

The Department of Nutrition University of California, Davis

Impact of Food Insecurity and Food Assistance Program Participation on Nutritional Risk Among the Elderly

Edward A. Frongillo, Jr., Ph.D., and
Jung Sun Lee, M.S.
Division of Nutritional Sciences
Cornell University
Ithaca, NY 14853
607-225-3153, fax 607-225-1003
eaf1@cornell.edu

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The purposes of this study are to examine: 1) the factors associated with the food insecurity of the elderly in the United States, 2) the consequences associated with food insecurity for the nutritional and health status of the elderly, and 3) the impact of food assistance programs among the nutritionally needy or food-insecure elderly on their nutritional and health status.

Frongillo and Lee used data from two cross-sectional surveys and one longitudinal study: the third National Health and Nutrition Examination Survey (1988-94), the Nutrition Survey of the Elderly in New York State (1994), and the Longitudinal Study of Aging (1984-1990). Their multiple linear and logistic regression analyses examined three sets of issues: (1) how health and physical functioning, as well as sociodemographic and economic factors, contributed to food insecurity in the elderly, (2) the extent to which food-insecure elderly were likely to have lower nutrient intake and skinfold thickness (a measure of body fat), poorer self-reported health status, and greater nutritional risk, and (3) whether food assistance participants differ from nonparticipants with respect to their nutrient intake, skinfold thickness, self-reported health status, nutritional risk, and rates of hospitalization and mortality; and how these differences compare between food-secure and food-insecure elderly.

The authors found that low levels of income and education, minority status, and food assistance program participation were significantly related to food insecurity. Functional impairments and lack of social support were significantly related to food insecurity among the elderly, even after controlling for those factors. Food insecurity was significantly associated with lower intakes of energy, protein, carbohydrates, saturated fat, niacin, Vitamins B-6, B-2, B-12, magnesium, iron, and zinc, as well as lower skinfold thickness. Also, food-insecure elderly were 2.3 times more likely to report fair or poor health status and had higher nutritional risk. The authors found poorer nutritional and health status among food-insecure or needy elderly than among food-secure elderly across all three data sets. Among food-insecure or needy elderly, food assistance participants had lower nutrient intakes and skinfold thickness, greater nutritional risk, poorer self-reported health status, and higher rates of hospitalization and mortality than nonparticipants. Among the food-secure elderly, however, participants and nonparticipants had similar nutritional and health status.

Food security in the elderly is associated not only with limited food affordability, availability, and accessibility, but also with inadequate food utilization. Food-insecure elderly are those with multiple problems that prevent them from achieving nutritional well-being, and lead them to seek food assistance programs. Food-insecure elderly have poorer nutritional and health status than do food-secure elderly.

The results of this study imply that both program efficacy and the need status of participants are playing roles in determining the impact of food assistance programs. The authors conclude that better theoretical and empirical knowledge of how the needs of this population are dynamically related to food assistance program delivery is essential to determining program impact and to make food assistance programs more effective and beneficial for needy elderly.

Influence of Food Stamps on the Nutritional Status of Inner-City Preschoolers from Hartford, CT, Who Receive WIC Benefits

Rafael Pérez-Escamilla,* Ann M. Ferris,
and Linda Drake

Department of Nutritional Sciences
University of Connecticut
Jones Building, Storrs, CT 06269

and

Lauren Haldeman, Jessica Peranick,
Marcia Campbell, Donna Moran, Yu-Kuei Peng,
Georgine Burke, and Bruce A. Bernstein
Hispanic Health Council, Inc., Hartford Hospital,
Connecticut Children's Medical Center,
and St. Francis Hospital

*Contact: 860-486-5073

rperez@canr.caq.uconn.edu

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The authors compared the food and nutrition situation of low-income preschoolers who received food stamps (N=59 FS) and those who did not (N=41 NFS). The 100 children participating in the study were recruited in the waiting areas of the two largest hospitals in Hartford, CT. The average age of the sampled children was 2.6 years. Fifty percent were female, and 84 percent were Hispanic. According to their caregivers, all had been enrolled in WIC at some point in the preceding year, and 95 percent were receiving WIC benefits at the time of the study. Groups were comparable in demographic characteristics, but the socioeconomic status of the FS group was lower than that of the NFS group.

The authors report that 74 percent of the 100 households in their sample were food insecure as measured by the Radimer/Cornell hunger scale. Among the FS group, the average monthly FS allotment was \$260 and represented 96 percent of monthly food expenditures. Logistic regression results showed a positive and statistically significant relationship between "How long food stamps last each month" and food security, even after controlling for monthly income, monthly food stamp allotment, household size, maternal education, and car availability.

Twenty-four-hour recall data indicate that FS preschoolers tended to have higher intakes of iron, zinc, and folate than NFS preschoolers (statistically significant at the 10 percent level). Among those with monthly household incomes of less than \$1,000, FS children had higher intake of fiber, riboflavin, niacin, pantothenic acid, and vitamins B-6 and D than NFS children. After controlling for energy intake and child's age, the positive association between FS and the intakes of niacin and vitamin B6 remained statistically significant. Low-income FS children also consumed more sodas and had a higher caffeine intake than NFS children.

The authors draw three conclusions from these results. First, food stamps provide children with higher intakes of essential nutrients. Second, the monthly duration of food stamps has an independent effect on the food security of food stamp households. Third, food shopping, budgeting and menu planning lessons may be important for food stamp recipients to maximize how long their food stamps last each month and to increase the nutritional value of foods purchased with them.

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Relationships Between Participation in Food Assistance Programs and Skeletal Health in Adult Women and Men

May-Choo Wang, Dr. P.H., R.D.
Department of Nutrition and Food Science
One Washington Square
San Jose State University
San Jose, CA 95192-0058
408-924-3106, fax 408-924-3114
maywang@pacbell.net

and

Lori Beth Dixon, Ph.D., M.P.H.
National Cancer Institute
National Institutes of Health
Bethesda, Maryland

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University of California, Davis

The relationship between osteoporosis and socioeconomic status has never been explored even though income and education-related lifestyle factors, such as diet and activity, are known to affect bone status. The primary objectives of this study are to determine if an association exists, and if bone density is higher among the poor who participate in food assistance programs.

The authors used the National Health and Nutrition Examination Survey (NHANES) III, 1988-94 for their

analysis. They limited their sample to nonpregnant premenopausal women aged 20 years and older; postmenopausal women; and men age 50 and older. Their outcome variables were bone mineral density (BMD, g/cm²) for the femoral neck and total body. They used multiple linear regression to assess relationships between participation in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and the Food Stamp Program, and bone density. They also included age, nutrient intakes, physical activity, oral contraceptive use, pregnancy history, income, education, and cultural factors indicated by language spoken at home and place of birth in the regression models.

The authors found that education was a positive predictor of BMD in all three groups—premenopausal women, postmenopausal women, and men—but only among whites. Participation in WIC was not related to BMD. Participation in the Food Stamp Program was associated with lower BMD in low-income Mexican American men and African American postmenopausal women. In premenopausal women, neither participation in the Food Stamp Program nor in WIC was associated with BMD. As in the Frongillo and Lee study, these results are likely to derive from the participants' reasons for entering the programs, rather than from program impacts. Further research is needed to address the potential impacts of length of participation in food assistance programs on BMD.