

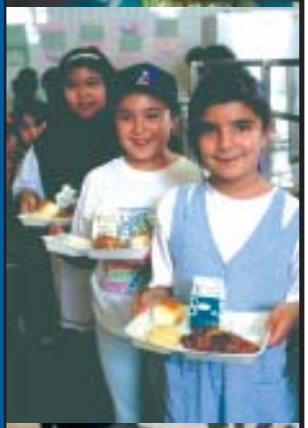

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Do Food Stamps Without Education Improve the Nutrient Intake and Food-Related Behaviors of Recipients?

Katherine L. Cason, *Pennsylvania State University*
Ruby H. Cox, *Virginia Polytechnic Institute and State University*
Janie L. Burney, *University of Tennessee*

The Food Stamp Program is considered a safety net to protect the nutritional health of Americans regardless of age or disability. The program helps put food on the table for more than 9 million households, involving 22 million individuals each day. It provides low-income households with coupons or electronic benefits they can use like cash at designated grocery stores to help ensure access to a healthy diet. The current program structure was implemented in 1977 with a goal of alleviating hunger and malnutrition by permitting low-income households to obtain a more nutritious diet through normal channels of trade. It provided $19.8 billion in benefits in 1998.

Despite dedicating billions of dollars in benefits, studies investigating factors affecting food consumption of low-income individuals have shown little relationship between the receipt of Food Stamps and nutrient intake [5,6,8,11]. Participation in the Food Stamp Program generally increases access to food and presumably should increase nutrient intake by low-income individuals through increased purchasing power. However, it is uncertain whether Food Stamp recipients actually consume more nutritious diets. The Third Report on Nutrition Monitoring in the United States [4] indicates that individuals receiving Food Stamps have less adequate diets than low-income individuals who do not receive Food Stamps. In addition, the report suggests that such risk factors as obesity, hypertension and high serum cholesterol are major concerns for low-income individuals and place them at higher risk for developing chronic diseases due to inadequate diets. Other researchers [2,7] found that Food Stamp participation had negligible effects on nutrient intake of the elderly. Similarly, Weimer's [10] investigation of the elderly found no significant relationship between Food Stamp participation and dietary intake.

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Purpose and Procedures

This study examined the effect of food assistance on the dietary patterns of households in South Carolina, Tennessee and Virginia. The researchers used data previously collected from participants in the Expanded Food and Nutrition Education Program (EFNEP) and the Food Stamp Nutrition Education Program (FSNEP) in the three states during the 1999 reporting year. Data on intake of foods and nutrients and food-related behaviors were used to compare Food Stamp recipients with non-Food Stamp recipients on relative dietary adequacy, recommended food-related behaviors and other factors.

The purpose of the study was to determine if a relationship exist between participation in the Food Stamp Program and food/nutrient intake. Participants in the project were enrolled in the Expanded Food and Nutrition Education Program (EFNEP) or the Food Stamp Nutrition Education Program (FSNEP) at Clemson University in South Carolina, The University of Tennessee and Virginia Polytechnic Institute & State University. EFNEP and FSNEP are nutrition education programs that target low-income families and youth teaching them how to make healthy food choices, prepare food safely and manage their resources to reduce food insecurity. EFNEP focuses on nutrition education for families with children, while FSNEP focuses on education for families receiving Food Stamps. EFNEP and FSNEP programs are administered by the Cooperative Extension Service at each university. Using instruments developed for the national EFNEP Reporting System (ERS Version 4.02, CSREES, Washington, DC), researchers examined the relationship of participation in the Food Stamp Program and dietary intake in low-income populations.

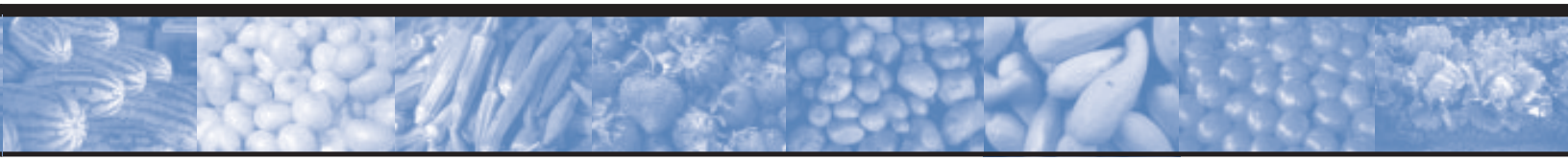
Subjects

Table 1 provides a comparison of the demographic characteristics of subjects enrolled in EFNEP versus those enrolled in FSNEP.

