



Assessing the Impact of Nutrition Education at Produce Distributions

by
Perales & Associates Evaluation Services

October 2012

TABLE OF CONTENTS

Section		Page
	Summary	v - vi
	Acknowledgements	vii
I	Introduction	2 - 8
	<ul style="list-style-type: none">• Nutrition Education and Produce Distribution Toolbox Phase I Background• Phase II Introduction• Logic Model for Curriculum	
II	Phase II: New Lesson Development	10 - 13
	<ul style="list-style-type: none">• Lesson Development Process• Development of New Interactive Education Lessons	
III	Methodology	14 - 26
	<ul style="list-style-type: none">• Evaluation Design• Priority Population• Instruments• Evaluation Questions and Intended Impact• Data Collection and Sampling• Interviewer Training	
IV	Nutrition Education Intervention	28 - 37
	<ul style="list-style-type: none">• Combination Lesson Components• Intervention Dates and Locations• Lesson Delivery• Intervention Challenges	
V	Evaluation Results	38 - 59
VI	Discussion and Recommendations	60 - 67
VII	References	68 - 70

TABLE OF CONTENTS

Continued

Section		Page
VIII	Appendices	72 - 124
	A: MyPlate and Enjoy Your Broccoli Combo Lesson	
	B: Eat More Fruits and Vegetables Throughout Your Day and MyPlate Combo Lesson	
	C: Protocol for MyPlate and Enjoy Your Broccoli Combo Lesson Protocol for Eat More Fruits and Vegetables Throughout Your Day and MyPlate Combo Lesson	
	D: Intervention Observation Form	
	E: Intervention Group: Client Interview Questionnaire	
	F: Control Group: Client Interview Questionnaire	
	G: Regression Result	

SUMMARY

Objective: To evaluate the impact of brief nutrition education interventions on food bank clients participating in produce distributions.

Design: A design with six intervention group sites and six control group sites (not randomly assigned) was used for this study. Random assignment of the six controls and intervention sites was not possible due to the need to prevent intervention and data gathering scheduling conflicts associated with the once-a-month food distribution dates. The nutrition education intervention was implemented over a two-month period. USDA's MyPlate icon served as the foundation for the two lessons. This visual cue allows for messages for how to build a healthy plate including promotion of fruit and vegetable consumption. Post-test data were gathered through client interviews at all 12 sites one month after completion of the intervention.

Setting: Twelve food bank distribution sites that are part of the Family Harvest Program (FHP) of the Second Harvest Food Bank (SHFB) of Santa Clara and San Mateo Counties.

Participants: Predominately Spanish speaking and some English speaking recipients of produce distributed at six control and six intervention sites located in low-income multi-unit housing complexes, churches, schools, and community centers. Intercept surveys were conducted with over 500 participants (control group: n = 254, intervention group: n = 261).

Intervention: Brief interactive nutrition lesson using 1) tri-fold display containing labeled food groups, cutout food items, and key nutritional messages, 2) produce distribution matching the intervention's key messages, 3) food tasting, 4) recipe distribution to match the featured produce, and 5) educational handout implemented at monthly produce distributions.

Main Outcome Measure: Food bank clients' awareness of MyPlate, recall and use of MyPlate nutrition messages, use of distributed recipes and consumption of produce introduced during the intervention, and self-efficacy/confidence in preparing produce received from the food bank.

Analysis: Differences between means were analyzed using independent *t*-tests and linear regression. Chi-squared tests and logistic regression were used to compare control and intervention group proportions.

Results: Food bank clients at sites that received brief nutrition education interventions in food distribution lines had significantly greater awareness of MyPlate, greater recall and use of specific MyPlate messages, and were more likely to have prepared recipes received from the food bank than clients at control sites without the education. Intervention participants were also significantly more likely to have purchased one of the featured items at a store. Statistically significant differences were evident even in regression models controlling for demographic differences between the two groups. The qualitative data analysis supported the quantitative findings. Respondents' comments showed that MyPlate influenced participants to add more vegetables to their meals, eat smaller portions, and cook healthier foods for their families. Furthermore, those who received the featured recipes said they prepared the dishes or modified the recipes in ways that their family would like to eat it.

Conclusions and Implications: A well-designed nutrition education intervention can be successfully conducted within the time constraints associated with food distribution lines and still have an impact on nutrition message awareness and consumption-related behaviors.

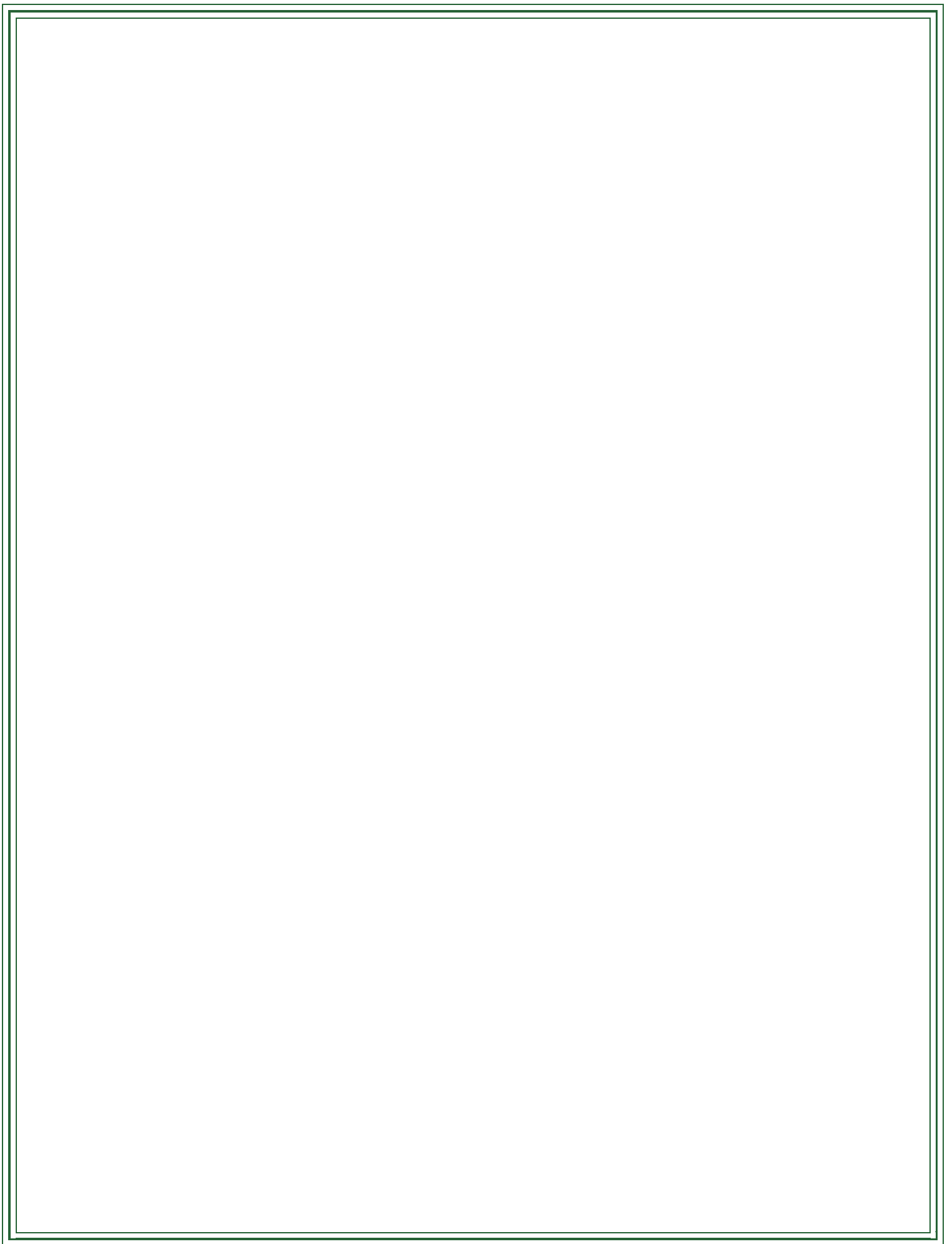
ACKNOWLEDGEMENTS

This report was written by primary authors:

Denise Cintron Perales, MS
Dan Perales, DrPH, MPH
Barbara MckNelly, MS
Deborah Danielewicz, MPH

The authors wish to thank the following individuals for their support and assistance in the execution of the Nutrition Education and Produce Distribution Toolbox Evaluation Project:

- Terry Garner, MA, Program Manager, California Association of Food Banks
- Stephanie Nishio, MPH, RD, Director of Programs, California Association of Food Banks
- Patrick Mitchell, DrPH, Research Scientist, *Network for a Healthy California*, Research and Evaluation Section
- Vanessa Alcantar, MPH, Research Associate, Perales and Associates Evaluation Services
- Cheryl Mariscal Hergert, MPH, Research Associate, Perales and Associates Evaluation Services
- Margie Erwin, MS, RD
- Janet Leader, MPH, RD, Director of Services, and Madoka Gaspar, Nutrition Program Manager, Second Harvest Food Bank of Santa Clara and San Mateo Counties
- Khanh Ngo, MSW, Primavera Hernandez, MPH, and Janet Hung, Community Nutrition Educators, Second Harvest Food Bank of Santa Clara and San Mateo Counties
- Fran McNeill, Chief Program Officer, FOOD Share Inc. of Ventura County
- Gail Atkins, Director of Programs, Redwood Empire Food Bank
- Teresa Moran, Nutrition Programs Manager, Second Harvest Food Bank Santa Cruz County
- PAES Research Interviewers: Vanessa Alcantar, Erika Ayala, Evelyn Beas, Claudia Figueroa, and Amber Torres



SECTION I

Introduction

I. INTRODUCTION

This report describes the findings of a 2012 study commissioned by the *Network for a Healthy California* and the California Association of Food Banks (CAFB) that was done in collaboration with Second Harvest Food Bank (SHFB) of Santa Clara and San Mateo Counties, to assess the effectiveness of providing interactive nutrition education to food bank clients participating in produce distributions.

The California Association of Food Banks (CAFB) is one of the 150 organizations partnered with the *Network for a Healthy California*. Founded in 1995, CAFB is a membership organization for California's food banks. CAFB provides support and resources to a membership of 41 food banks, with the purpose of increasing the visibility of hunger and its solutions, sharing food resources, and influencing public policy.¹ It also shares the *Network's* goal of preventing obesity and other diet related chronic diseases by promoting increased fruit and vegetable consumption, physical activity, and food security. Indeed, the CAFB's innovative Farm to Family program connects growers and packers with California's food bank network and provides fresh fruits and vegetables to its low-income food bank clients.²

Currently, through their *Network* contract, CAFB subcontracts with 18 member food banks and 11 other non-profit organizations to distribute nutrition education materials, conduct nutrition education classes, and provide nutrition education with food tastings at food distributions promoting healthy recipes to clients. Other programs operated by member food banks throughout the state include Kid's Café, Afterschool and Summer Lunch programs, and mobile produce pantries. CAFB subcontractors use a wide range of strategies and materials that focus on preparing healthy meals with limited resources, including foods procured through CAFB's Farm to Family program.

The *Network* and CAFB funded two studies in 2011 and 2012, to improve nutrition education resources for its food bank partners. In Phase I, the 2011 study focused on developing a Nutrition Education and Produce Distribution Toolbox for food banks while the 2012 Phase II study focused on developing and evaluating interactive nutrition education materials and methods for use at produce distributions.

Nutrition Education and Produce Distribution Toolbox Project

Phase I Background

CAFB and its members have a history of delivering nutrition education to their clients. In 2004, CAFB collaborated with the *Network for a Healthy California* to support nutrition education programs at eight of CAFB's member food banks. A case study of the educational campaign identified the characteristics of effective education materials and strategies used by the member food banks (MkNelly, Bartholow, Garner, and Nishio, 2009). They included the following best practices:

¹ Source: California Association of Food Banks website <http://www.cafoodbanks.org/>

² Source: California Association of Food Banks http://www.cafoodbanks.org/Farm_to_Family.html

- Colorful reader-friendly materials with brief messages
- Short and simple messages with recipes
- Food demonstrations and taste tests
- Mobile produce distribution in locations where clients reside
- Nutrition education reinforcement items

The *Network*, in collaboration with CAFB, subcontracted with Perales & Associates Evaluation Services (PAES) in 2011, to develop a Nutrition Education and Produce Distribution Toolbox for food banks and to further assist CAFB members with identifying best practices for use in food bank settings, particularly in food distribution lines. From July through September 2011, as part of Phase I, a Toolbox was developed by PAES to complement CAFB's Farm to Family produce distribution program. The Toolbox was compiled through a review of 85 nutrition education materials currently used by California food banks, a literature review of nutrition education best practices in food bank settings, extant materials developed by the *Network* and the USDA, and online research on promising materials and activities appropriate for use with clients in a food distribution line. Materials within the Toolbox include the most promising nutrition education materials, interactive activities, and resources as they relate to emergency food distribution settings.

The extensive review of research literature and best practices completed during the first phase of the Nutrition Education and Produce Distribution Toolbox Evaluation Project highlighted the need for nutrition education materials and activities specific to the food distribution line. Indeed, of the 43 nutrition education lessons, interactive games, cookbooks, posters and videos reviewed and selected for inclusion in the Toolbox, only five educational lessons were identified that were specifically created for the food bank line. Most of the lessons were developed by Second Harvest Food Bank of Santa Clara & San Mateo Counties and were specific to the produce distributed by the food bank but had not been evaluated for effectiveness. Therefore, at the conclusion of Phase I, the decision was made to hire consultants to develop additional lessons for use with food bank clients at food distributions. The lessons were to be directly linked to the produce being distributed, 5-10 minutes in length, and suited for food distribution settings.

PHASE II Introduction

In January 2012, the *Network* and the California Association of Food Banks awarded PAES a contract to further develop and evaluate the Nutrition Education and Produce Distribution Toolbox with a specific focus on nutrition education at produce distributions.

Food distribution settings can be limiting in that they may only allow for brief educational interactions as clients move through the distribution line. Furthermore, the clients' primary focus is on receiving their food which often limits the attention given to a food bank's nutrition education offerings. In addition, client contact opportunities can affect the continuity of providing nutrition education in such settings, as some food banks or distribution sites may see recipients monthly, while others may see clients on a weekly basis. In addition, not all distribution sites have the same regular clientele.

The nine month contractual scope of work consisted of:

- Development of an online survey distributed to CAFB's 18 subcontracting member food banks to gather feedback on the CAFB Nutrition Education and Produce Distribution Toolbox and to query members on topics for the development of new nutrition education lessons;
- Subcontracting with a registered dietitian to develop 5 new interactive nutrition learning activities based on the findings and recommendations from the Toolbox Survey; and
- Testing the impact of the newly developed lessons with 480 food bank clients at 12 food bank distribution sites that are part of the Second Harvest Food Bank (SHFB) of Santa Clara and San Mateo Counties.

This report describes the methodology and results of the Phase II study. Throughout the entire project, key CAFB and *Network* staff, as well as the members of a Produce Toolbox Advisory Committee³, provided guidance and support for developing the lessons, selecting intervention sites, and testing the impact of the new interactive lessons.

Logic Model for Curriculum

The literature review conducted by PAES during Phase I of the Nutrition Education and Produce Distribution Toolbox project, identified materials consistent with examples of nutrition education that were found by Contento (2011) to be effective and enjoyable for participants. These include taste testing, recipe booklets; take away items, videos, and brochures. Contento (2011) also brings to light the need to consider low-literacy audiences and suggests keeping nutrition education material focused on behaviors and actions rather than on facts. While none of the studies cited by Contento (pp. 55-56) were related to nutrition education in food distribution lines, she identifies three essential phases for nutrition education that are consistent with the logic model shown in Figure 1:

1. Motivational phase with a focus on why to take action, in which the objective is to increase awareness, promote contemplation, enhance the motivation to act, and facilitate the intention to take action;
2. Action phase where the objective is to facilitate the individual's ability to act; and
3. Environmental phase in which the objective is to educate decision and policy makers to promote more supportive environments including interpersonal social support, community activation, and implement food environmental policies that, in terms of food banks, increase direct access and availability of fresh produce.

