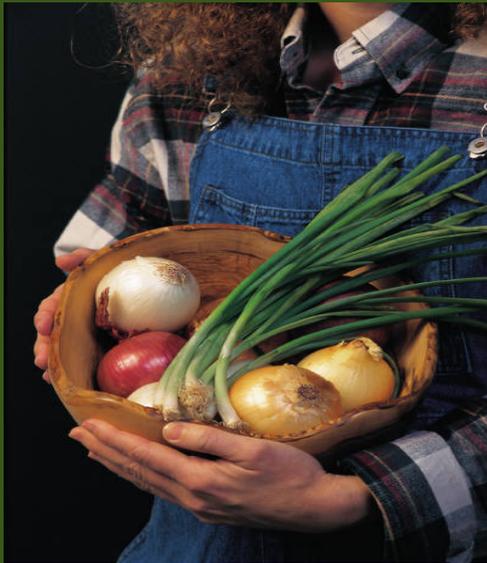


Food \$ense Annual Report 2012



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Letter from the Directors

Dear Friends,

In 2012, the Utah State University Food \$ense program (known nationally as the Supplemental Nutrition Assistance Program or SNAP-Ed) assisted hundreds of Utah families in making healthy food choices on a limited budget. Our group and individual classes are at the core of Food \$ense. These classes meet the needs of our participants by providing nutrition education that support and follow the current USDA Dietary Guidelines and MyPlate.

Food \$ense targets individuals who are either food insecure or are at risk for food insecurity. In 2012 we directly reached over 13,202 adults and 17,111 youth. In addition, we also indirectly reached another 2,116,532 Utahns, for a total of 2,146,836. This was all done as a result of the committed support from USDA's Food and Nutrition Services (FNS), Utah's Department of Workforce Services (DWS), and Utah State University.

Despite the number of people reached by Food \$ense this last year, there is still so much to do. Food \$ense will continue it's efforts to grow and expand its education to low-income families in Utah, partnering with DWS and other agencies to provide SNAP eligibles with all available resources.

The heart of SNAP-Ed is found in caring and knowledgeable paraprofessionals who teach by example. Utah Food \$ense developed a paraprofessional training program called the National Nutrition Paraprofessional Certification Program. The program was launched nationally this past year and has served 25 states and 653 paraprofessionals. Currently we are working on expanding this certification program to provide additional education and training for nutrition paraprofessionals nationwide.

Striving to make a difference one meal at a time,

Heidi LeBlanc

Program Director, Food \$ense

Debbie Christofferson

Assistant Director, Food \$ense

Overview

Food \$ense (known nationally as SNAP-ED) is a partnership of Nutrition, Dietetics, and Food Sciences/Cooperative Extension Services at Utah State University, the Utah Department of Workforce Services, and other collaborating agencies. Food \$ense provides nutrition education to low income individuals in all 29 counties in the state.

The aim of Food \$ense is to provide education to food stamp recipients and/or food stamp eligibles to promote healthy eating and an active lifestyle. With the overall increase in disease and obesity in the United States, particularly among those individuals from low-income backgrounds, there is an obvious need for education and lifestyle changes. Food \$ense offers a large array of nutrition related curriculum for individuals of all ages to increase the knowledge, skill set, and overall wellbeing of those we serve.

Food \$ense offers a variety of classes to expand participants knowledge of nutrition, cooking, food safety, and physical activity. Curriculum has been developed to meet the needs of English and Spanish speaking youth and adult participants. Because of this, participants are able to learn about topics that relate to their needs and interests. These hands on classes are taught by Nutrition Education Assistants (NEA's) who are trained with the National Nutrition Paraprofessional Certification Program created by Food \$ense of Utah.

Food \$ense connects program participants with the knowledge and skills they need for continual access to safe and healthy foods. Participants learn how to cook healthy meals on a budget, how to buy and prepare whole foods, how to read food labels, how to practice safety in the kitchen, and much more.



Volunteers

Local volunteers bring so much knowledge and enthusiasm to Food Sense. Volunteers for Food Sense are found all throughout the state of Utah and provide many hours of service over the course of a year. In Fiscal Year (FY) 2012, there was a total of 1,524.25 hours of volunteer service for Food Sense across the state. Out of those hours, 174.5 hours were volunteered at the state office in Logan, Utah while the other 1,349.75 hours were volunteer hours from counties all across the state.

Many of the Food Sense volunteers are dietetic students from Utah State University although Food Sense also has Americorps interns, undergraduate and graduate students from other programs and universities, and community members who volunteer throughout the year in various counties across the state. These volunteers help us provide Food Sense participants with quality experiences and information. Volunteers have helped us with recipe development, curriculum development, local health fairs, and other nutrition related events in the community.



“Thank you for the opportunity to volunteer with Food Sense! I have learned so much about food and nutrition throughout this experience which will continue to benefit me as a student and my future career as a dietitian.”

-Dietetics student volunteer from Utah State University



Youth Curriculum

Food Sense Kids

This curriculum, developed in English, contains twenty-seven lessons based primarily on the 2010 Dietary Guidelines and MyPlate. The lessons are developed for preschool aged children. Each lesson focuses on a different fruit, vegetable, whole grain, or legumes.

Food Sense Kids On the Run

This curriculum, developed in English, contains 12 lessons based primarily on the 2010 Dietary Guidelines and MyPlate. The lessons are developed for school-aged children. Each lesson focuses on being healthy through energy balance, including eating healthy and proper physical activity.

Viva Vegetables

This curriculum was developed in English and is based on the 2010 Dietary Guidelines and MyPlate. Each month focuses on a vegetable within that growing season.

"You're the reason my son likes tomatoes. You gave them that assignment to try something new and he had never tried tomatoes and now he loves them!"

-Mother of a Food Sense participant



"My son loves your classes and has learned so much. When he comes home he tells me all that he has learned. We have made microwave breakfast burritos three times since your class. It is fun to have him excited about something and the part I like the most is that he is talking to me and we are sharing. Thank you so much."

-A mom of a 14 year old Food Sense participant



"You are the reason my mom puts beans in EVERYTHING now, but that is okay because we like it and it is healthier."

-6th grade Food Sense participant

Adult Curriculum

Food Sense Vegetables, Food Sense Fruits, Food Sense Grains

Faculty at Utah State University in the Nutrition, Dietetics and Food Sciences Department developed this curriculum to help educate adults about incorporating vegetables, fruits, and whole grains into their daily diets. The lessons teach participants how to grow, select, prepare, cook, and store vegetables, fruits, and whole grains that are in season.

Food Sense Cooks

This curriculum, developed by SNAP-Ed of Utah, provides basic cooking instruction and techniques. The curriculum is geared for low-income audiences and is designed to help homemakers feel at ease in the kitchen as it builds knowledge and confidence in basic meal preparation skills.

Food Sense Basics

This curriculum, developed in English, contains nine lessons based primarily on the 2010 Dietary Guidelines and each food group in MyPlate, menu planning, shopping, and quick meals, food safety, and gardening basics.



"What you do for these families is so awesome and they are so excited to have someone teach them the things they do not know. The family will benefit from these lessons throughout their lifetime. This program is so cool so thank you for helping these families."

-Program Leader from a partnering organization



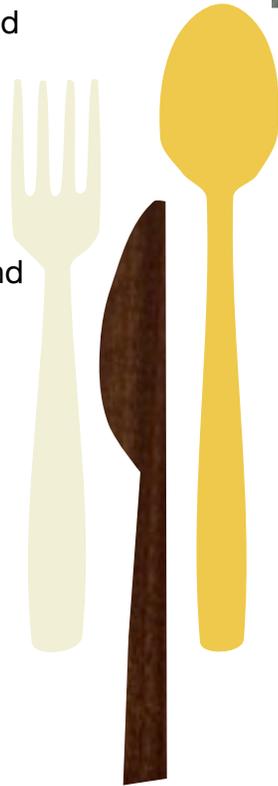
"You're the one who has gotten me to try new foods! I am feeling so good and I have lost a lot of weight!"

-Adult Food \$ense participant

Farmers Market

In recent months, the number of farmer's markets accepting EBT cards has increased from four to thirteen in the state of Utah. The EBT machines allow individuals on food stamps to use their food stamp benefits on local produce and foods. Food \$ense currently has booths at the Salt Lake County, Cache County, Iron County, Grand County, and Davis County farmers markets in Utah. Food \$ense looks forward to extending Food Sense booths to selected farmers markets with EBT machines in the future.

The Food \$ense booths have been great attractions for farmers market customers and Food Stamp recipients. Customers have enjoyed the free samples, recipe cards, helpful nutrition tips, and additional resources provided by Food \$ense interns and volunteers.



"I love the Food \$ense booth! I love the samples and the recipes. I keep all the recipes and make them at home for my friends and family"

-Cache Valley Farmers Market customer



"We prepared an eggplant chickpea salad with Moroccan spices. A woman came by the booth and loved the sample and took the recipe home. A few weeks later she came back and said she made it for a group of Girl Scouts during one of their camps. The girls, ages 8-14, were hesitant to try it at first, but gave it a shot and really enjoyed it. We helped create a whole troop of new eggplant fans!"

-Americorps volunteer who organized the Farmers Market in Cache County

Tier II Certification

National Nutrition Paraprofessional Certification – Culinary Basics/Cooking Skills

Tier II Certification

Food \$ense launched the Tier 1 Nutrition Paraprofessional Certification Program nationally last year. With SNAP-Ed programs nationwide utilizing this program, Food \$ense has decided to create a Tier II Nutrition Paraprofessional Certification Program.

Applied Research will be improving Nutrition Education Assistant (NEA) competencies through professional development. A statewide pilot study on the impacts of the Tier II certification will be conducted to evaluate the impact of Tier II. This certification will focus on how overall culinary basics and cooking skills of NEAs improves overall nutrition education and cooking skills throughout Food \$ense and EFNEP participants in the state of Utah. Tier II will be launched nationally to meet a national initiative for cooking skill enhancement in low income populations.

The planning phase of Tier II began in March 2012. Currently, cooking and culinary basics curriculum is being developed by faculty and graduate students at Utah State University. The state training pilot and graduate student projects will be completed by May 2014. Development of the national Tier II certification is an ongoing process and will be developed further following the pilot study in Utah.



State Programming Summary

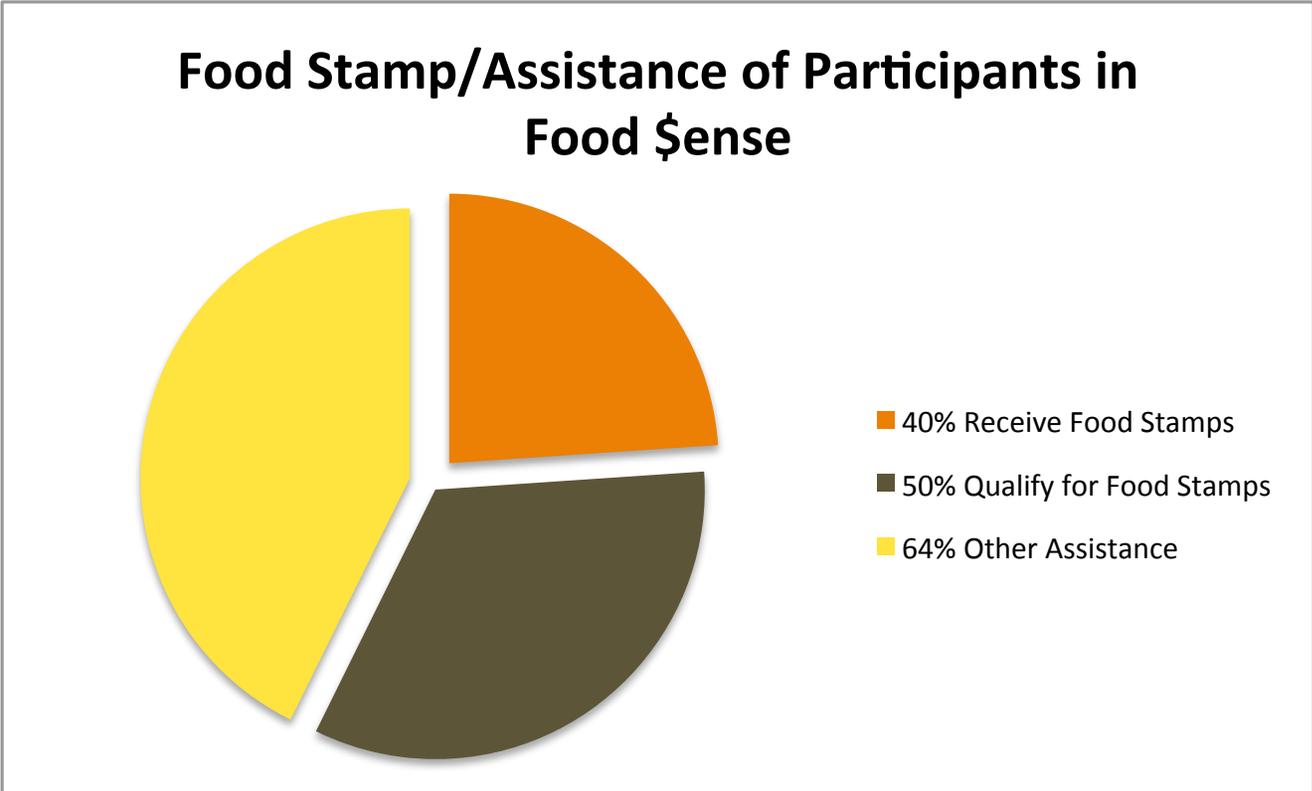
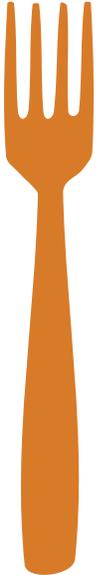
| State Summary | | | | | | | |
|---------------|--------------------|----------------|--|------------------------|---|--|--|
| Project Time | Delivery Locations | | Audiences | | Methods | Content | Evaluation |
| | Geographic | Delivery Sites | Targeted Audience | Total No. Participants | Frequency, Duration, and Type of Educational Methods | Key Messages | Type & Status |
| State Adult | Utah | 29 counties | SNAP families or low-income families | 6456 unduplicated | Group and individual classes teaching the following curriculum; Food \$ense basics, cooks, vegetables, fruits, etc. Loving Your Family, Feeding Their Future. Number of lessons per participants varies. 4,310 lessons were taught. | Food Security, Cooking Skills, Dietary Quality, Food Safety, Shopping Resource Management. MyPlate, Dietary Guidelines for Americans | Food Frequency Questionnaire, Behavior Checklist (after 4 lessons), Class Participant Form |
| State Youth | Utah | 29 counties | SNAP families or schools with 50% free/reduced lunch eligibility | 17,111 | Classes taught at schools and at summer school lunch programs teaching the following curriculum: Professor Popcorn, WIN Kids, Food, Fun and Reading, & Food, Culture and Reading, Food \$ense Kids. 1232 lessons were taught. | MyPyramid, MyPlate, & Dietary Guidelines for Americans | Class Participant Form (Youth) |