Table 1. Demographic Description of Study Participants at Entry Into the Expanded Food and Nutrition Education Program (EFNEP) and the Food Stamp Nutrition Education Program (FSNEP) in Three States.

Demographic Characteristics	EFNEP (N=6,969)		FSNEP (N=3,552)	
RACE	**Number**	**Percent**	**Number**	**Percent**
White	3,947	56.6	1,538	43.3
African American	2,771	39.8	1,865	52.5
Hispanic	173	2.5	90	2.5
Other	78	1.1	59	1.7
AGE GROUP	**Number**	**Percent**	**Number**	**Percent**
<18 Years	1,282	18.4	137	3.9
19 - 50 Years	5,439	78.0	1,205	33.9
51 - 64 Years	180	2.6	506	14.2
>65 Years	68	1.0	1,704	48.0
INCOME	**Mean**	**SD**	**Mean**	**SD**
	$378	+ 508	$394	+ 446
FOOD STAMPS	**Number**	**Percent**	**Number**	**Percent**
Yes	3,481	50.0	1,575	44.3
No	3,488	50.0	1,977	55.7

[a]Three states included South Carolina, Tennessee and Virginia.



Expanded Food and Nutrition Education Program (EFNEP)

The study included 6,969 participants who were enrolled in EFNEP during the 1999 reporting year. Data collected at entry (i.e. prior to the educational intervention) were used for making comparisons between Food Stamp and non-Food Stamp recipients. The racial distribution of the EFNEP subjects was 3,947 (56.6%) White, 2,771 (39.8%) African-American, 173 (2.5%) Hispanic, and 78 (1.1%) other. The majority of the subjects (78%) were 19-50 years of age, with the next highest percentage (18.4%) in the <18 years age group. The mean monthly income was $378, with the ≥65 years age group reporting the highest monthly income ($437) and the <18 years age group reporting the lowest monthly income ($126). Food Stamp recipients reported lower monthly incomes ($349) than those not receiving Food Stamps ($649).

Food Stamp Nutrition Education Program (FSNEP)

The study included 3,552 participants enrolled in the FSNEP in the 1999 reporting year. The racial distribution of the FSNEP subjects was 1,538 (43.3%) White, 1,865 (52.5%) African-American, 90 (2.5%) Hispanic, and 59 (1.7%) other. The age distribution revealed that the largest age category were those in the ≥65 years of age (48.0%), with those in the category of 19-50 years of age being the second largest (33.9%). The reported mean monthly income of the group was $394, with the ≥65 years age group reporting the highest monthly income ($400) and the <18 years age group reporting the lowest monthly income ($293). Food Stamp recipients reported lower monthly incomes ($379) than those not receiving Food Stamps ($524).

Comparison of Food Stamp Versus Non-Food Stamp Recipients on Food Group and Nutrient Intakes Before Educational Intervention

Expanded Food and Nutrition Education Program (EFNEP)

Table 2a compares food group and selected nutrient intake of Food Stamp households and non-Food Stamp households. No significant differences were noted between Food Stamp and non-Food Stamp recipients in level of intake for the majority of food groups and nutrients. However, significant differences were noted for two food groups and one nutrient. Food Stamp recipients consumed more meat, (2.3 servings), compared to non-Food Stamp recipients (2.0 servings). Food Stamp recipients consumed less milk, (1.2 servings) than non-Food Stamp recipients, (1.4 servings). Food Stamp recipients consumed more fat (71.7 grams) than non-Food Stamp recipients (67.9 grams).

Food Stamp Nutrition Education Program (FSNEP)

Table 2b presents a comparison of food group and selected nutrient intake of Food Stamp households and non-Food Stamp households. In comparing food group/nutrient intakes of FSNEP participants, no significant differences were noted in the level of intake for the majority of food groups and nutrients based on whether or not the participants received Food Stamps. Significant differences were noted for fat and energy. Food Stamp recipients consumed more fat (62.4 grams) than non-Food Stamp recipients (56.3 grams). Energy intake was also higher for Food Stamp recipients than for non-Food Stamp recipients (1566 kcal versus 1490 kcal).

