the kinds of food they wanted to eat, (3) sometimes not enough to eat, or (4) often not enough to eat. The authors categorized households that indicated that they had enough of the kinds of food they wanted to eat as food secure and all other households as food insecure.² Note that this measure of food security differs from the Federal measure just described, which is assessed by a series of 18 questions about a household's difficulties in meeting its food needs due to financial constraints.

The authors found that 12 percent of children are overweight, and another 16 percent are at risk of becoming overweight. A child's risk of becoming or being overweight increases as their dietary energy intake, saturated fat intake, or time spent watching television increases, and decreases as their household income relative to the poverty line increases.

About three-fourths of children live in households categorized as food secure, according to the study's definition. The authors separated children into four age groups and found that food insecurity is positively associated with overweight and risk of overweight among children ages 12-15 and children ages 16-19. They also separated children according to their race and ethnicity and found no significant relationship between overweight and food insecurity among non-Hispanic White children of any age. However, they found a positive association between overweight and food insecurity for several age groups of Mexican-American and non-Hispanic Black children. Food insecurity is positively associated with overweight and risk of overweight for non-Hispanic black children ages 12-15 and Mexican-American children ages 6-11.

The study results show that older minority children who are food insecure are more likely to be overweight than those who are food secure. The authors noted that corroboration of this finding may guide the development of education interventions that accompany food assistance programs, such as the Food Stamp Program, available to food-insecure families.

²A number of other research studies have used the responses to this survey question to categorize people as food insufficient if they report that they sometimes or often do not have enough to eat, or food sufficient otherwise.

A Study of Older Adults on the Waiting List for Home-Delivered Meals in North Carolina

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The Nutrition Services Incentive Program (NSIP) is a Federal program that provides incentives for State agencies to provide meals to older adults. The program is administered by the U.S. Department of Health and Human Services (HHS), and States may obtain commodity foods from USDA.³ The NSIP provides funding and commodities for the provision of home-delivered meals to adults over age 60 in a number of States. The NSIP does not allow State agencies to set income limits for the receipt of home-delivered meals. However, the NSIP is not an entitlement program, and a number of applicants may be placed on a waiting list if the State does not have sufficient resources to provide meals for all applicants. This study examined a population of older adults who have been placed on a waiting list for home-delivered meals in five counties in North Carolina to assess their functional ability, nutritional status, and strategies to obtain food.

The authors conducted telephone interviews with 110 people who had been assessed as eligible and placed on the waiting list for home-delivered meals in one Area Agency on Aging (AAA) Region in North Carolina.

³Until 2003, the program was known as the Nutrition Program for the Elderly and administered at the Federal level by USDA.

They found that those on the waiting list were about the same age as those who began receiving home-delivered meals in 2001, about as likely to be female, and somewhat more likely to be African-American and to live alone. Almost half of those on the waiting list lived in households with incomes below the poverty line. Survey respondents were asked whether they needed assistance with nine standard activities of daily living, such as getting dressed and transferring from bed to chair. About 20 percent reported that they did not require the help of another person for any of the nine activities. Those on the waiting list were less likely to report needing help getting dressed and transferring from bed to chair than those who began receiving home-delivered meals in 2001.

Almost all of those on the waiting list were at high nutritional risk, based on an index used by the HHS Administration on Aging. More than a third reported that they had neither eaten fruit nor drunk fruit juice the day before the interview, over 40 percent had eaten no nonstarchy vegetables, less than 15 percent had eaten neither fruits nor vegetables, and over 40 percent had neither drunk milk nor eaten calcium-rich products. While many on the waiting list were at high nutritional risk, very few were underweight. In fact, more than half were overweight.

Those on the waiting list to receive home-delivered meals relied on a variety of sources for their meals. Seven in 10 reported that they had someone bring them prepared meals, which accounted for an average of 3.2 of their meals each week. Almost two-thirds had someone bring them groceries, which provided a weekly average of almost 16 meals. The respondent's adult children were the most likely to bring prepared meals or groceries. Almost 10 percent of respondents did not receive prepared meals or groceries or the help of someone coming to their home to cook for them. Almost half of the survey respondents reported that they did not always have enough money (or food stamps) for food. However, only 15 percent reported that they were receiving food stamps.

The study results indicate that almost all of those on the waiting list to receive home-delivered meals are at high nutritional risk. However, there is some variation in their access to an informal support network to help provide them with meals, which suggests a need to focus resources on applicants who do not have informal supports.

Impact of Home-Delivered Meals on the Nutritional Status and Food Security of the Elderly in New York State

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The Home-Delivered Meals (HDM) component of the Nutrition Services Incentive Program provides meals to noninstitutionalized frail elderly persons who are no longer able to obtain an adequate diet without assistance.⁴ This study examined whether participation in the HDM program improves nutritional outcomes, characterized elders who are most likely to benefit from the program, and identified a number of nutritional indicators that can be used in program evaluation.

Several studies have found benefits associated with HDM. For example, a recent national evaluation found that participants in both HDM and Congregate Meals had a higher average daily intake of nutrients than a matched comparison group of nonparticipants. However, due to methodological limitations, these studies could not determine whether participation in the HDM program was responsible for the improved outcomes. The authors addressed the methodological limitations of previous studies by comparing those who received HDM with a nonrandomized control group and by using longitudinal data on the nutritional outcomes of both the control and treatment group members. The authors also examined outcomes other than nutrient intakes, such as food security and dietary patterns, and information on measured, rather than self-reported, height and weight.

⁴Until 2003, the program was known as the Nutrition Program for the Elderly and administered at the Federal level by USDA.