The United Nations (UN) Standing Committee on Nutrition Activities lists six essential criteria for consideration in developing well designed nutrition education systems: (1) audience and time of exposure, (2) quality of education, (3) reinforcement of message, (4) complement to materials, (5) incentives, and (6) cost (Engesveen & Shrimpton, 2007). In addition, the National Cancer

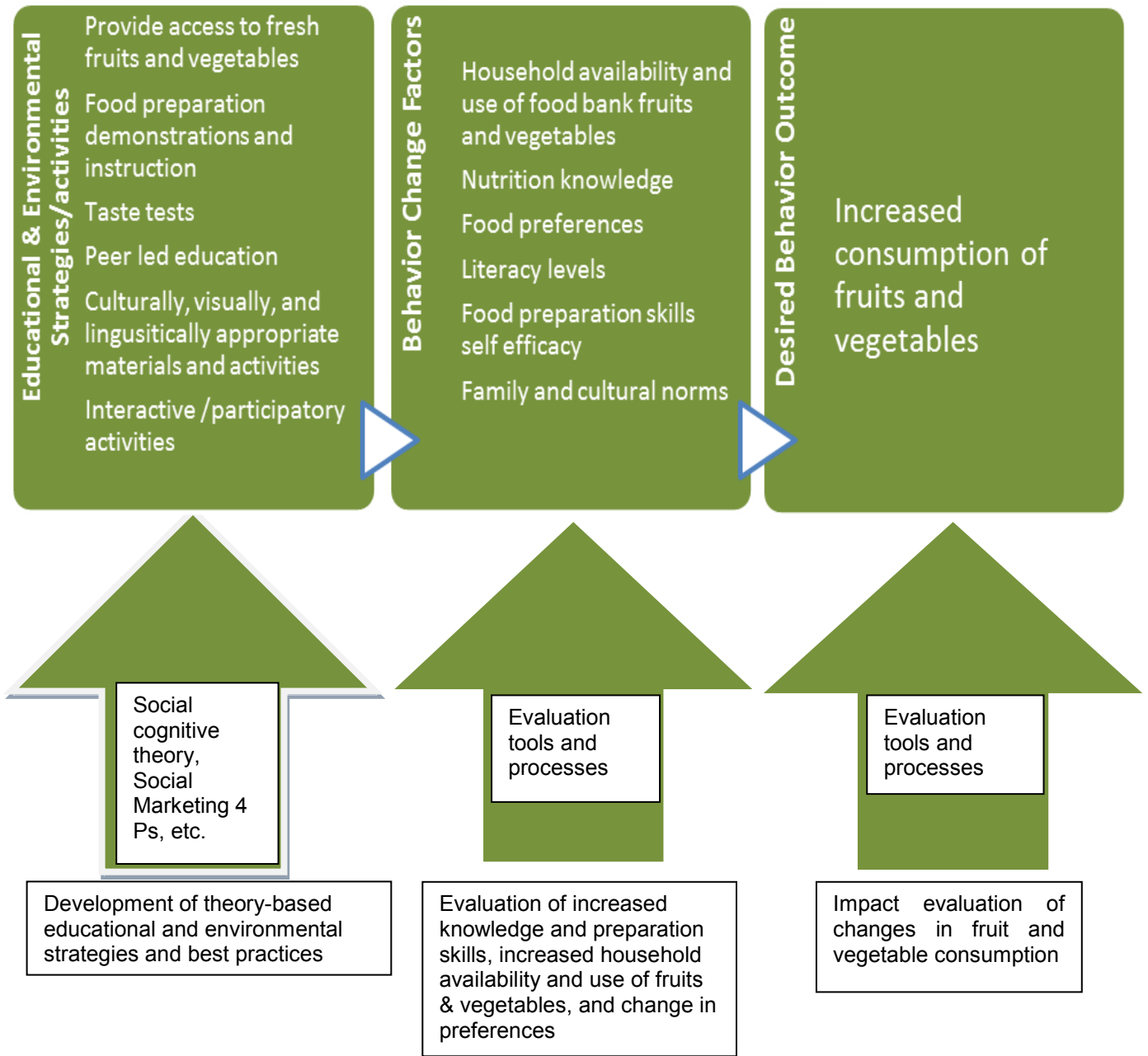
³ The Produce Toolbox Advisory Committee was composed of representatives from the *Network for a Healthy California*, California Association of Food Banks, and the following food banks: FOOD Share Inc. of Ventura County, Redwood Empire Food Bank, Second Harvest Food Bank Santa Cruz County, and Second Harvest Food Bank of Santa Clara and San Mateo Counties,

Institute, in its Theory at a Glance publication (2005), notes the PRECEDE-PROCEED planning model (Green, Kreuter, Deeds, and Partridge, 1980; Green and Kreuter, 2005) and the social marketing planning model (Kotler and Andreasen, 1996) should be considered when developing programs to promote health behavior change such as nutrition education programs. Furthermore, Contento (2011) suggests that nutrition education needs to use behavioral theory and evidence-based interventions to guide its work. The literature review completed by PAES confirmed the importance of using theory and health behavior models to guide the design of effective strategies/interventions.

The lessons and activities described in this report are grounded in the nutrition education behavior change logic model developed by PAES for Phase I of the CAFB Toolbox project and modified for Phase II (see Figure 1). The logic model is based on the PRECEDE-PROCEED planning model of Green and Kreuter (2005) and the evaluation model in the Impact Evaluation Handbook (2009) developed by Dr. Andy Fourney, Evaluation Specialist with the *Network for a Healthy California*. Both planning and evaluation models recognize that a desired behavior change (e.g., increased fruit and vegetable consumption) is affected by individual factors (e.g., personal attitudes, behaviors), social factors (e.g., family and cultural norms), and environmental factors (e.g., availability of healthy foods). Furthermore, the model implies that multiple factors contribute to behavior change in the food bank setting. These factors include access to fruits and vegetables, knowledge and beliefs about nutrition, literacy levels, skill in preparing unfamiliar produce, food preparation skills, social norms, and food preferences.

The logic model shows the flow from the design of the theory based intervention strategies and activities and the effect of those strategies/activities on clients accessing fresh fruits and vegetables at food distribution sites, increasing nutrition knowledge and motivation, and changing or building on food preferences and preparation skills that can lead to the desired impact of increasing fresh fruit and vegetable consumption.

Figure 1: Nutrition Education and Produce Distribution Behavior Change Logic Model



SECTION II

Phase II: New Lesson Development

II. PHASE II: NEW LESSON DEVELOPMENT

Lesson Development Process

As outlined in the project's Phase II scope of work, the final Toolbox would include approximately eight to nine interactive short lessons and supporting materials designed to be effective in produce distribution settings. Each interactive lesson was to be five minutes or less, complement produce being distributed at the food bank, engage food bank clients, children and adults alike, and have visual appeal with hand-outs and an interactive display board. The learning objective for all lessons was to increase consumption of fruits and vegetables.

Topics and activities which were already successfully implemented at food distribution settings and present in the Toolbox included

- food demonstrations,
- taste testing,
- USDA's *MyPlate*,
- Alternatives to Sugar Sweetened Beverages (e.g., Rethink Your Drink), and
- CalFresh promotion.

An additional four to five topics and/or activities were to be identified and developed, by a registered dietitian consultant.

Development of New Interactive Nutrition Education Lessons

A registered dietitian was contracted to develop the five lessons based on the five topics that would be initially identified through an online survey of 18 member food banks (*survey available upon request*). The purpose of the survey was to gather feedback on the use of materials in the CAFB Nutrition Education Produce Distribution Toolbox and provide guidance in the development of four to five new interactive learning activities for use with clients in the food distribution line.

The lessons developed by the dietitian and approved by the Produce Toolbox Advisory Committee were:

- ✓ **Three Produce-specific Lessons:** A list of commonly distributed vegetables at food banks and their seasonal availability was used to identify common produce distributed by food banks. *Broccoli, Cauliflower, and Spinach* lessons were developed by the dietitian, since these produce items are commonly distributed by California food banks and broccoli, in particular, is available all year round.
- ✓ **Eat More Fruits and Vegetables throughout the Day:** The objective of the lesson was to increase participants' knowledge on ways to add fruits and vegetables to meals, thus increasing consumption of fruits and vegetables. The concept was based on *MyPlate*.

- ✓ **Nutrition through the Lifetime** *-focusing on seniors*: Because five of the new lessons developed by the dietician were meant to complement CAFB’s Farm to Family produce distribution program, this lesson was revised to fit families of all age groups. Therefore, the new lesson was changed to *Fruits and Vegetables throughout Your Lifetime*.
- ✓ **Snack Time with Grover** was already in use at Second Harvest Food Bank of Santa Clara & San Mateo Counties. The dietician enhanced the lesson by developing a handout for parents and caregivers on quick healthy snack ideas.

During the continued refinement of the lesson plans, PAES and the Produce Toolbox Advisory Committee identified four pilot test sites, six intervention and six control sites from SHFB’s Family Harvest Program (FHP) (see methods section for details on site selection criteria). Intervention and data gathering timelines were limited to a three month period (June, July, and August). In addition, participants in SHFB’s Family Harvest Program only received produce once a month. Therefore, given the time constraint, in early May, five members of the Advisory Committee agreed to focus the educational lessons on three topics, as shown in Table 1.

Table 1: Lesson topics

Topic	Month	Focus
1. Enjoy Your Broccoli	June	Educational lesson
2. Eat More Fruits and Vegetables Throughout Your Day	July	Educational lesson
3. MyPlate	August	Educational lesson combined with post-test data gathering.

Nutrition staff from CAFB and SHFB reviewed the above lesson topics, added a recipe, and incorporated supplemental educator resource materials to each lesson plan. In addition, they modified the lessons to make them shorter for brief encounters with clients in the food distribution line. Furthermore, they branded each lesson with a common template and added a small group interactive educational activity. Thus, the final lesson for each topic incorporated a common template with four components: resources for educators, interactive activities, a recipe for taste testing, and a produce tip card developed by SHFB as a handout for clients. The lessons were translated into Spanish with the client produce tip card written at a fourth or fifth grade reading level.

Subsequently, further discussions about the practicality of conducting a lesson in addition to gathering post-test data in August resulted in integrating the *MyPlate* lesson with the June *Enjoy Your Broccoli* lesson and the July *Eat More Fruits and Vegetables throughout Your Day* lesson. The *MyPlate* lesson served as the foundation for the other two lessons and allowed for reemphasis of key nutritional messages (See Appendix A, B, & C for lessons.).

SECTION III

Methodology

III. METHODOLOGY

Evaluation Design

A design with six intervention group sites and six control group sites (not randomly assigned) was used for this study. Random assignment of the six controls and intervention sites was not possible due to the need to prevent intervention and data gathering scheduling conflicts associated with the once-a-month food distribution dates. The evaluation methodology was reviewed and approved for exemption by the Public Health Institute's Institutional Review Board.

Priority Population

As previously noted, the Second Harvest Food Bank (SHFB) of Santa Clara and San Mateo Counties was chosen as the site for the intervention and control study sites. SHFB is one of the top five California food banks in the number of pounds of Farm to Family produce distributed. In addition, they have a large number of produce only distributions which was necessary to effectively evaluate the intervention and control groups. Furthermore, they have a staff of nutrition educators capable of delivering the lessons.

SHFB's Family Harvest Program (FHP) was chosen by CAFB for the study, since the FHP met several priority population characteristics, specifically⁴:

- Eligible households at or below 200% of the federal poverty level who re-apply each year;
- Average Family Harvest recipient household's income was \$1,438 per month; and
- Households had an average of four people; 88% of the households had one or more children younger than age six (when brain development and proper nutrition are most critical).

Intervention and Control Sites

The evaluation design called for conducting educational interventions and post-intervention and control group data gathering across 12 food distribution sites; six intervention sites and six control sites. Sites were selected from among SHFB's 48 monthly FHP food distribution sites, with 31 in Santa Clara County and 17 in San Mateo County. Distribution locations across the 48 sites include family resource centers, a variety of family-serving non-profit organizations, low-income housing sites, schools, and community centers. FHP provides food to low-income families with children under the age of 18. Each family in the program receives approximately 100 pounds of food per month (the equivalent of 3-4 bags of groceries), including: Fresh produce, ground turkey, eggs, pasta, and an assortment of canned and frozen items.

⁴ Source: Second Harvest Food Bank of Santa Clara and San Mateo Counties <http://shfb.org/familyharvest>

Table 2, lists the criteria used for selecting the control and intervention food distribution sites.

Table 2 Site Selection Criteria

Criteria	Intervention Sites	Control Sites
SHFB Family Harvest Program Site*	✓	✓
Sites have capacity for conducting interactive nutrition education in June and July and data gathering in August.	✓	✓
Distance between multiple sites are accessible in one day	✓	✓
Receive the same produce	✓	✓
Nutrition education in previous 6 months	✓	
Nutrition education in June and July	✓	
Recipe Tip Cards distributed during the two intervention months of June and July	✓	
Recipe tastings in June & July	✓	
Recipe Tip Card distribution in August	✓	
SHFB newsletter containing healthy recipes and information on CalFresh eligibility distributed in June in multiple languages	✓	✓

*Five of the six sites were part of the Family Harvest Program. See footnote #6 on following page for more information.

Table 3, features the six intervention sites and six control sites, their location, client demographics, and the number of families served through the SHFB Family Harvest Program.

Table 3: Intervention and control site locations, n = 12

Control Sites			
Sites	City	Approximate Demographics⁵	# families registered
7th Day Adventist	San Jose	60% Latino 30% Asian 10% Caucasian & Other	155
Friends of Farm Drive	San Jose	60% Latino 30% Asian 10% Caucasian & Other	140
Campbell Methodist Church	Campbell	70% Latino 20% Asian 10% Caucasian & Other	160
K Smith Elementary	San Jose	70% Latino 20% Asian 10% Caucasian & Other	105
San Jose City College	San Jose	90% Latino 10% Asian 20% Caucasian & Other	100
Hank Lopez Community Center	San Jose	80% Latino 10% Asian 10% Caucasian & Other	140
Intervention Sites			
Jasmine Square	Morgan Hill	90% Latino 10% Caucasian & Other	88
Monterra Village	Gilroy	97% Latino 3% Caucasian & Other	180
John H. Boccardo Family Living Center	San Martin	70% Latino 20% Asian 10% Caucasian & Other	165
Eastside Community Center	San Jose	70% Latino 20% Asian 10% Caucasian & Other	135
Washington Youth Center	San Jose	90% Latino 10% Caucasian & Other	90
Hoover Elementary⁶	Redwood City	90% Latino 10% Caucasian & Other	100

⁵ Source: Second Harvest Food Bank of Santa Clara and San Mateo Counties

⁶ Note: Hoover Elementary was not an FHP distribution location. It was a Produce Mobile site that received produce only, compared with the Family Harvest sites that received produce, perishable and non-perishable food. It was included as an intervention site due to scheduling issues.

Instruments

Nutrition Education Intervention Observation Form

PAES developed an Intervention Observation Form (see Appendix D) that was used in June and July to gather information about: (1) the food distribution site including the location, name of the site coordinator, produce distributed, number of families registered and estimated number attending the distribution; (2) the intervention - how the lesson was delivered, what materials were distributed to food bank clients, the number of clients reached, the language used by the nutrition educator delivering the lesson, length of the intervention, and the percent of clients that appeared engaged in the interaction; and (3) gathered information that would be helpful for the evaluation team that would conduct the client interviews in August 2012.

Client Interview Observation Form

PAES used the Intervention Observation Form as a template and modified it to collect observation data during the client post-intervention interviews in August. In addition to gathering information on the setting and produce distributed, the form noted how the interviews were conducted, if the interviewer read the client confidentiality script before conducting the interview, and the length of the interviews. A comment section in the form gathered overall observations and noted interviewers' comments during debriefing sessions after interviews were completed at each location.

Client Consent Form

The purpose of the *Client Consent Form* (see Appendix E & F) was to protect clients' confidentiality and to pre-screen potential interviewees first by age, then by participation in the food distribution program. Clients were informed of their rights to decline to be interviewed without reprisal. Only those over 18 years of age and those who had received food in June or July were interviewed. In addition, only clients who spoke English or Spanish were interviewed. The Client Consent script was integrated into both the *Intervention Client Interview Questionnaire* and *Control Client Interview Survey*.

Client Interview Instruments: Intervention and Control

Two surveys, an *Intervention Group: Client Interview Questionnaire* and *Control Group: Client Interview Questionnaire* (see Appendices E & F), were developed by PAES in collaboration with CAFB, the *Network for a Healthy California*, and SHFB. Both *Client Interview* instruments assessed clients' self-efficacy, attitudes, behavioral intentions, and health outcome beliefs related to fruit and vegetable consumption and the produce being distributed. In addition, both were designed to be administered during the brief encounters (5-10 minutes) with clients in the food distribution line.

The *Intervention Group: Client Interview Questionnaire* assessed the impact of the new nutrition education interactive activities at the six intervention food distribution sites. The survey collected background and demographic information, and contained 21 scaled response questions with opportunities for comments. The *Control Group: Client Interview Questionnaire* collected

demographic information and contained 15 scaled response questions, with opportunities for comments. The instruments were pilot tested before implementation at the control and intervention sites (Pilot Test Summary *available upon request*).

Table 4, below, provides the study’s evaluation questions, intended impact, and corresponding questions in the Client Interview Survey:

Evaluation Design: Evaluation Questions and Intended Impact

The overall impact or change this study was designed to achieve was an:

Increase in consumption of fruits and vegetables

The key evaluation question the study sought to answer was:

Does exposure to multiple nutrition education interventions, combined with recipe distribution and food tasting, increase food bank clients’ use and consumption of produce distributed by the food bank?

Table 4: Evaluation questions guiding the study

EVALUATION QUESTIONS	INTENDED IMPACT/CHANGE	Corresponding SURVEY QUESTION
1. Do clients exposed to the multiple nutrition education interventions recall the messages?	Increase Knowledge/Awareness	<ul style="list-style-type: none"> • Do you remember hearing a message about eating healthier during your visit in June and/or July? • Do you remember hearing about MyPlate from the nutrition educators in June and/or July? • Have you ever heard about MyPlate? • What do you remember about how to use MyPlate for feeding your family? • Where have you heard about MyPlate?
2. Do clients exposed to multiple nutrition education interventions apply the knowledge and change their or their family’s behavior?	Behavior	<ul style="list-style-type: none"> • How have you used MyPlate to prepare food for your family
3. Do clients exposed to multiple nutrition education interventions and food tastings make the distributed recipes at home?	Use of Distributed Recipes	<ul style="list-style-type: none"> • Did you make the broccoli/stone fruit recipe at home?

