

# Impact of Participation in the Commodity Supplemental Food Program on Food Insecurity Among Low-Income Elderly Rhode Islanders

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## ABSTRACT

**BACKGROUND:** Food insecurity continues to impact low-income elderly Americans. The Commodity Supplemental Food Program (CSFP) is a federal food-box program targeted specifically to this population. However, the effectiveness of this program has not been well studied.

**DESIGN:** We conducted a cross-sectional survey evaluating the effects of CSFP participation on food insecurity status of elderly low-income Rhode Islanders. This study was conducted during June and July 2016.

**PARTICIPANTS:** A total of 93 responses was received. About 50% was from individuals receiving boxes at food pantries and 50% was from those receiving boxes at senior housing.

**RESULTS:** About 85% of the survey population was found to be food insecure prior to CSFP participation. Overall, CSFP participation was associated with a 20.7% decrease in food insecurity. Reduction of food insecurity was stronger among senior housing participants.

**CONCLUSIONS:** CSFP participation can help reduce food insecurity among elderly low-income Rhode Islanders.

**KEYWORDS:** Commodity Supplemental Food Program (CSFP), food insecurity, senior hunger, Rhode Island Community Food Bank

## BACKGROUND

In 2015, nearly 5.4 million Americans over the age of 60 were food insecure, defined as having limited or uncertain access to adequate food.<sup>1</sup> This reflects 8.5% of the senior population, up from 5.5% in 2001. By 2025, the number of food insecure seniors is predicted to increase by 50%.<sup>2</sup> A variety of federal programs, such as the Commodity Supplemental Food Program (CSFP), has been established to assist low-income seniors in obtaining enough food. Prior to 2014 the CSFP also targeted children under 6 years old and pregnant, postpartum, and/or breastfeeding women, but now exclusively serves the elderly. The USDA requires that participants be at least 60 years of age and at or below 130 percent of the Federal Poverty Income Guidelines to be eligible for CSFP. Each month, eligible individuals receive a

box of food that includes vegetables, grains, juice, and other products that the USDA claims provides adequate nutrition for its target population. While the CSFP is federally funded, state agencies administer the program. According to the USDA, the program served 630,000 individuals monthly nationwide in 2016. In Rhode Island, the Rhode Island Community Food Bank manages over 1,500 CSFP boxes per month.<sup>3</sup> The agency packages CSFP boxes and delivers them to community partner sites, which distribute the boxes to program enrollees. Enrollees then return monthly to community sites, which include food pantries and senior housing, to verify enrollment and receive their boxes.

Despite the financial investment in the program, there is a dearth of literature on the impact of CSFP and whether it achieves its core objectives. A 2005 evaluation of the program in New York suggested CSFP recipients have similar levels of food security as seniors participating in the Supplemental Nutrition Assistance Program (SNAP), another federally funded and state-run program.<sup>4</sup> Furthermore, a qualitative 2008 study from the USDA highlighted the role of CSFP as the sole source of food assistance for many seniors and as a gateway to other services.<sup>5</sup> However, studies are inconclusive about whether the program effectively relieves food insecurity. This research is crucial for informing state and federal policy, especially as the current administration has proposed eliminating CSFP funding in the 2019 fiscal year budget.<sup>6</sup> This present study investigates whether CSFP has reduced food insecurity for low-income RI recipients. In addition, this study will explore whether the effect of the CSFP on food insecurity on this population varies based on other factors.

## METHODOLOGY

A 10-item survey was administered at food pantries and senior housing in RI during June and July 2016 at monthly box distributions. The survey assessed demographic information, SNAP participation status, health status, and food-insecurity risk. Food insecurity was assessed using a 2-item screen using questions from the USDA Food Security Module. This screen, known as the Hunger Vital Sign,<sup>7</sup> was previously validated.<sup>8,9</sup> To observe changes in food security status after program enrollment, participants were instructed to answer each item of the screen twice in the

following manner: "I am going to read you three statements. First, think about the time before you started receiving these boxes, and tell me if each of these statements was 'Often true,' 'Sometimes true,' or 'Never true.' Now, think about the time since you started receiving these boxes, and tell me if each of these statements was 'Often true,' 'Sometimes true,' or 'Never true.'" The three statements were read in succession to minimize response bias.<sup>10</sup>

Surveys were administered in English or Spanish to CSFP participants who had been enrolled in the program for at least one month at the time of box distribution.

### Site Selection

Sites were pre-selected by a RI Community Food Bank staff member based on geographic variability, logistical feasibility and how representative they were of the overall RI CSFP population. Furthermore, only sites where distributions had also taken place at least one month prior to the time of survey administration were included in the study. Communities chosen for recruitment of participants included Providence, Coventry, Cumberland, Newport, Central Falls, Little Compton, Cranston, and Warwick. In total, 35.9% (n=14) of all RI CSFP partner sites were selected for inclusion in the study.