Comparison of Food Stamp and Non-Food Stamp Recipients at Pre-Intervention with Desirable Responses on Food Behavior Checklist

EFNEP Participants

Food Stamp recipients were compared with non-Food Stamp recipients on desirable responses to a 10-item food behavior checklist, prior to any educational intervention. Table 3a provides a comparison of Food Stamp and non-Food Stamp recipients at pre-intervention with desirable responses on food behavior checklist. No significant differences were noted in the data for six of the 10 food behaviors. For four questions, significant differences were noted between responses of Food Stamp recipients and non-Food Stamp recipients. Food Stamp recipients more often reported planning meals ahead of time than non-Food Stamp recipients (20.3% vs. 18.7%). Food Stamp recipients reported that they

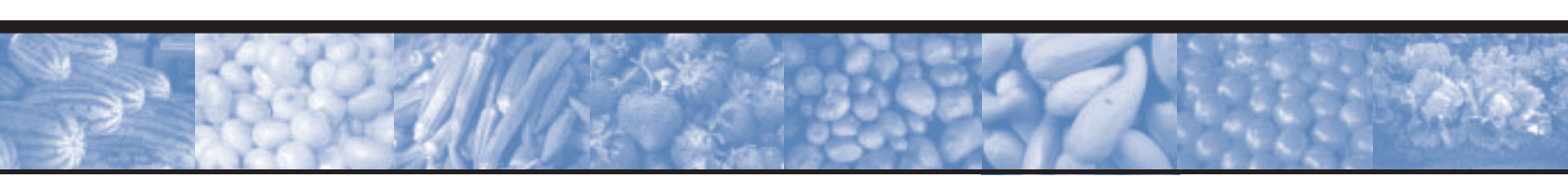


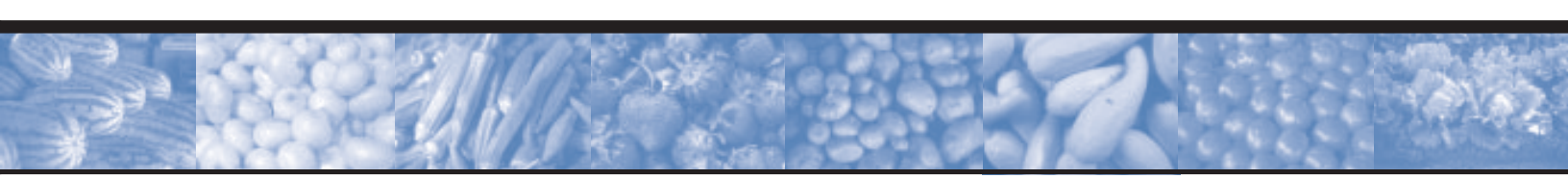
Table 2a. Comparison of Food Stamp and Non-Food Stamp Recipients Enrolled in EFNEP in Three States at Program Entry on Intakes of Food Groups and Selected Nutrients (N=6,359).

Food or Nutrient	Food Stamp Group (n=3,164)		Non-Food Stamp Group (n=3,195)		P-Value
	Mean	+ SD	Mean	+ SD	
Meat/poultry/fish/eggs (3 oz or equiv)	2.3	2.5	2.0	1.8	.0001**
Milk/Yogurt/Cheese (8 fl oz)	1.2	1.4	1.4	1.5	.0001**
Vegetables (servings)	2.6	3.3	2.5	3.1	.1400
Fruits (servings)	.94	2.2	1.1	2.3	.008*
Bread/Cereal/Pasta (servings)	4.9	3.8	4.9	3.4	.7400
Protein (grams)	67.5	47.5	64.7	42.3	.0140
Fat (grams)	71.7	54.4	67.9	49.6	.0030*
Carbohydrate (gm)	205.1	143.9	207.5	136.9	.4900
Iron (milligrams)	11.9	10.4	11.8	9.3	.8800
Calcium (mg)	625.9	487.9	654	507.5	.0200
Vitamin A (RE)	763.5	1,443.9	771.2	1,390.5	.8300
Vitamin C (mg)	84.2	97.2	85.8	101.8	.5300
Vitamin B6 (mg)	1.4	1.3	1.4	1.2	.2000
Dietary Fiber (gm)	11.3	12.0	11.0	10.9	.2600
Energy (kcal)	1,722.7	1,119.3	1,684.4	1,020.2	.1500

Table 2b. Comparison of Food Stamp and Non-Food Stamp Recipients Enrolled in FSNEP in Three States at Program Entry on Intake of Food Groups and Selected Nutrients (N=3,533).