EVALUATION QUESTIONS	INTENDED IMPACT/CHANGE	Corresponding SURVEY QUESTION
4. Do clients exposed to multiple nutrition education interventions and recipe samples taste the featured recipe and therefore change their attitude?	Change in Attitude/Preference	<ul style="list-style-type: none"> • Did you taste a broccoli/stone fruit recipe here in June/July?
5. Do clients exposed to multiple nutrition education interventions, recipe distribution and samples consume more of the featured produce at home?	Increase Consumption Use of distributed produce Increased Purchase	<ul style="list-style-type: none"> • Did you or your family eat broccoli/stone fruit since June/July? • How much of the fresh fruits/vegetables that you receive from here does your family end up eating each month? • What do you do with the fruits or vegetables that your family does not like to eat? • If you or your family ate broccoli [since June] where did you get the broccoli? • If you or your family ate stone fruit [since June] where did you get the stone fruit?
6. Does the distribution of recipe cards alone change clients' behavior?	Behavioral Intention	<ul style="list-style-type: none"> • If you got a Recipe Card today do you plan to make the recipe?
7. Does the distribution of fresh produce and corresponding recipes increase clients' belief that their family will consume the fruits & vegetables?	Self-efficacy / health outcome belief	<ul style="list-style-type: none"> • How confident are you that you can make the fruits and vegetables you take home today in such a way that your family will like and eat it?

Data Collection and Sampling

PAES worked in collaboration with the *Network* evaluation specialist, CAFB staff, and the Nutrition Education Task Force, to develop a sampling plan and schedule for data collection at 12 produce distribution sites in August 2012. The total target number of client intervention and control surveys was 450-480. Data was collected at the 12 produce distribution sites with approximately 30-40 interviews completed at each site. Each interviewer was expected to complete 4-8 interviews per produce distribution.

The study used a non-probability, convenience sample of all clients who were approached and who agreed to be interviewed. Furthermore, the sampling method included only those participants age 18 or older and proficient in English or Spanish, and those that received food at the distribution center in June and/or July, 2012. No other exclusion criteria were established for this survey.

The following table highlights the interventions and the data collection design.

Table 5: Intervention and data collection design

DATES	Activity	Lesson Topic & Education Activity	Location
June 14 & 16	Pilot test the two lessons	<ul style="list-style-type: none"> • MyPlate & Enjoy Your Broccoli Combination • Eat More Fruits & Vegetables Throughout Your Day & MyPlate Combination 	Sites: 2 sites per lesson
June 12, 13, 14, 15	Controls 1: food distribution only	No nutrition education No recipe card distribution	Sites 1-6 (80-150 clients/site)
June 22, 23, 28	Intervention 1: Nutrition education and food distribution	MyPlate & Enjoy Your Broccoli <ul style="list-style-type: none"> • Recipe distribution • Recipe tasting • Interactive poster 	Sites 1-6 (80-150 clients/site)
July 10, 11, 12, 13	Controls 2: food distribution only	No nutrition education No recipe card distribution	Sites 1-6 (80-150 clients/site)
July 26, 27, 28	Intervention 2: Nutrition education and food distribution	MyPlate & Eat More Fruits & Vegetables Throughout Your Day – <i>highlighting stone fruit</i> <ul style="list-style-type: none"> • Recipe distribution • Recipe tasting • Interactive poster 	Sites 1-6 (80-150 clients/site)
August 3	Pilot Test	Pilot Test Evaluation Instruments at Non-Intervention Sites	Site 1: 25 clients interviewed
August 7, 8, 9	<u>Control Sites:</u> Data Collection	Utilization of produce	Control sites 1-6 (40 interviews/site)
Aug 23, 24, 25	<u>Intervention Sites:</u> Data Collection	Impact of nutrition education intervention on client’s consumption of produce	Sites 1-6 (40 interviews/site)

Interviewer Training

Five bilingual Spanish speaking/reading interviewers were recruited to conduct the client interviews. Of those, four attended an in-person training and one participated in an online training to prepare them to conduct the food bank client interviews. A data collection training guide and protocol (*available upon request*) was developed by PAES. The training included project background information, a review of the interactive nutrition learning activities and survey instruments, and a schedule for interviewers. The interviewer protocol provided details on conducting the interviews, as well as pre and post-interview activities.



PAES interviewers/role-playing interviews during the pilot test

The training also included a one-hour observation of nutrition education delivery at one of the study's intervention sites. The observations provided interviewers an opportunity to observe the SHFB nutrition educators deliver one of the interactive nutrition education lessons being used with food bank clients. It was also an opportunity to meet some of the food bank staff and gain a better understanding of the unique challenges posed by the distribution line setting to conducting nutrition education and client interviews. In addition, interviewers were able to role play interviewing each other before pilot testing the instruments and conducting the control and intervention interviews.



PAES interviewers and staff

pilot testing the instruments and conducting the control and intervention interviews.

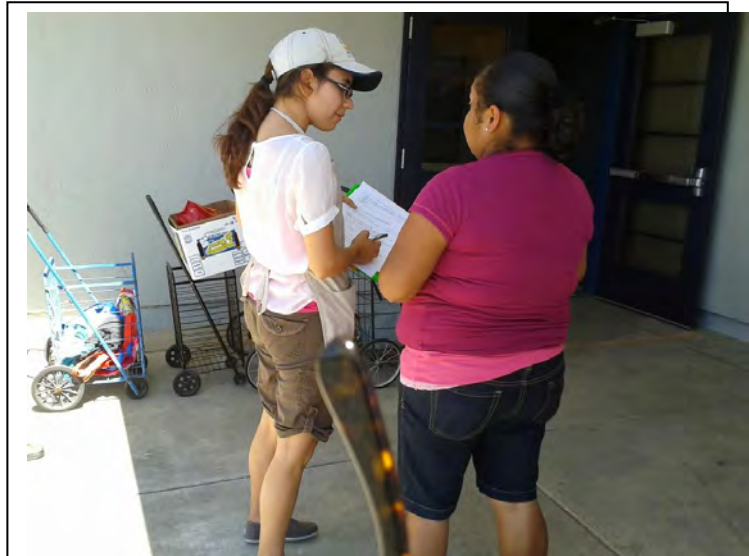
Client Interviews

In-person interviews with clients in the control and intervention groups were conducted one-on-one before and during food distribution times at all 12 sites. Bilingual Spanish-speaking interviewers wore Champions for Change aprons and hats provided by the *Network for a Healthy California* and name badges using the SHFB logo to make them easily recognizable to the food bank clients.

Interviews were conducted in the distribution line and in front of a promotional table. After a consent script was read and the client agreed to be interviewed,

interviews lasted an average duration of

five minutes. Clients who agreed to be interviewed were offered a nutrition education reinforcement item of their choice, either a Champions for Change cap or apron, available in English or Spanish. Participation was voluntary and survey responses were confidential. While the interviewers surveyed clients, PAES staff observed the interviews and completed an observation form.



Client Interview



Client Interview

Table 6, shows the locations for the control and intervention interviews, and the dates and times the interviews were conducted.

Table 6: Control and intervention sites and interview dates, n = 12.

Control Sites		
Sites	Interview Date	Interview Time
7th Day Adventist	8/7/12	10:00 –11:30 am
Friends of Farm Drive	8/7/12	3:00 – 4:30 pm
Campbell United Methodist Church	8/8/12	3:15 – 4:45 pm
K Smith Elementary	8/9/12	12:00 – 1:30 pm
San Jose City College	8/10/12	10:00 –11:30 am
Hank Lopez Community Center	8/10/12	2:00 – 3:45 am
Intervention Sites		
Jasmine Square	8/23/12	8:30 – 11:00 am
Monterra Village	8/23/12	1:30 – 4:00 pm
John H. Boccardo Family Living Center	8/24/12	9:00 – 11:30 am
Eastside Community Center	8/25/12	9:00 – 11:30 am
Washington Youth Center	8/25/12	2:00 – 4:30 pm
Hoover Elementary	8/31/12	2:30 – 5:00 pm

Data Entry and Analysis

The online survey development website, SurveyMonkey, was used to create and post the *Intervention Client Interview Questionnaire* and *Control Client Interview Survey* for data entry. Each trained interviewer entered the data into SurveyMonkey from the completed client interview forms immediately after collection at the interview site. Simple tabulations were calculated in SurveyMonkey and a summary was produced for both data sets.

Subsequently, quantitative data were exported into the Statistical Package for the Social Sciences (SPSS) Version 17.0, for further analysis and reporting. Inferential statistics were used to determine if group differences between the control and intervention groups were statistically significant. Statistics were calculated with SPSS Version 17.0 and for the regression analysis with SPSS Version 20.0. Differences between means were analyzed using independent *t*-tests and linear regression. Chi-squared tests and logistic regression were used to compare control and intervention group proportions. All variables were considered significant at $p < 0.05$ (two-tailed). A content analysis of the qualitative data was performed to identify common themes. In addition, a more detailed analysis was completed for some key survey questions.

SECTION IV

Nutrition Education Intervention

IV. Nutrition Education Intervention

The two newly developed combination nutrition education lessons, (1) *MyPlate & Enjoy Your Broccoli* and (2) *Eat More Fruits and Vegetables Throughout Your Day & MyPlate*, were implemented at the SHFB Family Harvest Program’s six food distribution locations in Santa Clara and San Mateo Counties in June and July 2012, with approximately 100 clients at each site. Table 7, provides a description of the education lesson components (See Appendix A & B for combo lesson plans) and the key messages contained in the nutrition educator’s lesson plan protocol documents (See Appendix C).

Table 7: Combination Lesson Components

Combo Lesson Plan Topic	Key Messages	Handouts	Interactive	Produce Distributed
<i>MyPlate & Eat Your Broccoli Combination</i>	<ol style="list-style-type: none"> 1. MyPlate is made up of 5 different food groups: fruit, vegetables, grains, protein, and dairy 2. Fill half your plate with fruits and vegetables 3. Fill a quarter of your plate with grains, and the other quarter with protein. 	<ol style="list-style-type: none"> 1. Broccoli Recipe Card, 2. 1 Great Plate Handout English/Spanish 3. Broccoli Salad Recipe Tasting 	Tri-fold interactive poster with: <ul style="list-style-type: none"> • Large MyPlate graphic with 5 food groups labeled, • Food item cut outs from the 5 food groups • Key Messages in English & Spanish: Make “Healthy Choices” and components of “A Healthy Plate” 	Broccoli
<i>Eat More Fruits & Vegetables Throughout Your Day & MyPlate</i>	<ol style="list-style-type: none"> 1. MyPlate is made up of 5 different food groups: fruit, vegetables, grains, protein, and dairy 2. Fill half your plate with fruits and vegetables 3. Eat more fruits & vegetables throughout your day 	<ol style="list-style-type: none"> 1. Stone Fruit Recipe Card, 2. MyPlate “What’s on Your Plate” Handout English/Spanish 3. Fruit Salad Recipe Tasting 	Tri-fold interactive poster with: <ul style="list-style-type: none"> • Photos of 3 typical Breakfast, lunch , and dinner meals • Fruit and vegetable photo cut outs • Key Messages in English & Spanish: A Healthy Plate and MyPlate graphic • Key Tips for adding fruits & vegetables to each meal 	Stone Fruit

Intervention Dates & Locations

Table 8, shows the intervention dates, locations, and languages used by the SHFB nutrition educators to provide the nutrition education.

Table 8: Interventions by site and date, n = 6

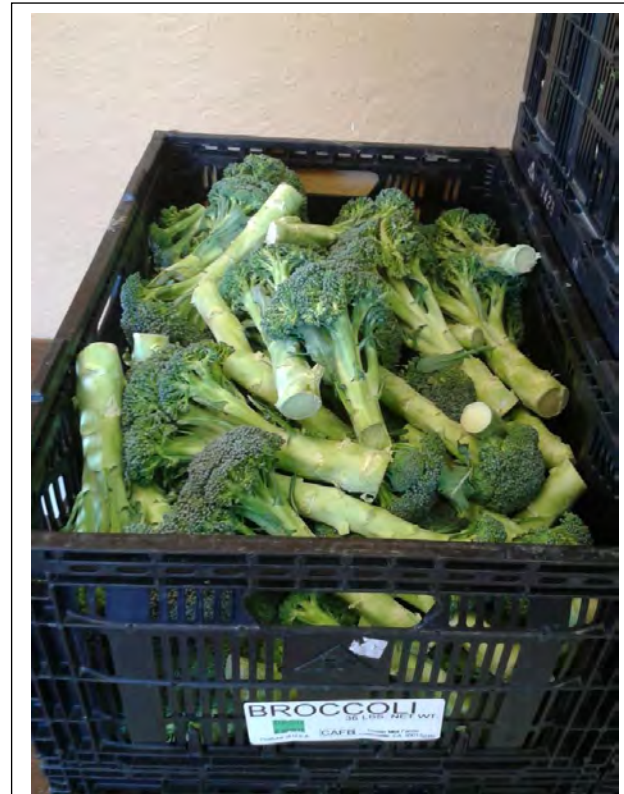
Site	City	Intervention Dates	Presentation Language
John H. Boccardo Family Living Center	San Martin	6/22/12 7/27/12	Spanish English
Hoover Elementary	Redwood City	6/22/12 7/20/12	Spanish English Chinese and Vietnamese
Eastside Community Center	San Jose	6/23/12 7/28/12	Spanish English Vietnamese
Washington Youth Center	San Jose	6/23/12 7/25/12	Spanish English
Jasmine Square	Morgan Hill	6/28/12 7/26/12	Spanish English
Monterra Village	Gilroy	6/28/12 7/26/12	Spanish English

Lesson Delivery

Each of the interactive nutrition education lessons was delivered by a team of at least two SHFB nutrition educators. At all six intervention sites, the nutrition education lessons were delivered to clients standing outdoors waiting in the food distribution line, with 1-5 participants hearing the nutrition message, while one self-selected adult client or child engaged with the educator and participated in the interactive learning activity. The interchange took an average of 5 minutes, and ranged from as short as 1½ minutes to as long as 8 minutes.

The colorful interactive tri-fold display board was a key component of the educational activity. At some sites the nutrition educators had access to a rolling cart where they placed the display and moved it up and down the line to reach each client. At other sites the board was on a table that did not roll, and at sites where using a table was not possible, one educator walked the board through the line while another engaged the food distribution audience.

The other key components to the lesson delivery were the distribution of a MyPlate handout, a recipe and corresponding food tasting (i.e., Broccoli recipe for the first lesson and a Stone Fruit recipe for the Eat More Fruits & Vegetable lesson).



Broccoli distributed to match the lesson

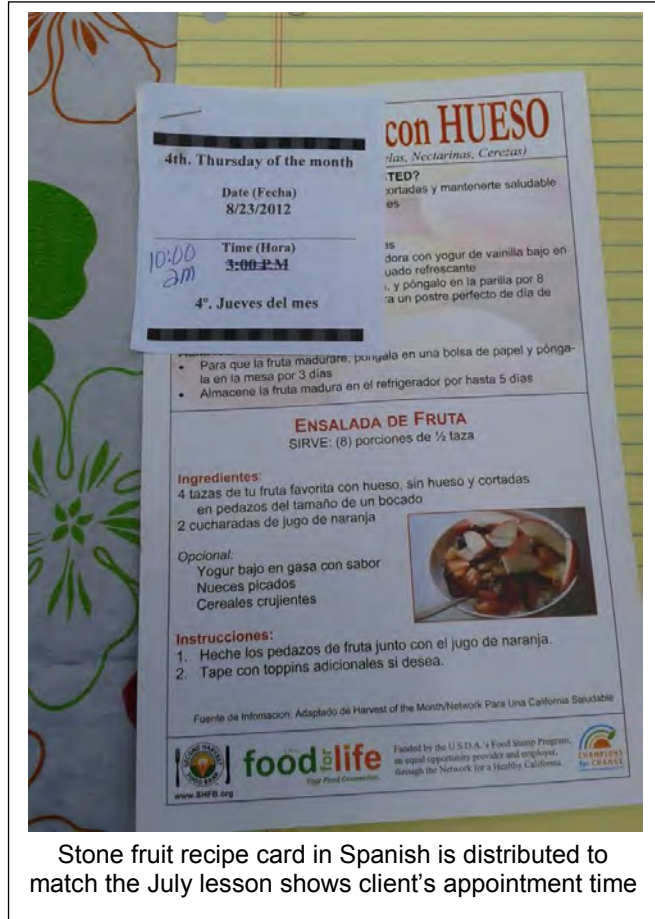


MyPlate/ Enjoy Your Broccoli interactive display that was the centerpiece of one of the newly developed lessons

The intervention design included the distribution of produce at each site to match the core theme of each lesson, i.e. broccoli in June and stone fruit in July. This was a function of two factors: 1) the food bank would receive the corresponding produce from the California Association for the two intervention months; and 2) The SHFB warehouse would have sufficient matching produce to dispatch to the intervention sites.

The final component in the intervention design called for SHFB to distribute a Squash Recipe Tip Card to intervention site clients in the month of August.

Lastly, some intervention sites received a Family Harvest Program newsletter (available in English and Spanish) created by SHFB that included a volunteer profile, information on CalFresh, California's name for the Federal Supplemental Nutrition Assistance Program, and a healthy recipe. All these components reinforced the nutrition education message to food bank clients at the intervention sites in June and July.



Stone fruit recipe card in Spanish is distributed to match the July lesson shows client's appointment time

Intervention Challenges

Language was a barrier at all the intervention sites that was overcome by the multi-lingual SHFB nutrition staff who spoke Spanish, Vietnamese, and Chinese, and effectively delivered the lessons in the food bank client's preferred language. Furthermore, at some locations it was hard to hear the nutrition educator above other conversations and children playing. A confounding factor



Stone fruit distributed to match the Eat More Fruits & Vegetables/MyPlate lesson

included a SHFB CalFresh outreach representative walking the line and speaking to clients at one site. The representative distributed CalFresh flyers that also included a MyPlate logo. Lastly, produce that was received at the sites for the nutrition lessons was sometimes a challenge, because the lessons were dependent upon the availability of matching produce in the Second Harvest Food Bank warehouses.