Participants enrolled in the CSFP after being identified by a manager at their respective sites. At food pantries, participants who had already been utilizing the site for food would pick up their CSFP boxes in person on specific dates. At senior housing, eligible residents enrolling in the program would have their CSFP boxes delivered directly to them.

At the selected sites, program enrollees were notified about the survey as they received their boxes. Those who agreed to take the survey would approach a separate table and complete the survey either before or after receiving their box. Before beginning the survey, they were notified that completing the study was voluntary and would not affect their continued participation in the CSFP, and that their answers would remain anonymous. The survey was administered with the researcher reading the questions to participants who were unable to read. Following survey completion, participants could choose between various incentives (bag clips, air fresheners, jar grips, measuring spoons, or small containers of Tupperware) as compensation.

### Data Analysis

Respondents were considered food insecure if they answered "Sometimes true" or "Always true" to either of the two items in the food security screen. We further characterized food insecurity by a scoring system – any response of "Often true" was assigned 2 points, "Sometimes true" was assigned 1 point, and "Never true" was assigned 0 points. "High food insecurity" was defined as a score of 3–4 for the two items; "moderate food insecurity" was defined as a score of 1–2, and "Food secure" was defined as a score of 0. We used

a McNemar's chi square test for paired nominal data to compare respondents' levels of food insecurity before and after starting the program. A  $p < 0.05$  indicates a significant difference in responses.

## RESULTS

Overall, 93 participants completed the survey. Of those approached for the survey, 10.5% (n=11) refused to participate. **Table 1** outlines the characteristics of this survey sample, the survey site population, and the overall RI CSFP recipient population. No differences in gender or age existed between these groups. 75.3% of respondents completed the form in English, versus 24.7% who completed the form in Spanish. A slightly greater proportion of respondents in the sample identified as white (57.0%) compared with those in the survey site (40.2%) and overall population (45.8%). A similar proportion of respondents received their food boxes at senior housing (49.5%) as did from food pantries (50.5%).

The majority (83.7%, n=77) of CSFP recipients in the sample were concurrently enrolled in SNAP. A slight majority of respondents were in self-reported good health (58.1%), defined as having "Excellent", "Very Good", or "Good" health. 41.9% of respondents were in self-reported poor health, defined as having "Fair" or "Poor" health.

**Table 2** outlines the food insecurity status of respondents before and after program enrollment. Overall, baseline food insecurity was high (84.8%), with program participation

**Table 1.** Baseline Characteristics of the RI CSFP Recipients

Characteristic	Survey Sample (n=93) n (%)	Survey Site Population (n=699) n (%)	Overall CSFP Population (n=1,785) n (%)
Average Age	71	71	72
Age Range	60-91	60-100	60-100
<b>Gender</b>			
Female	60 (64.5)	486 (69.7)	1,240 (69.7)
Male	33 (35.5)	211 (30.3)	540 (30.3)
<b>Language</b>			
English	70 (75.3)	383 (54.8)	1,085 (60.8)
Spanish	23 (24.7)	316 (45.2)	700 (39.2)
<b>Race</b>			
White	53 (57.0)	281 (40.2)	818 (45.8)
Hispanic	26 (28.0)	301 (43.1)	682 (38.2)
Black/African American	6 (6.5)	54 (7.7)	142 (8.0)
Other	8 (8.6)	63 (9.0)	143 (8.0)
<b>Site Type</b>			
Food Pantry	47 (50.5)	450 (64.4)	1,079 (60.5)
Senior Housing	46 (49.5)	249 (35.6)	654 (36.6)

significantly decreasing insecurity levels (84.8% to 64.1%,  $p < 0.05$ ). Results remained significant when stratified by gender ( $p < 0.05$  for both males and females) and health status ( $p < 0.05$  for both participants with relatively poor and

relatively good health). However, differences emerged based on site type and SNAP status. Interestingly, respondents receiving their boxes at senior housing experienced a significant drop in food insecurity (84.4% to 48.9%,  $p < 0.05$ ), while those receiving their boxes at food pantries did not (85.1% to 78.8%,  $p = 0.37$ ). Additionally, SNAP recipients experienced a significant drop in food insecurity ( $p < 0.05$ ), while non-SNAP recipients did not ( $p = 0.37$ ).