County by County Programming Summary

| COUNTY PROGRAM SUMMARY | | |
|------------------------|-------------------------|------------------------|
| County | Number of Adults Taught | Number of Youth Taught |
| Beaver | 206 | 1,127 |
| Box Elder | 851 | 1,089 |
| Cache | 1,466 | 950 |
| Carbon | 163 | 268 |
| Davis | 1,095 | 0 |
| Emery | 240 | 1,109 |
| Garfield | 5 | 80 |
| Grand | 8 | 273 |
| Iron | 555 | 1,283 |
| Juab | 839 | 1,246 |
| Kane | 23 | 521 |
| Millard | 495 | 2,931 |
| Morgan | 99 | 52 |
| Salt Lake | 2,996 | 1,736 |
| San Juan | 110 | 4,406 |
| Sanpete | 297 | 814 |
| Sevier | 621 | 414 |
| Summit/Wasatch | 290 | 245 |
| Tooele | 301 | |
| Uintah | 88 | 28 |
| Utah | 741 | 1,080 |
| Washington | 95 | 2,096 |
| Wayne/Piute | 330 | 1,944 |

Utah SNAP-Ed Goals that Address Food Insecurity

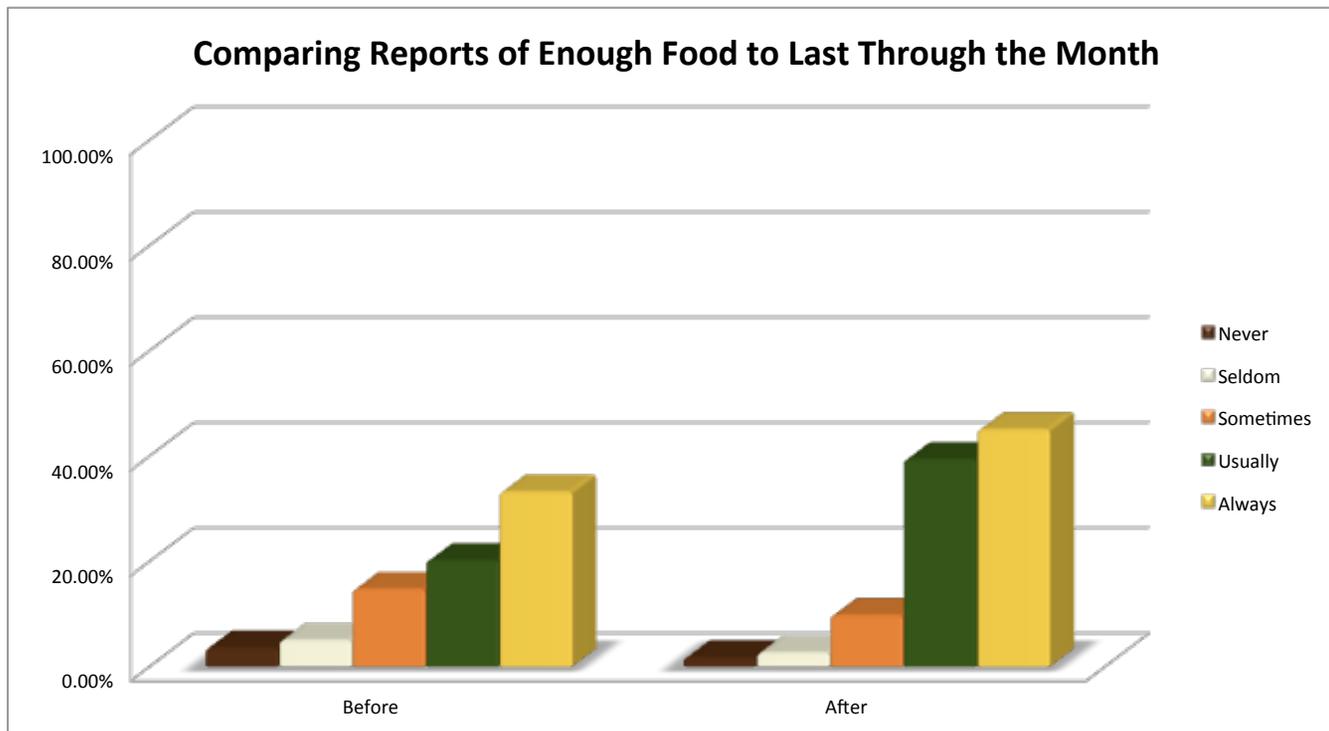
Food \$ense strives to provide nutrition education to low income individuals therefore at least 50% of program participants must be receiving food stamps and other assistance or eligible to receive food stamps and/or other assistance.



Food Safety Increases Food Security

Participants in Food \$ense gain the knowledge and skills to help them stretch their food dollar.

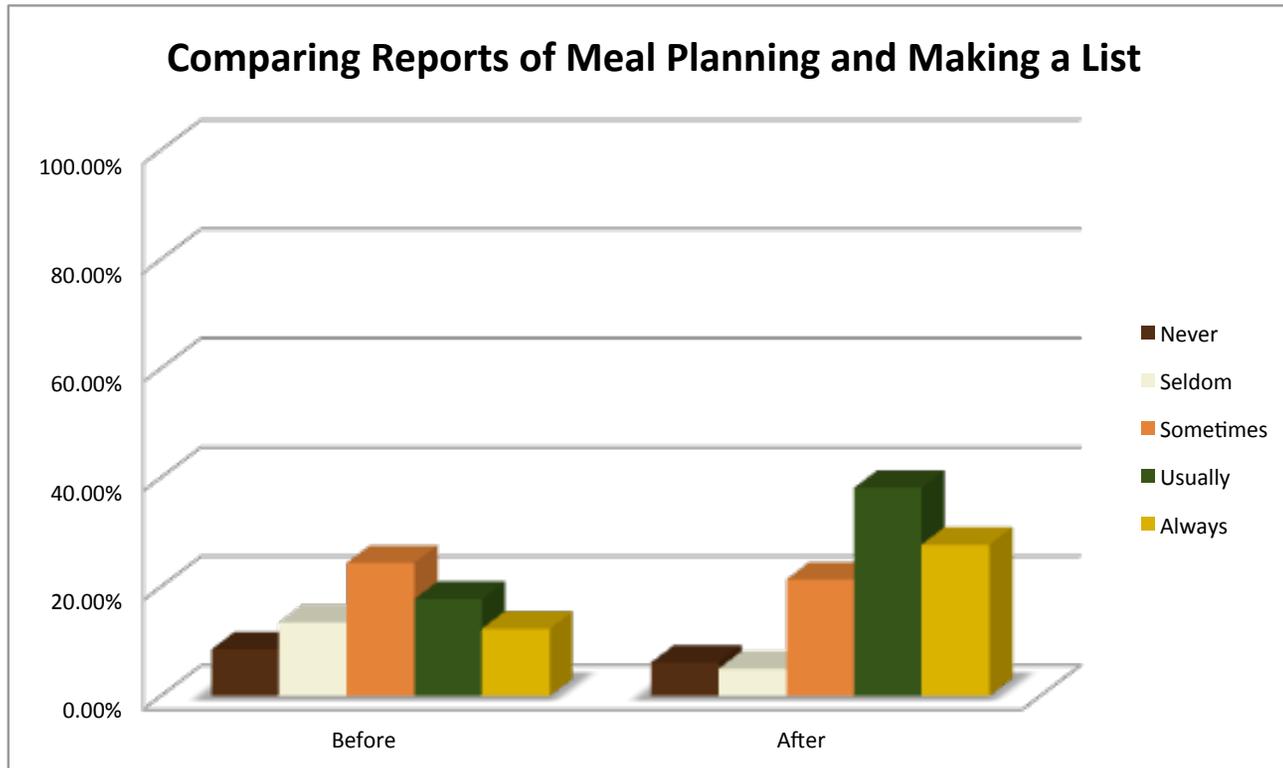
Question answered: Have enough food to last through the end of the month? (Post/Pre Behavior Checklist)



Prior to Food \$ense classes 33.2% of Food \$ense participants indicated they always had enough food to last through the month while 20.1% of participants reported they usually had enough food to last the entire month. After Food \$ense classes, 45% of participants reported they always had enough food to last through the month and 39.4% of participants who reported they usually had enough food to last through the end of the month.

Food Security - Meal Planning and Grocery Shopping with a List

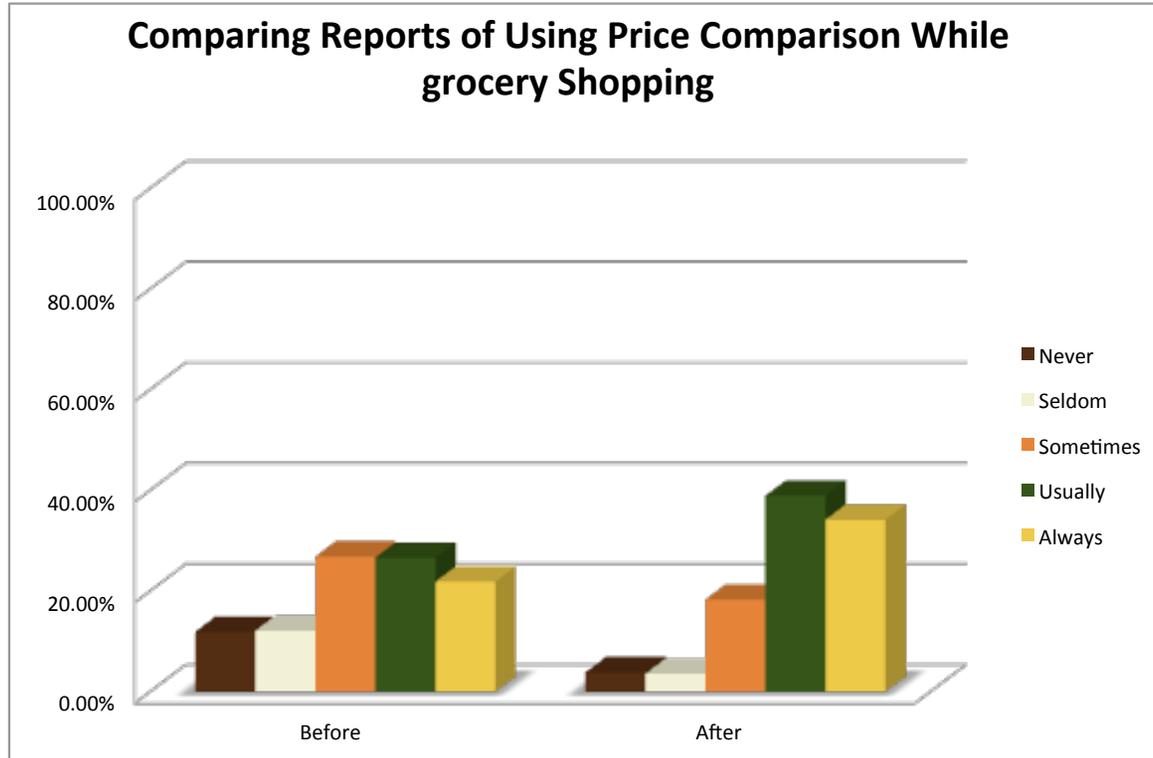
Participants in Food \$ense gain the knowledge and skills to help them stretch their food dollar.
Question answered: Plan meals and make a grocery list before shopping? (Post/Pre Behavior Checklist)



Only 12.3% of participants reported they usually made a list and planned meals before taking any Food \$ense classes while 17.7% of participants reported they always made a grocery list. After taking classes with Food \$ense, 27.7% of participants reported they always shopped with a list and prepared meals after taking Food \$ense classes while 38.2% reported they usually plan meals and make a shopping list.

Food Security-Comparing Prices

Participants in Food \$ense gain the knowledge and skills to help them stretch their food dollar.
Question answered: Shop with a list and compare prices? (Post/Pre Behavior Checklist)



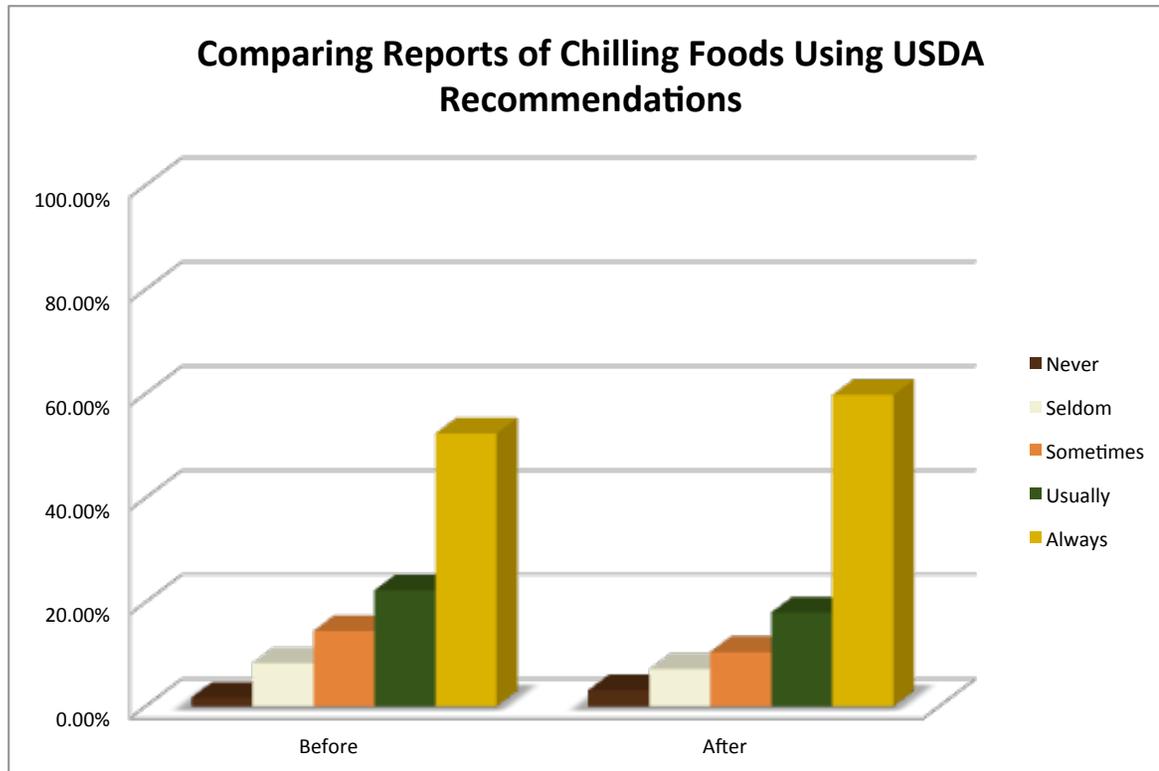
Prior to Food \$ense classes 21.8% of Food \$ense participants indicated they always compared prices while grocery shopping while 26.5% of participants reported they usually compared prices. After Food \$ense classes, 45% of participants reported they always had enough food to last through the month and 39.4% of participants who reported they usually compared prices at the grocery store.