This collaborative study analyzed data collected by the New York State Office for the Aging in 1999 in three counties representative of Upstate New York. All elders referred for aging services over a 5-month period received a standard assessment and were asked to participate in the study. Of the 212 people who agreed to participate, 171 began receiving HDM and 41 began receiving other services but not HDM. Both the HDM recipients and nonrecipients completed a baseline survey and two followup surveys, at 6 months and 12 months after the baseline survey. The surveys contained a 24-hour dietary recall and questions used to construct the Federal measure of food security. A number of elders in the initial sample did not complete the followup surveys, primarily because they stopped participating in HDM because they no longer needed it, moved, or died. A total of 99 elders completed the 6-month followup survey, and 67 elders completed the 12-month followup survey. The authors used estimation techniques that suggest that the bias resulting from the loss of sample members is minimal.

The study found that respondents' dietary intakes before receipt of HDM were lower than recommended for many nutrients and food groups. After receipt of meals through the HDM program, however, participants reported eating more vegetables, a greater variety of fruits and vegetables, and more beta carotene, vitamin E, and magnesium. In addition, the prevalence of food insecurity among elders in the sample decreased from 23 percent to 13 percent. The analysis shows that the positive effects of the HDM are greater among males and elders who live alone. Participants with poorer initial nutritional status also show greater improvement, regardless of demographic characteristics.

The analysis compared HDM participants whose diets were assessed in the followup surveys on days that they had eaten an HDM meal with participants whose diets were assessed on days that they had not eaten an HDM meal. Participants who had eaten an HDM meal on assessment day showed greater improvement over time in 25 of 27 indicators of nutrient intake and dietary patterns compared with participants who had not eaten an HDM meal on assessment. The authors found similar results when they examined nutrient density rather than total nutrient intake.

These results provide evidence that the HDM program improves the nutritional well-being of the elderly. The fact that some applicants are placed on a waiting list

shows there is unmet interest in participating in the HDM program. The positive effects of the program are an important consideration in the decision to allocate limited resources to social programs. Information on those who are likely to benefit most from the program

can be used to target program resources more effectively. In addition, the new nutritional indicators identified in the study can be used to measure the effect of the HDM and other food assistance and nutrition programs.

The Role of the Private Sector in Providing Food Assistance

Private Food Assistance in the Deep South: Agency Profiles and Directors' Perceptions of Needs and Opportunities Under Charitable Choice

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Emergency food providers are an important source of food assistance to low-income households in many communities. The direct providers of emergency food assistance are often private faith-based organizations, which are the focus of the charitable choice provision of 1996 welfare reform legislation. The charitable choice provision enables government agencies to fund the service programs of faith-based organizations and has the potential to significantly alter the funding possibilities available to emergency food providers.

This study examined the types of local community agencies that provide food assistance to the poor in the Alabama-Mississippi area and information about the agencies' directors. The authors collected primary data from a random sample of approximately 230 food pantry directors in Alabama and Mississippi. The survey provided information on the demographic characteristics of food pantry directors and their attitudes about poverty and food pantry use. The survey also contained questions designed to assess how knowledgeable the directors are about the charitable choice provision (that is, their familiarity with the general policy contours, specific legal provisions, and implementation status provision) and how receptive they are to receiving government funds.

The study found that about three-quarters of the surveyed food pantries are affiliated with a religious congregation. About two-fifths of faith-based food pantries are affiliated with religious congregations with fewer than 100 members, and another two-fifths are affiliated with religious congregations with 100-500 members. About 70 percent of the food pantries reported that they primarily serve rural populations. Three-fifths of the food pantry directors are White, and about 65 percent are female. Almost 80 percent have some education beyond high school, and about 40 percent reported an annual household income of \$50,000 or more. More than two-thirds reported that they attend church at least once per week.

The survey provides information on the perceptions of food pantry directors regarding pantry users and their need for food assistance. Most of the directors reported that food pantry use is related to low wages in some industries or to sickness or physical disability, and that most food pantry users who are able to work are trying to find jobs. However, almost one-third of food pantry directors believed that too many people using food pantries should be working, and almost half believed that many people getting food are not honest about their needs.

The study also gauged food pantry directors' awareness of the charitable choice provision and their openness to accepting government funding. A third of the surveyed food pantry directors reported that they do not currently receive government funds, while slightly more than half indicated that they would be willing to apply for government funds in the future. Most of the directors were generally aware of the legal responsibilities associated with receipt of government funding, but were also unsure of the general policies relating to the charitable choice provision, such as the process to apply for funds and the extent to which charitable choice has been implemented in the U.S.

The authors noted that additional research in other parts of the U.S. will help determine if there are broader regional variations or systematic rural-urban differences in the knowledge about the charitable choice provision among community-level organizations. However, the study results suggest that there is a need to educate organizations that can potentially benefit from the charitable choice provision of the 1996 welfare reform legislation so that they can make a reasoned choice about the new opportunities available to them.

Making Ends Meet: An Examination of TANF and Former TANF Food Pantry Users in Virginia

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Since passage of the 1996 welfare reform legislation, questions have been asked about whether those who have stopped using Federal cash assistance and food stamps have achieved self-sufficiency, or whether they have instead come to rely on assistance from private organizations. Nichols-Casebolt conducted a series of statewide surveys of Virginia food pantry users from 1997 to 2001. She examined the characteristics of Virginia families with children who sought assistance in food pantries and described changes over time in their receipt of cash assistance and food stamps. She also collected information on the material well-being of food pantry users, including their food security status in 2001.