Intervention Photo Gallery:
MyPlate & Eat Your Broccoli Interactive Nutrition Lesson



Clients participating with the SHFB nutrition educator and the *MyPlate-Broccoli* interactive board



SHFB nutrition educator, Prima Hernandez, teaches combo MyPlate/Broccoli lesson to clients



Janet Hung, SHFB nutrition educator, uses a rolling cart to reach clients



Madoka Gaspar, SHFB Nutrition Program Manager, readies broccoli recipe tasting



Typical FHP client food distribution items

Intervention Photo Gallery:

Eat More Fruits & Vegetables throughout Your Day-MyPlate Interactive Nutrition Lesson



SHFB nutrition educator Janet Hung and clients engaging in the *Eat More Fruits & Vegetables-MyPlate* interactive educational activity



Fruit Salad Recipe tasting is distributed by SHFB nutrition educator to clients in line

SECTION V

Evaluation Results

V. RESULTS

Control Group *Client Interviews* were completed with 254 food bank recipients at six food distribution sites from August 7, 2012, through August 10, 2012 that had not received education during June and July. In addition, the *Intervention Group Client Interview Survey* was completed at six food distribution sites from August 23, 2012, through August 31, 2012 with 261 clients at sites that had received education during June and July. Both sets of interviews were conducted at sites operated by the Second Harvest Food Bank of Santa Clara and San Mateo Counties by interviewers contracted with Perales & Associates Evaluation Services, in collaboration with the California Association of Food Banks and the *Network for a Healthy California*. The following section provides combined results of the control and intervention data gathered from the 515 interviews.

Demographics

Demographic variables and background information were collected as part of the administered surveys (See Table 9). Descriptive statistics were used to summarize the data obtained from the surveys. Age was measured as both a continuous and ordinal variable. Other demographic characteristics were measured at the dichotomous or nominal level.

Demographic characteristics indicated that participants were predominantly female in both the control and intervention groups (94.5% and 93.4%, respectively). The mean age for participants in the control group was 39.08 years ($SD = 10.22$), and in the intervention group, it was 40.27 years ($SD = 10.95$)⁷. The difference between the two means was not statistically significant ($t = 1.20$, $df = 460$). Almost two thirds of both respondent groups were between 25 and 44 years of age. Less than 5% were under 25 years or over 65 years.

As shown in Table 9, the majority of participants at the control and intervention sites self-identify as Hispanic/Latino only (84.5% and 93.8%, respectively). Since the expected cell size for several of these sub groups was very small (expected cell size < 5), the race/ethnic information was analyzed for just two subpopulations whether the respondent self-identified as Hispanic/Latino (including those who identified to more than one race/ethnic group) or not. The difference was statistically significant between the two groups with 13.9% of participants at control sites but only 5.8% of participants at intervention sites not self-identifying as Hispanic/Latino ($\chi^2 = 9.487$, $df = 1$, $p < 0.01$).

The majority of participants at both control and intervention sites indicated their primary language as Spanish (81.1% and 86.9%, respectively). A similar number of participants at the control and intervention sites were English dominant (26 and 29, respectively). More participants in the control group were Chinese dominant (3) and Vietnamese dominant (16) compared to participants in the intervention group (1 and 3, respectively). Since the expected cell size for several of the subpopulations was very small (expected cell size < 5), primary language was analyzed whether or not the participant had indicated Spanish was their primary language. The difference was not statistically significant between participants at the control and intervention

⁷ Respondents were asked their age in years. Fifty one respondents preferred to provide their ages in terms of age categories rather than actual years. In these cases, the mid-point of the age category was used to estimate respondents' age in years.

sites ($\chi^2 = 2.788$, $df = 1$, $p > 0.05$). As expected, the majority of interviews were conducted in Spanish at both the control and intervention sites (81.5% and 84.3%, respectively).

Also, Table 9 shows that both the control and intervention groups reported comparable percentages of children under the age of 18 living with the participant at home (96.9% and 95.8%, respectively). Additionally, 83.1% and 80.5% of participants at the control and intervention sites, respectively, reported receiving food at the food distribution site in June and July. A small percentage of participants at the control and intervention sites received food in June only (6.7% and 9.6%, respectively), and about one in ten participants at both sites received food in July only. No significant differences were detected between control and intervention sites for the two aforementioned variables.

Table 9: Demographic Characteristics of Participants: Control and Intervention Client Interview Surveys (N = 515)

Characteristics	Control Group (n = 254), % or Mean (SD)	Intervention Group (n = 261), % or Mean (SD)	P-value
Gender			
Female	94.5	93.4	.62
Male	5.5	6.6	
Age			
Years	38.81 (10.06)	40.06 (10.97)	.18
Race/Ethnicity			
White/Caucasian	3.2	1.5	n/a
Hispanic/Latino	84.5	93.8	
Black/African Amer.	0.4	0.8	
Asian/PI ^a	9.1	2.3	
Other	0.4 ^b	0.4 ^c	
Multiethnic/mixed-	2.4	1.2	
Hispanic/NonHispanic**			
Hispanic/Latino	86.1	94.2	.002
NonHispanic	13.9	5.8	
Primary Language			
English	10.6	11.2	n/a
Spanish	81.1	86.9	
Chinese	1.2	0.4	
Vietnamese	6.3	1.2	
Other	0.79 ^d	0.4 ^e	
Primary Language			
Spanish	81.5%	86.9%	.095
Not Spanish	18.5%	13.1%	
Language of interview			
Spanish	81.5	84.3	.40
English	18.5	15.7	
Children living at home^f	96.9	95.8	.51
Received food^g			
June & July	83.1	80.5	.49
June	6.7	9.6	
July	10.2	10.0	

n/a – Statistical test not appropriate since expected cell size < 5 for some of the subpopulations.

^aPacific Islander, ^bIranian (n=1), ^cJapanese (n=1), ^dAssyrian (n=1), Farsi (n=1), ^eTagalog (n=1)

^fParticipants responded to “Do you have any children living at home with you who are under age 18?”

^gParticipants responded to “Did you get food here in _?”

** Statistically significant difference p < .01

Questions in Section II of the survey gathered participants' responses regarding familiarity and utilization of *MyPlate*. *MyPlate* is part of the USDA's communication initiative, which is designed to help Americans make healthy food choices through the use of a place setting as an everyday icon.⁸

MyPlate and Healthy Eating Recall: Intervention Group Only

Intervention clients were asked if they *remembered hearing a message about eating healthier*, and if they *remembered hearing about MyPlate from the nutrition educators* during their June and/or July visit. As seen in Tables 10 & 11, the majority of participants remembered hearing a healthy eating message (80.8%) in June or July and approximately two-thirds of participants specifically recalled hearing about *MyPlate* from the nutrition educators. Eight participants commented that they saw the table or board that was set up by the nutrition educators, but that they did not hear the message. Among the 93 intervention clients that did not remember hearing about *MyPlate* from the nutrition educators, the majority (64.5%) of those respondents had never heard about *MyPlate*.

Table 10: Recall hearing healthy eating message, (N = 261)

	Intervention (%), n=261
Yes	211 (80.8)
No	50 (19.2)

Table 11: Recall hearing about MyPlate from nutrition educators, (N = 260)

	Intervention (%), n=260
Yes	167 (64.4)
No	93 (35.6)

⁸Source: USDA ChooseMyPlate: [http:// www.choosemyplate.gov](http://www.choosemyplate.gov)

Results – Intervention and Control Groups

The following section features a quantitative comparison of the intervention and control group results. It also includes qualitative analysis for certain key survey questions.

MyPlate Awareness

Intervention and control group participants were asked if they *had ever heard about MyPlate*, and if they answered yes, they were asked where they heard about it.⁹ Table 12 shows that more than three-fourths of the intervention group compared to approximately only one-fifth of the control group were aware of USDA’s *MyPlate*. The intervention group participants had a statistically significant greater awareness of *MyPlate* compared to the control group participants.

Table 12: *Awareness of MyPlate? (N =515)*

	Control (%), n=254	Intervention (%), n=261	p
Yes	57 (22.4)	201 (77)	.000***

***p<.001

Since initial comparisons between the control and intervention groups revealed intervention participants were significantly more likely to self-identify as Hispanic/Latino, additional regression analysis shown in Appendix G was conducted to control for this demographic difference. Even when controlling for Hispanic/Latino race ethnicity, significant differences between the two groups remained with intervention group participants almost 12 times more likely than control group participants to be aware of *MyPlate* (see Appendix G, Table 1).

Recall on How to Use MyPlate

Results of the survey question, “*What do you remember about how to use MyPlate for feeding your family?*” indicated that 21.6% of all respondents in the control group, and 12.4% of respondents in the intervention group did not know or did not remember anything specific about *MyPlate*. Among respondents who remembered *MyPlate*, the two most common recalled responses were that half of your plate should consist of fruits and vegetables and that *MyPlate* is made up of five different food groups (see Table 13). Overall, a comparison between intervention and control group recall showed a statistically significant difference for four of the common responses. In addition to recalling the key messages from the two Intervention Lessons, intervention group participants remembered to “Make at least half of your grains whole” and to “Eat low fat dairy products”. Clients also commented on eating smaller portions or portion control (n=29), adding or eating more fruits and/or vegetables (n=24), eating or cooking healthier foods (n=9), and one person noted using the *MyPlate* handout to “guide kids into liking fruits”. When recalled responses were converted to a mean score based on the six desirable choices included in the survey, the difference between the two means is statistically significant ($t = 6.849, df = 513, p < .001$).

⁹ Participants at intervention sites who had remembered learning about MyPlate from nutrition educators at the June or July distributions were not asked this question but were classified as having heard about MyPlate.

Table 13: *What do you remember about how to use MyPlate for feeding your family?* (N =515)

Remembered	Control % or Mean (SD), n=254	Intervention % or Mean (SD), n=261	P
Make half of your plate fruits and vegetables	5.1	27.2	.000***
<i>MyPlate</i> is made up of five different food groups	10.2	18.0	.011*
Make at least half of your grains whole	2.0	10.0	.000***
Add lean protein	4.3	6.9	.207
Eat low fat dairy products	0.0	3.1	.005**
Eat from the five food groups throughout the day	2.0	4.6	.095
Score	0.04 (.10)	0.12 (.15)	.000

***p<.001, **p<.01 *p<.05

Even when controlling for Hispanic/Latino race ethnicity (see Appendix G Tables 2-4), compared to participants at control sites, significant differences remained with participants at intervention sites who were:

- 6.8 times as likely to remember to make half of your plates fruits and vegetables
- twice as likely to remember *MyPlate* is made up of five different food groups, and
- 5.7 times as likely to remember to make at least half of your grains whole,

Due to the control group cell size being too small, it was not possible to conduct the additional logistic regression for the item “eat low fat dairy products”. However, even when controlling for Hispanic/Latino race ethnicity (see Appendix G, Table 5), participants at intervention sites had a significantly higher mean score across the six aspects of *MyPlate* that were addressed in the education activity conducted at the produce distribution sites.

MyPlate Usage

When clients were asked how they had used *MyPlate* to prepare food for their families, nearly half of the intervention group participants (45.6%) said they used it to prepare more vegetables, compared with 10.2% of control group clients (see Table 14). There were significant differences between the intervention and control groups for usage of *MyPlate* to prepare more vegetables, give more fruits, lean meats, whole grains, of more fruits, lean meats, whole grains, and eating from the five food groups, although the percentages within groups were small. The remaining respondents, 7.1% of the 254 from the control group and 17.6% of 261 of the clients from the intervention group said they did not make any changes. When usage responses were converted to a mean score based on the six desirable choices included in the survey, the difference between the two means is statistically significant ($t = 10.016$, $df = 513$, $p < .001$).

Table 14: *How have you used MyPlate to prepare food for your family (N = 515)*

Use of <i>MyPlate</i>	Control % or Mean (<i>SD</i>), $n=254$	Intervention % or Mean (<i>SD</i>), $n=261$	<i>p</i>
Preparing more vegetables	10.2	45.6	.000***
Giving them more fruits	3.1	24.5	.000***
Making sure they eat from the five food groups throughout the day	4.3	8.8	.041*
Giving them lean meats	1.6	8.4	.000***
Giving them more whole grains	0.0	4.2	.001**
Score	.0329 (.0900)	.155 (.173)	.000

*** $p < .001$, ** $p < .01$ * $p < .05$

Even when controlling for Hispanic/Latino race ethnicity (see Appendix G, Tables 6-9), compared to participants at control sites significant, differences remained with participants at intervention sites who were:

- 7.7 times as likely to have used *MyPlate* to prepare more vegetables,
- 10.1 times as likely to have used *MyPlate* to give more fruits,
- 2.3 times as likely to have used *MyPlate* to make sure their family eats from the five food groups throughout the day, and
- 5.8 times as likely to have used *MyPlate* to give their family more lean meat

Due to the control group cell size being too small, it was not possible to conduct the additional logistic regression for the item “give them more whole grain”. However, even when controlling for Hispanic/Latino race ethnicity (see Appendix G, Table 10), participants at intervention sites had a significantly higher mean score across the six uses of *MyPlate* that were specified in the survey.

Qualitative Response: *Intervention Group, n = 72*

Question: *How have you used MyPlate to prepare food for your family?*

Key and Themes
Changes in Food Choices
Different Food Options
Health Conditions
Food Portions

The analysis of the qualitative data for question five generated one overarching theme- *changes in food choices*- and three other major themes: *different food options*, *health conditions*, and *food portions*. Respondents stated *MyPlate* has helped them make *changes in food choices* (n = 27) by eating healthier, preparing/eating less fatty foods, substituting more fish and poultry for red meats, adding at

least two of the five food groups to their meals, and eating less fast food.

MyPlate also gave respondents different ideas on how to prepare innovative meals that include more fruits and vegetables (*different food options*). Ten percent of respondents stated they were using *MyPlate* because they had a *health condition* such as diabetes or because they or a family member were trying to lose weight. Three participants stated that they or a relative lost weight as a result of using *MyPlate*. Respondents stated *MyPlate* helped them portion their food by adding more vegetables, making balanced meals, and preparing smaller portions to support them with a health condition (i.e. diabetes, weight loss).

The remaining 17 comments were a combination of answer options in the quantitative section of the question (n=8), proper cleansing of fruits and vegetables (n=2), had made little to no change or temporary change using *MyPlate* (n=1), has or is currently using *MyPlate* (n=4), and general comments (n=2).

Qualitative Response: *Control Group, n = 9*

Question: *How have you used MyPlate to prepare food for your family?*

Key and Themes
Food Portions

One major theme identified from the analysis of the qualitative data for question 7 among control participants was *food portions*. Respondents (n=6) used *MyPlate* to

portion and balance the food they were giving to their families, including preparing less meat and more salads. In the *MyPlate* figure, the vegetable section (portion) is the biggest section on the plate. If respondents were using the *MyPlate* figure as a guide to portion their food, one can infer they were preparing more vegetables. The remaining respondents said they used *MyPlate* making soups (n=1), adding “nutritious ingredients” (n=1), and used it for cooking (n=1).

Where Clients Heard about MyPlate

Nearly half of the 45 respondents from the control group and almost one quarter of the 201 respondents from the intervention group who indicated they heard about *MyPlate*, reported hearing about it through the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) (see Table 15). Nutrition classes, media (e.g., TV Univision), and their children's school each comprised approximately one quarter of respondents' answers in the control group, whereas only about 8% of the respondents in the intervention group had heard about *MyPlate* from those sources. Half of the intervention group reported hearing about *MyPlate* at the food bank food distribution site compared to approximately one-fifth of the control participants. This is interesting since *MyPlate* was not addressed during food distributions at the control sites in June or July.

Table 15: Where have you heard about MyPlate (N =246)

Where heard	Control %, n=45	Intervention %, n=201
Food bank	22.2	50.7
WIC	46.7	22.4
Nutrition classes	26.7	9.0
Media (TV show, radio, internet)	22.2	5.0
Child's school	20.0	7.5
Other (doctor's office/clinic, Headstart, church, community center)	4.4	17.4

Note: Respondents could choose more than one response.

Broccoli Recall and Use

Questions in Section III of the survey gathered participants' responses regarding the receipt and use of a *Broccoli Recipe Card*. Clients were shown a sample *Broccoli Recipe Card* and asked if they had ever received it at the food distribution site. Some participants did not know or could not remember (8.3% of the control group and 6.5% of the intervention groups). If they responded, "Yes," they were asked if they had made the recipe at home. As indicated in Table 16, the majority of participants in both the control and intervention groups reported receiving a recipe card¹⁰. The difference between the two distributions is not statistically significant ($\chi^2=2.284$, $df=2$, $p>0.05$).

¹⁰ As part of the evaluation design, a broccoli recipe card was not supposed to be distributed at the six control sites. However, during data analysis and collection, it became evident to the evaluators that either a card had been inadvertently distributed or control site clients were recalling having received a card at a time prior to June 2012.

Table 16: Did you get a Broccoli Recipe Card at the food distribution site in June? (N =515)

	Control %, n=254	Intervention %, n=261	<i>p</i>
Yes	57.1	63.6	.131
No/Don't know	42.9	36.4	

Broccoli Recipe Preparation

Table 17, shows that more than one-fifth of respondents in the control group and more than one-third of respondents in the intervention group prepared the broccoli recipe at home. The difference between the two distributions is statistically significant ($\chi^2 = 14.89$, $df = 1$, $p=0.0001$).

Table 17: Did you make the broccoli recipe at home? (N=515)

	Control %, n=254	Intervention %, n=261	<i>p</i>
Yes	21.7	37.2	.000***
No/Don't know	78.3	62.8	

Even when controlling for Hispanic/Latino race ethnicity, participants at intervention sites were significantly more likely - 2.2 times as likely - to report having tried the broccoli recipe at home than participants at the control sites (see Appendix G, Tables 11).