Food Security and Food Safety- Chilling Foods Properly

Participants in Food \$ense gain the knowledge and skills to help them stretch their food dollar.

Question answered: Refrigerate meat, dairy, and other perishables within two hours of shopping? (Post/Pre Behavior Checklist)

Food Safety skills and techniques increase the food security in the the home by making the food



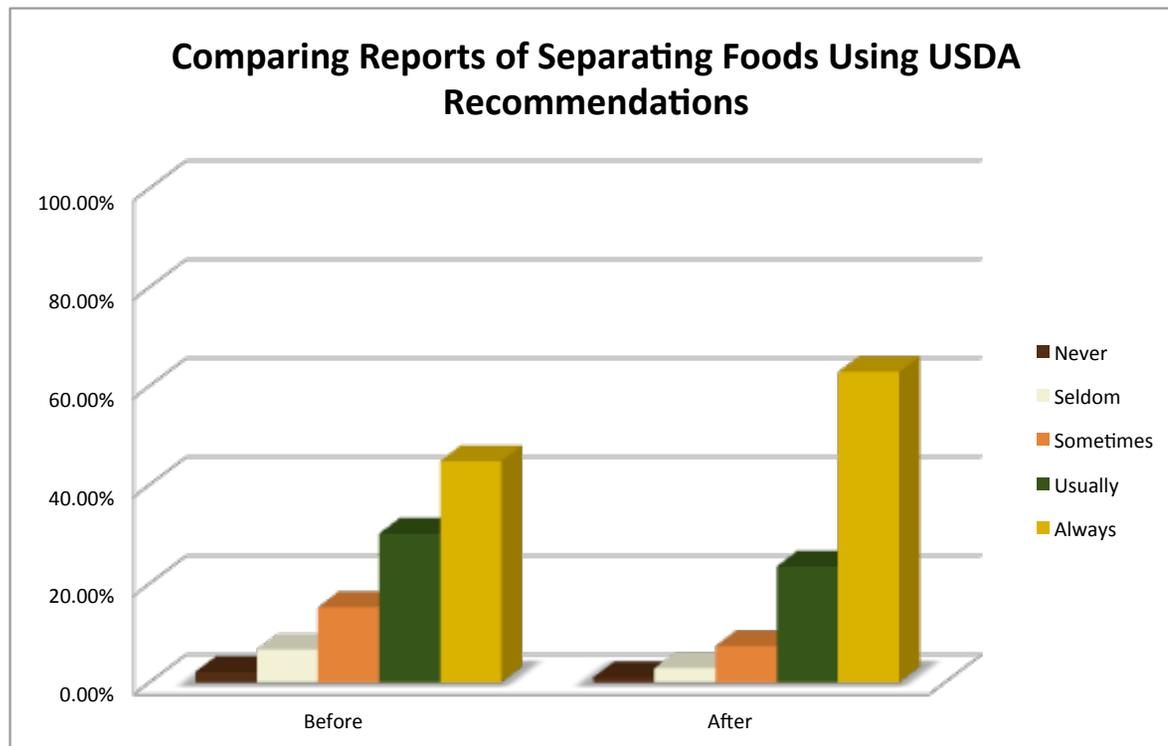
Prior to Food \$ense classes 52.3% of Food \$ense participants indicated they always chilled foods within 2 hours of shopping while 22.27% of participants reported they usually chilled foods within 2 hours of shopping. After Food \$ense classes, 59.7% of participants reported they always chilled food within 2 hours of shopping while 18% of participants who reported they usually chilled food within 2 hours of shopping.

Food Security and Food Safety- Separating Foods Properly

Participants in Food \$ense gain the knowledge and skills to help them stretch their food dollar.

Question answered: Prepare raw meats, poultry, and eggs separately from other foods? (Post/Pre Behavior Checklist)

Food Safety skills and techniques increase the food security in the home by making the food safe



Prior to Food \$ense classes 44.8% of Food \$ense participants indicated they always separated foods appropriately while 30.0% of participants reported they usually separated foods appropriately. After Food \$ense classes, 62.8% of participants reported they always separated foods appropriately and 23.5% of participants who reported they usually separated meats, poultry, and eggs.

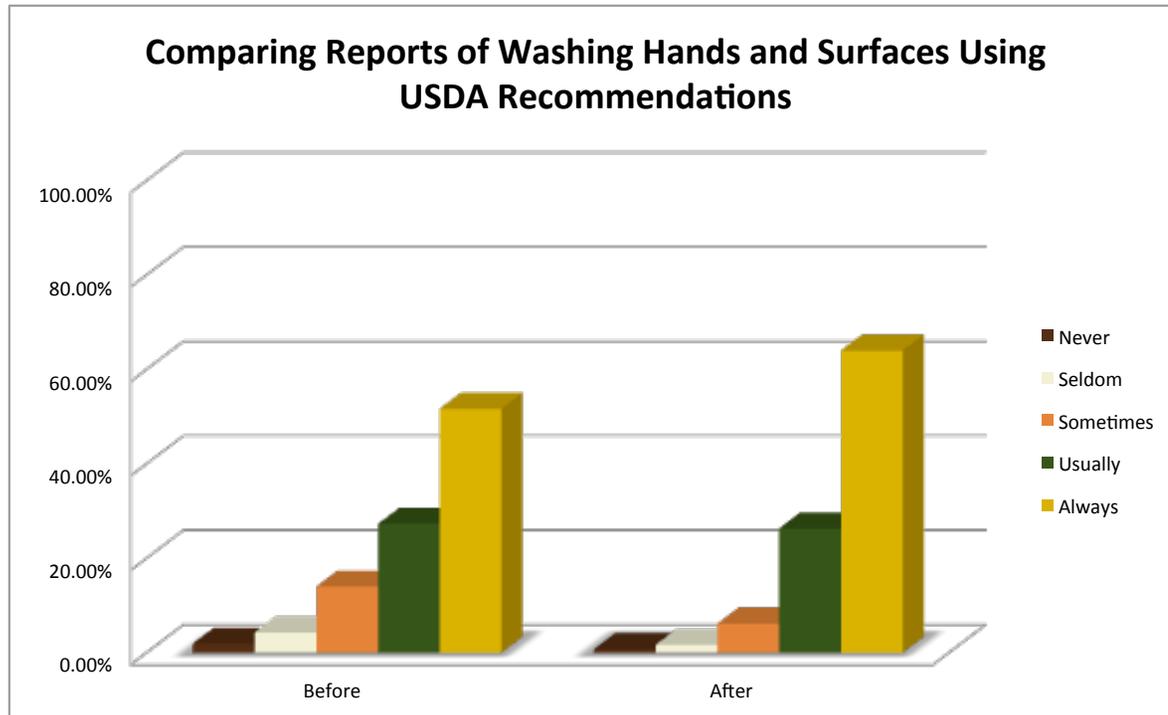
Food Security and Food Safety- Hand Washing

Participants in Food \$ense gain the knowledge and skills to help them stretch their food dollar.

Question answered: Wash hands and surfaces before and after preparing and eating food?

(Post/Pre Behavior Checklist)

Food Safety skills and techniques increase the food security in the home by making the food safe



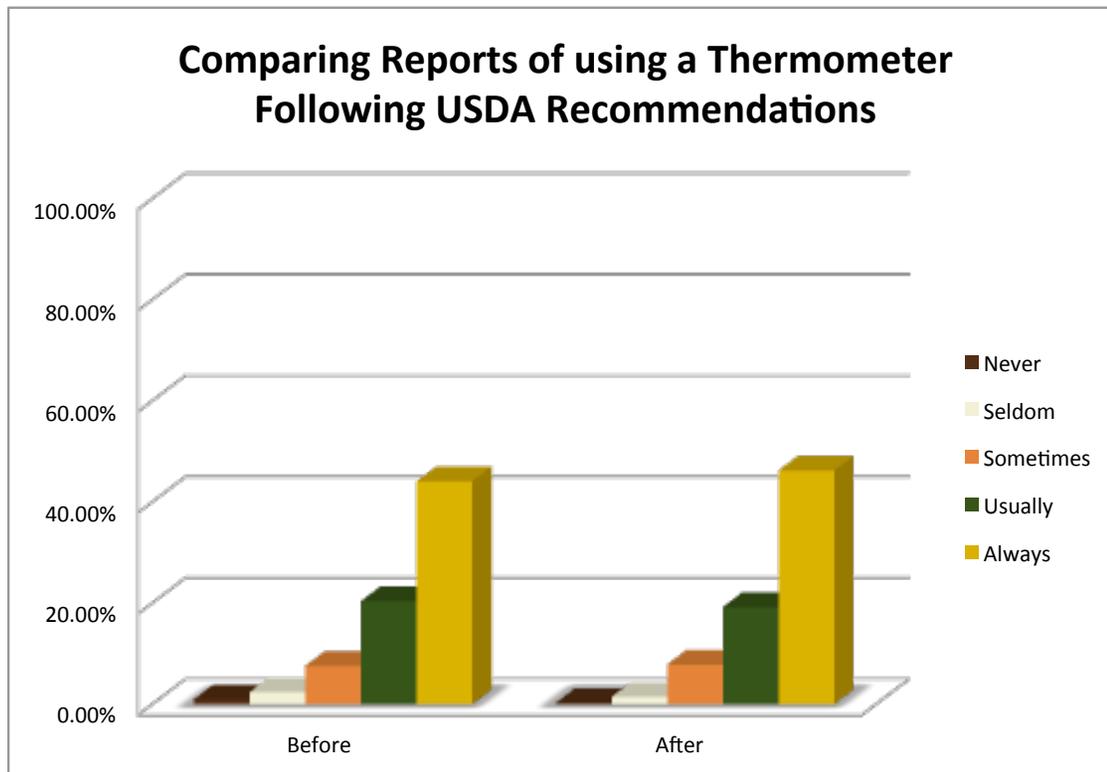
Prior to Food \$ense classes 51.6% of Food \$ense participants indicated they always washed hands and surfaces after cleaning while 27.3% of participants reported they usually washed hands and surfaces. After Food \$ense classes, 64% of participants reported they always washed hands and surfaces and 26.3% of participants who reported they usually washed hands and surfaces.

Food Security and Food Safety- Using a Thermometer

Participants in Food \$ense gain the knowledge and skills to help them stretch their food dollar.

Question answered: Use a thermometer when cooking? (Post/Pre Behavior Checklist)

Food Safety skills and techniques increase the food security in the home by making the food safe for families and individuals to eat.



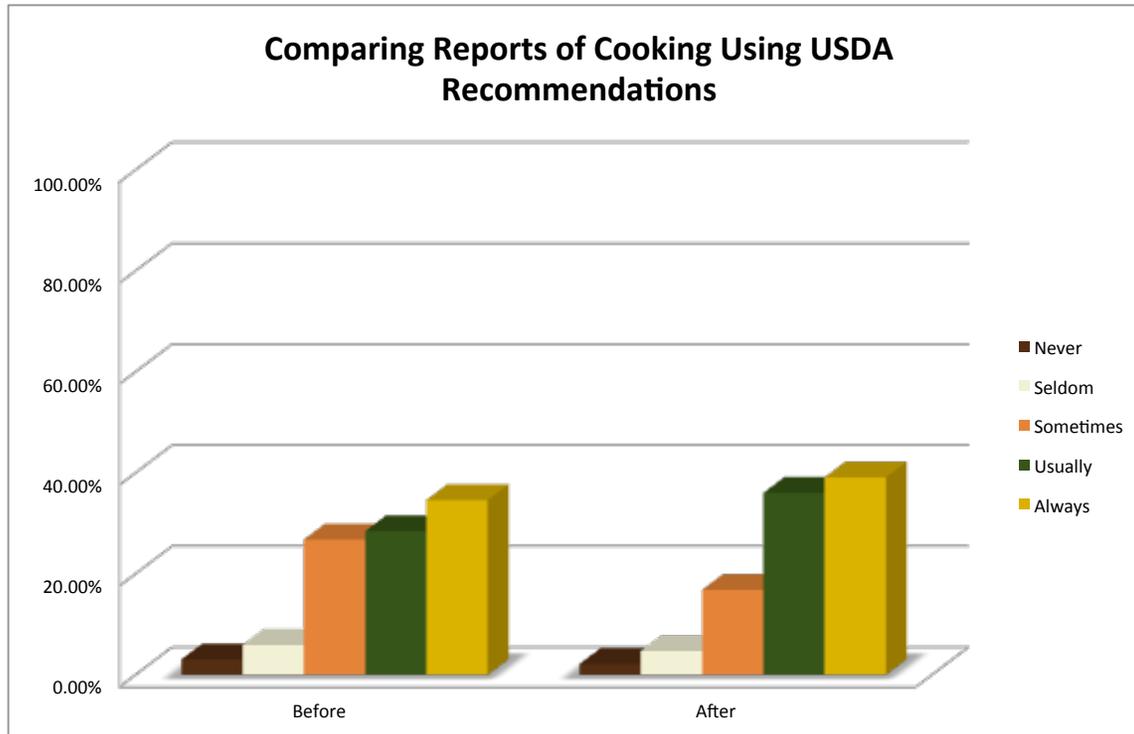
Prior to Food \$ense classes 44.0% of Food \$ense participants indicated they always used a thermometer while 20.4% of participants reported they usually used a thermometer. After Food \$ense classes, 46% of participants reported they always used a thermometer and 19.2% of participants who reported they usually used a thermometer.

Food Security and Food Safety-Cook Foods Thoroughly

Participants in Food \$ense gain the knowledge and skills to help them stretch their food dollar.