The study found that demographic characteristics of food pantry users changed little between 1997 and 2001. In contrast, the share of food pantry users receiving cash assistance or food stamps fell. About 42 percent of food pantry users were also receiving food stamps at the time of the 1997 survey, while about 30 percent of food pantry users were also receiving food stamps in 2001. The author also found that over 35

percent of food pantry users who had recently left the Temporary Assistance for Needy Families (TANF) indicated that they had also stopped receiving food stamps within the last 6 months. After statistically controlling for a number of other factors that influence food stamp receipt, the author found that TANF leavers are significantly less likely than TANF recipients to receive food stamps. Food pantry users who are most likely to be at economic risk—including the unemployed, single parents, parents with young children, and those with low education levels—are most likely to receive food stamps.

The study also documented the material hardships of many households who seek services at food pantries. Over 80 percent of the families were food insecure and over 25 percent lost telephone service at some time in the past 6 months. About 15 percent had been recently forced to change their living arrangements. The author examined the factors associated with the food security status of food pantry users. The results indicate that higher household income is associated with greater food security. After household income and demographic characteristics are controlled for, the receipt of either cash assistance or food stamps has no statistically significant effect on the food security status of food pantry users.

The author concluded that private food assistance plays a strong role in meeting the food needs of some low-income families. She noted that the decrease in the Food Stamp Program (FSP) participation rate suggested that food pantries are promising locations for FSP outreach efforts. Given the strong positive relationship between household income and food security, the author suggests that policies that focus on employment and work supports are important elements to improve food security in this population.

The Arkansas Child and Adult Care Food Program: A Study of Factors Associated With Program Participation

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The Child and Adult Care Food Program (CACFP) is a Federal food assistance program that provides reimbursement for meals provided to children and adults in eligible child and adult care programs. To receive reimbursements, child care providers must sign up for CACFP and meet program eligibility criteria. Access to the CACFP program by the target population depends on the availability of child care providers and on providers' decisions to participate in the program. Two major types of child care providers are family child care homes and child care centers.⁵ In Arkansas, family child care homes are licensed to serve a maximum of 16 children at a time, while child care centers are typically licensed to serve a larger number of children. This study examines the geographic variation in child care availability in Arkansas and the factors that affect child care providers' participation in the CACFP.

The 1996 welfare reform legislation introduced a new reimbursement structure for family child care homes into the CACFP. The reimbursement rates that apply to homes in low-income areas or homes operated by low-income people are similar to those that applied before the 1996 legislation, but reimbursement rates to all other homes are at least 40 percent lower.⁶ The change in reimbursement rates may have reduced CACFP participation among family child care homes serving children from middle-income families.

⁵Other CACFP providers include infant and toddler care, school-age care, and sick care programs, which are not analyzed in this study.

⁶For these other homes, higher reimbursements remained available for meals served to individual low-income children.

The authors used 2002 State administrative data on child care licensing and CACFP participation to analyze county-level child care provision and CACFP participation in Arkansas. They also used 2000 Census data to construct measures of potential need for child care and for food assistance. In addition, they surveyed over 900 licensed child care providers in 2002 to collect information on the factors that influence their decisions to participate in the CACFP.

The study found that almost 70 percent of family day care homes in Arkansas participate in the CACFP, comprising 70 percent of CACFP providers. Child care centers make up 13 percent of CACFP providers in Arkansas. The analysis shows that the availability of child care providers, particularly those that participate in the CACFP varies significantly across regions of Arkansas. Family day care homes are concentrated in the delta region, which is located in southwest Arkansas and has the highest concentration of poverty in the State. The authors constructed a measure of child care capacity in a county, equal to the total number of children that child care providers in the county are licensed to serve. They found that child care capacity as a share of the child population (age 5 and younger) is higher in the counties of the delta region than in the counties in the rest of the State. However, because of the high rate of poverty in the region, the child care capacity of CACFP providers as a share of the population of poor children is lower in the delta region than in the rest of the State.

The authors used logit regression analysis to examine the effect of provider characteristics and perceptions on CACFP participation by providers. The results of the regression analysis indicate that family day care homes are more likely than child care centers to participate in the CACFP and that nonprofit child care providers are more likely to participate than for-profit providers. The longer the provider's hours of operation per week, the more likely it is to participate in the CACFP.

The results of the child care providers survey indicate that 90 percent of child care providers are satisfied with CACFP administration. However, about half reported that the reimbursement rates are not adequate to cover costs, and about one-fourth reported that the paperwork requirements are too high. Child care providers not participating in the CACFP were asked about the barriers to participation. Almost 40 percent reported that they do not know about the program, and

one-fourth reported that they do not know how to apply or that the application process is too difficult.

The authors concluded that many of the providers who do not participate in the CACFP are not eligible to receive large amounts of meal reimbursements because they typically serve few low-income children.

However, the survey results suggest that some potentially eligible providers do not participate because they are not familiar with the program or are overwhelmed by the application process. These findings suggest that intervention strategies may be developed to encourage greater participation by eligible non-CACFP providers.

Dynamics and Life Course Patterns of Food Assistance Program Participation

Estimating the Probabilities and Patterns of Food Stamp Use Across the Life Course

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The Food Stamp Program (FSP) is the largest U.S. food assistance program. With some exceptions, the FSP is available to all households for which income and assets fall below certain levels. Information is already available on the extent to which households rely on the FSP during a given year. However, much less is known about how households use food stamps over the course of many years. Rank and Hirschl estimated the lifetime probabilities and patterns of food stamp use for the U.S. population, using a life table procedure. This approach provides empirical evidence on the range and scope of the FSP in the lives of Americans.

