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## Incorporating Nutrition Education Classes into Food Pantry Settings: Lessons Learned in Design and Implementation

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## **Incorporating Nutrition Education Classes into Food Pantry Settings: Lessons Learned in Design and Implementation**

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### Abstract

The project reported here evaluated the effectiveness of nutrition education at food pantries. We offer best practices for future Extension-based nutrition programming with this clientele. Three classes were offered at food pantries through the Expanded Food and Nutrition Education Program (EFNEP). Entry and exit surveys were collected for each series, including 24-hour food recalls. Seventy-three percent of participants reported an increase in vegetable consumption, and 82% reported positive changes in consumption of at least one food group. Nutrition education in food pantries is promising, particularly for Extension-led programs like SNAP-Ed and EFNEP, to address nutrition behaviors among food insecure populations.

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## Introduction

Over the past few years, food insecurity has increased dramatically, leading to increased demand at food banks and pantries (Weinfeld et al., 2014). Food insecurity rates increased with the economic crisis in 2008 and have remained high since then. According to the United States Department of Agriculture (USDA), 14.5% of U.S. households were food insecure during 2013, meaning that at some point during the year, household food intakes were reduced and families were not able to provide the amount of food they typically would eat (Coleman-Jensen, Nord, & Singh, 2013). In

North Carolina, 17% of households are food insecure, with 5.5% of households reporting high levels of food insecurity (Coleman-Jensen et al., 2013). Higher food insecurity rates have led to increased pressure on food banks and pantries, especially since the Supplemental Nutrition Assistance Program (SNAP), the primary federal food assistance program for low-income families, was cut in November of 2013, resulting in a 5.4% decrease for a family of four receiving maximum benefits (Oliveira, 2013). Feeding America, a national food bank organization, estimates that food insecure families would need an additional \$68.74 per month to meet their budget shortfalls and become food secure (Feeding America, 2014). Feeding America's 2014 report, *Hunger in America*, found that one in seven people in the have utilized a Feeding America food pantry for support (Weinfeld et al., 2014).

Previous research suggests that diet quality can be poor among food pantry clients (Duffy, Zizza, Jacoby, & Tayie, 2009; Evans & Clarke, n.d.; Harmon, Grim, & Gromis, 2007; Hoisington, Shultz, & Butkus, 2002; Wardlaw & Baker, 2012). However, food banks and pantries face significant challenges in trying to meet the nutritional needs of food insecure populations. Handforth, Hennink, and Schwartz (2013) report that food banks employ a variety of strategies to support healthy eating among client populations. They find that a lack of refrigeration and storage space is one of the key factors that limits pantries' ability to stock healthy foods, including fresh produce. Another study finds that dairy and fruit are underrepresented in food bank distributions; one-third of items provided to participating pantries are condiments, non-caloric beverages, convenience meals and baking supplies (Hoisington, Manore, & Raab, 2011).

Although strategies to address food insecurity must be broad-based and multi-pronged (for example, improving food access and addressing cuts to food assistance programs and real wages), nutrition education may be one way of helping to mitigate food insecurity. Federally funded nutrition education programs like the Supplemental Nutrition Assistance Program Education (SNAP-Ed) and the Expanded Food and Nutrition Education Program (EFNEP) have a long history of demonstrating positive nutrition outcomes and food resource management practices with low-income and food insecure clients (Wardlaw & Baker, 2012). In addition, some organizations have developed nutrition education programs for low-income and/or food insecure populations. A study of 219 families in SNAP-Ed found that nutrition education classes produced significant positive changes in food security status among families, post-intervention (Eicher-Miller, Mason, Abbott, McCabe, & Boushey, 2009). However, food insecure populations face significant challenges for consistent nutrition education, due to the effects of poverty on food insecure households. These challenges include a lack of reliable transportation, transient housing situations, and difficulties accessing affordable, healthy foods. These issues may be exacerbated for food pantry clients, who report high levels of poverty and recent housing transitions (Weinfeld et al., 2014).