Question answered: Cook foods thoroughly using USDA time/temperature recommendations (Post/Pre Behavior Checklist)

Food Safety skills and techniques increase the food security in the home by making the food safe

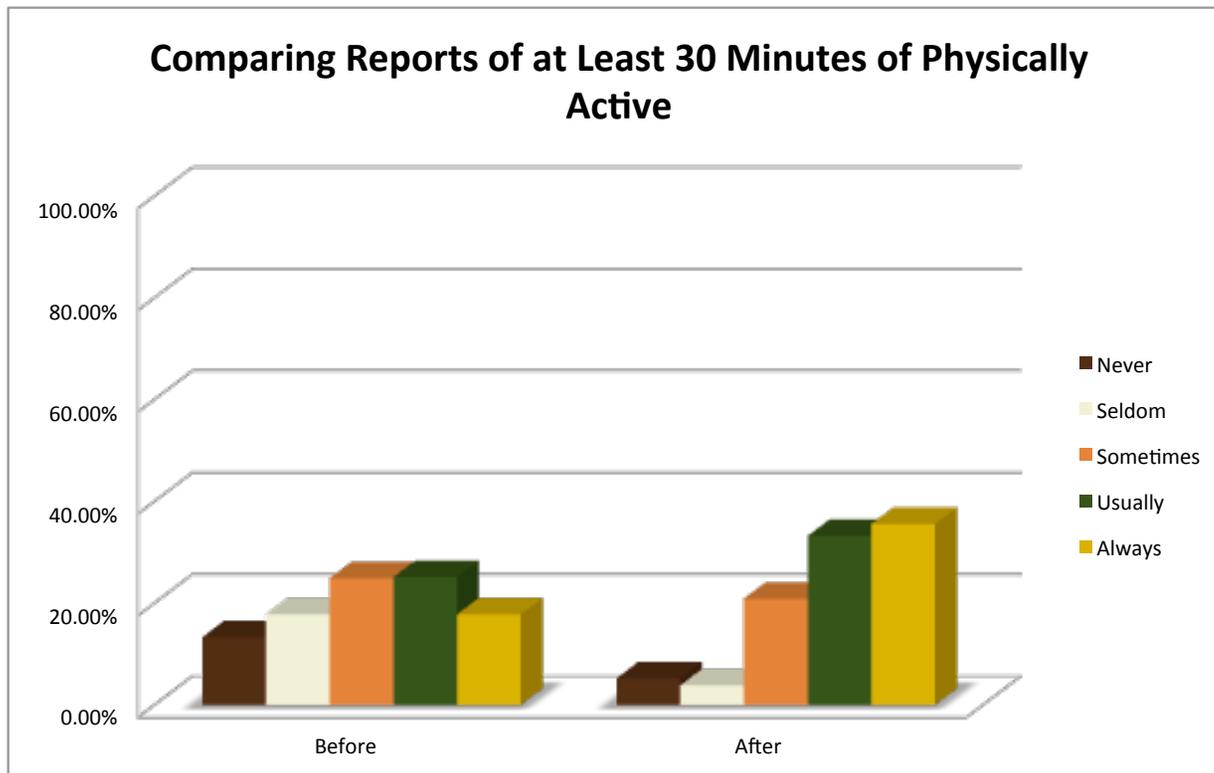


Prior to Food \$ense classes 34.6% of Food \$ense participants indicated they always cooked foods thoroughly according to USDA recommendations while 28.4% of participants reported they usually cooked foods thoroughly. After Food \$ense classes, 39% of participants reported they always cooked foods thoroughly according to the USDA recommendations and 36% of participants who reported they usually cooked foods thoroughly.

Obesity Prevention-Physical Activity

As a result of participating in the SNAP-Ed program, SNAP eligibles statewide will increase their physical activity to meet the goals of the 2010 Dietary Guidelines for Americans.

Question Answered: Choose to be physically active for at least 30 minutes, 5 days a week?

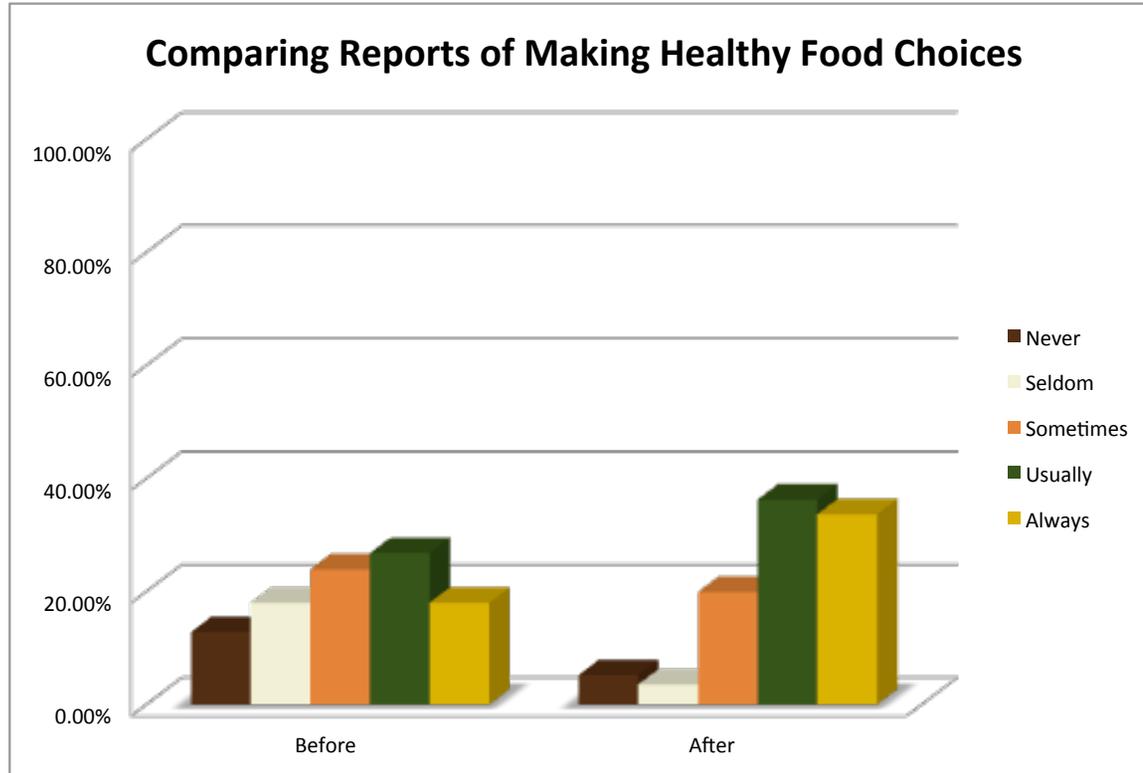


Prior to Food \$ense classes 17.7% of Food \$ense participants indicated they always exercised for 30 minutes 5 days per week while 25.1% of participants reported they usually exercised for 30 minutes 5 days per week. After Food \$ense classes, 35.5% of participants reported they always exercised 30 minutes per day 5 days per week and 33.2% of participants who reported they usually exercised for 30 minutes 5 days per week.

Obesity Prevention- Healthy Food Choices

As a result of participating in the SNAP-Education program, SNAP eligibles statewide will make healthy food choices to meet the goals of the 2010 Dietary Guidelines for Americans.

Question Answered: Make food choices based on healthy choices and by using the nutrition facts label?

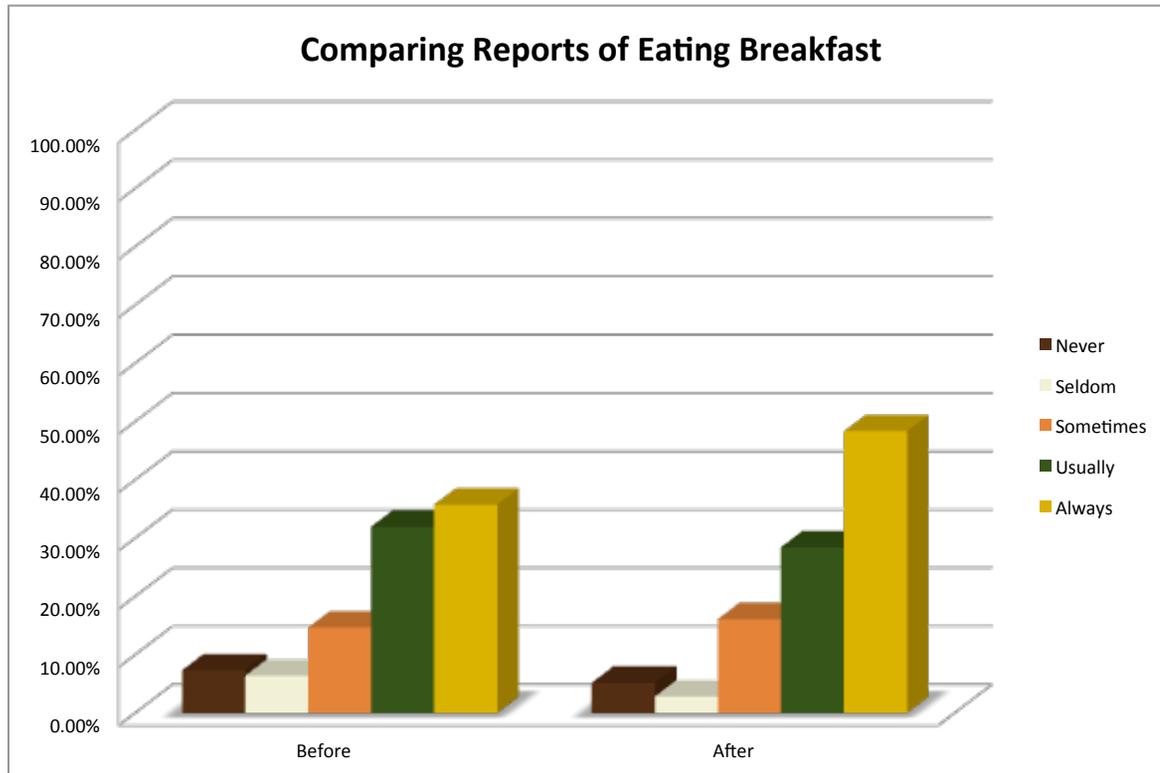


Prior to Food \$ense classes 18.0% of Food \$ense participants indicated they always made healthy food choices based on the nutrition facts label while 26.8% of participants reported they usually made healthy food choices. After Food \$ense classes, 33.7% of participants reported they always made healthy food choices and 36.3% of participants who reported they usually made healthy food choices based on the nutrition facts label.

Obesity Prevention- Eating Breakfast

As a result to participating in the Food \$ense Program, food stamp eligibles statewide will improve their diets by eating breakfast consistent with the 2010 Dietary Guidelines for Americans and My Plate.

Question Answered: Children and adults in household eat something within two hours of waking?

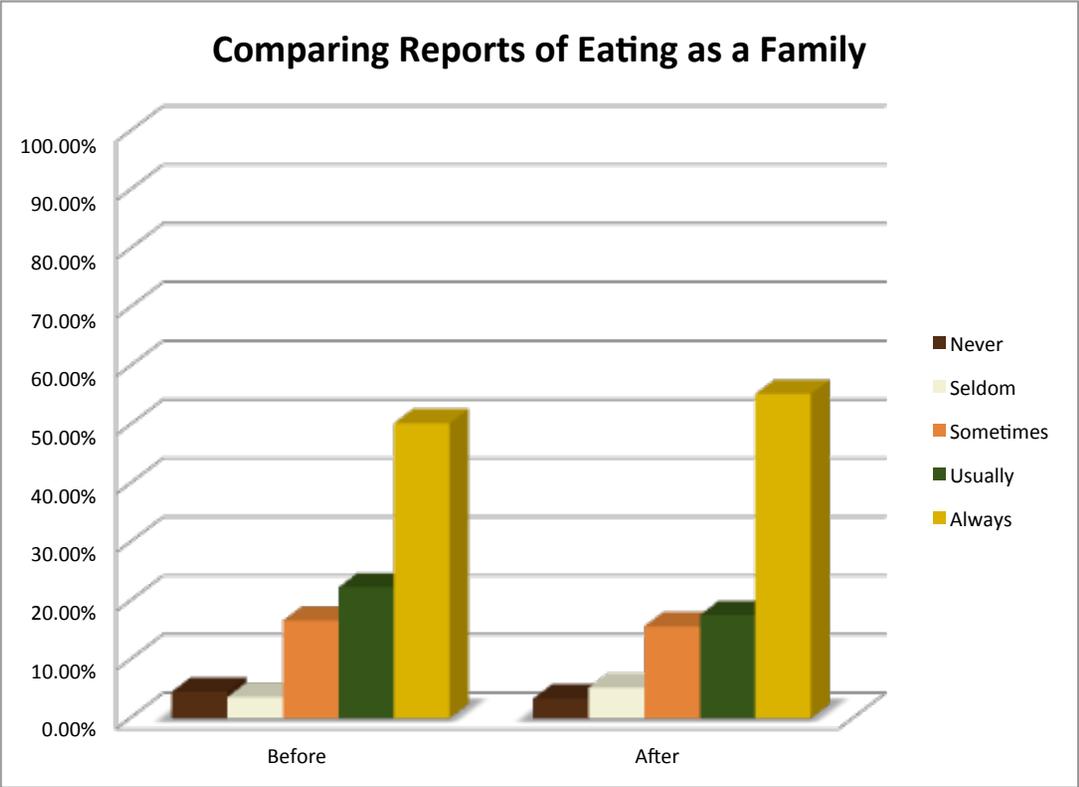


Prior to Food \$ense classes 35.8% of Food \$ense participants indicated they always ate breakfast while 32% of participants reported they usually ate breakfast. After Food \$ense classes, 48.4% of participants reported they always ate breakfast and 28.4% of participants reported they usually ate breakfast.

Healthy Food Choices- Eating As a Family

As a result to participating in the Food \$ense Program, food stamp eligibles statewide will eat together as a family to be consistent with the 2010 Dietary Guidelines for Americans and My Plate.

Question Answered: Eat meals together as a family at least three times a week?