The authors used the Panel Study of Income Dynamics (PSID), a longitudinal survey of a representative sample of U.S. individuals and their families. They merged 30 waves of data from 1968 to 1997 to build a series of life tables detailing the cumulative probabilities of participating in the FSP. They examine two periods of the life course—childhood (ages 1-20) and working-age adulthood (ages 20-65). Within each of these periods, they estimated the overall likelihood of food stamp use, the total and consecutive number of years that food stamps are accessed, and the effects that race, education, gender, and marital status have upon the likelihood of using the FSP.

The results indicate that food stamp use is quite common during both childhood and working-age adulthood: 49 percent of American children receive food stamps at some point by the time they reach age 20, and 51 percent of American adults participate in the FSP sometime between the ages of 20 and 65. Furthermore, once a household uses food stamps, it is quite likely to use the program again. Two-thirds of children who receive food stamps will do so in at least one additional year, while three-quarters of adults who use the program will do so more than once.

The results further indicate that food stamp use across the life course tends to occur over relatively short periods of time. For example, while half of all children receive food stamps some time before age 20, only 1 in 10 will do so in 5 consecutive years. These findings are consistent with earlier work examining the life course patterns of poverty, as well as the bulk of research examining the dynamics of poverty and welfare use. Although some households use food stamps for long periods of time, most food stamp users rely on the FSP to provide short-term assistance.

In this study, race, education, and marital status profoundly affect the probability that a person will use food stamps during his or her lifetime. Black Americans, people who have not graduated from high school, and children residing in nonmarried households have a high probability of using food stamps over the course of their lives. For example, 90 percent of Black children use food stamps at some point during their childhood compared with 37 percent of White children.

Study results indicate that a wide segment of the American population uses FSP some time during their lives. However, because different households participate in different years, more households participate at some point over a period of several years than participate in any 1 year. While roughly half of American children and half of working-age adults participate in at least 1 year, most FSP participants use the program for short-term assistance.

Food Stamp Program Participation Dynamics in U.S. Counties and States

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The Food Stamp Program (FSP) and cash assistance caseloads have fallen dramatically since the mid-1990s, and the rate of caseload decline differs across States and counties. Prior research on cash assistance and FSP caseload declines focused on the effect of macroeconomic changes, such as changes in State-level unemployment rates. This study examined the factors associated with caseload declines, accounting for economic conditions and demographic characteristics at the county level, and for employment conditions in the labor markets that are most likely to employ former welfare recipients.

In their analysis, the authors used county-level data on economic conditions, which provided more reliable

information than State-level data about the employment prospects of former welfare recipients. In addition, they accounted for employment conditions in the foodservice and retail sectors, in which former welfare recipients are most likely to find jobs.

The authors used estimation techniques that accounted for the spatial clusters of program participation, as well as the direct effect that welfare reform has on labor market conditions. The authors found that higher county-level earnings per capita were associated with a more rapid decline in per capita FSP spending between 1995 and 1999, while county-level retail employment growth did not appear to have an effect on the decline in spending. Reductions in food stamp payments per capita were lower in rural counties than in suburban counties. In counties with proportionally more foreign-born and African-American residents, per capita FSP spending fell more quickly. In counties with proportionally more single female-headed households, per capita FSP spending fell more slowly. A greater number of vehicles per household and more bus services per person in a county were associated with a more rapid decline in FSP spending.

The study results suggest that both individual- and community-level factors play a role in explaining changes in FSP participation over time. Further, the way that community-level factors are measured is critical, as is controlling for the spatial clustering of program participation. Finally, per capita FSP spending falls less rapidly in rural counties than in suburban counties, suggesting a systematic difference in the processes that affect food stamp use in rural and suburban counties. The authors noted that the study findings can be used in forecasting fiscal outlays as economic conditions change and measuring the effectiveness of the FSP.

The Dynamics of Prenatal WIC Participation

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The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides food vouchers, nutritional counseling, and health care referrals to low-income pregnant and breastfeeding women and their young children. This study analyzed the characteristics that affect the probability of WIC participation over the course of a woman's pregnancy. Understanding the program rules and other factors that affect the timing and duration of WIC participation can help to ensure that the program is designed to target resources most effectively.

Although many studies have examined the effect of WIC participation on various health outcomes, relatively little research has focused on the decision to participate in WIC and none have modeled the decision of when to participate. One study provided descriptive information about the month at which participation begins and the number of months of participation, and a number of other studies explored the role of early versus late participation in WIC on birth outcomes. Another recent study, as part of an analysis of health outcomes associated with participation, estimated a simple equation to explain WIC participation.

In this study, the author used data from the 1988 National Maternal and Infant Health Survey, a nationally representative sample of women who experienced a live birth or infant death in 1988, and information about State WIC policies from the 1988 Survey of WIC Program Characteristics. The WIC program data include information on State-level program rules, which varied significantly across the States in 1988. The State-level differences helped the author to assess which program characteristics are important determinants of early participation in WIC.

The study used both parametric and nonparametric hazard rate analysis to examine the relationships among recipient characteristics, WIC program rules, and the timing of WIC participation. These techniques relate maternal, family, and program characteristics to the likelihood that an eligible woman begins participating in WIC during each month of pregnancy, given that she has not participated in the previous months of pregnancy.

The analysis shows that WIC participation is higher among women who have low education levels, are Hispanic, have low income (even among those who are eligible), and participate in other welfare programs. The probability of participating in WIC increases during the first 4 months of pregnancy and decreases thereafter. Women who have participated in WIC during a previous pregnancy are three times more likely to participate in WIC than women who have not participated in the past. The author noted, however, that this result should be interpreted with caution because of limitations on the information in the survey about previous WIC participation.