Despite these challenges, existing nutrition education programs with food pantry clients report promising early results (Evans & Clarke, n.d.; Harmon et al., 2007; Hoisington et al., 2002; Martin, Wu, Wolff, Colantonio, & Grady, 2013). These programs typically provide clients with nutrition education and recipes that they can make using their food pantry items. Materials have been delivered through various formats, including personalized newsletters (Evans & Clarke, n.d.; Evans, Clarke, & Koprowski, 2010), cell phone apps (Flynn & Schiff, 2010; Martin et al., 2013), and cooking demonstrations at food pantry sites (Flynn & Schiff, 2010; Martin et al., 2013) or in clients'

homes (Eicher-Miller et al., 2009).

Only a few programs have published results of formal evaluations, so it is difficult to draw firm conclusions about best practices for interventions, but these preliminary results suggest that food pantry clients who receive nutrition and cooking education consume more fruits and vegetables than those who do not (Clarke, Evans, & Hovy, 2011; Evans & Clarke, n.d.; Evans et al., 2010; Miyamoto, Chun, Kanehiro, & Nakatsuka, 2006). Additionally, two programs reported that the supportive relationships established between educators and clients during in-person nutritional education efforts had an additional positive impact on healthy eating behaviors (Clarke et al., 2011; Miyamoto et al., 2006). Our research, though small in sample size, builds on this growing body of evidence that suggests that nutrition education is a promising strategy for improving diet among food insecure populations. Given the need for additional research in this area, we argue that pilot projects like the one reported here, that build on proven methods in nutrition education as developed by programs like EFNEP, are a necessary first step in creating broad-based nutrition programming for food pantry settings.

As such, we developed nutrition education classes for two food pantries in North Carolina. This was part of Voices Into Action: The Families, Food and Health Project (Voices Into Action). Voices Into Action is a USDA-funded study out of North Carolina State University and North Carolina Agricultural and Technical State University that seeks to understand and improve food access among low-income families in three counties in North Carolina. Despite the surge of interest in providing nutrition education and healthier foods at food pantries, few nutrition education classes have accounted for the specific needs and constraints of this unique population. The EFNEP-based study used strategies such as partnering with food pantry directors, offering classes during times that are convenient for clients, and incorporating fresh, local foods to improve outcomes and retention in nutrition education programs with low-income clients at food pantries.

## Methods

Between 2012 and 2014, Voices Into Action conducted community health asset mapping workshops, developed food assessments, established community-based action groups, offered mini-grant funding for innovative projects that addressed food access and healthy eating, and partnered with North Carolina Cooperative Extension to offer nutrition education outreach through EFNEP. Food insecurity and hunger emerged as critical themes in each county, and community-based action groups in each county partnered with local food pantries to increase clients' access to, and knowledge about, healthy foods. As part of the community food assessments that Voices Into Action conducted in partnership with community-based action groups in each county, we interviewed 28 food pantry directors across the three counties. These interviews asked pantry directors to discuss the types of foods they offered to clients, where they obtained these foods, and the challenges they faced in feeding food insecure populations in their communities. The North Carolina State University Institutional Review Board approved the study.

As part of this work, in 2013, we partnered with EFNEP to offer three series of classes in two food pantries (two classes in a rural pantry and one class in an urban pantry) in North Carolina. EFNEP Program Associates (PAs) led the classes. The PAs used EFNEP's Eating Smart and Moving More six-

lesson curriculum, which focuses on simple, evidence-based nutrition behaviors to support participants as they shop for, prepare, and serve healthy and affordable foods.

We conducted one six-class series in the urban food pantry and two six-class series in the rural food pantry. PAs worked with food pantry directors to offer classes 1 hour before food distribution, incorporated common food basket items into the demonstrations/recipes, and included a grocery store tour to help participants learn how to shop for healthy and affordable foods. The rural food pantry used pantry funds to offer a \$10 gift card for each participant to spend on a "healthy food challenge" during the grocery store tour. This food pantry also allowed the PA to use fresh produce from their on-site community garden. At program entry and exit, each participant completed the standard EFNEP dietary and behavioral assessment, which included demographic questions, a 24-hour food recall, and questions about nutrition, physical activity, and food resource practices.

## Results

Of the food pantry directors that we interviewed, 100% (n=28) said they had experienced an increase in demand over the past year, and 61.5% (n=16) said they were not able to meet the needs of food pantry clients. When asked what their top priorities were in terms of promoting health among their clients, 43% of pantry directors stated they would like to provide nutrition education for their clients.