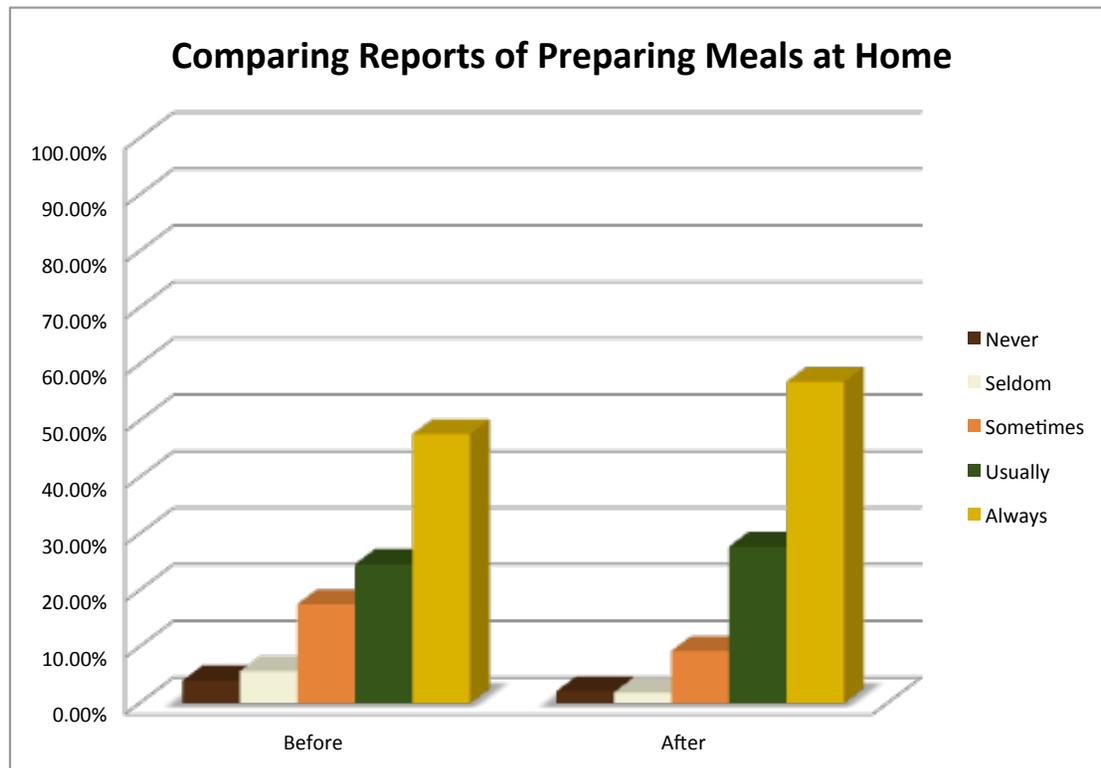


Prior to Food \$ense classes 50.2% of Food \$ense participants indicated they always ate as a family while 22.3% of participants reported they usually ate as a family. After Food \$ense classes, 55.2% of participants reported they always ate as a family and 28.4% of participants who reported they usually ate together as a family at least 3 days out of the week.

Healthy Food Choices-Prepare Meals at Home

As a result to participating in the Food \$ense Program, food stamp eligibles statewide will prepare meals at home consistent with the 2010 Dietary Guidelines for Americans and My Plate.

Question Answered: Prepare meals at home at least three times per week?

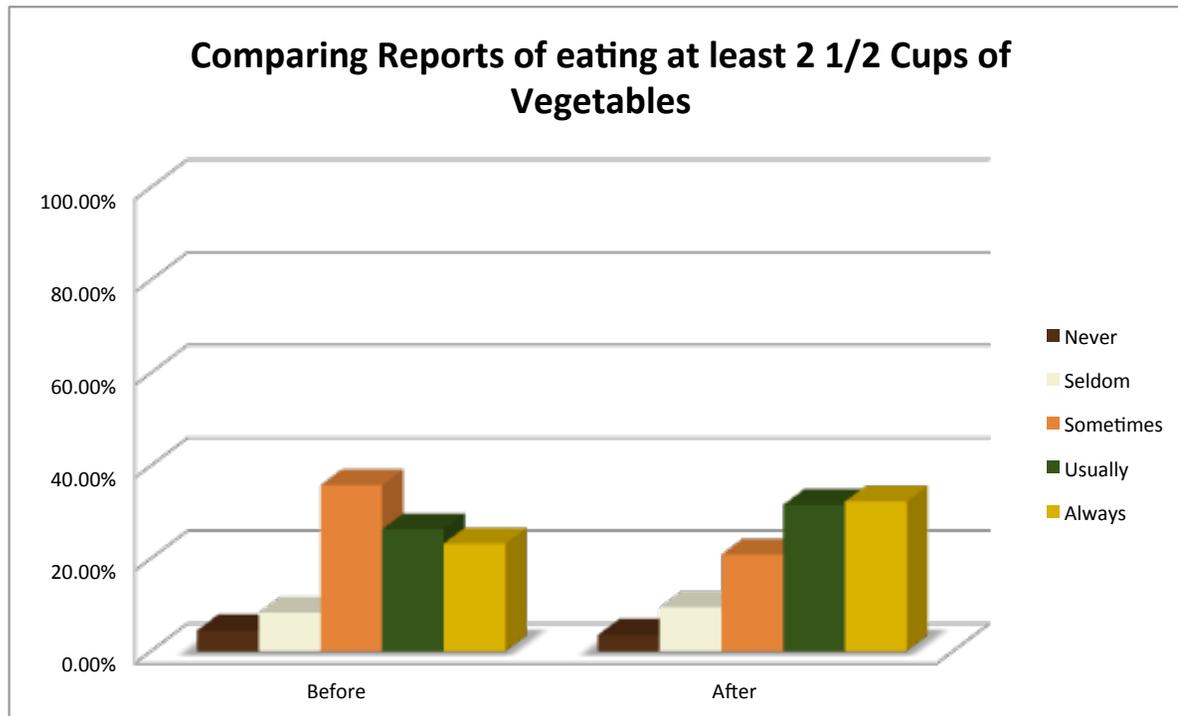


Prior to Food \$ense classes 47.6% of Food \$ense participants indicated they always prepared meals at home at least 3 times per week while 24.6% of participants reported they usually prepared meals at home at least 3 days a week. After Food \$ense classes, 56.9% of participants reported they always prepared meals at home at least 3 times per week and 27.7% of participants who prepared meals at home at least 3 times per week.

Healthy Food Choices- Vegetable Intake

As a result to participating in the Food \$ense Program, food stamp eligibles statewide will improve their diets by eating at least 2.5 servings of vegetables consistent with the 2010 Dietary Guidelines for Americans and My Plate.

Question Answered: Eat at least 2.5 cups of vegetables a day?

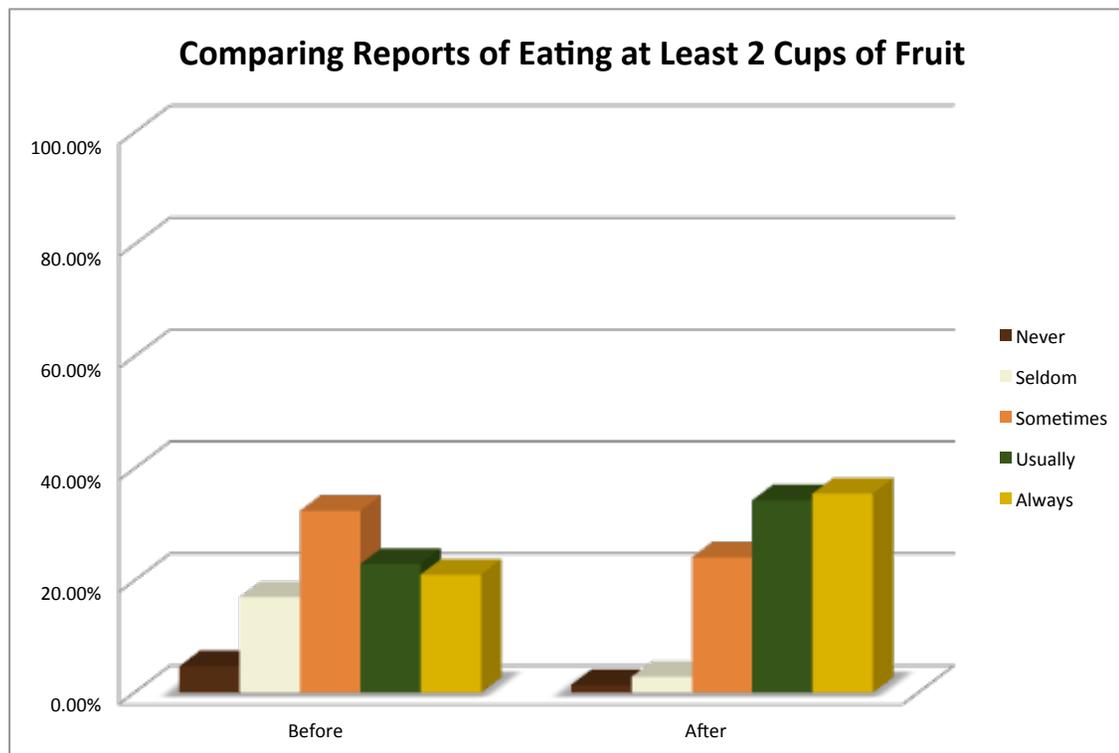


Prior to Food \$ense class 23.2% of Food \$ense participants indicated they always ate at least 2.5 cups of vegetables while 26.3% of participants reported they usually ate 2.5 cups of vegetables per day. After Food \$ense classes, 32.2% of participants reported they ate at least 2.5 cups of vegetables and 31.5% of participants who reported they usually ate at least 2.5 cups of vegetables.

Healthy Food Choices- Fruit Intake

As a result to participating in the Food \$ense Program, food stamp eligibles statewide will improve their diets by eating at least 2 servings of fruits consistent with the 2010 Dietary Guidelines for Americans and My Plate.

Question answered: Eat at least 2 cups of fruit a day?

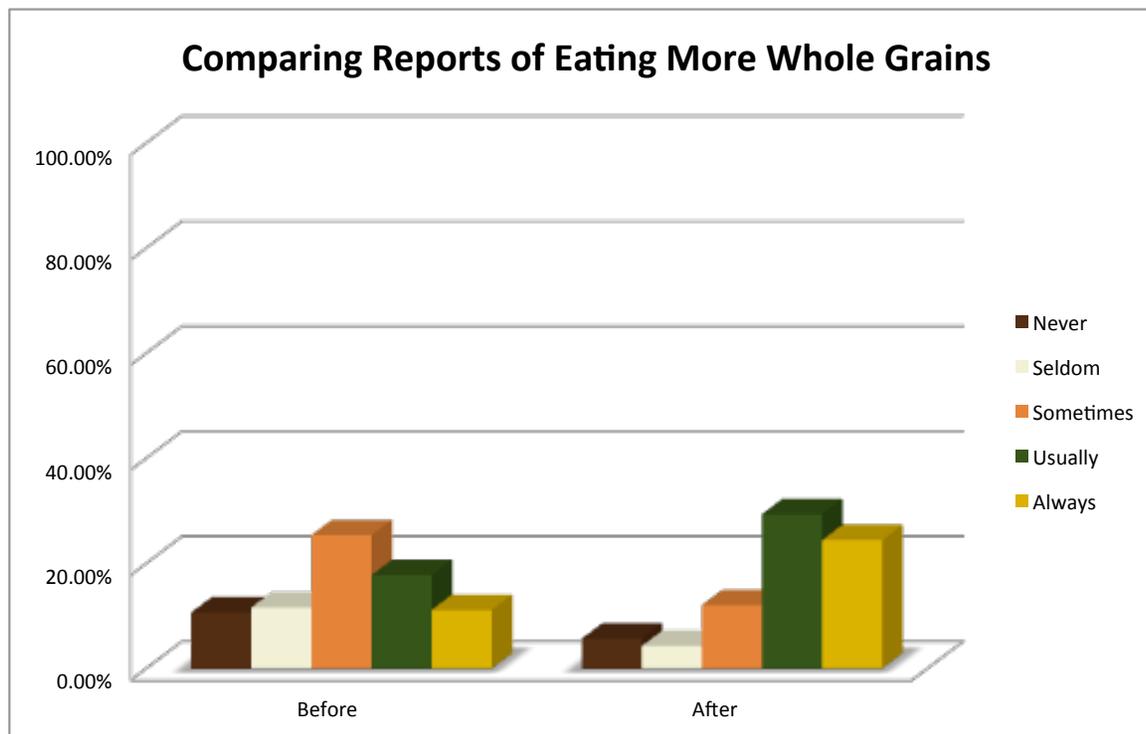


Prior to Food \$ense classes 21.1% of Food \$ense participants indicated they always ate at least 2 servings of fruit per day while 23% of participants reported they usually ate 2 servings of fruit per day. After Food \$ense classes, 35.5% of participants reported they always ate 2 servings of fruit per day 34.4% of participants who reported they usually ate at least 2 servings of fruit per day.

Healthy Food Choices- Whole Grains

As a result to participating in the Food \$ense Program, food stamp eligibles statewide will improve their diets by eating whole grains consistent with the 2010 Dietary Guidelines for Americans and My Plate.

Question Answered: Eat more whole grains than refined grains?

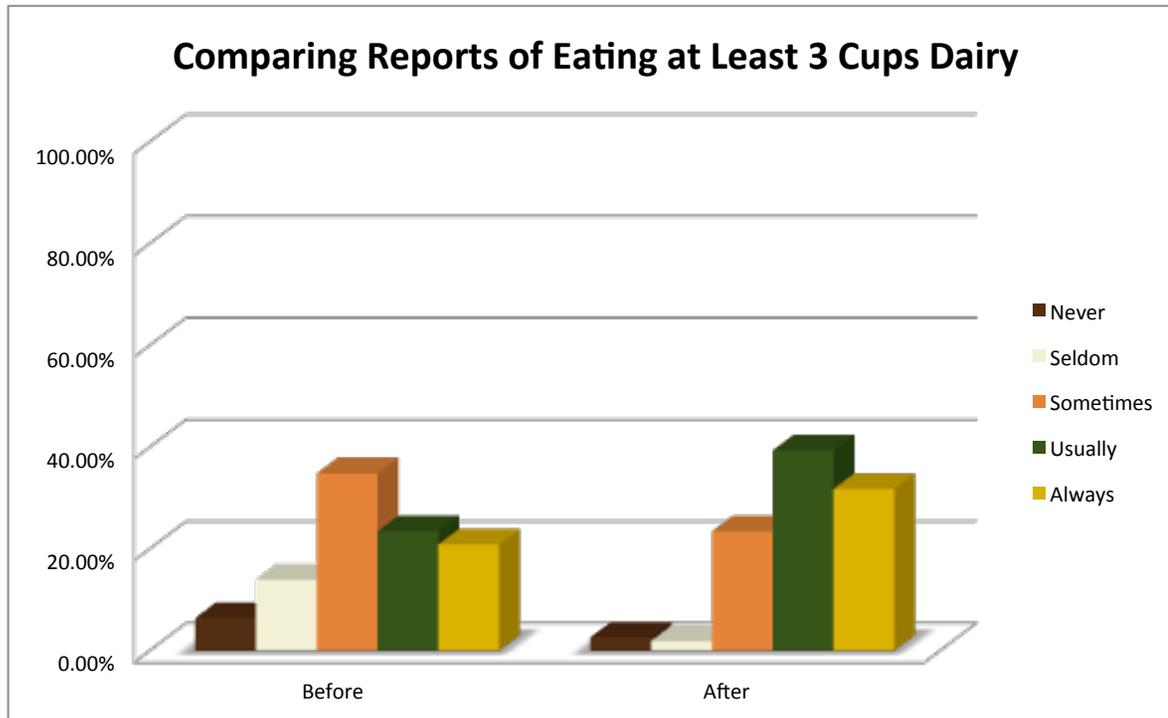


Prior to Food \$ense classes 11.1% of Food \$ense participants indicated they always ate whole grains while 17.8% of participants reported they usually ate whole grains. After Food \$ense classes, 24.4% of participants reported they always ate whole grains and 29.4% of participants who reported they usually ate whole grains.