The study also found that State-level program characteristics are important determinants of WIC participation. Women in States that allow applicants to self-report their income when determining eligibility are 30 percent more likely to participate in WIC than women in States that require applicants to provide documentation of their income. In addition, the State-level policy to offer adjunctive eligibility for WIC to Medicaid and cash assistance recipients is associated with a 10- to 20-percent increase in the likelihood of WIC participation.

Recent policy changes have mandated documentation of income for eligibility determination and have expanded adjunctive eligibility. Given the estimates of this study, these policies have opposite effects on participation. Restricting the ability of applicants to self-declare income decreases the probability of WIC participation, and mandating adjunctive eligibility increases it. The author simulated the effects of these policy changes and found that the net effect is a 1-percentage-point increase in the probability of WIC participation over the course of a 40-week pregnancy.

Nutritional Status and Diet Quality

Development of a Diet Quality Index for Preschool Children and Its Application in Examining Dietary Trends in the United States

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The prevalence of childhood obesity has increased significantly in the past three decades. Obesity carries a number of negative medical consequences, including cardiovascular problems and diabetes. In addition, the dietary intake behavior of adults is strongly associated with their dietary intake behavior as children. The authors designed a tool to assess total diet quality in American preschoolers: the children's diet quality index (C-DQI). The C-DQI can be used to measure the effectiveness of child nutrition programs in improving overall diet quality in children and to help target child nutrition programs to population groups at greatest risk of poor diet quality.

The authors used dietary and sociodemographic data for over 5,000 children ages 2-5 from the 1994-96 and 1998 Continuing Survey of Food Intake in Individuals (CSFII). They designed the index using information on common nutritional problems in the preschool population and dietary intake recommendations by such organizations as the American Academy of Pediatrics, American Dietetic Association, and the National Academy of Sciences. The authors selected eight components of the index that incorporate information on the recommended consumption levels of added sugar, total fat, saturated fat, fruit, vegetables, grains, fruit juice, and iron.

The study found that the C-DQI values range from 16 to 70 points within the population, with an average of 46

out of 70 points. The authors tested the index's ability to distinguish between different levels of diet quality and found that better diet quality (a more healthful diet) within each of the components of the index is significantly associated with a higher overall C-DQI score. The analysis indicates that overall diet quality is better for boys than for girls and for children living in metropolitan areas than for those living in nonmetropolitan areas. Diet quality in low-income households is better for Hispanic children than for non-Hispanic Black or White children and for children who attend day care or preschool than for children who do not attend. Average diet quality declines as children get older.

The authors also examined the trend in children's diet quality over time by comparing C-DQI total and component scores among respondents to the National Food Consumption Survey 1977-79, the CSFII 1989-91, and the CSFII 1994-96, 1998. They found that overall diet quality improved somewhat during the study period, but that an increase in consumption of added sugar, excess juice, and excess dairy and a decrease in iron consumption caused declines in some components of diet quality. Fat consumption, as measured in grams per day, remained stable between 1977 and the mid- to late 1990s, while fat consumption as a percentage of total calories dropped 4 percent. The average number of fruit servings consumed almost doubled between the early 1990s and the mid- to late 1990s, with most of the rise attributable to an increase in fruit juice consumption. The authors noted that the intake of fat and saturated fat has not decreased since 1977, despite public health messages about the importance of reducing fat consumption.

The study results indicate that children's diet quality is influenced by sociodemographic characteristics of children and their families. Thus, public health messages could be targeted specifically to population groups at greatest risk for poor diet quality. Federal programs designed to enhance children's diet quality, such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and Head Start, target children at high risk for poor diet quality. The C-DQI could be used to measure the impact of Federal programs, such as WIC, on overall diet quality and on the level of diet quality in the individual components of the index. Using the C-DQI as an outcome measure could help to inform policymakers in the design and implementation of nutrition programs that will most effectively improve children's overall diet quality.

Heat or Eat? Cold Weather Shocks and Nutrition in Poor American Families

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Poor American families with children may have to make difficult tradeoffs when they face high heating costs in cold weather. This study investigates whether poor American families spend less on food and reduce the amount and nutritional value of the food they eat during these cold periods.

One study found that the diets of poor American children are inadequate during winter. Two studies of British children, in contrast, failed to identify any relationship between excess winter mortality and deprivation. Economists have also examined nutritional resource sharing among members of poor families. Studies examining the extent to which poor families on food stamps will reduce their food consumption toward the end of a benefit month conclude that food consumption in poor families is potentially vulnerable to financial strains but that the parents are able to protect their children from the adverse effects of these strains to some extent.

The authors measured patterns of household spending on food and home fuel and patterns of nutritional well-being at the individual level. They used expenditure data from the Consumer Expenditure Survey (CEX) for 1980-98. The data on nutritional well-being are from the National Health and Nutrition Examination Survey (NHANES) for 1988-94.

The authors examined spending in four categories—food eaten inside the home, food eaten away from home, clothing, and home fuel—in unseasonably cold or warm months. Because changes in spending over the course of a year by richer families are less constrained by financial resources, the authors used these families as a comparison group for the spending changes in poor families. In the analysis of nutritional outcomes, they compared the change in nutritional outcomes between summer and winter. Specifically, they compared the change in nutritional outcomes separately by age (children vs. adults) and income level (rich vs. poor). They define poor families as those whose incomes are below 150 percent of the poverty level and rich families as those whose incomes are more than 300 percent of the poverty level.

The study found that poor families spend less on food in months with unusually low temperatures. Both poor and rich families spend more on heating. While the dollar increase in heating expenditures for a poor family is less than that for a rich family, the change is a larger share of the poor family's budget. In addition, both adults and children in poor families reduce their caloric intake during the winter. Caloric intake does not differ significantly between summer and winter for either adults or children in rich families.