Additional client comments included:

- Modified recipe (11)
- Prefers broccoli alone (3)
- Did not have ingredients (2)
- They or their children did not like it (4)

Broccoli Consumption

Clients were also asked whether they or their family had eaten broccoli since June, and if so, where they had purchased or received the vegetable. A substantial majority of clients in both the control and intervention groups responded that they had consumed broccoli since June (98.8% and 97.3%, respectively). The difference between the two groups is not statistically significant ($\chi^2 = 1.523$, $df = 1$, $p>.10$).

As shown in Table 18, among those who ate broccoli, the majority of clients in both the control and intervention groups had obtained broccoli from the food bank or grocery store. In addition to the response options that had been included in the survey, broccoli had also been received from churches; a community garden, WIC, and a community center (see “other” in Table 18).

Table 18: *Where did you get the broccoli? (N =505)*

	Control %, n=251	Intervention %, n=254
Food bank	89.2	87.8
Grocery store	65.3	76.4
Farmer's market	1.6	2.0
Flea market	0.8	1.6
Street vendor	0.4	0.0
Friends or family	0.4	1.2
Other	1.6	4.7

Note: Respondents could choose more than one response.

Table 19 shows that within the whole sample (N=515), the distribution of clients who purchased broccoli at a grocery store in the intervention and control groups is statistically significant ($\chi^2 = 5.79$, $df p < 0.05$).

Table 19: *Where did you get broccoli? (N=515)*

	Control %, n=254	Intervention %, n=261	<i>p</i>
Bought at grocery store	64.6	74.3	.016*
Not bought at grocery store	35.4	25.7	

* $p < .05$

Even when controlling for Hispanic/Latino race ethnicity, participants at intervention sites were significantly more likely - 1.6 times as likely (or 60% more likely) - to report having bought broccoli in a store than participants at the control sites (see Appendix G, Tables 12).

Stone fruit

Questions in Section IV of the survey gathered clients' responses regarding the receipt and use of a *Stone Fruit Recipe Card*. As indicated in Table 20, approximately one in four clients in the control group reported receiving a recipe card, while two-thirds of clients in the intervention group reported receiving a recipe card (27.2% and 65.9%, respectively)¹¹. The difference between the two distributions is statistically significant ($\chi^2 = 77.575$, $df = 1$, $p = .000$).

Table 21: *Did you get a Stone Fruit Recipe Card at the food distribution site in July? (N=515)*

	Control %, n=254	Intervention %, n=261	p
Yes	27.2	65.9	.000***
No/Don't know or don't remember	72.8	34.1	

***p<.001

Even when controlling for Hispanic/Latino race ethnicity, participants at intervention sites were significantly more likely - 5.4 times as likely - to have received the Stone Fruit Recipe Card at the food distribution in July than participants at the control sites (see Appendix G, Table 13).

Stone Fruit Recipe Preparation

As noted in Table 22, when the whole sample of participants was considered in both the intervention and control groups, less than one-eighth of respondents in the control group made the stone fruit recipe at home, while approximately one-third of respondents in the intervention group made the stone fruit recipe at home. The difference between the two distributions is statistically significant ($\chi^2 = 36.46$, $df = 1$, $p = .000$).

Table 22: *Did you make the stone fruit recipe at home? (N=515)*

	Control %, n=254	Intervention %, n=261	p
Yes	11.4	33.7	.000***
No/Don't know	88.6	66.3	

***p<.001

Additional client comments included:

- Modified the recipe (15)
- Kids liked it (7)
- Did not come out the same or did not like it (4)
- Didn't have all the ingredients (1)

¹¹ As part of the evaluation design, a stone fruit recipe card was not supposed to be distributed at the six control sites. However, during data analysis and collection, it became evident to the evaluators that either a card had been inadvertently distributed or control site clients were recalling having received a card at a time prior to July 2012.

Even when controlling for Hispanic/Latino race ethnicity, participants at intervention sites were significantly more likely - 4.8 times as likely - to report having made the stone fruit recipe at home than participants at the control sites (see Appendix G, Tables 14).

Clients were also asked whether they or their family had eaten stone fruit since June, and if so, where they had purchased or received the fruit. A substantial majority of clients in both the control and intervention groups responded that they had consumed stone fruit since June (95.7 and 98.1%, respectively). The difference between the two groups is not statistically significant ($\chi^2 = 2.494, df = 1, p = .114$). As shown in Table 23, approximately three in four clients in both the control and intervention groups had obtained stone fruit from the food bank, and/or had bought it at a grocery store. Stone fruit had also been received from work, churches, a community garden, and the Salvation Army.

Table 23: Where did you get the stone fruit? (N =499)

	Control %, n=243	Intervention %, n=256
Grocery store	75.7	77.0
Food bank	73.3	75.4
Farmer's market	2.9	3.5
Flea market	8.2	1.6
Street vendor	0.4	0.0
Friends or family	2.5	3.5
Grew myself	2.9	1.6
Other	0.4	5.5

Note: Respondents could choose more than one response

New Recipe Card

Only clients in the Intervention Group were asked, “*If you got a recipe card today, do you plan to make the recipe?*” The majority of respondents in the intervention groups stated that they would make the recipe (92.3%).

Additional client responses included:

- If I have the ingredients (8)
- I can try to follow (5)
- Modify it (4)
- If it looks appealing/appetizing (3)
- My kids might not like/to test if kids like (2)
- If it doesn’t contain meat (1)

Self-Efficacy and Consumption of Fruits and Vegetables

Questions in Section VI of the survey gathered clients’ responses regarding self-efficacy and consumption of fruits and vegetables. Clients were asked, “*How confident are you that you can make the fruits and vegetables you take home today in such a way that your family will like and eat it?*” Response choices were: “Not at all sure,” “A little sure,” and “Very sure.” As indicated in Table 24, a large majority of clients in both the control and intervention groups responded that they were “very sure” that they could prepare the fruits and vegetables they took home in a way that their family would like and eat them (95.3% and 93.5%, respectively). The difference between the intervention and control participants is not statistically significant ($\chi^2 = 0.862$, $df = 2$).

Table 24: *How confident are you that you can make the fruits and vegetables you take home today in such a way that your family will like and eat it? (N =515)*

	Control %, n=254	Intervention %, n=261	<i>P</i>
Very sure	95.3	93.5	.650
A little sure	4.3	5.7	
Not at all sure	0.4	0.8	

Qualitative Response: *Intervention Group, n = 13*

Question: *How confident are you that you can make the fruits and vegetables you take home today in such a way that your family will like and eat it?*

Key Themes
Confidence in Cooking Style
Prepare Food Creatively
Selection of Food

One main theme resulted from the analysis of the qualitative data for question 18: *confidence in cooking style*.

Respondents expressed being confident in preparing food/meals in a way their family likes to eat it. Below are a few of the respondents' comments:

- "I cook it the way they like it so it is a win/win"
- "I have been doing it [cooking] for years"
- "I know they [family] like it a lot and what I make they eat"

Two minor themes were also generated: *prepare food creatively* and *selection of food*.

Respondents stated they have found ways to hide vegetables in their children's meals and prepare vegetables in different ways so that their family can eat it (*prepare food creatively*). The *selection of food* provided by the food bank is highly enjoyed by respondents' families so it makes it easy for respondents to prepare meals in a way their family will like and eat it.

Therefore, the themes generated in the qualitative data (*confidence in cooking style*, *prepare food creatively*, and *selection of food*) align with respondents answers to the quantitative portion of the question where the majority (94%) stated they are *very sure* they can prepare fruits and vegetables in a way their family will like and eat it.

Qualitative Response: *Control Group, n = 8*

Question: *How confident are you that you can make the fruits and vegetables you take home today in such a way that your family will like and eat it?*

Key Themes
Family Food Consumption

The analysis of the qualitative data for this question

generated one overarching theme: *family food preference*.

Respondents (62%) stated their family members like to eat

the fruits and vegetables they are given because the food is fresh and of good quality. The fact that family members like the food that is provided by the food bank might contribute to the fact that the majority of respondents (95%) stated they were *very sure* they can prepare fruits and vegetables in a way that their family will like and eat it.

Fresh Fruit and Vegetable Consumption

Clients were then asked, “How much of the fresh **fruits** that you receive from here does your family end up eating each month?”, and “How much of the fresh **vegetables** that you receive from here does your family end up eating each month?”

Fresh Fruit

Table 25, shows that over three-quarters of clients in both the control (77.2%) and intervention groups (79.3%) responded that they “ate all” of the fresh **fruits** they received.

Table 25: How much of the fresh **fruits** that you receive from here does your family end up eating each month? (N =515)

<i>Fruits</i>	Control %, n=254	Intervention %, n=261	<i>p</i>
All of it	77.2	79.3	.829
Most of it	19.3	17.2	
Some of it	3.5	3.4	
None of it	0.0	0.0	

Qualitative Response: *Intervention Group, n = 14*

Question: *How much of the fresh fruits that you receive from here does your family end up eating each month?*

Key Themes	
Prevent food Spoilage By:	Conserving Food
	Preparing Food Creatively
	Prepare/eat food fast
Quality of Food	
Need more food	

Prevent food spoilage was the main theme generated from the analysis of the qualitative data for question 19. Respondents prevented food spoilage by: conserving it (i.e. freezing), *preparing food creatively* (i.e. making natural fruit shakes, making food in different ways, packing fresh fruits in their lunch packs), and *preparing/eating the food quickly*. The main theme, (*prevention of food spoilage*) generated in the qualitative data analysis parallels with respondents' answer to the quantitative portion of the question where the majority of participants (79%) stated their family eats *all* of the fresh fruits each month. The alignment of the qualitative data to the quantitative response seems to suggest that respondents eat *all* of their fresh fruits each month because they have found ways to prevent food spoilage.

Two other themes were generated from the qualitative data: *quality of food* and the *need for more food*. Responses to the quality of food varied significantly with three participants stating that a portion of the food goes bad and one participant stated that "it's rare when food goes bad so we eat all". Lastly, respondents expressed a need for more food because it runs out quickly.

Qualitative Response: *Control Group, n = 11*

Question: *How much of the fresh fruits that you receive from here does your family end up eating each month?*

Key Themes	
Insufficient Food	
Food spoils	
Prevent Food Spoilage By:	Conserving Food
	Preparing Food Creatively

The alignment of the qualitative data to the quantitative responses seems to suggest that control group respondents also eat *all* of their fresh fruits each month for two reasons: One, the food participants receive is *insufficient* to last a month so they eat it *all*. Second, respondents sometimes receive fruits with a short shelf life which might lead them to dispose of the fruit due to spoilage.

A third and minor theme was also generated: *prevent food spoilage*. Respondents prevented food spoilage by conserving the fruits and vegetables (i.e. freezing) and making them in different ways. This minor theme also parallels with respondents answer to the quantitative portion of the question (*Eat All* fresh fruits) because they have found ways to prevent food spoilage that allows them to consume *all* the fruit they receive.

Fresh Vegetables

Nearly 80% of respondents in both the intervention and control groups stated their family consumes “all” of the fresh vegetables they receive from the food bank, as noted in Table 26.

Table 26: How much of the fresh **vegetables** that you receive from here does your family end up eating each month? (N =515)

	Control %, n=254	Intervention %, n=261	<i>p</i>
All of it	79.9	78.5	.927
Most of it	16.9	18.0	
Some of it	3.1	3.4	
None of it	0.0	0.0	

Qualitative Response: *Intervention Group, n = 14*

Question: *How much of the fresh **vegetables** that you receive from here does your family end up eating each month?*

Key Themes	
Prevent Food Spoilage By:	Preparing food creatively
Food Spoils	
Need more food	

Three themes were concluded from question 20’s qualitative data: prevent *food spoilage*, *need for more food*, and *food spoilage*. Respondents prevented food spoilage by preparing food creatively (i.e. veggie soups, desserts, and adding additional amounts of vegetables to their dishes).

The themes *need for more food* and *food spoilage* were equally represented in the data. These themes (*prevention of food spoilage* and *need for more food*) generated in the qualitative data analysis parallel with respondents’ answers to the quantitative portion of the question where the majority of respondents (79%) stated their family eats *all* of the fresh vegetables each month. Similar to question 19, the alignment of the qualitative data to the quantitative response seems to suggest that respondents eat *all* of their fresh vegetables each month because they run-out of food quickly and have found ways to prevent food spoilage.

Qualitative Response: *Control Group, n = 2*

Question: *How much of the fresh **vegetables** that you receive from here does your family end up eating each month?*

Key Themes
Need More Food

The theme, *insufficient food*, was generated from the analysis of the qualitative data for question 16. Respondents expressed that they sometimes have to buy more fresh vegetables. The theme, *insufficient food*, parallels with respondents’ answer to the quantitative portion of this question where the majority (80%) of respondents stated they eat *all* of their fresh vegetables. The alignment of the qualitative data to the quantitative response seems to suggest that respondents eat *all* of the fresh vegetables each month because the food they receive is not sufficient to last an entire month.

Fruits & Vegetables Not Consumed

Lastly, clients were asked, “*What do you do with the fruits or vegetables that your family does not like to eat?*” As shown in Table 27, the majority of clients in both the control and intervention groups indicated that they “eat all of it” (58.2% and 65.0%, respectively). The difference between the intervention and control participants is not statistically significant ($\chi^2 = 2.955, df = 3$).

Table 27: *What do you do with the fruits or vegetables that your family does not like to eat?*
(*N = 508*)

	Control %, <i>n</i> =251	Intervention %, <i>n</i> =257	<i>p</i>
Eat all of it	58.2	65.0	.399
Give it away to friends or neighbors	39.8	33.1	
Not take it	0.8	1.2	
Throw it away	1.2	0.8	

Qualitative Response: *Intervention Group, n = 45*

Question: *What do you do with the fruits or vegetables that your family does not like to eat?*

Key Themes
Conserve Food
Throw food away only when expired
Give Food Away
Prepare Food Creatively

Four main themes were captured in respondents’ comments that provide an explanation for the actions they took with the food their family does not like to eat. The four themes are: *conserve the food* (i.e. freezing, canning), *throw food away only when it is expired*, *give food away* when they have excess amounts of food, and/or do not want to see the food spoil, and *prepare food creatively*.

The qualitative data implies that conserving food and preparing food creatively (*n*=20 combined) are methods used by respondents to *eat all* the food they receive from the food bank. That qualitative data explains that for some of those that stated they throw food away (*n*=4), they do it because the food has expired. Those that give food away (*n*=17), give it away to family, friends, or neighbors, and they also donate it at a public library, workplace, ship it to Mexico, and exchange with neighbors for what seems to be other goods. It is also worth noting that one respondent stated he/she gives away only the canned goods.

Qualitative Response: Control Group, n = 35

Question: *What do you do with the fruits or vegetables that your family does not like to eat?*

Key Themes
Conserve Food
Throw food away only when expired
Give Food Away
Prepare Food Creatively

The qualitative data for question 17 generated two main themes and three minor themes that provide depth to respondents' answers to the question and provide an explanation for the actions they took with the food their family does not like to eat. The two themes are: *give away the food* and *conserve food* (i.e. freezing, storing). The three minor themes are: *throw food away only when it is expired*, *give food away* only if they received excess amounts or if the food is about to expire, and *prepare food creatively*.

The qualitative data implies that conserving food and preparing food creatively ($n=14$ combined) are methods used by respondents to *eat all* the food they received. That data also explains that some of those that stated they throw food away ($n=2$), do it because the food has expired. Those that give food away ($n=13$), share it with friends, family, neighbors, coworkers, and donate it to church. It is worth noting that one individual mentioned they give away only their canned food and another individual feeds the food he/she does not eat to his or her pets. The remaining comments state that respondents use all of the food they receive.

SECTION VI

Discussion

VI. DISCUSSION, RECOMMENDATIONS, and CONCLUSIONS

The results of this study showed that brief nutrition education interventions in food distribution lines had a significant effect on clients' awareness of *MyPlate*, nutrition message recall, and usage and preparation of recipes received from the food bank.

The following summary highlights the success of the intervention and offers suggestions for replicating the design in similar settings.

Demographic profile of respondents

This study measured differences in *MyPlate*-based nutrition education related awareness, knowledge, and behaviors in a convenience sample of 261 intervention food bank clients at six different food distribution sites compared to 254 control clients at six different food bank distribution sites.

Data analysis showed a statistically significant difference between Hispanics/Latinos and non-Hispanics in racial/ethnic compositions of the two groups. However, controlling for race/ethnicity and language through regression analysis found little to no effect on the significance of the outcome variables. There was no significant difference in the respondents' primary language. Some respondents chose to be interviewed in Spanish and others in English. Although it would seem that language was not an interview barrier among the Asian/Pacific Islander group, feedback from the interviewers indicated that Vietnamese and Chinese speaking respondents seemed to be primarily elderly first generation non-English speakers who were assisted during the interview by younger English speaking relatives. In some cases, potential Asian respondents simply opted out from participating in the survey due to limited English language skills. In addition, among all respondents in both groups who self-identified as Latinos, nearly 7% said that English was their primary language. The implications for future educational interventions is that presentations in Spanish accompanied with materials in Spanish will continue to be important but also that materials in Vietnamese and Chinese will continue to be valued by some respondents.

Nearly 95% of all respondents were female and nearly 97% had children under age 18 living at home. This implies that oral, written, and pictorial nutrition education messages should appeal to women with children. Indeed, observations and feedback from nutrition educators indicates that the recipe cards, the interactive poster board, and the *MyPlate* flyers were popular among the female participants. In addition, the children seemed to delight in receiving the small *MyPlate* sticker.