Healthy Food Choices- Dairy

As a result to participating in the Food \$ense Program, food stamp eligibles statewide will improve their diets by eating at least 2 servings of dairy consistent with the 2010 Dietary Guidelines for Americans and My Plate.

Question Answered: Eat at least 3 cups or equivalent of dairy a day?

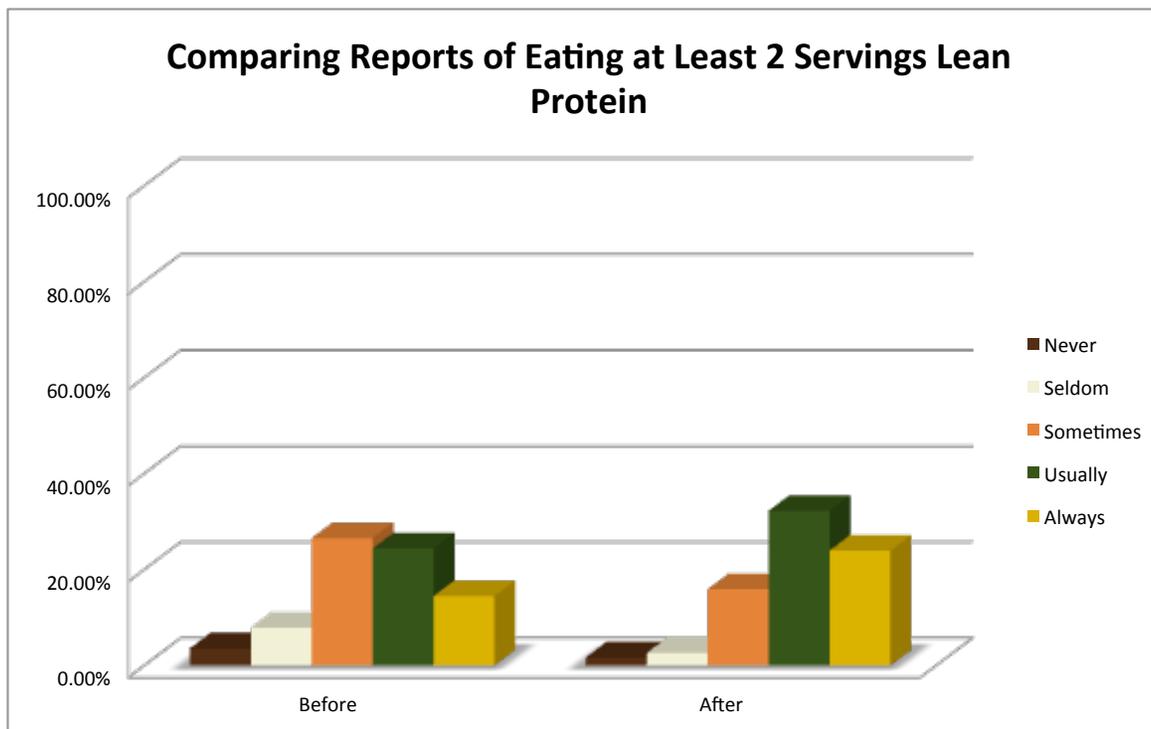


Prior to Food \$ense classes 20.8% of Food \$ense participants indicated they always ate at least 2 servings of dairy per day while 23.5% of participants reported they usually ate at least 2 servings of dairy per day. After Food \$ense classes, 31.7% of participants reported they always ate at least 2 servings of dairy and 39.3% of participants who reported they usually ate at least 2 servings of dairy.

Healthy Food Choices-Lean Protein

As a result to participating in the Food \$ense Program, food stamp eligibles statewide will improve their diets by eating at least 2 servings of lean protein consistent with the 2010 Dietary Guidelines for Americans and My Plate.

Question Answered: Choose at least two servings of lean protein a day

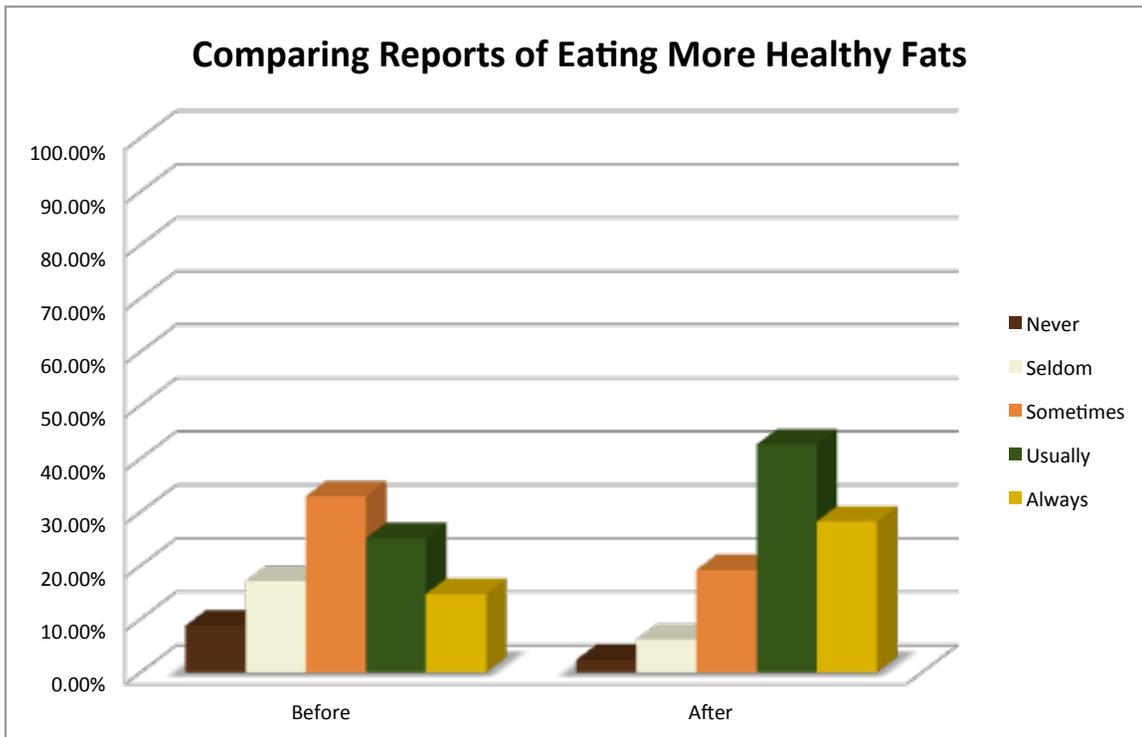


Prior to Food \$ense classes 14.5% of Food \$ense participants indicated they always ate at least 2 servings of lean protein while 24.4% of participants reported they usually ate at least 2 servings of lean protein. After Food \$ense classes, 23.9% of participants reported they always ate at least 2 servings of lean protein and 32.2% of participants who reported they usually ate at least 2 servings of lean protein.

Healthy Food Choices- Healthy Fats

As a result of participating in the Food \$ense Program, SNAP eligibles statewide will replace unhealthy fats with heart healthy oils to meet the goals of the 2010 Dietary Guidelines for Americans.

Question Answered: Choose low fat foods and replace saturated and trans fats with heart healthy fat?

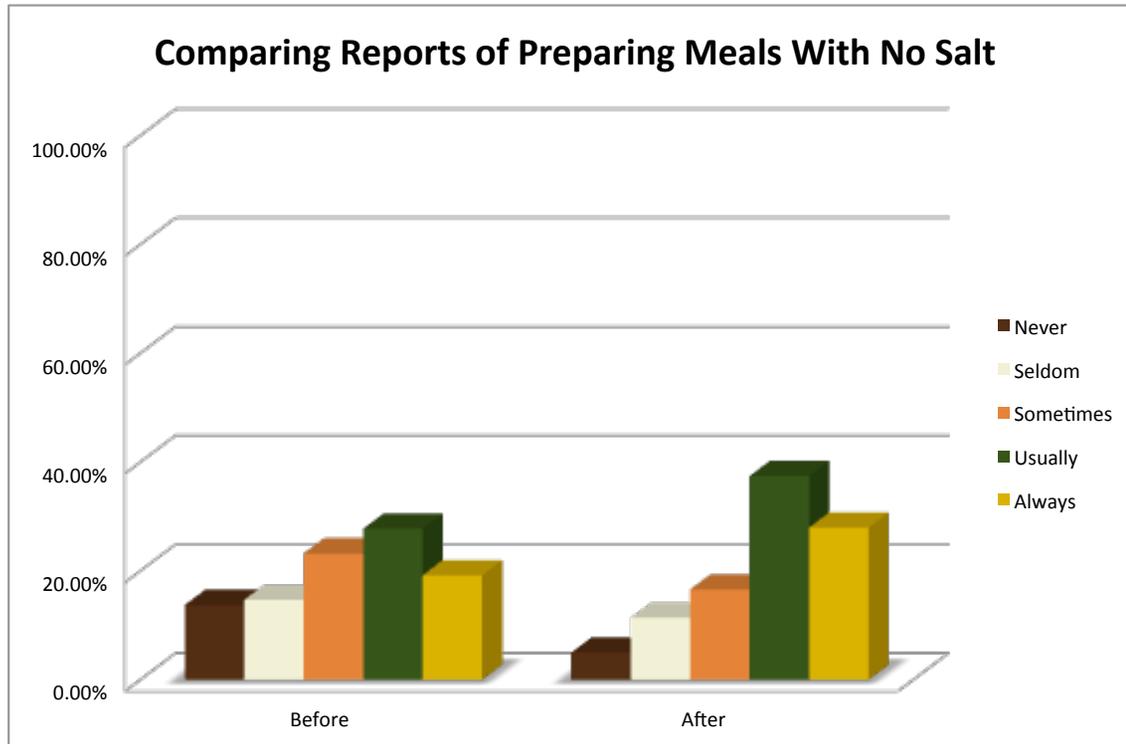


Prior to Food \$ense classes 14.7% of Food \$ense participants indicated they always chose healthy fats while 25.1% of participants reported they usually chose healthy fats. After Food \$ense classes, 28.2% of participants reported they always chose healthy fats and 42.7% of participants who reported they usually chose healthy fats.

Healthy Food Choices- Reducing Salt Intake

As a result to participating in the Food \$ense Program, food stamp eligibles statewide will improve their diets by reducing sodium in preparation of food choices consistent with the 2010 Dietary Guidelines for Americans and My Plate.

Question Answered: Prepare foods without adding salt?



Prior to Food \$ense classes 19.1% of Food \$ense participants indicated they always reduced salt intake by not adding salt to foods while 27.7% of participants reported they usually prepare foods without adding salt. After Food \$ense classes, 28% of participants reported they always reduce salt intake by not adding salt to foods and 37.4% of participants who reported they usually prepare foods without adding salt.

Evidence Based Outcome Driven

Presented at:
 Extension Annual Conference
 Utah Extension Association of Family and Consumer Sciences
 Utah Academy of Nutrition and Dietetics

SNAP-ED PARTICIPANTS INCREASE FRUIT AND VEGETABLE CONSUMPTION

LeBlanc H, Haws S, Christensen NK, Christensen D, Christofferson D, Stosich MC

Abstract

The benefits of fruit and vegetable consumption are documented extensively, yet more than 75 percent of Americans do not eat the recommended servings advised by the current Dietary Guidelines for Americans and MyPlate. Through self-reported post/pre behavior questionnaires, the Utah State University Supplemental Nutrition Assistance Program – Education (SNAP-Ed) program demonstrates an increase in fruit and vegetable consumption in low-income individuals through consistent education consisting of four or more lessons.

Introduction

The 2010 Dietary Guidelines for Americans describe a healthy diet as one that focuses on fruits, vegetables, whole grains, and fat-free or low-fat milk and milk products. The newly unveiled icon MyPlate, found at www.choosemyplate.gov, gives the advice to "make half your plate fruits and vegetables" (USDA CNPP, 2011). According to the guidelines, there are three main reasons for the recommendation of increased intake of vegetables and fruits.

- Vegetables and fruits provide high amounts of key nutrients lacking in American diets.
- Reduction of chronic disease. Eating 2 cups of fruits and/or vegetables a day reduces risk of heart disease, stroke and cancer.
- The majority of fruits and vegetables are naturally low in calories and can help maintain a healthy weight for adults and children.

Despite all the health benefits of fruits and vegetables, the average American does not consume the recommended amount (USDA HHS, 2010). According to the Behavioral Risk Factor Surveillance System, only 23% of Americans eat five or more fruits or vegetables a day (CDC, 2011). Many low-income people understand that eating healthy is important but mistakenly believe that it is cost prohibitive creating a barrier to fruit and vegetable consumption (Wenrich, 2010, Bilsard and Stewart 2006; Frazao et al. 2007; Guthrie et al. 2007).

The Utah State University (USU) Supplemental Nutrition Assistance Program – Education (SNAP-Ed) teaches low-income audiences, specifically targeting those on the Supplemental Nutrition Assistance Program (SNAP). The SNAP-Ed goal is to increase the likelihood that SNAP eligibles will make healthy food choices within a limited budget and choose physically active lifestyles consistent with the current Dietary Guidelines for Americans and MyPlate.

Purpose

The objective of the study was to determine the effectiveness of increasing fruit and vegetable consumption in low-income audiences by teaching how to menu plan, select, purchase, prepare, and eat more fruits and vegetables.

Methods

Participants in Utah SNAP-Ed were recruited by Nutrition Education Assistants (NEAs) through word of mouth, agency referral, local advertisements, and the Department of Workforce Services Extension Nutrition Letter (DWS XNLU) list. Lessons were taught in individual and group settings. The specific curriculum and lessons to be taught were chosen by NEAs based on what they thought was best suited for each individual, participant or group. The curriculum is focused on the current dietary guidelines and provides experiential learning activities that reinforce nutrition concepts and teach skills needed to eat healthy on a limited budget (see table 1 for curriculum descriptions).

Participants in the Utah SNAP-Ed program voluntarily completed a post/pre behavior checklist questionnaire. Data was imported to computer format using the Remark® software and scanning system. It was then converted into an Excel spreadsheet and means and standard deviations were calculated for daily consumption of fruits and vegetables for participants before and after they had completed at least four SNAP-Ed curricula.