The results suggest that poor American families with children spend more on home fuel at the cost of spending on food and nutritional well-being. Parents in poor households are not fully able to protect their children from the effects of cold weather shocks. Both children and adults in poor families eat less food during the winter.

Nutrition Assessment and Education for Keweenaw Bay Ojibwa

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Keweenaw Bay Ojibwa Community College established the Nutrition Assessment and Education project to assess the nutritional needs of the Ojibwa people and to examine ways to address these nutritional needs while maintaining the traditional nutrition practices of the Ojibwa people. The author initiated the project, in collaboration with other tribal organizations and businesses, in response to the high risk and prevalence of diabetes, heart disease, and other nutrition-related health problems among the Ojibwa people.

The author focused on the members of the Keweenaw Bay Ojibwa community living on or near the L'Anse Reservation in northern Michigan on Keweenaw Bay of Lake Superior. About 860 of the 3,550 members of the Keweenaw Bay Ojibwa tribal community live on the reservation. This study provides information on the initial year of the nutrition project, in which the author conducted a primary data collection by analyzing the nutrition content of the food available on the L'Anse Reservation and surveying 40 elders living on or adjacent to the reservation about their health status and food consumption practices.

The author collected information on the food available at the three restaurants on the L'Anse Reservation and assessed the nutrient content of the food. While the restaurants offer some low-calorie meals, many of the meals are high in fat and calories and lack fruits and vegetables. None of the restaurants serve traditional Ojibwa foods, such as wild rice, fish, wild game, and seasonal fruits and vegetables. The author also collected information on the food served at the Elderly Nutrition Program and the Head Start program. These

programs do not serve traditional Ojibwa food regularly, but do serve it when they receive donations from local fishermen, hunters, or gardeners. Even then, the food is often fried rather than prepared with traditional low-fat cooking methods.

Preliminary results of the survey of elders indicate that health problems are much more prevalent among this population than among the elderly U.S. population overall. Almost half of the Ojibwa elders who responded to the survey are obese, 35 percent have diabetes, and almost 40 percent have high blood pressure.

Most of the elders who responded to the survey (85 percent) reported getting some exercise each week. About two-thirds walk as their primary exercise. Over half of the respondents eat fast food only once per month, but almost one-fourth eat fast food at least three times per week. The Elderly Nutrition Program, which provides light breakfasts and lunches Monday through Friday to adults age 55 and over, is an important source of food for elders on the reservation. About 80 percent of the survey respondents participate in the program, and 25 percent eat at least three meals per week through the program.

Less than one-third of the respondents eat traditional Ojibwa food once per week or less. However, over one-half reported that they would like to eat traditional Ojibwa food at least once per week, and over one-fourth reported that they would like to eat it at least once per day. The most frequently reported barrier to eating Ojibwa food is that it is difficult to get.

In the second year of the nutrition project, the author will continue the primary data collection from Ojibwa elders and begin a similar survey of children on the reservation. The analysis of these data could provide important insights into the factors related to healthy food consumption practices and activity levels by Ojibwa elders and children. To encourage the Ojibwa people to eat traditional food, the nutrition project plans to produce a cookbook of traditional Ojibwa food and to encourage the local restaurants and feeding programs to incorporate this food in their menus.

Food Security and Food Assistance Programs in the Community Context

Community Attitudes Toward Traditional Tohono O'odham Foods

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The Tohono O'odham people have the highest rate of diabetes among Native American tribes. About 50 percent of Tohono O'odham adults have adult-onset diabetes compared with 4-6 percent of the overall U.S. population. A number of studies have shown that the components of many traditional Tohono O'odham foods, such as tepary beans, cholla cactus buds, and wild spinach, help regulate blood sugar and reduce the incidence and effects of diabetes. In this study, the authors examined the prevalence of traditional Tohono O'odham food in the diets of tribal members and assessed the level of interest among tribal members in incorporating more traditional food into their diets.

The authors surveyed primary caregivers in 128 households, which contain an estimated 625 household members. Almost 75 percent of respondents are female, and about 60 percent are under age 36. Almost 20 percent of respondents suffer from diabetes, and almost 80 percent reported that at least one family member has diabetes.

The study found that less than one-fourth of survey respondents often eat traditional food. Respondents were asked about a number of possible obstacles to eating more traditional food. They reported that the limited availability of traditional food and lack of time to prepare it are the two main obstacles to eating traditional Tohono O'odham food. Over 60 percent would eat traditional food often if it were available. About 13 percent reported that they do not know what the traditional foods are, and less than 1 percent reported that they do not like the taste.

The survey shows that 60 percent of the respondents know that eating many traditional foods helps prevent diabetes, but just 53 percent know that eating these foods can help keep diabetics healthier.

The study found that about 27 percent of respondents receive food stamps, 7 percent receive USDA commodities through the Food Distribution Program on Indian Reservations (FDPIR), and 32 percent participate in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Almost 90 percent of surveyed FDPIR participants would like to receive traditional food as part of their commodity package, and almost 90 percent of surveyed WIC participants would like to receive supplemental coupons to purchase traditional foods, if these foods were available. Almost half of surveyed Food Stamp Program participants would definitely buy traditional foods with their food stamps, and another 30 percent would probably buy them. Although these results are based on responses to hypothetical questions, they suggest that these Federal food assistance program participants are receptive to incorporating traditional food into their diets. The authors made recommendations for how Federal food assistance programs could help to encourage the consumption of healthy, traditional Tohono O'odham food.

Contextual Determinants of Food Security in Southern Hispanic and African-American Neighborhoods

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Since 1995, when the Federal Government began monitoring food insecurity, African-American and Hispanic households have had consistently higher rates of food insecurity than the overall U.S. population. This study examines whether community-level factors in predominantly minority neighborhoods can help to explain the higher rates of food insecurity among minority households.