Message Recall

The nutrition education messages were delivered to small groups of four to six clients standing in the food distribution line. The educational activity took between five and ten minutes, depending on the progression of the distribution line. Eighty percent of the intervention group respondents recalled hearing a healthy eating message from the nutrition educators during June or July. Furthermore, nearly two-thirds of the intervention group recalled hearing about *MyPlate* during the same time period. These are excellent recall rates considering that it was not possible to

match those who were at the food distribution site in June and July with those who were interviewed in August. In addition, it seems that even if people did not recall hearing the nutrition education message, they did recall the nutrition three-panel board and the nutrition educators. In effect, the food distribution respondents were very aware of the educational presence.

MyPlate Awareness and Use

The impact of the nutrition education intervention is partially evident from the fact that the intervention group participants had a statistically significant greater awareness of *MyPlate* compared to the control group participants. In addition, the education's emphasis on *MyPlate* is evident in that the intervention group had statistically significantly greater knowledge than the control group about making half of your plate fruits and vegetables, that *MyPlate* is made up of five different food groups, that at least half of grains should be whole, and to eat low-fat dairy products. The quantitative analysis is supported by 62 qualitative comments describing that *MyPlate* influenced respondents to eat smaller portions, cook healthier foods for their families, and more importantly, eat more fruits and vegetables.

Nearly half of the intervention group indicated that they were using *MyPlate* to prepare more vegetables for their families and 25% were giving them more fruits because of the educational intervention. These proportions were statistically significantly higher than the control group. This finding is important, because data from the adult portion of the 2005 California Health Interview Survey found that "*Hispanic FVC [Fruit and Vegetable Consumption] intake did not meet the national recommendation, although their reported intake is higher compared to other race/ethnicity groups. The public health message remains the same: to increase FVC.*"¹² It can also be implied that the nutrition education had an effect on the intervention group's increase in fruit and vegetable preparation. The food bank's educational effort is further emphasized by the fact that half of the intervention group compared to 22% of the control group heard about *MyPlate* from the food bank.

How Respondents Learned about MyPlate

The results also indicated the clients were exposed to the *MyPlate* message beyond the food bank in places such as WIC offices, the media, schools, and clinics. This is an asset that the food bank's interactive nutrition education intervention can build on. This may mean that educators can spend less time on explaining *MyPlate* and more on showing how it is applied for breakfast, lunch, and dinner.

¹²Uriyoán Colón-Ramos, Frances E. Thompson, corresponding author Amy Lazarus Yaroach, Richard P. Moser, Timothy S. McNeel, Kevin W. Dodd, Audie A. Atienza, Sharon B. Sugerman, and Linda Nebeling, Differences in fruit and vegetable intake among Hispanic subgroups in California - Results from the 2005 California Health Interview Survey. *Journal of the American Dietetic Association* Volume 109, Issue 11, Pages 1878-1885, November 2009

Broccoli and Stone Fruit Recipe Cards and Food Preparation

The study design called for recipe cards to be distributed as part of the nutrition education to the intervention sites only. However, during data collection and analysis clients from the control sites reported having received the broccoli and/or the stone fruit recipe cards. Follow-up with a SHFB nutrition educator produced the following possibilities¹³:

- Tip cards were mistakenly distributed to the control sites, even though the nutrition educator personally pulled the tip cards from control sites in June.
- Clients believed they received a tip card in June; they normally get tip cards each month.
- Clients remembered receiving the broccoli tip card from the previous year (i.e., the card was familiar to them from a previous distribution and they thought that they received it in June when they were asked).

Despite the above, the fact that one-third of the intervention group clients prepared the recipes at home and that 92% of them said that if they got a recipe card today they would make the recipe implies that the financial and educational investment in the cards is worthwhile. In an interesting finding, several clients stated that they modified the recipes. For example, one person added other vegetables that kids liked instead of broccoli and another modified the stone fruit recipe by substituting apple. In effect, the recipe cards resulted in modifications, tailored to their families that still promoted preparation and consumption of fruits and vegetables.

Broccoli Access and Consumption

Broccoli is a vegetable that is distributed nearly year round by the SHFB. Indeed, nearly all of the control and intervention group respondents had consumed broccoli in June. Furthermore, nearly 90% of both groups indicated they had acquired their broccoli at the food bank, with a grocery store as the other most common location. The fact that broccoli is such a popular vegetable invites an opportunity to create new recipe cards and perhaps even recipes suggested by clients but vetted by a registered dietitian. Indeed, as is commonly seen in family style recipe books, a recipe could even be given the name of the client who provided the recipe (e.g., “*Maria’s broccoli salad with salsa*”). This would be an easy method for building a nutrition education bond between the food bank and the community. Indeed, Contento’s (2011) environmental tenet that policy and decision makers can promote social support, lays the foundation for developing a network of clients across distribution sites that jointly develop something like a produce-based *Second Harvest Food Bank Family Recipe Book*.

Self-Efficacy and Preparation of Fruits and Vegetables

Approximately 94% of both the intervention and control groups felt very sure that they could prepare the fruits and vegetables from the food bank in a manner that their family will like and consume. The themes identified in the qualitative data (*confidence in cooking style, prepare food creatively, and selection of food*) align with respondents’ answers to the above quantitative findings about food preparation confidence. This cooking style confidence and food preparation creativity further supports the value of the fruits and vegetables provided by the food bank and the importance of nutrition education and recipes as methods for enhancing consumption.

¹³ Personal communication with SHFB Nutrition Manager Madoka Gaspar.

Fruits and Vegetables Consumption

Nearly 80% of intervention and control group respondents indicated that their families eat all of the fruits and vegetables received from the food bank. The fruits or vegetables that families do not like to eat do not go to waste as they are most commonly given to friends or neighbors. Furthermore, preventing food spoilage of fruits and vegetables emerged as a method for ensuring that most of the food received was eaten by the family. This finding provides an opportunity for the food bank to expand its education on preventing food spoilage through creative recipes for cooking and preserving foods such as vegetable soups that can be frozen. Some of these items will be alien to the Latino population so they may require food tasting. However, this is another area where seeking food preservation ideas and experiences from clients can be added to the nutrition education portfolio.

Nutrition Education Intervention

The nutrition education provided to the intervention group was originally designed to focus on three educational lessons across the three month period June (eating more broccoli), July (eating more fruits and vegetables throughout the day), and August (how to use *MyPlate* to feed your family). However, in order to avoid the complication of delivering the third lesson in August, while also gathering follow-up data, all parties agreed to conduct the educational interventions in June and July with the third month reserved for the client interviews. Therefore, the *MyPlate* lesson was woven into the lessons on broccoli and eating more fruits and vegetables. In effect, the *MyPlate* lesson became the foundation for the images, lesson content, and interactive display board-based activities of the first two lessons. Feedback from the SHFB nutrition educators indicates that blending the *MyPlate* lesson actually strengthened the first two lessons. As noted above, the lesson also reinforces the *MyPlate* messages the clients have been hearing from other venues such as schools and clinics.

The SHFB nutrition educators have learned to base the length and content of their educational and food tasting intervention activity on how quickly the food distribution line moved. In cases where the line moved fairly quickly (e.g., educational message that lasted 5 to 7 minutes), they used the three-panel board to focus on the healthy eating aspects of *MyPlate* and how commonly distributed fruits and vegetables could be easily prepared in a healthy manner. In situations where the line moved more slowly, or had not started to move, the educators were often able to spend 10 to 15 minutes with a small group of predefined clients.

In those cases, the nutrition message not only addressed *MyPlate* but often included recipe tasting, client interaction with the educators and the three-panel board, and even time for feedback from the clients on how they prepared produce received from the food bank. Interestingly, concern with getting food for their family, as one person put it, “before it ran out”, inspired many clients to arrive at least one-half to one-hour prior to their appointed distribution time. Therefore, the nutrition educators learned that by arriving approximately one hour before the announced first food distribution time they were able to provide the entire nutrition education lesson to the ‘early birds’. In effect, nutrition education in food distribution line requires significant flexibility and insight into what can be delivered in a constrained time period.

RECOMMENDATIONS

In addition to the recommendations noted above, the authors of this report also have the following recommendations:

Grow your own champions for change

The PAES data gathering team of five young Latinas interviewed 515 food bank clients. Regardless of whether they were at a control or intervention site, they easily identified several clients who were very enthusiastic about the educational activities conducted by the SHFB nutrition educators and commonly provided their own recommendations for healthier eating recipes based on the fruits and vegetables distributed by the food bank. Some clients even made recommendations on how to improve the *MyPlate* display board to include more culturally relevant foods such as chilies. At the time of this study, the SHFB was developing a promotora (community health worker) program for clients that they called “Health Ambassadors”. The Health Ambassadors should prove to be assets that will help the food bank reach more clients with their nutrition education messages. As reward, they could be provided with the *Network’s* Champions for Change apron and cap (or some SHFB gear) and, as is commonly done with food distribution site volunteers, be given first opportunity at that day’s food distribution.

Branding

The Champions for Change aprons and hats gave high and attractive visibility to the evaluation data gathering team. PAES staff and interviewers visited the intervention and control sites during the intervention sessions and food bank clients could see them interacting with the SHFB nutrition educators. Thus, when they returned to conduct the interviews wearing their Champions of Change gear they were easily recognizable and clients felt comfortable speaking with them. Food banks seeking to replicate this intervention should also consider “branding” their intervention and interview teams.

Portable microphone

In some settings, it became clear that a portable microphone system could enhance the ability of food distribution recipients to more clearly hear the educational message. The downside of this is that it is one additional item that the nutrition educators need to carry with them from site to site.

Extending their food throughout the month

Clients pointed out during the interview some creative ways to extend their food through the month. The SHFB could develop educational handouts on how to prevent food spoilage through recipes that result in foods that can be frozen or preserved. For example, the High Plains Food Bank of Amarillo, Texas provides food preservation classes as part of its nutrition education program¹⁴.

¹⁴ Source: High Plains Food Bank: <http://www.hpfb.org/home>

Invite clients to submit their own recipes

The SHFB should consider inviting clients to submit recipes that could result in a community food bank recipe book. Production of this book could be sponsored by a local for-profit business or a community based organization. The advantage of a SHFB community cookbook over the *Network's* (although excellent) recipe books is that they would give the local population ownership over its recipes and provide them with local and cultural ways to prepare foods.¹⁵

CONCLUSIONS

This project demonstrated that a well-designed nutrition education intervention can be successfully conducted within the nutritional message time constraints associated with food distribution lines and still have an impact on knowledge and consumption behaviors.

The California Association of Food Banks has been at the forefront of the farm to food bank movement in America. Research has shown that the highest rates of obesity in the United States occur among population groups with the highest poverty rates and the least education (Drewnowski, 2004). Therefore, it is not surprising that CAFB would see the importance of increasing access to produce and linking the produce distributed by its 41 member food banks to nutrition education. The new nutrition education interactive lessons developed for the food distribution line are an important contribution to the field. Furthermore, funding to develop additional lessons specific to clients in the food distribution line and evaluation of their impact on the population should be considered.

Second Harvest Food Bank of Santa Clara and San Mateo Counties is recognized as a leader among California food banks for its innovative approach to serving food insecure families, and by the tremendous support it receives from its partner agencies, its corporate sponsors, and from local volunteers. Nutrition lessons developed by this food bank are included in CAFB's Nutrition Education and Produce Distribution Toolbox. Further collaboration between these two entities can continue to contribute to best practices in this field, since so little research exists on conducting nutrition education in food distribution lines.

¹⁵ Recipes used for *Network*-funded nutrition education would need to meet the CDC/Produce for Better Health healthy recipe criteria found at <http://www.pbhfoundation.org/licensing/guid/nutritionmktg/>

SECTION VII

References

References

- Contento, I. (2011). Nutrition Education: linking research, theory, and practice. Sudbury, MA. Jones & Bartlett.
- Drewnowski, A. (2004). Obesity and the food environment: dietary energy density and diet costs. *American Journal of Preventive Medicine*, 2004, 27(3 Suppl):154-162.
- Engesveen, K., Shrimpton, R. (2007). Nutrition education in the context of the United Nations Standing Committee on nutrition activities and publications, 1985-2006. *Journal of Nutrition Education and Behavior* , 39:351-356.
- Glanz K, Rimer BK, Lewis FM. (2002). Health Behavior and Health Education: Theory, Research, and Practice (3rd Edition). San Francisco, Calif.: Jossey-Bass.
- MkNelly, B., Bartholow, J., Garner, T., Nishio, S. (2009). Banking on Better Health: California Association of Food Banks' Nutrition Education Program: A Case Study Report. *Network for a Healthy California*, California Department of Public Health. Sacramento, CA.

SECTION VIII
APPENDICES

APPENDIX A

MyPlate and Enjoy Your Broccoli Combo Lesson



Lesson 4: MY PLATE and Enjoy Your Broccoli Combo Lesson

Lesson Highlights

Objectives

Consumer will:

- Identify the 5 food groups in the My Plate model.
- Describe 3 main messages of the My Plate model.
- Practice building a healthy plate
- Taste a healthy recipe.

Educator Resources

- USDA Dietary Guidelines Brochure
- USDA My Plate Consumer Messages
- USDA My Plate Tip Sheet

Consumer Handout:

- 1 Great Plate Handout Eng/Span
- Broccoli Tip Card

Materials

- My Plate tri-fold display including label food groups, cut out food items and My Plate messages.
- Pre-prepared Broccoli Salad recipe for taste test (optional)

Activity: Interactive Learning Dialogue

Educator -Read the USDA Dietary Guidelines Brochure. USDA My Plate Consumer Messages and USDA My Plate Tip Sheet to familiarize yourself with My Plate food groups.

Set up the My Plate tri-fold display board for interactive tool. Display has My Plate with Labeled Food Groups (Eng/Span), cut-out food items, and My Plate messages (Eng/Span)

Sample Interactive Learning Dialogue:

Who has heard of the My Plate dietary guidelines? **(Refer to display board.)**

This plate is a picture to help you make healthy food choices and build a healthy meal.

It is made up of 5 different food groups: fruit, vegetables, grains, protein and dairy, on the side.

If you notice fresh fruits and vegetables like the broccoli you are receiving today should make up half of your plate.

Now let's look at what other important foods you need for a

This material was produced by the California Department of Public Health's *Network for a Healthy California* with funding from USDA SNAP, known in California as CalFresh (formerly Food Stamps). These institutions are equal opportunity providers and employers. CalFresh provides assistance to low-income households and can help buy nutritious foods for better health. For CalFresh information, call 1-877-847-3663. For impor-

healthy My Plate.

As you see on the display board there are pictures of different food items.

Will someone volunteer to select one of the foods and put on the My Plate display? For example I will select a glass of milk. (**Educator sticks milk glass photo in Dairy section.**)

Answer:

Add Dairy by enjoying a cup of fat-free or low-fat milk with your meal. The dairy provides calcium for strong bones. If you do not drink milk, try soymilk, or fat-free or low-fat yogurt.

What is the other important foods do you need for a healthy My Plate? (**Encourage participants to select a food item and stick on My Plate display to complete all of the food groups.**)

Answer:

Fill a quarter of your plate with grains. If you can replace 1/2 of your grains with whole grains because they provide more nutrients, like fiber.
Add lean protein, like ground turkey, chicken, fish, beans or tofu. Beans are extra special because they belong to both the vegetable and protein group.

Now we have completed a healthy My Plate.

Today you are receiving fresh broccoli. (If taste test prepared ask participants following questions.) Did you like the broccoli salad that we prepared for you? How would you prepare the broccoli to include on your plate?

Answer:

Broccoli can be eaten raw, prepared as a side dish or mixed with other part of a main dish. Examples might be: toss into a green salad or steam as a side dish.

Educator: Distribute My Plate handout in either English or Spanish and Broccoli Tip Card to participants.

Small Group Activity: MY PLATE Relay Game optional

Educator: Depending upon the food distribution site setting, participants can be divided into groups of two, three or four participants. Similar to the interactive activity in the lesson plan the participants will select 5 food items that they must stick in the correct food group section on a My Plate display. Set up the game and explain the rules of the relay game to the participants. This game may be utilized with children waiting in line with parents or family once the lesson has been completed.



Rules of the Relay Game

1. Two groups participants line up side by side to start the game.
2. Each group takes 5 food examples for the relay.
3. Game starts and each participant must run to My Plate poster and stick food example on the board.
4. Then participant runs back to the line and next person in the group goes until all the food examples have been placed.
5. The group that finishes first and has placed the most food groups correctly wins.

Group Activity: Taste Test optional

Educator: Follow local Food Safety Guidelines for taste test preparation. Check with your local County Public Health Department for guidelines. Pre-prepare samples of Broccoli Pasta Salad Recipe. Use disposable cups and spoons. Keep pasta salad samples cold at food distribution site. Refer to Nutrition Educator Resource: Food Safety and Produce Handling .

BROCCOLI PASTA SALAD

Makes 8 Servings

Ingredients:

4 cups cooked pasta

2 cups cooked broccoli pieces

1 cup cooked carrot slices

1/2 cup red or green pepper strips

1/4 cup sliced green onions

1/2 cup salad dressing



Nutrition Facts

8 Servings

Amount Per Serving

Calories	244.8	
Total Fat	16.2 g	
Saturated Fat	2.9 g	
Polyunsaturated Fat		7.7 g
Monounsaturated Fat		4.7 g
Cholesterol	0.0 mg	
Sodium	14.7 mg	
Potassium	169.2 mg	
Total Carbohydrate		23.2 g
Dietary Fiber	4.5 g	
Sugars	1.4 g	
Protein	4.7 g	

Instructions: Mix all ingredients together and refrigerate for about 30 minutes before serving. **Note:** For a more hearty salad, add strips of cooked meat, cooked beans or sprinkle with grated cheese.