Table 1. SNAP-Ed Curriculum for Increasing Fruit and Vegetable Consumption

| Curriculum | Age/Grade | Description | Lessons |
|---|--------------|--|--|
| Food Sense Basics | Adults | Curriculum comprised of 9 lessons based on the 2010 Dietary Guidelines and MyPlate. | Dietary Guidelines/MyPlate Menu Planning and Shopping Food Safety Grains Fruits and Vegetables Milk and Dairy Foods Protein Foods Feeding Infants and Children Gardening Basics |
| Food Sense Vegetables, Food Sense Fruits, and Food Sense Grains | Adults | Curriculum based on one in-season vegetable, fruit and/or grain per month. | All lessons are available online at www.extension.usu.edu/fsne |
| Loving Your Family, Feeding Their Future | Adults | Curriculum that supports the following behaviors: Eat fruits and vegetables, whole grains, and fat-free or low-fat milk and milk products every day; be physically active every day as part of a healthy lifestyle; balance calorie intake with calories expended. | Family Meals Vegetables and Fruits How Much: Food and Physical Activity Family Time: Active and Fun |
| Eat Smart, Live Strong | Older Adults | Curriculum developed for able-bodied, independent, older adults, designed to improve fruit and vegetable consumption and physical activity among 60-74 year olds who are SNAP eligible. | Reach your goals, Step by Step Challenges and Solutions Colorful and Classic Favorites Eat Smart, Spend Less |

Results

Participants in the Utah SNAP-Ed program increased their daily vegetable (Table 2) and fruit (Table 3) intake following at least four curricula in the SNAP-Ed program. This increase in intake was significant across all five years (2007-2011) of behavioral data. For example, in 2007, the average daily vegetable intake for Utah SNAP-Ed participants was 1.71 servings of vegetables per day at pre-program whereas by the completion of the SNAP-Ed curricula, the average intake of vegetables was 3.09.

Table 2. Daily vegetable servings by Utah SNAP-Ed participants

| Year | Participants who took 4+ lessons | Pre-program Mean and Standard Deviation | Post-program Mean and Standard Deviation | P-Value |
|------|----------------------------------|---|--|---------|
| 2007 | 88 | 1.71 ± 1.47 | 3.09 ± 1.34 | ≤0.00 |
| 2008 | 110 | 1.81 ± 1.09 | 3.01 ± 0.53 | ≤0.00 |
| 2009 | 179 | 1.91 ± 1.18 | 2.84 ± 0.83 | ≤0.00 |
| 2010 | 180 | 1.83 ± 1.29 | 2.88 ± 0.95 | ≤0.00 |
| 2011 | 221 | 2.11 ± 1.29 | 2.79 ± 1.07 | ≤0.00 |

Table 3. Daily fruit servings by Utah SNAP-Ed participants

| Year | Participants who took 4+ lessons | Pre-program Mean and Standard Deviation | Post-program Mean and Standard Deviation | P-Value |
|------|----------------------------------|---|--|---------|
| 2007 | 93 | 1.95 ± 1.57 | 3.0 ± 0.96 | ≤0.00 |
| 2008 | 109 | 1.97 ± 1.32 | 2.81 ± 0.70 | ≤0.00 |
| 2009 | 183 | 2.05 ± 1.53 | 3.03 ± 0.75 | ≤0.00 |
| 2010 | 180 | 2.01 ± 1.39 | 2.94 ± 0.82 | ≤0.00 |
| 2011 | 217 | 2.11 ± 1.29 | 3.04 ± 5.44 | ≤0.00 |

Conclusion

A barrier to low-income people purchasing and eating fruits and vegetables is the perceived high cost (Bilsard and Stewart 2006; Frazao et al. 2007; Guthrie et al. 2007). Participants who received four or more educational SNAP-Ed classes gained confidence and understanding of how to incorporate fruits and vegetables into their food budgets and diets. Thus, the consistent education available through SNAP-Ed programs can influence the healthy food choices of participants.

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SNAP-Ed Improves Food Safety Practices Through Nutrition Education

Debra Christofferson MDA, RD; Janet Smith MS; Karin Allen PhD; Heidi LeBlanc MS, CFCS; Marie Stosich, RD

Abstract:

Roughly 48 million people are exposed to foodborne illnesses each year, many of which occur in the home, making it critically important for consumers to understand and follow food safety practices. Food safety practices are often observed, modeled, and taught through nutrition lessons and demonstrations. Through self-reported post/pre behavior questionnaires, Utah State University Supplemental Nutrition Assistance Program-Education (SNAP-Ed) demonstrates that low-income individuals show increased intent to follow food safety practices by properly cooking, chilling, and separating food items, and properly cleaning food preparation surfaces through consistent nutrition education consisting of four or more lessons.

Introduction:

According to recently released estimates from the Centers for Disease Control (CDC), 31 known pathogens are responsible for 9.4 million cases of foodborne illness annually in the U.S. (Scallan et al., 2011a), with an additional 38.4 million cases from unknown or unidentifiable foodborne sources (Scallan et al., 2011b). Redmond and Griffith (2003) suggest that a considerable proportion of foodborne illness cases are the result of improper handling in the home. However, only 15% of surveyed consumers considered home kitchens to be the most likely source of food contamination (USDA FSIS, 2002). The costs associated with foodborne illness include not only medical care, but also time missed at work (Medeiros et al., 2001). For low-income families, this financial burden may be considerable.

Unfortunately, many consumers tend to be wary of food safety information from "official" sources (Jacob et al., 2010). The USDA (2002) reports that, despite improvements in basic food handling practices over a five year period, consumers continue to rely on media outlets, including cooking programs, for their food safety information. Programs such as Utah Supplemental Nutrition Assistance Program Education (SNAP-Ed), where participants interact with paraprofessionals who are more likely to be seen as peers, offer a unique opportunity to reinforce food safety practices through demonstration.

Curriculum used by Utah SNAP-Ed supports the most recent Dietary Guidelines for Americans and MyPlate and includes the message to keep food safe by following the four FightBac! recommendations: Clean, Separate, Cook, and Chill. Although the curriculum contains one lesson specifically addressing food safety, participants in the program do not have to participate in this lesson to learn the FightBac! concepts, as they are demonstrated in almost every lesson taught. In this way, participants are repeatedly exposed to correct food safety practices even in the absence of a specific food safety lesson.

Purpose:

To evaluate if SNAP-Ed participants participating in four or more lessons demonstrate increased intent to follow food safety practices by properly cooking, chilling, and separating food items and properly cleaning food preparation surfaces.

Methods:

Utah SNAP-Ed nutrition education assistants (NEAs) receive extensive food safety training and teach basic nutrition education, menu planning, sensible food shopping, and food preparation skills to low-income individuals. The trained NEAs recruited participants to take the SNAP-Ed lessons through a variety of methods including word of mouth, agency referral, state SNAP participation lists, and local advertisements. Recruited participants were then taught up to ten lessons, depending on individual need, desire, and circumstance.

After participating in four or more lessons, individuals completed a post/pre behavior checklist. The behavior checklist asked individuals to rate behaviors before and after taking the Utah SNAP-Ed lesson series. The data collected in the behavior checklist consisted of 20 statements, including the following food safety statements: refrigerate meat and dairy within two hours of shopping; thaw frozen foods such as meats in the refrigerator; wash hands before food preparation or eating; prepare raw foods separately from other foods. Data collected from the behavior checklists was processed using the Remark® scanning system, where responses were coded numerically (1=never; 2=seldom; 3=sometimes; 4=usually; 5=always). Paired-t analysis of responses for pre- and post-behaviors was conducted using SAS version 9.2 (SAS Institute, Cary, NC).

Results:

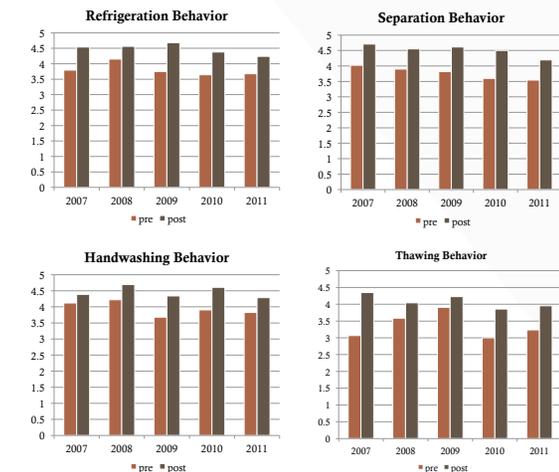
Participants in the Utah SNAP-Ed program increased the four core food safety practices recommended by the USDA after completing at least four curriculum lessons in the SNAP-Ed program (Table 1). This increase in healthy food safety practices was consistent across five years (2007-2011) of pre/post behavioral checklist data collection (Figure 1).

Table 1. Food Safety Practices Among Utah SNAP-Ed Participants.

| Food Safety Behavior | Number of Responses | "Pre" Response* | "Post" Response* | Difference |
|---|---------------------|-----------------|------------------|-----------------|
| Chill (Refrigerate foods properly) | 655 | 3.8 ± 1.3 | 4.4 ± 0.9 | 0.6 p<0.0001 |
| Separate (Keep raw and ready to eat foods separate) | 644 | 3.6 ± 1.2 | 4.4 ± 0.8 | 0.7 p<0.0001 |
| Clean (Wash hands and surfaces) | 642 | 4.0 ± 1.2 | 4.5 ± 0.9 | 0.5 p<0.0001 |
| Thaw (Maintain safe temperature) | 656 | 3.2 ± 1.3 | 4.0 ± 1.1 | 0.8 p<0.0001 |

*Mean ± Standard Deviation

Figure 1. Pre- and Post- Response means by year.



Discussion:

Food Safety practices are often observed, modeled, and taught through nutrition lessons and demonstrations. SNAP-Ed participants in Utah did not have to complete the specific food safety lesson in the traditional curriculum to increase food safety practices. Rather, participants increased food safety practices by observing what was important to the paraprofessional teaching the lesson.

Participants who received four or more educational SNAP-Ed classes gained the confidence and understanding of basic food safety practices that will help them and their families improve health and food security by keeping their food supplies safe. Thus, the consistent education available through SNAP-Ed programs can influence food security through food safety for low-income participants.

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Evidence Based Outcome Driven

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 Utah Extension Association of Family and Consumer Sciences
 Utah Academy of Nutrition and Dietetics

ASSESSMENT OF NEWLY IMPLEMENTED ONLINE EDUCATION PROGRAM

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 Utah State University Department of Nutrition, Dietetics, and Food Sciences

Introduction

There are currently 350,000 people in Utah at or below the poverty line. Amongst these people, there is an increasing number developing health complications. Multiple government programs have been developed as a prevention measure among low-income families, including the Supplemental Nutrition Assistance Program (SNAP), to offer ways in which families can increase their access to food. During the 2010 fiscal year, an average of 40.3 million people received SNAP benefits in the United States.

The Supplemental Nutrition Assistance Program-Education (SNAP-Ed) is the education component of SNAP. In Utah SNAP-Ed is administered through the Utah State University Extension Food Sense program. Their target audience includes low-income families at or below 185% of the poverty level. In 2010, this program taught 11,398 adults through face-to-face education. This number represents a 13% increase in people taught from the previous year.

The goal of the SNAP-Ed program is to improve the likelihood that SNAP participants will make healthy food choices within a limited budget. In order to support an increased number of families, Utah's Food Sense program has incorporated technological learning along with face-to-face education.

Studies have shown that many people are interested in technology based education because of the instant personalized feedback they receive. Individually tailored counseling and education provided by face-to-face education is ideal; however, it is often too time-consuming and therefore too expensive to apply to every individual. This study analyzes a cost-benefit analysis between the two methods.

Materials and Methods

Data from a cross sectional, convenience study was analyzed to determine potential cost minimization of the Food Sense online nutrition education program. Our study population consisted of individuals who qualified for the Food Sense program in 2011. These individuals were targeted to receive nutrition education by Nutrition Education Assistants (NEAs).

Fifty-nine subjects were evaluated as if they had received face-to-face lessons and were compared to the costs of the online program, where data was also gathered from 59 people who participated in a pilot online education program.

Once data was collected it was compiled into a spread sheet and the following calculations were made:

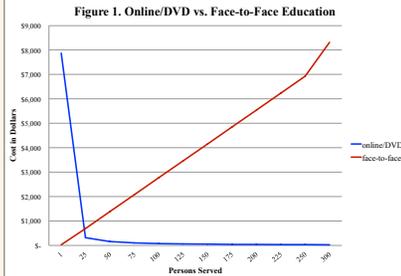
- Calculation for **face-to-face** instruction:
- (Time spent traveling) + (Averaged 45 min teaching time x \$10.55 per hour)
 - Travel reimbursement of 48.5 cents per mile.

- The costs of the **online** program included the following:
- Remark Web Survey Program: \$995.00 (one-time expense)
 - Softchalk Program: \$695 (one-time expense)
 - Softchalk Connect Plus: \$180 (yearly fee)
 - DVD development costs: \$6,000.00 (one-time expense)

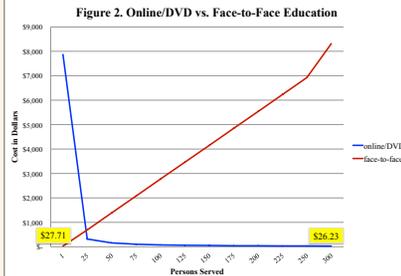
This cost was then compared to the cost determined for face to face education.

Results

Figure 1 demonstrates a potential cost savings per person with online and DVD education. Exact numbers of participants and program expansion costs are unknown, but were estimated based on current expenditures and participation rates. As portrayed in the table, the cost of delivering education via online and DVD methods decreases as the number of users increase. In contrast, the cost of education for face-to-face participants increases at the same rate as the number of participants increase.



Currently, the cost for instruction, materials, and travel for traditional face-to-face methods is approximately \$27.00 per person. Figure 2 indicates that once 300 people are instructed with online/DVD education the cost will be similar at \$26.00 per person. This would be expected to decrease further as participant numbers increased.