Previous research has found that accessibility of food varies with the level of residential racial segregation and that supermarket access is associated with average dietary quality in a community. The authors conducted a community-based participatory study, in partnership with residents of predominantly minority neighborhoods, to identify the most important community factors that relate to household food insecurity.

The authors held focus groups and photography sessions with residents of six predominantly minority neighborhoods in Durham, NC. They used two innovative

methods to gain an “insider’s perspective” of community factors related to food insecurity. First, all participants were asked to use cameras to identify and record the aspects of their communities that they thought were important in supporting their efforts to eat healthful, adequate diets. Second, participants analyzed data from the focus groups to identify the salient themes among members of their neighborhood research group. In addition, 12 members of the neighborhood research groups participated in individual interviews to explore further their personal experiences with food insecurity.

Participants in the study identified dietary quality as their primary food-related concern. They expressed concerns about five aspects of dietary quality: taste, freshness, balance, variety, and nutrient density of foods. They identified community factors that influence their diet quality, including access to fast food restaurants and food stores, the National School Lunch and School Breakfast programs, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the Food Stamp Program. Hispanic participants expressed concern about their children’s dietary habits related to their greater acculturation to “fast foods.” However, many participants recognized the importance of fast food restaurants as community centers and as the only source of safe playgrounds in some minority neighborhoods.

This study identified community factors, such as accessibility of retail food and food assistance programs, related to food insecurity in predominantly minority neighborhoods in Durham, NC. The authors noted that quantitative analysis is necessary to test the relationship between community characteristics and household food insecurity. The qualitative research could help to identify possible community-level policies that might help reduce household food insecurity.

Welfare Reform and Food Assistance Programs

Access to Food Assistance Programs Among Northern Cheyenne Families

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Federal food assistance programs are an integral part of the social safety net on the Northern Cheyenne Reservation in southeastern Montana. In 2000, almost half of Northern Cheyenne families with children lived in poverty, and in 2002, the unemployment rate for the Northern Cheyenne Nation was 71 percent. Previous research has shown that about one-third of Northern Cheyenne Reservation residents use food stamps and one-third receive USDA commodities through the Food Distribution Program on Indian Reservations (FDPIR).⁷ This study examined the use of food assistance by two population groups that are particularly vulnerable to the adverse economic conditions on the Northern Cheyenne Reservation: seasonal workers and families in which the adults face high barriers to employment.

The authors used administrative data to document changes in the use of Federal food and cash assistance since the mid-1990s in Rosebud County, MT, where much of the Northern Cheyenne Reservation is located. In addition, the authors interviewed 32 reservation residents who are either seasonal workers or individuals who face high barriers to employment. The interviews provided detailed accounts of individual and family experiences with the use of Federal food

assistance programs. The authors compared the information collected from seasonal workers with data they had collected from other reservation residents in an earlier study.

The study found that the average monthly number of food stamp recipients fell almost 30 percent between 1996 and 2000 and then rose 8 percent between 2000 and 2001. The decline in the use of food assistance is particularly striking because economic conditions for the Northern Cheyenne Reservation, unlike for most of the rest of the country, did not improve during the 1990s. The number of households that received commodities through the FDPIR increased slightly between July 1998 and July 1999. However, the most recent program data show that the average number of households receiving commodities decreased almost 16 percent between 2000 and 2002.

Most survey respondents are seasonal workers, who most often cited fire-fighting as their seasonal job. Seasonal workers also reported doing construction work, selling firewood, babysitting, cleaning houses, or working at local schools as a school aide, cook, or bus driver. The single-parent families in the survey are much more aware of the food assistance programs that may be available to them than other types of families. Single-parent families with children are most likely to be eligible for and receive cash assistance, and their participation in the cash assistance program is likely to make them more aware of other Federal assistance programs.

The seasonal workers who do access food assistance programs reported that the FSP and FDPIR are important in helping them meet their food needs. FSP participants appreciate the flexibility that they have to purchase the kinds of food that they want but noted that the high food prices on the reservation make it difficult to stretch their food stamp benefits. Commodity recipients like the amount and kinds of foods they receive. Many reported that the monthly commodity package provides them with more food than they could buy with food stamps and that the application process for FDPIR is simpler than for the FSP. A number of seasonal workers also reported difficulty in establishing their eligibility for the FSP when their employment ends. However, whether this is due to actual eligibility restrictions or to misinformation about the program's eligibility requirements is not clear.

⁷FDPIR primarily provides commodity foods to low-income households living on Indian reservations. Many households participate in the FDPIR as an alternative to the Food Stamp Program because they do not have easy access to food stamp offices or authorized food stores.

The authors collected information that allowed them to assess the level of food insecurity, stress, and health problems among survey respondents. They found that seasonal workers experience levels of food insecurity and nutritional risk that are almost as high as those experienced by the unemployed. Seasonal workers reported higher levels of stress than the unemployed. While seasonal workers reported that they are able to provide for the needs of their families during the part of the year that they are employed, they do not consider the income they receive to be sufficient to last

the remainder of the year. The limitations of the local economy prevent most seasonal workers from finding alternative employment.

The cultural norm on the Northern Cheyenne Reservation is to share food and help family members when they are in need. However, because poverty and unemployment rates are so high, this dependence on extended family stretches the resources of most families very thin. Therefore, Federal food assistance programs represent an important source of support for these families.