Adapted from: Oregon's Healthy Harvest Recipes, Oregon State University Extension Service



BRÒCOLI

¿QUE BENEFICIOS HAY PARA USTED?

- Vitamina C ayuda a mantenerte saludable
- Vitamina A para una piel y vista saludable

DEAS PARA SERVIR

- Hierva o cocine a vapor el brócoli en un poco de agua hasta que este tierno. Agregue ajo cocido.
- Corte el brócoli crudo en pedazos pequeños y agregue a ensaladas, o coma con aderezo.

ALMACENAMIENTO

- Almacene brócoli sin lavar en una bolsa de plástico abierta en el refrigerador por hasta 5 días.

ENSALADA DE PASTA A LA ITALIANA

Rinde: 8 porciones

Ingredientes:

- 4 tazas de pasta, cocida
- 2 tazas de pedazos de brécol blanqueados
- 1 taza de rebanadas de zanahoria cocida
- 1/2 taza de tiras de pimiento rojo
- 1/4 taza de cebolletas o cebollines
- 1/2 a 3/4 taza de aderezo para ensalada estilo Italiano, light o reducido en grasa



Instrucciones:

Mezcle todos los ingredientes y refrigere durante 30 minutos antes de servir.

Nota: Para una ensalada más llenadora, agregue tiras de jamón cocinado, una lata de frijoles rojos o espolvoree con queso rallado.

Adapted from: Oregon's Healthy Harvest Recipes, Oregon State University Extension Service



food to life
Your Food Connection.

Funded by the U.S.D.A.'s Food Stamp Program, an equal opportunity provider and employer, through the Network for a Healthy California.





BROCCOLI

WHAT'S IN IT FOR YOU?

- Vitamin C to help you stay healthy
- Vitamin A for healthy vision and skin

SERVING IDEAS

- Boil or steam broccoli in a small amount of water until tender. Add cooked garlic.
- Cut raw broccoli into small pieces and add to salads, or dip in dressing.

STORAGE

- Store unwashed broccoli in an open plastic bag in the refrigerator for up to 5 days.

BROCCOLI PASTA SALAD

Makes 8 Servings

Ingredients:

- 4 cups cooked pasta
- 2 cups cooked **broccoli** pieces
- 1 cup cooked carrot slices
- 1/2 cup red or green pepper strips
- 1/4 cup sliced green onions
- 1/2 cup salad dressing



Instructions:

Mix all ingredients together and refrigerate for about 30 minutes before serving.

Note: For a more hearty salad, add strips of cooked meat, cooked beans or sprinkle with grated cheese.

Adapted from: Oregon's Healthy Harvest Recipes, Oregon State University Extension Service



www.SHFB.org



Funded by the U.S.D.A.'s Food Stamp Program, an equal opportunity provider and employer, through the Network for a Healthy California.



APPENDIX B
Eat More Fruits and Vegetables Throughout Your Day
and MyPlate Combo Lesson



Lesson 5: Eat More Fruits and Vegetables Throughout Your Day and My Plate Combo Lesson

Activity: Interactive Learning Dialogue

Lesson Highlights

Objectives

Consumer will:

- Accept distributed produce.
- Learn how to increase daily fruit and vegetable intake.
- Understand health benefits of eating more fruits and vegetables.
- Taste a healthy recipe.

Educator Resources

- CDC How Many Fruits and Vegetables Do You Need? Eng/Span
- CDC How to Use Fruits and Vegetables to Manage Your Weight

Consumer Handout:

- Stone Fruit Tip Card
- 1 Great Plate Handout Eng/Span

Materials

- My Plate Tri-Fold Display including cut-out meal options and food items.
- Fruit Salad taste test (optional)

Educator -Read the Center for Disease Control (CDC) How Many Fruits and Vegetables Do You Need? And CDC How to Use Fruits and Vegetables to Manage Your Weight to familiarize yourself about healthy fruit and vegetable consumption.

Set up the My Plate tri-fold display board for interactive tool. Display has My Plate with Labeled Food Groups (Eng/Span), cut-out meal and food items, and My Plate messages (Eng/Span)

Sample Interactive Learning Dialogue:

Today you will be getting fresh fruit and vegetables to take home with you.

How many of you have seen the healthy My Plate? **(Refer to My Plate tri-fold display)**

Answer:

It is recommended that a healthy My Plate has half Fruits and Vegetables plus a quarter Whole Grains, plus a quarter Lean Protein.

We are going to share some easy ways to add more fruits and vegetables to fill up half of your plate for the three main meals of the day.

This material was produced by the California Department of Public Health's *Network for a Healthy California* with funding from USDA SNAP, known in California as CalFresh (formerly Food Stamps). These institutions are equal opportunity providers and employers. CalFresh provides assistance to low-income households and can help buy nutritious foods for better health. For CalFresh information, call 1-877-847-3663. For important nutrition information, visit

Let's start with breakfast.

If you like to eat breakfast raise your hand.

Answer:

That's great. Breakfast is an important meal that helps you get a good start to the day.

How would you add more fruits and vegetables to your breakfast? **(Educator demonstrates selecting a fruit cut-out from the display board and sticking on the cereal picture.)**

What do you usually eat for breakfast? **(Encourage participants to answer and add food cut-outs to their favorite breakfast foods.)**

Answer:

You can cut back on the amount of cereal in your bowl to make room for sliced bananas, peaches, oranges or strawberries. Add some spinach, onions, or broccoli for one of the eggs or half of the cheese in your omelet.

What about lunch?

Answer:

Add vegetables such as lettuce, tomatoes, cucumbers, or onions to your sandwich, wrap, or burrito. Add a cup of chopped vegetables, such as broccoli, carrots, beans, or red peppers in your favorite soup. The vegetables will help fill you up and give you vitamins to help you stay healthy.

And dinner?

Answer:

Add to your favorite dish an extra handful of chopped vegetables for each person at dinner such as broccoli, tomatoes, squash, onions, or peppers.

What other foods do you eat during the day? **(Refer to display board.)** Can you think of other ways to add more fruits and vegetables to your favorite foods?

Answer:

Add bell peppers, lettuce or tomato to a taco. Cook broccoli as a side dish for chicken or fish. Or add vegetables as toppings to a pizza. Try sliced tomato, spinach, green peppers or cooked onions. Eat a bowl of sliced fresh peaches or apples for dessert.

Educator: Distribute the Stone Fruit Tip Card and 1 Great Plate handout.

Group Activity: Taste Test optional

Educator: Follow local Food Safety Guidelines for taste test preparation. Check with your local County Public Health Department for guidelines. Pre-prepare samples of Fruit Salad Recipe.

FRUIT SALAD

Makes (8) ½ cup servings

Ingredients:

4 cups of your favorite stone fruit, pitted and chopped into bite-sized chunks

2 tablespoons orange juice

Optional:

Low-fat flavored yogurt

Chopped Nuts

Crunchy cereal (like granola or

Grape Nuts)

Instructions

1. Toss fruit chunks together with orange juice.
2. Layer with optional topping(s) if desired.



Nutrition Facts

8 1/2 cup Servings

Amount Per Serving no toppings

Calories	119
Carbohydrate	31g
Dietary Fiber	4 g,
Protein	1 g
Total Fat	0
Saturated Fat	0
Polyunsaturated Fat	0
Monounsaturated Fat	0
Cholesterol	0.0 mg
Sodium	0



SOURCE: Adapted from Harvest of the Month/Network for a Healthy California



STONE FRUIT

(Peaches, Plums, Nectarines, Cherries)

WHAT'S IN IT FOR YOU?

- Vitamin C to help heal cuts and to keep you healthy
- Vitamin A for healthy eyes and skin

SERVING IDEAS

- Slice fruit into green salads
- Put fruit chunks into a blender with low fat vanilla yogurt and orange juice for a refreshing smoothie
- Cut in half, remove seed, and grill for 8 minutes (4 minutes each side) for a perfect picnic dessert!

STORAGE

- To ripen fruit, put into a paper bag and place on the counter for 3 days
- Store ripe fruit in the refrigerator for up to 5 days

FRUIT SALAD

Makes (8) ½ cup servings

Ingredients:

4 cups of your favorite stone fruit, pitted and chopped into bite-sized chunks
2 tablespoons orange juice

Optional:

Low-fat flavored yogurt
Chopped Nuts
Crunchy cereal



Instructions:

1. Toss fruit chunks together with orange juice.
2. Layer with optional topping(s) if desired.

SOURCE: Adapted from Harvest of the Month/Network for a Healthy California



food & life
Your Food Connection.

Funded by the U.S.D.A.'s Food Stamp Program, an equal opportunity provider and employer, through the Network for a Healthy California.



APPENDIX C
Protocols for Combo Lessons



Lesson 4: MyPlate and Enjoy Your Broccoli Combo Lesson

PROTOCOL

1. Study the MyPlate and Enjoy Your Broccoli lesson and Educator Resources.
2. At the Food Bank, gather the following materials: MyPlate tri-fold display, Broccoli tip Card, 1 Great Plate Handout English/Spanish
3. At the Intervention Site, set-up the poster according the Template and photo (attached)
4. Set-out the handouts, i.e. Broccoli tip Card, 1 Great Plate Handout English/Spanish
5. Prepare the Broccoli Salad recipe for the tasting
6. Aim to engage a minimum of 5 participants in hearing the lesson from start to finish for 10 minutes
7. Emphasize the 3 or more key messages of the lesson
8. Invite participants to taste the recipe

Lesson Highlights

Objectives:

- Identify the 5 food groups in the MyPlate model
- Describe 3 main messages of the MyPlate model
- Practice building a healthy plate
- Taste a healthy broccoli recipe.

Educator Resources:

- USDA Dietary Guidelines Brochure
- USDA MyPlate Consumer Messages

USDA MyPlate Tip Sheet

Consumer Handout:

- 1 Great Plate handout Eng/Sp
- Broccoli Tip Card

Materials:

- MyPlate tri-fold display including label food groups, cutout food items and MyPlate messages
- Pre-pared Broccoli Salad recipe for taste test (optional)

Key Messages of this lesson:

1. **MyPlate is made up of 5 different food groups: fruit, vegetables, grains, protein, and dairy**
 2. **Fill half your plate with fruits and vegetables**
 3. **Fill a quarter of your plate with grains, and the other quarter with protein.**
9. Distribute the hand-outs: Broccoli tip Card, 1 Great Plate Handout English/Spanish



Lesson 5: Eat More Fruits and Vegetables Throughout Your Day and MyPlate Combo Lesson

PROTOCOL

Lesson Highlights

Objectives:

- Accept distributed produce
- Learn how to increase daily fruit and vegetable intake
- Understand health benefits of eating more fruits and vegetables
- Taste a healthy recipe.

Educator Resources:

- CDC How many fruits and Vegetables do You Need?
- CDC How to Use Fruits & Vegetables to Manage Your Weight

Consumer Handout:

- Stone Fruit Tip Card
- What's on your plate? Eng/Spanish
- MyPlate Stickers

Materials:

- Eat More Fruits & Vegetables - MyPlate tri-fold display including key messages, cutout food items and MyPlate graphic
- Pre-prepare Stone Fruit recipe for taste test (optional)

1. Study the *Eat More Fruits and Vegetables Throughout Your Day and MyPlate Combo Lesson* and Educator Resources.
2. At the Food Bank, gather the following materials: The Eat More Fruits and Vegetables combo MyPlate tri-fold display, Stone Fruit Tip Cards, What's on Your Plate Handout-English/Spanish
3. At the Intervention Site, set-up the poster according the Template and photo (attached)
4. Set-out the handouts, i.e. Stone Fruit Tip Cards, What's on Your Plate Handout-English/Spanish
5. Prepare the Stone Fruit recipe for the tasting
6. Invite participants to taste the recipe
7. Distribute the hand-outs.
8. Deliver the lesson:
 - Aim to engage a minimum of 5 participants in hearing the lesson from start to finish for 5-10 minutes
 - Emphasize the 3 key messages of the lesson

Key Messages of this lesson:

1. **MyPlate is made up of 5 different food groups: fruit, vegetables, grains, protein, and dairy**
2. **Make half your plate with fruits and vegetables**
3. **Eat more fruits & vegetables throughout your day**

APPENDIX D
Intervention Observation Form

**CAFB NUTRITION EDUCATION and PRODUCE DISTRIBUTION
TOOLBOX EVALUATION PROJECT
Intervention Observation Form**

Date : _____ Nutrition Educators: _____

Site: _____

Location: _____

Site Coordinator: _____ Phone # _____

Volunteers: _____

1. Which combo lesson was delivered?	MyPlate/Broccoli	MyPlate/Eat More Fruits & Vegetables	
2. Demographics of population served	Anglo	Latino	Asian
3. # of families registered			
4. Estimated number attending the distribution			
5. Was MyPlate introduced or reintroduced?	Introduced	Reintroduced	
6. What kind of setting was used to deliver the message?	Enclosed room	Outdoors	
7. How was the lesson delivered?	Participants seated	Participants standing	
8. Lesson delivery method :	one on one in the line	Individuals/groups approached the table	Auditorium style

9. Lesson delivery method : Explain: _____ _____ _____			
10. Did the produce match the lesson and recipe card?	Yes	No	
11. What produce was distributed? _____ _____ _____			
12. Did SHFB do a food demo?	Yes	No	

Handouts

1. Recipe Tip Card	Yes	No					
2. What's on Your Plate place mat - English	Yes	No					
3. What's on Your Plate place mat – Spanish	Yes	No					
4. MyPlate Stickers-English	Yes	No					
5. MyPlate Stickers-Spanish	Yes	No					
6. Matching Food Tasting	Yes	No					
7. Other: SHFB Newsletter	Yes	No					
#	# Adults	#Kids	Presentation Language	Presentation Length	3 keys		% People Engaged
1.							
2.							
3.							
4.							
5.							
6.							

Site: _____

Notes about the Intervention Delivery:

Notes for the Evaluation:

Where can the interviews be conducted?

When can the interviews be conducted?

How many interviewers will be needed? _____

Other Notes re: Evaluation:

APPENDIX E
Intervention Group: Client Interview Questionnaire

**CAFB NUTRITION EDUCATION and PRODUCE DISTRIBUTION TOOLBOX EVALUATION PROJECT
Intervention Group: Client Interview Questionnaire -English**

Location: _____ Date: _____ Interviewer: _____
--

Hello. My name is XXX. I am with the Food Bank. Would you prefer I speak to you in English _____ or Spanish _____ ?

Are you 18 years of age or older? Yes _____ No _____ *(if not, thank them and move on)*

CLIENT CONSENT

I would like to ask you a few questions about how you use the food you get here. The questions take about 5 minutes. We are not taking any names and your responses will help the food bank improve what we do. There are no right or wrong answers. All responses are kept confidential If you decide that you don't want to participate it will not affect your ability to receive food today or in the future.

Are you willing to complete the survey? Interviewer Initial if respondent consents [_____]

Did you get food here in June _____ ? In July _____? Neither _____ (check response)
(If yes, proceed. If neither, thank them and systematically sample another client.)

Questions	Responses
------------------	------------------

Q1	Do you remember hearing a message about eating healthier during your visit in June and/or July?	Code	
	Yes	1	Go to Q2
	No	2	Go to Q2
	DK	3	Go to Q2

Q2	Do you remember hearing about MyPlate from the nutrition educators in June and/or July? (Show blank MyPlate)	Code	
	Yes	1	Go to Q4
	No	2	Go to Q3
	DK	3	Go to Q3

Q3	Have you ever heard about MyPlate? (Show blank MyPlate)	Code	
	Yes	1	Go to Q4
	No	2	Go to Q7
	DK	3	Go to Q7

Q4	What do you remember about how to use MyPlate for feeding your family. (check all that apply)	Code	Record responses and go to Q5
	Don't Know/Don't remember	1	
	MyPlate is made up of 5 different food groups: (or they mentioned the different food groups together - fruit, vegetables, grains, protein, and dairy)	2	
	Make half your plate fruits and vegetables	3	
	Make at least half of your grains whole (Or they mentioned eating whole grains)	4	
	Add lean protein (or mentioned adding lean proteins like ground turkey, chicken, fish, beans, or tofu).	5	
	Eat low-fat dairy products.	6	
	Eat from the 5 food groups throughout the day.	7	
	Other	8	
	Comments?	9	

Q5	How have you used MyPlate to prepare food for your family? (Check all that apply)	Code	Record responses and go to Q6
	No/or did not make any changes	1	
	Preparing more vegetables	2	
	Giving them more fruits	3	
	Giving them low fat dairy food	4	
	Giving them lean meats	5	
	Giving them more whole grains	6	
	Making sure they eat from the 5 food groups throughout the day	7	
	Comments?	8	

Q6	Where have you heard about MyPlate?. (Check all that apply)	Code	Record responses and Go to Q 7
	WIC	1	
	Child's School	2	
	TV show (Ask which show: _____)	3	
	Nutrition classes (where?)	4	
	Work: (where?) _____	5	
	Here:	6	
	Other:	7	
	Comments:	8	

Q7	Did you get this recipe card for broccoli here at the food distribution in June? (Show recipe card)	Code	Go to
	Yes	1	Go to Q8
	No	2	Go to Q9
	DK	3	Go to Q9

Q8	Did you make the broccoli recipe at home?	Code	
	Yes	1	Go to Q9
	No	2	Go to Q9
	DK	3	Go to Q9
	Comments (record any examples):		

Q9	Did you taste a broccoli recipe here in June?	Code	Go To
	Yes – (person who got card)	1	Go to Q10
	Yes – (person who did not get card)	2	Go to Q10
	No	3	Go to Q10
	DK	4	Go to Q10

Q10	Did you or your family eat broccoli since June?	Code	
	Yes	1	Go to Q11
	No	2	Go to Q12
	DK	3	Go to Q12
	Comments?		