Because of this emphasis on nutrition education, we carried out nutrition education classes at two sites. Twenty-two people enrolled in the program across both sites. Seventy-seven percent of participants were at or below 100% of the federal poverty level. All participants were at or below 200% of the federal poverty level. Forty-five percent of participants reported their race as white, 41% of participants reported their race as Black or African-American, and 5% of participants reported multiple races. The remaining participants did not report race or ethnicity. Half of the original participants dropped out during the course of the sessions, largely because the PAs lost contact with pantry clients. Eleven people completed all six classes across both sites. The remaining analysis is based on the 11 people who completed all six classes. Given the high dropout rate, future efforts should explore new ways of maintaining contact with food pantry clients who participate in classes. The results presented here are preliminary in that they are based on such a small sample, yet they provide important information about the promise of incorporating nutrition education classes into food pantry practices.

**Table 1.**

Summary of Dietary Behavior Change for One-Day Intake at Entry and Exit for EFNEP Food Pantry Classes (n=11)

		<b>Percent Daily at Entry</b>	<b>Percent Daily at Exit</b>
<b>Whole Grains</b>	0 oz	82%	64%
	1-3 oz	18%	36%
	4-5	0%	0%

	oz		
	6-9 oz	0%	0%
	10+ oz	0%	0%
Percent with positive change at exit			36%
<b>Fruits</b>	0 cups	55%	27%
	1 cup	27%	27%
	2 cups	0%	27%
	3 cups	0%	0%
	4+ cups	18%	18%
Percent with positive change at exit			54%
<b>Vegetables</b>	0 cups	18%	9%
	1 cup	73%	45%
	2 cups	0%	27%
	3 cups	9%	18%
	4 cups	0%	0%
	5+ cups		
Percent with positive change at exit			73%

Table 1 compares dietary behaviors for participants at entry and after completing the classes. Seventy-three percent of participants reported an increase in vegetable consumption upon exit, and 64% of participants reported an increase in fruit consumption upon exit. These increases in fruit and vegetable consumption were almost 20% higher than the averages for the 4,752 North Carolina

EFNEP participants in 2014 (56% and 60%, respectively). One hundred percent of participants reported a positive change at exit in their consumption patterns of at least one food group.

Additional changes included:

- 82% of participants showed improvement in one or more nutrition practices (i.e., planning meals, making healthy food choices, preparing food without adding salt, reading nutrition labels, or having children eat breakfast).
- 55% of participants showed improvement in preparing foods without adding salt.
- 64% of participants showed improvement in using nutrition facts or food labels when selecting foods to purchase.

In addition to these changes in dietary practices, participants also reported positive changes in their food resource management practices. Seventy-three percent of participants reported that they no longer ran out of food at the end of the month, and there was a 73% improvement in the number of participants who reported shopping with a grocery list. Given that 77% of participants were at or below 100% of the federal poverty level, these data are particularly promising.

## Discussion

While preliminary results indicate that nutrition education classes with food pantry clients can be effective, there are several key challenges for Extension professionals and others working in the food pantry setting. One of the major issues in working with this population, particularly for classes like EFNEP that require multiple sessions with the same participants, is variability in client turnout and participation. As mentioned previously, half of the participants did not complete the sessions because PAs lost contact with them. Our ongoing research with Voices Into Action has shown us that low-income families often do not have access to reliable transportation or consistent phone service or Internet. While other nutrition programs have addressed these issues by offering classes in clients' homes (Eicher-Miller et al., 2009) or adapting food pantry practices and policies as a whole to impact all clients served, instead of only those who participate in nutrition education (Hoisington et al., 2002), this project focused on the food pantry setting. As others have noted, there is a gap in information about the effectiveness of nutrition interventions in food pantry settings (Handforth, Hennink, & Schwartz, 2013). Despite the challenges this population faces related to transportation, communication, social support, and poverty, we contend that pilot projects like this one—while small—demonstrate some of the potential successes (increased fruit and vegetable intake, increased food resource management skills) and challenges (attrition and class location/setting) in working with food pantry clients.

Partnering closely with food pantry directors and following their guidance have helped to encourage retention among some of the class participants. Pantry directors often have close relationships with clients and are able to reach them consistently to remind them about classes. The classes were held just before pantry distribution times, which helped to meet participants at a space and time that was most convenient for them. Participants at the rural food pantry were given first placement in the distribution line for completing the classes, which was a significant incentive, given that this

pantry serves 2,100 clients each month. Also, the pantry director at the rural pantry offered a \$10 gift card to participants who completed the class, which they spent during their grocery store tour. It is important to note, however, that the participants did not find out about this gift card until the final class, so it was most likely not an incentive for class participation.