Food Stamp Program Participation of Refugees and Immigrants: Measurement Error Correction for Immigrant Status

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After two decades of increasing participation in cash and noncash public assistance programs by immigrant households, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 drastically altered the availability of Federal public assistance to legal immigrants. Immigrants who were not yet naturalized by 1996 or who entered the country after August 1996 became ineligible for Federal benefits, although States had the option to provide them with cash assistance or Medicaid benefits.⁸ Refugees, however, were given a 5-year exemption from the eligibility restrictions on Federal benefits that applied to other legal immigrants. Despite the exemption, since 1996, the participation rate of refugees in public assistance programs, such as the Food Stamp Program (FSP), has fallen at least as fast as for other foreign-born residents. FSP participation of refugees fell 37 percent between 1994 and 1997. During the same

period, participation in the FSP dropped 30 percent for immigrants and 21 percent for native-born citizens.

The authors used the Current Population Survey to estimate the impact of refugee status on FSP participation from 1994 to 2001 and estimated the effect of PRWORA on FSP participation of refugees. They corrected for errors in the measurement of refugee status and for the misreporting of FSP participation, which allowed them to get consistent estimates of the effect of refugee status and PRWORA on FSP participation.

The study found that refugees and nonrefugee immigrants have distinct patterns of FSP participation. Refugees are more likely than other immigrants to use food stamps near the time of their arrival in the U.S. However, the FSP participation rate of refugees declines with the number of years since their arrival in the U.S., whereas this decline does not occur among nonrefugee immigrants. The FSP participation rate of refugees is more sensitive to the economic climate than that of other immigrants or of U.S. citizens. The authors also found differences in program use by citizenship status. Immigrants who opt for citizenship are more likely to participate in welfare programs than those who do not.

Even though FSP participation fell 37 percent between 1994 and 1997, welfare reform does not appear to have had the unintended consequence of reducing FSP participation among refugees. The study results suggest that food stamp use among refugees is primarily explained by their response to favorable economic conditions, rather than to welfare reform.

The authors found that the usual approach to measuring refugee status leads to a substantial underestimate of the effect of refugee status on participation in the FSP. Additionally, the failure to account for response error in program participation causes an underestimate of the effects of all variables on participation. The methods used in this study can be applied in research on program participation, to correct for these measurement problems and to ensure that research findings will be useful to policy analysis.

⁸Subsequent legislation in 1997 allowed legal immigrants who were disabled, elderly, or children living in the United States in August 1996 to regain eligibility for the Food Stamp Program. More recently, the 2002 Farm Act restored food stamp eligibility to legal noncitizens who have lived in the United States for at least 5 years or who are children or disabled, regardless of how long they have lived in the United States.

Food Stamp Receipt by Families With Noncitizen Household Heads in Rural Texas Counties

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The 1996 welfare reform legislation eliminated the eligibility of most legal immigrants to receive food stamps, although it did make exceptions based on a legal immigrant's refugee status, work history, or U.S. veteran status. Subsequent legislation in 1997 allowed legal immigrants who were disabled, elderly, or children living in the United States in August 1996 to regain eligibility for the Food Stamp Program (FSP). More recently, the 2002 Farm Act restored food stamp eligibility to legal noncitizens who have lived in the United States continuously for at least 5 years or who are children or disabled, regardless of how long they have lived in the United States.

In 2000, noncitizens made up almost 10 percent of the population in Texas. Noncitizens were more than twice as likely as citizens to live in poor households. Although noncitizens in Texas are concentrated in metropolitan areas, about 5 percent of people in nonmetropolitan counties are noncitizens. Because of the large noncitizen population in Texas, the elimination of the eligibility of most noncitizens to receive food stamps would be expected to have a large impact on the State's FSP caseload. This study examined the decline in the number of households in Texas headed by a noncitizen that participated in the FSP between 1995 and 2001 and the factors that contribute to the decline. It also compared the decline in the noncitizen FSP caseload in metropolitan counties with the decline in nonmetropolitan counties.

The study found that the number of FSP households in Texas declined 45 percent between 1995 and 2001, while the number of FSP households headed by a noncitizen declined 72 percent. The proportion of elderly household heads among noncitizen FSP households increased from 10 percent in 1995 to almost 25 percent in 2001, a trend that is consistent with the restoration of FSP eligibility to elderly noncitizens.

The authors used monthly FSP administrative caseload data to examine the factors associated with the decline in the noncitizen FSP caseload. While the eligibility restrictions contribute to much of the decline, the authors find that other factors, such as demographic characteristics and program changes, also contribute to the decline. Noncitizen FSP households are less likely to leave the program when the household is larger, and when the head is older, female, and has low levels of education and income. The study results indicate that these demographic characteristics have a slightly stronger effect on citizen FSP households than on noncitizen FSP households. Noncitizen FSP households that live in a nonmetropolitan county are less likely to leave the FSP than those that live in metropolitan counties, and metropolitan status has a stronger effect on noncitizen FSP households than it does on citizen FSP households. The authors also examined whether the frequency with which households must recertify their eligibility for the FSP has a differential effect on noncitizen FSP households. Regardless of citizenship status, the more frequently FSP households must recertify eligibility, the more likely they are to exit the program. However, the effect of a more frequent recertification policy is stronger on citizen FSP households than on noncitizen FSP households.

The study results indicate that restrictions placed on FSP eligibility of noncitizens are responsible for a large share of the decline in their use of food stamps, but that other factors, such as increasing income, also contributed to the decline. This finding implies that noncitizens respond to changes in economic conditions in ways similar to citizens. One notable difference is that residence in a nonmetropolitan county reduces the probability that a noncitizen FSP household leaves the program by more than it reduces the probability that a citizen FSP household leaves the program. This suggests that research focus on whether county-level program administration or economic conditions have different effects on citizen and noncitizen FSP households.