Food or Nutrient	Food Stamp Group (n=1,572)		Non-Food Stamp Group (n=1,961)		P-Value
	Mean	+ SD	Mean	+ SD	
Meat/poultry/fish/eggs (3 oz or equiv)	2.0	1.7	1.9	1.6	.0200
Milk/Yogurt/Cheese (8 fl oz)	1.0	1.2	1.1	1.2	.0400
Vegetables (servings)	2.7	4.3	2.7	2.7	.8100
Fruits (servings)	1.3	2.0	1.2	2.2	.3700
Bread/Cereal/Pasta (servings)	4.6	3.0	4.7	4.6	.5000
Protein (grams)	63.2	39.2	62.4	37.5	.5400
Fat (grams)	62.4	49.4	56.3	39.4	.0001**
Carbohydrate (gm)	192.1	111.7	189.1	126.7	.4600
Iron (milligrams)	12.9	11.2	12.8	26.4	.2700
Calcium (mg)	575.1	510.0	591.9	406.6	.2800
Vitamin A (RE)	917.1	2,070.4	970.5	1,515.4	.3800
Vitamin C (mg)	88.4	108.1	90.6	88.1	.5100
Vitamin B6 (mg)	1.4	1.2	1.5 +	1.3	.0140
Dietary Fiber (gm)	11.8	14.7	12.4	11.0	.1500
Energy (kcal)	1,565.7	892.3	1,490.0	837.7	.0001**

* Significant difference at P < .01
** Significant difference at P < .001



ran out of food before the end of the month (10.3%) more often than non-Food Stamp recipients (8.2%). For the two questions dealing with food safety behavior (refrigerating food within two hours and thawing properly), a lower percentage of Food Stamp recipients (45.7% for item five and 34.0% for item six) reported practicing the desirable behavior as compared to non-Food Stamp recipients (47.9% for item five and 37.5% for item six).

FSNEP Participants

Food Stamp recipients were compared with non-Food Stamp recipients on desirable responses to a 10-item food behavior checklist, prior to an educational intervention. Table 3b provides a comparison of Food Stamp and non-Food Stamp recipients at pre-intervention with desirable responses on food behavior checklist. Significant differences were noted between responses of Food Stamp and non-Food Stamp households for two questions only. A lower percentage of Food Stamp recipients (33.7%) reported practicing the desirable behavior of thawing food properly as compared to non-Food Stamp recipients (44.8%). A lower percentage of Food Stamp recipients (9.9%) reported using the Nutrition Facts on food labels to make food choices as compared to non-Food Stamp recipients (14.9%).

Discussion

Findings from this study suggest that there are relatively few differences in intake of food groups and selected nutrients between Food Stamp and non-Food Stamp households at entry into EFNEP and FSNEP prior to educational intervention. Food Stamp recipients enrolled in EFNEP typically consumed more meat and fat, but less milk than non-Food Stamp recipients. Food Stamp recipients enrolled in FSNEP typically consumed more fat and energy than non-Food Stamp recipients. The results of this study are consistent with previous literature on the effects of Food Stamp participation on dietary intake. Most previous studies [1,2,10] have found that participation is not significantly related to the intake of most nutrients. Where significant relationships have been found, they have not been consistently positive or negative.

Data also suggest that there are relatively few differences in food-related behaviors between Food Stamp and non-Food Stamp households prior to educational intervention. A lower percentage of Food Stamp recipients reported desirable behaviors in food safety and in using food labels to make food choices. However, more Food Stamp recipients reported that they planned meals ahead of time. Responses to the one survey item related to measures of food security showed Food Stamp recipients more often ran out of food before the end of the month. A similar finding was previously noted in the Third Report on Nutrition Monitoring in the United States [4].

Several factors may explain why Food Stamp recipients do not consume more nutritious diets than households not receiving Food Stamps. One reason may be that recipients purchase more expensive forms of the same foods than non-recipients, thereby reducing their ability to purchase enough nutritious food. For example, with the additional resources available, Food Stamp recipients may select brand-name foods rather than generic foods in the grocery store. Food Stamp recipients may purchase more meat rather than less expensive meat substitutes, such as dry beans. They may also purchase the more expensive convenience foods rather than preparing foods from basic staples. Food Stamp recipients may also waste more food than non-recipients due to a lack of proper food safety and storage techniques. An additional component of this research project involving one state, which assessed food purchasing patterns, supports this theory. However, additional research is needed to further document the extent to which these differences might exist.

Implications for Policy

One goal of USDA's Food and Nutrition Service is to help Food Stamp recipients bring their food choices and food preparation practices more in line with broadly accepted recommendations for healthful eating. Butler and Raymond [2] indicated that adequate income was no guarantee of adequate nutrition and reported that "even rudimentary knowledge

Table 3a. Comparison of Food Stamp and Non-Food Stamp Recipients Enrolled in FSNEP in Three States on Desirable Responses[a] on a Food Behavior Checklist at Program Entry (N = 6367).