Q11	If you or your family ate broccoli where did you get the broccoli? (check all that apply)	Code	Record responses and Go to Q 12
	Got it here from the food bank	1	
	Bought it at a grocery store	2	
	Bought it at farmers' market	3	
	Bought it at flea market	4	
	Bought it from a street vendor	5	
	Got it from friends or family	6	
	Grew it myself	7	
	Comments?:		

Q12	Did you get this recipe card for stone fruit here at the food distribution in July? (Show recipe card and note the peaches)	Code	
	Yes	1	Go to Q13
	No	2	Go to Q14
	DK	3	Go to Q14
	Comments:		

Q13	Did you make the stone fruit recipe at home?	Code	
	Yes	1	Go to Q14
	No	2	Go to Q14
	DK	3	Go to Q14
	Comments/record any examples:		

Q14	Did you taste a stone fruit recipe here in July? (Show recipe card again)	Code	
	Yes – (person who got card)	1	Go to 15
	Yes – (person who did not get card)	2	Go to 15
	No	3	Go to 15
	DK	4	Go to 15
	Comments:		

Q15	Did you or your family eat stone fruit since June?	Code	
	Yes	1	Go to Q16
	No	2	Go to Q17
	DK	3	Go to Q17
	If so, do you recall what you made?		

Q16	If you or your family ate stone fruit where did you get the stone fruit? (check all that apply)	Code	Record responses and Go to Q17
	Got it here from the food bank	1	
	Bought it at a grocery store	2	
	Bought it at farmers' market	3	
	Bought it at flea market	4	
	Bought it from a street vendor	5	
	Got it from friends or family	6	
	Grew it myself	7	
	Comments:		

Q17	If you got a Recipe Card today do you plan to make the recipe? (Show recipe card).	Code	
	Yes	1	Go to Q18
	No: If no, ask why not and note comment	2	Go to Q18
	DK	3	Go to Q18
	If not, why not?		

Q18	How confident are you that you can make the fruits and vegetables you take home today in such a way that your family will like and eat it? (<i>state the response choices to the respondent</i>)	Code	Record responses and Go to Q19
	Not at all sure	1	
	A little sure	2	
	Very Sure	3	
	Comment (record any example):		

Q19	How much of the <u>fresh fruits</u> that you receive from here does your family end up eating each month? <i>(tell them to please be honest as it helps us to learn about and improve the program). (State the response choices to the respondent)</i>	Code	Record responses and Go to Q20
	All of it	1	
	Most of it	2	
	Some of it	3	
	None of it		
	Record any reasons given:		

Q20	How much of the <u>fresh vegetables</u> that you receive from here does your family end up eating each month? <i>(tell them it's ok to be honest). (state the response choices to the respondent)</i>	Code	Record responses and Go to Q21
	All of it	1	
	Most of it	2	
	Some of it	3	
	None of it		
	Record any reasons given:		

Q21	What do you do with the fruits or vegetables that your family does not like to eat? <i>(tell them it's ok to be honest). (state the response choices to the respondent)</i>	Code	Record responses and Go to Age
	Not take it	1	
	Give it away to friends or neighbors	2	
	Throw it away	3	
	Eat all of it	4	
	Other/Comments:		

Demographics: For classification purposes only:

In order to provide better services we need some demographic information.

1. **What is your age:** _____ Declined to answer. If someone declines to answer, ask her/him if they would give their age range:

18-24 25-34 35-44 45-54 55-64 65+

2. **What race/ethnic group or groups do you identify with: (check all that apply)**

1=White/Caucasian 3=Black/African American 5=Asian/Pacific Islander

2=Hispanic/Latino 4=Native American/Indian

6=Other _____

3. **What is your primary language?**

1=English 2=Spanish 3=Chinese 4=Vietnamese

Other _____

4. **What is your gender?** 1=Female 2=Male 3=Transgender (check only if they self-identify. Don't 'out' someone)

5. **Do you have any children living at home with you who are under age 18?**

____ 1=Yes ____ 2 =No

THANK YOU. That concludes the survey

We would like to give you a gift for completing the survey. Take this MyPlate sticker to the table over there after you get your food and pick out your gift.

Participants Comments and Interviewer's Notes:

APPENDIX F

Control Group: Client Interview Questionnaire

**CAFB NUTRITION EDUCATION and PRODUCE DISTRIBUTION TOOLBOX EVALUATION PROJECT
Control Group: Client Interview Questionnaire**

Location: _____ Date: _____ Interviewer: _____

Hello. My name is XXX. I am with the Food Bank. Would you prefer I speak to you in English _____ or Spanish _____ ?

Are you 18 years of age or older? Yes _____ No _____ (if not, thank them and move on)

CLIENT CONSENT

I would like to ask you a few questions about how you use the food you get here. The questions take about 5 minutes. We are not taking any names and your responses will help the food bank improve what we do. There are no right or wrong answers. All responses are kept confidential. If you decide that you don't want to participate it will not affect your ability to receive food today or in the future.

Are you willing to complete the interview? Interviewer Initial if respondent consents [_____]

Did you get food here in June _____ ? In July _____ ? Neither _____ (check response)
(If yes, proceed. If neither, thank them and systematically sample another client.)

Questions _____ Responses

Q1	Have you ever heard about MyPlate? (Show blank MyPlate)	Code	
	Yes	1	Go to Q2
	No	2	Go to Q5
	DK	3	Go to Q5

Q2	What do you remember about how to use MyPlate for feeding your family. (check all that apply)		Go to Q3
	Don't Know/Don't remember	1	
	MyPlate is made up of 5 different food groups: (or they mentioned the different food groups together - fruit, vegetables, grains, protein, and dairy)	2	
	Make half your plate fruits and vegetables	3	
	Make at least half of your grains whole (Or they mentioned eating whole grains)	4	
	Add lean protein (or mentioned adding lean proteins like ground turkey, chicken, fish, beans, or tofu).	5	
	Eat low-fat dairy products.	6	
	Eat from the 5 food groups throughout the day.	7	
	Comments: _____ _____ _____ _____	8	

Q3	How have you used MyPlate to prepare food for your family? (Check all that apply)	Code	Go to Q4
	No/or did not make any changes	1	
	Preparing more vegetables	2	
	Giving them more fruits	3	
	Giving them low fat dairy food	4	
	Giving them lean meats	5	
	Giving them more whole grains	6	
	Making sure they eat from the 5 food groups throughout the day	7	
	Comments: _____ _____ _____ _____	8	

Q4	Where have you heard about MyPlate?. (Check all that apply)	Code	Go to Q5
	WIC	1	
	Child's School	2	
	TV show (Ask which show): _____	3	
	Nutrition classes (where?) _____	4	
	Work: _____	5	
	Other: _____	6	
	Other: _____	7	
	Other: _____	8	

Q5	Did you ever get this recipe card for broccoli here at the food distribution? (Show recipe card)	Code	
	Yes	1	Go to Q6
	No	2	Go to Q7
	DK	3	Go to Q7

Q6	Did you make the broccoli recipe at home?	Code	
	Yes	1	Go to Q7
	No	2	Go to Q7
	DK	3	Go to Q7
	Comments: _____ _____ _____ _____		Go to Q7

Q7	Did you or your family eat broccoli since June?	Code	
	Yes	1	Go to Q8
	No	2	Go to Q9
	DK	3	Go to Q9
	Comments: _____ _____ _____ _____		

Q8	If you or your family ate broccoli where did you get the broccoli? (check all that apply)	Code	Go to Q9
	Got it here from the food bank	1	
	Bought it at a grocery store	2	
	Bought it at farmers' market	3	
	Bought it at flea market	4	
	Bought it from a street vendor	5	
	Got it from friends or family	6	
	Grew it myself	7	
	Comments: _____ _____ _____ _____		

Q9	Did you ever get this recipe card for stone fruit here at the food distribution? (Show recipe card and note the peaches)	Code	
	Yes	1	Go to Q10
	No	2	Go to Q11
	DK	3	
	Comments: _____ _____ _____ _____		

Q10	Did you make the stone fruit recipe at home?	Code	
	Yes	1	Go to Q11
	No	2	Go to Q11
	DK	3	Go to Q11
	Comments: _____ _____ _____ _____		Go to Q11

Q11	Did you or your family eat stone fruit since June?	Code	
	Yes	1	Go to Q12
	No	2	Go to Q13
	DK	3	Go to Q13
	Comments: _____ _____ _____ _____		

Q12	If you or your family ate stone fruit where did you get the stone fruit? (check all that apply)	Code	Go to Q13
	Got it here from the food bank	1	
	Bought it at a grocery store	2	
	Bought it at farmers' market	3	
	Bought it at flea market	4	
	Bought it from a street vendor	5	
	Got it from friends or family	6	
	Grew it myself	7	
	Comments: _____ _____ _____ _____		

Q13	If you got a Recipe Card today do you plan to make the recipe?	Code	Go to Q14
	Yes	1	Go to Q14
	No: If no, ask why not and note comment	2	Go to Q14
	DK/Maybe	3	Go to Q14
	If not, why not? _____ _____ _____ _____		

Q14	How confident are you that you can make the fruits and vegetables you take home today in such a way that your family will like and eat it?	Code	Go to Q15
	Not at all sure	1	
	A little sure	2	
	Very Sure	3	
	Comment: (record any example) _____ _____ _____ _____		

Q15	How much of the <u>fresh fruits</u> that you receive from here does your family end up eating each month? <i>(tell them to please be honest as it helps us to learn about and improve the program)</i>	Code	Go to Q16
	All of it	1	
	Most of it	2	
	Some of it	3	
	None of it	4	
	Comment: _____ _____ _____ _____		

Q16	How much of the <u>fresh vegetables</u> that you receive from here does your family end up eating each month? <i>(Tell them it's ok to be honest)</i>	Code	Go to Q17
	All of it	1	
	Most of it	2	
	Some of it	3	
	None of it		
	Record any reasons given: _____ _____		
Q17	What do you do with the fruits or vegetables that your family does not like to eat? <i>(State the options. Tell them it's ok to be honest)</i>	Code	
	Not take it	1	
	Give it away to family, friends, or neighbors	2	
	Throw it away	3	
	Eat all of it	4	
	Other: _____ _____		

Demographics: For classification purposes only:

In order to provide better services we need some demographic information.

6. **What is your age:** _____ Declined to answer. If someone declines to answer, ask her/him

if they would say their age range: 18-24 25-34 35-44 45-54 55-64 65+

7. **What race/ethnic group or groups do you identify with: (check all that apply)**

- 1=White/Caucasian 3=Black/African American 5=Asian/Pacific Islander
 2=Hispanic/Latino 4=Native American/Indian
 6=Other _____

8. **What is your primary language?**

- 1=English 2=Spanish 3=Chinese 4=Vietnamese
 Other _____

9. **What is your gender?** 1=Female 2=Male

3=Transgender (check only if they self-identify. Don't 'out' someone)

10. **Do you have any children living at home with you who are under age 18?**

_____ 1=Yes _____ 2 =No

THANK YOU. That concludes the survey

We would like to give you a gift for completing the survey. Take this MyPlate sticker to the table over there after you get your food and pick out your gift.

APPENDIX G

Regression Results

Regression Results

Table 1: Summary of Logistic Regression Analysis for Awareness of MyPlate Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>P</i>
Intervention Group (=1)	2.459	.214	11.698	.000
Hispanic/Latino (=1)	-.090	.358	.914	.914
Constant	-1.176	.342	.309	.001
χ^2		161.105		.000
df		2		
% Aware of MyPlate		50.1%		

Table 2: Summary of Logistic Regression Analysis for Remembering to Make Half Your Plate Fruits and Vegetables Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>p</i>
Intervention Group (=1)	1.921	.320	6.827	.000
Hispanic/Latino (=1)	-.033	.481	.968	.946
Constant	-2.883	.501	.056	.000
χ^2		48.776		.000
df		2		
% Remembering - Make Half Your Plate Fruits and Vegetables		16.3%		

Table 3: Summary of Logistic Regression Analysis for Remembering MyPlate is Made up of 5 Different Food Groups Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>P</i>
Intervention Group (=1)	.706	.270	2.026	.009
Hispanic/Latino (=1)	-.355	.418	.701	.395
Constant	-1.906	.404	.149	.000
χ^2		7.338		.026
Df		2		
% Remembering MyPlate is Made up of 5 Different Food Groups		14.2%		

Table 4: Summary of Logistic Regression Analysis for Remembering to Make at least Half of your Grains Whole Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>P</i>
Intervention Group (=1)	1.743	.502	5.715	.001
Hispanic/Latino (=1)	-.377	.647	.686	.560
Constant	-3.584	.693	.028	.000
χ^2		16.210		.000
Df		2		
% Make at least Half Grains Whole		6.0%		

Table 5: Summary of Linear Regression Analysis for Overall Recall Score of What Remembered about How to Use My Plate to Feed Your Family Whole Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	<i>t</i>	<i>P</i>
Intervention Group (=1)	.078	.011	6.795	.000
Hispanic/Latino (=1)	-.005	.019	-.282	.778
Constant	.044	.018	2.381	.018
F		23.297		.000
Df		2		
Overall mean Recall Score		.08		

Table 6: Summary of Logistic Regression Analysis of Use of MyPlate to Prepare More Vegetables Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>P</i>
Intervention Group (=1)	2.041	.248	7.700	.000
Hispanic/Latino (=1)	-.529	.376	.589	.159
Constant	-1.721	.367	.179	.000
χ^2		85.31		.000
Df		2		
% Used MyPlate to Prepare More Vegetables		50.1%		

Table 7: Summary of Logistic Regression Analysis for Remembering of Use of MyPlate to Give More Fruits Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>p</i>
Intervention Group (=1)	2.314	.391	10.114	.000
Hispanic/Latino (=1)	-.325	.494	.723	.511
Constant	-3.144	.542	.043	.000
χ^2		53.996		.000
Df		2		
% Use MyPlate to Give More Fruit		14.0%		

Table 8: Summary of Logistic Regression Analysis of Use of MyPlate is Make Sure Family Eats from 5 Food Groups throughout the Day Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>P</i>
Intervention Group (=1)	.833	.392	2.300	.034
Hispanic/Latino (=1)	.357	.753	1.429	.636
Constant	-3.500	.748	.030	.000
χ^2		5.488		.064
Df		2		
% Use of MyPlate is Make Sure Family Eats from 5 Food Groups		6.6%		

Table 9: Summary of Logistic Regression Analysis of Use of MyPlate to Give Family More Lean Meat Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>P</i>
Intervention Group (=1)	1.759	.555	5.806	.002
Hispanic/Latino (=1)	-.105	.769	.901	.892
Constant	-4.038	.825	.081	.000
χ^2		13.890		.001
Df		2		
% Use MyPlate to Give Family More Lean Meat		5.1%		

Table 10: Summary of Linear Regression Analysis for Overall Use Score of How Used MyPlate to Prepare Food for Your Family Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	t	<i>P</i>
Intervention Group (=1)	.124	.012	10.011	.000
Hispanic/Latino (=1)	-.016	.021	-.766	.444
Constant	.046	.020	2.381	.081
F		50.292		.000
Df		2		
Overall Mean Use Score		.10		

Table 11: Summary of Logistic Regression Analysis of Whether Made the Broccoli Recipe at Home Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>P</i>
Intervention Group (=1)	.785	.202	15.105	.000
Hispanic/Latino (=1)	.014	.346	.968	1.014
Constant	-1.311	.336	.000	.269
χ^2		15.928		
Df		2		
% Made the Broccoli Recipe at Home		29.5%		

Table 12: Summary of Logistic Regression Analysis of Whether Bought Broccoli at a Grocery Store Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>P</i>
Intervention Group (=1)	.447	.196	1.564	.022
Hispanic/Latino (=1)	.463	.308	.134	1.588
Constant	.192	.293	.511	1.212
χ^2		8.518		
Df		2		
% Bought Broccoli at Grocery Store		69.5%		

Table 13: Summary of Logistic Regression Analysis of Whether Got a Stone Fruit Recipe Card at July Food Distribution Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>P</i>
Intervention Group (=1)	1.682	.196	5.379	.000
Hispanic/Latino (=1)	-.065	.330	.937	.844
Constant	-.939	.317	.391	.003
χ^2		82.040		
Df		2		
% Got Stone Fruit Recipe Card		46.8%		

Table 14: Summary of Logistic Regression Analysis of Whether Made Stone Fruit Recipe at Home Controlling for Intervention Group and Hispanic/Latino Race/ethnicity

Predictor	<i>B</i>	SE B	e^B	<i>P</i>
Intervention Group (=1)	1.403	.241	4.066	.000
Hispanic/Latino (=1)	.166	.418	1.181	.691
Constant	-2.224	.418	.000	.108
χ^2		39.791		.000
Df		2		
% Made Stone Fruit Recipe at Home		22.7%		



This material was produced by the California Department of Public Health's Network for a Healthy California with funding from USDA SNAP, known in California as CalFresh (formerly Food Stamps). These institutions are equal opportunity providers and employers. CalFresh provides assistance to low-income households and can help buy nutritious foods for better health. For CalFresh information, call 1-877-847-3663 or visit www.calfresh.ca.gov. For important nutrition information, visit www.cachampionsforchange.net.

The contents of this report are solely the responsibility of the authors and do not necessarily represent the official views of the California Department of Public Health.