As noted above, participants in these classes had higher rates of increases in fruit and vegetable consumption than the North Carolina state EFNEP averages. This is a small sample, but it is plausible that the 20% difference could be attributed to the focus on fresh, local foods, particularly at the rural pantry. The rural pantry operates a community garden on-site, with all produce going to the food pantry, and they work with a local grocery store to ensure that each distribution basket includes fresh (not always local) produce. Traditional EFNEP recipes were developed for low-income consumers, and as such, the recipes often focus on canned or frozen vegetables, rather than fresh, because these options are often more affordable. Therefore, the PA either had to adapt the lesson's recipes to include fresh fruits and vegetables, or adapt other low-cost EFNEP recipes to include fresh fruits and vegetables. Future research will explore whether using fresh, local produce in classes and recipes could help explain the differences observed in this study.

In addition, each of the classes included a grocery store tour as the final lesson, in which PAs demonstrated how to shop for healthier, affordable items, including food safety tips and information on reading nutrition labels and unit prices. PAs encouraged participants to try a new fruit or vegetable they might not have eaten before, in an effort to increase their variety of fruit and vegetable consumption. Future studies will explore whether these tours had a causal effect on the considerable improvements in participant food resource management behaviors, particularly practices such as reading a nutrition label and shopping with a list.

Additionally, PAs adapted to a pantry setting that presented its own set of unique challenges, including food safety issues and inadequate space for program delivery. Both food pantries are run by local faith communities. Despite serving large populations (2,100/month for the rural pantry and 950/month for the urban pantry), these pantries have limited space for any work that is not directly related to food distribution. The urban pantry proved the greatest challenge in terms of space. Because of the size of the church, most of the activities on their largest distribution day (Saturday) happen outside, meaning that the PA and volunteers had to work with participants in an open space, with no kitchen and numerous distractions, including other pantry clients who often wanted to try the food samples. After several Saturday attempts, PAs moved these classes indoors, and focused on a different, less-populated distribution day for the classes. Space and food safety were key concerns for PAs working with both groups, and this required a good deal of flexibility and adjustment to ensure that participants were able to attend classes in a suitable environment.

## **Implications for Extension Professionals**

Our goal in partnering with food pantry directors is to understand not only what pantry directors need, but also to create recipes, tools, and programs that meet both the pantry environment and clients where and as they are. For example, we aim to create recipe books or cards, using EFNEP and other low-cost, healthy recipes, that focus on the items most often found in pantry distribution baskets. Additionally, by learning what pantry clients receive in their baskets, we will continue to

improve EFNEP nutrition education delivery and recipes, to help clients to eat as healthfully as possible, using the resources they have.

Incorporating fresh, local foods is a promising area for future work with food insecure populations at food pantries. As food pantries and food banks increasingly see themselves as active participants, and not just recipients, in the food system, they are beginning to adopt practices that increase access to healthy foods for their clients (e.g., growing community gardens, setting up food hubs, and providing more equitable access to farmer's markets for low-income consumers) (Murphy, 2013, Robinson, Robinson, Carpio, & Hughes, 2007; Tarasuk & Eakin, 2005), and increase choice for pantry clients (Remley et al., 2006). Additionally, food banks and pantries are partnering more frequently with local farmers who are willing to donate excess produce or allow gleaning on their land to gather and save excess that otherwise remains unharvested (Hoisington, Butkus, Garrett, & Beerman, 2001). Voices Into Action is currently conducting both in-person and mailed surveys with local growers in two of the counties where we work (both rural) in order to understand: 1) whether they donate or allow gleaning, and 2) if they have interest in providing fresh produce to food pantries. The preliminary results presented here call for larger studies on the effects of incorporating local or fresh produce into nutrition education programs with food insecure or low-income clients.

Despite its small sample, the project reported here offers positive outcomes and lessons learned that can be harnessed for future nutrition education studies or projects with food pantries and food insecure clients. By partnering closely with food pantry directors and by being flexible and creative with regard to program delivery, nutrition education in food pantry settings is a promising strategy for Extension professionals who wish to address nutrition behaviors among low-income or food insecure populations.

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