Items on Food Behavior Checklist	Desirable Responses by Food Stamp Recipients (n = 3,170)		Desirable Responses by Non-Food Stamp Recipients (n = 3,197)		P-Value
	Number	Percent	Number	Percent	
1. Plan meals ahead of time	1,228	20.3	1,190	18.7	.0050*
2. Compare prices when buying food	2,031	31.9	2,071	32.5	NS
3. Run out of food before end of month	655	10.3	523	8.2	.0001**
4. Shop with a grocery list	1,265	19.9	1,320	20.7	NS
5. Leave meat/dairy foods out of refrigerator for 2 hours or more	2,907	45.7	3,051	47.9	.0001**
6. Thaw frozen food at room temperature	2,163	34.0	2,389	37.5	.0001**
7. Think of healthy food choices when deciding what to feed family	1,674	26.3	1,638	25.7	NS
8. Prepare foods without adding salt	889	14.0	858	13.5	NS
9. Use "Nutrition Facts" on food labels to make food choices	672	10.6	631	9.9	NS
10. Eat something in morning within 2 hours of waking up	1,945	30.6	2,031	31.9	NS

[a] Desirable responses included scoring 3 or more on positive practices and 2 or less on negative practices on the FNEP Evaluation and Reporting System (ERS) Food Behavior Checklist.

* Significant difference at P <.01

** Significant difference at P <.001

NS Not significant

of nutrition can increase nutrient intake considerably."

This study suggests that the provision of Food Stamps alone, without nutrition education, will not achieve the goals for which the Food Stamp Program was established. Based on a long history of positive dietary and food behavior improvement among Food Stamp and non-Food Stamp recipients that EFNEP has been able to achieve, it seems certain that all Food Stamp recipients would greatly benefit from a nutrition education program [9]. Without nutrition education, access to supplemental food through the Food Stamp Program may not promote healthier dietary intakes nor reduce disease risks.

In order to make healthy food choices, low-income individuals need research-based information about foods and nutrition. Like middle- and upper-income individuals, some may still make the wrong choices. However, they deserve the opportunity to make informed choices based on sound

Table 3b. Comparison of Food Stamp and Non-Food Stamp Recipients Enrolled in FSNEP in Three States on Desirable Responses[a] on a Food Behavior Checklist at Pre-Intervention (N = 3,552).

Items on Food Behavior Checklist	Desirable Responses by Food Stamp Recipients (n = 1,997)		Desirable Responses by Non-Food Stamp Recipients (n = 1,575)		P-Value
	Number	Percent	Number	Percent	
1. Plan meals ahead of time	441	12.4	534	15.0	NS
2. Compare prices when buying food	903	25.4	1,165	32.8	NS
3. Run out of food before end of month	285	8.0	289	8.1	NS
4. Shop with a grocery list	635	17.9	855	24.1	NS
5. Leave meat/dairy foods out of refrigerator for 2 hours or more	1,479	41.6	1,866	52.5	NS
6. Thaw frozen food at room temperature	1,196	33.7	1,592	44.8	.0009**
7. Think of healthy food choices when deciding what to feed family	753	21.2	997	28.1	NS
8. Prepare foods without adding salt	478	13.5	617	17.4	NS
9. Use "Nutrition Facts" on food labels to make food choices	350	9.9	529	14.9[a]	.0019*
10. Eat something in morning within 2 hours of waking up	931	26.2	1,099	30.9	NS

[a] Desirable responses included scoring 3 or more on positive practices and 2 or less on negative practices on the FNEP Evaluation and Reporting System (ERS) Food Behavior Checklist.

* Significant difference at P <.01

** Significant difference at P <.001

NS Not significant

knowledge of the nutrient contributions of food, food safety and food buying practices, and how these relate to health promotion and chronic disease prevention.

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Katherine L. Cason is an Associate Professor in the Department of Food Science at Pennsylvania State University. Ruby H. Cox is an Associate Professor in the Department of Human Nutrition, Food and Exercise at Virginia Tech. Janie L. Burney is an Associate Professor/Nutrition Specialist with the Tennessee Agricultural Extension Service at the University of Tennessee.

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Southern Rural Development Center
Box 9656
Mississippi State, MS 39762
662-325-3207
662-325-8915 (fax)
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For more information, contact:
Lionel J. (Bo) Beaulieu, Director
(ljb@srdc.msstate.edu) or
Debbie Rossell, Editor
(drossell@srdc.msstate.edu)

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