**Table 2.** Food Insecurity Status of Survey Sample

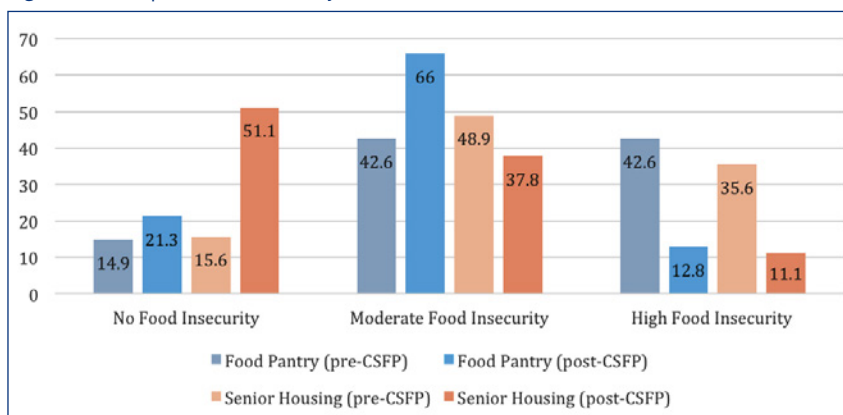
	Variable	Before Receiving Boxes n (%)	After Receiving Boxes n (%)	Chi-Squared Value	Chi-Squared P-Value
	<b>Overall</b>	<b>78 (84.8)</b>	<b>59 (64.1)</b>	<b>15.4290</b>	<b>&lt;0.001*</b>
<b>Site type</b>	Food pantry	40 (85.1)	37 (78.8)	0.8000	0.3711
	Senior housing	38 (84.4)	22 (48.9)	14.0620	<0.001*
<b>Gender</b>	Male	27 (84.4)	21 (65.6)	4.1667	0.0412*
	Female	51 (85.0)	38 (63.3)	9.6000	0.0019*
<b>Health Status</b>	Self-reported good health	43 (81.1)	32 (60.4)	7.6923	0.0055*
	Self-reported poor health	35 (89.7)	27 (69.2)	6.1250	0.0133*
<b>SNAP status</b>	SNAP recipients	65 (84.4)	49 (63.3)	14.0620	<0.001*
	Non-SNAP recipients	13 (92.9)	10 (71.4)	0.8000	0.3711

\*Indicates significant drop in food insecurity after program participation,  $p < 0.05$

**Table 3.** Food Insecurity Score by Site Type

Food insecurity status	Food Pantry		Senior Housing	
	Before Receiving Boxes n (%)	After Receiving Boxes n (%)	Before Receiving Boxes n (%)	After Receiving Boxes n (%)
No food insecurity	7 (14.9)	10 (21.3)	7 (15.6)	23 (51.1)
Moderate food insecurity	20 (42.6)	31 (66.0)	22 (48.9)	17 (37.8)
High food insecurity	20 (42.6)	6 (12.8)	16 (35.6)	5 (11.1)

**Figure 1.** Participant Food Insecurity Status



**Table 3** and **Figure 1** further characterize effects of program participation on food insecurity for food pantry versus senior housing recipients. Prior to program administration, both groups had similar levels of food insecurity. However, differences emerged when looking at moderate versus no food insecurity. Post-CSFP, many more senior housing recipients had no food insecurity (51.1%) versus food pantry recipients (21.3%). Concurrently, food pantry recipients appeared to have greater levels of moderate food insecurity (66%) versus senior housing residents (37.8%). Of note, levels of high food insecurity appeared to drop markedly for both food pantry (42.6% to 12.8%) and senior housing (35.6% to 11.1%) participants.

**DISCUSSION**

Our data show an alarming level of baseline food insecurity among this sample of the senior low-income RI population. Prior to program participation, 84.8% of the survey population was found to be food insecure, compared with 12.8% of the overall RI population between 2014 and 2016.<sup>11</sup> Participation in the CSFP was associated with a 20.7% decrease in food insecurity, representing a marked decrease compared with baseline levels.

The effects of CSFP participation on food insecurity remain significant when stratifying by gender and health status. However, differences in the effects of program participation emerged when stratifying by site type. Our data indicate that senior housing recipients, as compared to food pantry recipients, demonstrate the greatest gains from CSFP in terms of improved food security. Senior housing recipients have the food boxes delivered directly to them, which is likely an important benefit for this population of frail, low-income seniors.

Because the survey inquired about prior food security status, this study potentially introduced recall bias. Future studies involving a prospective cohort design would further clarify effects of CSFP participation on food security status over time. In addition, in-depth interviews exploring participants' views on the program may help explain differences between sub-groups of this population. Analysis of subgroups, including the food pantry and senior housing populations,

is also limited by the study's small sample size. Finally, while our study stratifies participants by baseline health status, no conclusions can be made about whether the program improves health. Food insecurity among the elderly has been associated with poorer nutritional intake and self-reported health status.<sup>12</sup> A follow-up study that tracks specific health and nutrition metrics would further delineate the relationship between CSFP participation and health.

Apart from the above limitations, it is important to caution that the results of this study may not be applicable outside of RI. Not all food banks operate similarly, and characteristics of recipients may differ in other states.

In conclusion, this study shows that the CSFP can have an impact on lowering food insecurity levels among RI recipients. As food insecurity levels of low-income elderly Rhode Islanders remain quite elevated, such programs can be an asset to address this issue. Furthermore, this study suggests that individuals receiving their food boxes at food pantries are particularly food insecure even after program administration.

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