Executive Summaries

Food Security

Food Insecurity and Welfare Reform

Kristine Siefert, Ph.D., MPH
Poverty Research and Training Center
The University of Michigan
School of Social Work
540 E. Liberty St., Suite 202
Ann Arbor, MI 48104-2210
ksiefert@umich.edu

Mary E. Corcoran, Ph.D. and
Colleen M. Heflin, MPP
Poverty Research and Training Center
The University of Michigan

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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

Joda Derrickson, Ph.D., RD
Nutrition Consultant
44-155-4 Laha Street
Kaneohe, HI 96744
Phone/Fax: 808-234-6317
laniwai4@pixi.com

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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

Carol L. Connell, MS, RD
Kathy Yadrick, Ph.D., RD
Agnes W. Hinton, Dr.P.H., RD
The University of Southern Mississippi
Hattiesburg, MS 39406-5054
carol-connell@usm.edu

Joseph Su, Ph.D., MPH
Louisiana State University Medical Center
New Orleans, LA

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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

Debra Palmer Keenan, Ph.D.
Rutgers, the State University of New Jersey
Department of Nutritional Sciences
26 Nichol Ave., Davison Hall
New Brunswick, NJ 08901-2882
keenan@aesop.rutgers.edu

Dr. Sylvia Ridlen, Puneeta Sonya Sadani,
Nancy Scotto Rosato, and Kathryn Kempson

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University of California, Davis

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.