Estimation for program costs are defined in these tables. These estimations were based on the 59 people who participated in the online education program and were compared with face-to-face costs for the same number of participants.

| Annual Costs in Dollars | | | |
|--|---------------|--------------|--------------|
| | DVD/Online | | |
| | Year 1 | Year 2 | Year 3 |
| Fixed Costs | | | |
| Remark Web | \$995 | 0 | 0 |
| Remark Office | \$695 | 0 | \$695 |
| Softchalk | \$180 | \$180 | \$180 |
| Softchalk Connect | | | |
| DVD Development, estimated Food Sense salary, 200 DVD copies | \$6000 | 0 | 0 |
| Total Fixed Costs | \$7870 | \$180 | \$875 |
| Variable Costs | | | |
| Travel Time and Instruction time | 0 | 0 | 0 |
| Mileage | 0 | 0 | 0 |
| Food, Supplies, Evaluations | 0 | 0 | 0 |
| Total Variable Costs | 0 | 0 | 0 |
| Total Annual Cost | \$7870 | \$180 | \$875 |
| Average Annual Cost | \$2975 | | |

| Annual Costs in Dollars | | | |
|--|---------------|---------------|---------------|
| | Face-to-Face | | |
| | Year 1 | Year 2 | Year 3 |
| Fixed Costs | | | |
| Remark Web | 0 | 0 | 0 |
| Remark Office | \$395 | \$395 | \$395 |
| Softchalk | 0 | 0 | 0 |
| Softchalk Connect | 0 | 0 | 0 |
| DVD Development, estimated Food Sense salary, 200 DVD copies | 0 | 0 | 0 |
| Total Fixed Costs | \$395 | \$395 | \$395 |
| Variable Costs | | | |
| Travel Time and Instruction time | \$787 | \$787 | \$787 |
| Mileage | \$457 | \$457 | \$457 |
| Food, Supplies, Evaluations | \$59 | \$59 | \$59 |
| Total Variable Costs | \$1303 | \$1303 | \$1303 |
| Total Annual Cost | \$1698 | \$1698 | \$1698 |
| Average Annual Cost | \$1698 | | |

Conclusions

The goal of this program is to provide recipients with nutrition education to improve lifestyle behaviors and overall health of individuals and families. Moderate to high intensity dietary counseling has been shown to make a marked improvement in perception of eating behaviors and food choices.

Extending the reach of Food Sense education is critical to the improvement of health in Utah's SNAP participants. Online education is expected to increase access to nutrition education and thereby influence future behavior toward positive lifestyle changes. This will result in decreased risk for morbidity and mortality associated with poor diet choices. The total potential for cost benefit cannot be projected at this time, however future study of usage and costs are expected to show a significant decrease in costs associated with the Food Sense program.

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For further information

Visit Utah State University Food Sense website at: <http://extension.usu.edu/fns>



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Evidence Based Outcome Driven

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Utah Academy of Nutrition and Dietetics



Preschool Nutrition Education and Influences on Food Neophobia

Kelsey Eller RD; Nedra Christensen PhD,RD; Janet Anderson MS,RD; Lisa Boyce PhD; Debra Christofferson MDA,RD; Heidi LeBlanc MS,CFCS



Abstract

Food Sense Kids is an interactive nutrition education curriculum designed to target food neophobia in 3 to 5 year old children. It was piloted at two child care facilities using baseline and post-intervention surveys and included 51 total participants. The curriculum was evaluated on its ability to engage children, be effective across multiple settings, and be easily implemented into a variety of preschool programs. The curriculum was also examined to determine its influence on food neophobia, food knowledge, and food preferences.

Introduction

Food neophobia, the fear of new foods, has been identified as a significant barrier to the intake of healthy foods including fruits and vegetables in young children (1). Food neophobia can hinder dietary quality (2) as well as dietary variety by limiting the development of food preferences (3). Neophobia may also be linked to the development of childhood obesity, and thus interventions that target food neophobia in preschool aged children may be successful in improving healthy eating habits and potentially aid in reversing the obesity trend (3).

Methods

Curriculum & Delivery

- *Food Sense Kids* has 33 lessons, each on a vegetable, fruit, or grain
- Each lesson contained:
 - Food sensory experiences (discussion and snacks)
 - Arts & Crafts (AC), Reading & Writing (RW), and physical activities (PA)
 - Recipes and cooking tips for parents
- Implemented in Spring, Summer, & Fall 2011 at Facility 1 (average 31 lessons)
- Implemented in Summer 2011 at Facility 2 (22 lessons)

Measures

- Child Food Neophobia Scale (CFNS) used to measure neophobia
- Food Preference Survey (FPS) used to measure food knowledge, preferences
 - Administered by researcher one-on-one with each child using pictures
 - Also administered to parents regarding their child's intake
- Engagement Check II to measure classroom engagement
- Parent and Teacher feedback surveys

Statistical Analysis

- Paired t-tests for PA, RW, AC
- Mixed models analysis (neophobia, knowledge, preferences)
- Repeated measures ANOVA (differences between facilities)

Statistical significance was defined as a p-value <0.05

Results

Neophobia

- Food neophobia did not change from baseline to post-intervention ($p = 0.12$)
- Food neophobia did not differ between facilities ($p = 0.97$)

Food Preferences

- Child food preferences did not change from baseline to post-intervention according to child data ($p = 0.135$) and parent data ($p = 0.376$)
- Child food preferences did not differ between facilities according to child data ($p = 0.642$) and parent data ($p = 0.197$)

Food Knowledge

- Child food knowledge at both facilities increased significantly ($p < .0001$)

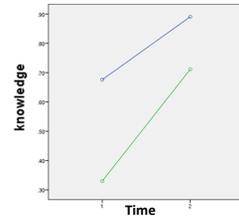
Child data:

- Facility 1 improved from 67 to 89%
- Facility 2 improved from 33 to 71%

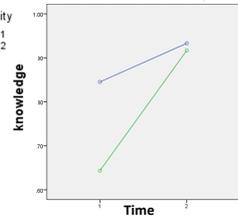
Parent data:

- Facility 1 improved from 84% to 93%
- Facility 2 improved from 64 to 91%

Child Knowledge Levels by Facility from Baseline to Post-Intervention (Child Responses)



Child Knowledge Levels by Facility from Baseline to Post-Intervention (Parent Responses)



Parent Feedback

- 75% agreed their child expressed a desire to eat the study foods at home
- 58% agreed they had seen changes in their child's food preferences
- 57% agreed their child was more willing to taste new, unfamiliar foods

Teacher Feedback

100% of teachers agreed:

- Nutrition education on unfamiliar foods is necessary in preschool settings
- Activities were developmentally appropriate for the 3-5 age group
- Activities presented could be easily implemented into a variety of programs
- A positive environment at snack time impacts child food acceptance

87.5% of teachers agreed:

- Recipes used could be easily implemented into a variety of programs
- Student were more willing to try unfamiliar foods as a result of the study

Engagement

- AC engaged 95.8% of children on average
- RW engaged 90.2% of children on average
- PA engaged 91.3% of children on average
- AC were significantly more engaging than PA ($p = 0.003$) and RW ($p < .000$)



Conclusions

- Food knowledge increased significantly at both facilities.
- There was not significant changes in neophobia (CFNS) or food preferences (FPS). This was explained mainly by the lack of multiple taste exposures to each food.
- Parent feedback was encouraging, with a majority of parents reporting changes in their child's neophobia and food preferences.
- Teacher feedback and engagement data indicated that *Food Sense Kids* was engaging, equally effective across multiple settings, and easily implemented into multiple programs.

Suggestions for the future:

- Future studies should incorporate multiple exposures to each food into *Food Sense Kids*, which may lead to beneficial effects on food neophobia and food preferences.
- Gaining cooperation and understanding of teachers is essential in order to help increase child food acceptance and overall willingness to sample novel foods.

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If you have additional questions or would like copies of study materials used, please contact Kelsey Eller at kelsey.eller@aggiemail.usu.edu

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Evidence Based Outcome Driven

Presented at:

Extension Annual Conference

Utah Extension Association of Family and Consumer Sciences

Utah Academy of Nutrition and Dietetics



PARENT NUTRITION EDUCATION AND THE INFLUENCE ON FAMILY LIFESTYLE BEHAVIOR CHANGES



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Abstract

Design: An observational study that looked at the impact of a series of parent nutrition lessons on changing lifestyle behaviors. Data was collected in three different rounds over one year.

Setting: Dolores Dore Early Care and Education Center, Best Friends Child Development Center, and Up to 3 Early Intervention.

Participants: Parents with young children aged infant to five years (n=28)

Interventions: Parents received a series of nutrition lessons. Topics covered included: family mealtime, feeding preschoolers, meal planning, shopping, quick meal ideas, fruit and vegetables, and whole grains. A pre-and post-evaluation was administered to measure change of lifestyle behaviors.

Variables Measured: The level of family lifestyle behavior changes after participating in a series of parent nutrition lessons.

Analysis: Dependent t tests pre- to posttest and independent t tests parent to child food frequency (FFQ).

Results: Children had a significant change in fruit, vegetable, and refined grain consumption. Parents had significant changes in fruit consumption. There were no significant changes in whole grain consumption. Additionally there were significant changes in parent body mass index (BMI), meals prepared at home, family mealtime, and physical activity.

Conclusion and Implications: Parent nutrition lessons were effective in decreasing parent BMI and increasing child fruit and vegetable consumption, parent fruit consumption, family mealtime occurrence, and home meal preparation.

Introduction

- The 2010 Dietary Guidelines for Americans reported that 32% of children and adolescents between the ages of 2 and 19 years are overweight or obese, with 17% of children being obese. Hypertension, type 2 diabetes, and dyslipidemia are now frequently seen in overweight and obese children. Due to the detrimental health consequences associated with obesity, decreasing its prevalence is a high priority for government officials and health care providers.
- Childhood obesity prevention programs should utilize behavior modification techniques to promote lifelong lifestyle changes. Lifestyle modification places emphasis on long term lifestyle and behavior change and encourages increased caloric expenditure while decreasing caloric intake.
- Most children consume excessive amounts of fat and sugar and do not consume enough fruits, vegetables, and whole grains. Family mealtime is associated with increased intakes of fruits, vegetables, and grains, and decreased soft drink consumption. Family mealtime during childhood encourages life long healthy food habits, which can aid in the prevention of obesity.
- To date, the majority of childhood obesity interventions have had short term success and have occurred in schools with older children and adolescents. Evidence suggests that eating behaviors are learned at an early age, and therefore, preventative efforts during early childhood may have life-long success in preventing obesity. Previous studies have also shown that interventions that involved parents were more effective.

Objectives

- Improve lifestyle behaviors among families through a series of SNAP-Ed parent nutrition educations.
- Implement a SNAP-Ed Extension Service program that is effective in the prevention of childhood obesity and can be repeated at various locations.

Methods

The series of nutrition educations was developed for parents of young children between the ages of infant to five years. Three hundred and eight parents were recruited from Dolores Dore Early Care and Education (DDE Center), Best Friends Child Development Center (Best Friends CDC), and Up to 3 Early Intervention. Parents with children aged infant through five years who were not associated with the above programs above but wanted to be involved were also allowed to participate. Data was collected in 3 different rounds.

| Rounds of Data Collection | |
|---------------------------|----------------------------|
| DDE Cent | January 2011-May 2011 |
| Best Friends CDC | June 2011-August 2011 |
| Up to 3 | October 2011-December 2011 |

- The series of SNAP-Ed nutrition education consisted of four nutrition lessons: Family Mealtime and Overcoming the Barriers of Family Mealtime; Feeding Preschoolers: Introduction to New Foods; Meal Planning, Shopping, and Quick Meal Ideas; Incorporating Whole Foods into Family Mealtime.
- The same curriculum was made available in two different forms: lesson plan for a live group class or recorded PowerPoint presentations that were interactive through the use of SoftChalk®.
- In order to be included in this study, parents had to participate in at least 3 of the nutrition educations. There were a total of 28 participants in this study. Ten participants attended group classes and 18 participants used the SoftChalk® lessons. Fifteen of the participants had 3-5 year old children participating in a preschool nutrition study at either DDE Center or Best Friends CDC.
- The following evaluation tools were used in the pre- and post-evaluations: SNAP-Ed Behavior Checklist, SNAP-Ed FFQ (2010), Nutrition Knowledge Survey, parent BMI, Physical Activity Survey, and Class Participant Form. The Behavior Checklist, FFQ, and Class Participant Form were required documents per the SNAP-Ed program.

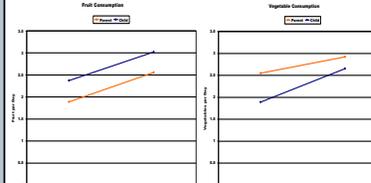
BMI

| BMI Pre/Post T-Test | | | |
|---------------------|------|-----|------|
| | Mean | SD | Sig. |
| PRE | 26.7 | 6.2 | 1 |
| POST | 26.2 | 6.0 | 0.00 |

After the series of nutrition educations, there was a significant change in parent BMI.

Food Frequency

| Child FFQ Pre/Post T-Test | | | | Parent FFQ Pre/Post T-Test | | | | | |
|---------------------------|----|------|------|----------------------------|--------------------|----|------|------|------|
| | N | Mean | SD | Sig. | | N | Mean | SD | Sig. |
| Fruit Pre | 28 | 2.37 | 1.59 | | Fruit Pre | 28 | 1.89 | 1.1 | |
| Fruit Post | 28 | 3.02 | 1.78 | 0.02 | Fruit Post | 28 | 2.56 | 1.34 | 0.00 |
| Veggie Pre | 28 | 1.89 | 1.2 | | Veggie Pre | 28 | 2.55 | 2.0 | |
| Veggie Post | 28 | 2.65 | 1.97 | 0.00 | Veggie Post | 28 | 2.92 | 1.75 | 0.21 |
| WholeGr Pre | 28 | 1.87 | 1.32 | | WholeGr Post | 28 | 1.43 | 0.8 | |
| WholeGr Post | 28 | 1.87 | 1.32 | | WholeGr Pre/Post | 28 | 1.68 | 1.2 | 0.28 |
| RefinedGr Pre | 28 | 1 | 1 | | RefinedGr Post | 28 | 1.23 | 1.0 | |
| RefinedGr Post | 28 | 1 | 1 | | RefinedGr Pre/Post | 28 | 1.23 | 2.4 | 0.81 |



Significant changes in child fruit, vegetable and refined grain consumption with significant changes in adult fruit consumption. No significant changes in whole grain consumption in children or parents. Child fruit consumption was significantly higher in both the pre- and posttest compared to parents. Adult vegetable consumption was significantly higher in both pre- and post-test compared to children.

Behavior Checklist

| Behavior Checklist Pre/Post T-Test | | | | |
|--|----|------|-----|------|
| | N | Mean | SD | Sig. |
| PRE Physically active 30 min per day 5 days a week | 28 | 3.32 | 1.3 | 1 |
| POST Physically active 30 min per day 5 days a week | 28 | 4.16 | 0.6 | 0.0 |
| PRE Walk, take the stairs or be active in other ways | 28 | 3.77 | 1.1 | 1 |
| POST Walk, take the stairs, or be active in other ways | 28 | 4.35 | 0.5 | 0.0 |
| PRE Prepare meals at home at least 3 times a week | 28 | 4.58 | 0.5 | 8 |
| POST Prepare meals at home at least 3 times a week | 28 | 4.69 | 0.4 | 7 |
| PRE Family mealtime at least 3 times a week | 28 | 4.69 | 0.5 | 5 |
| POST Family mealtime at least 3 times a week | 28 | 4.73 | 0.5 | 0.0 |

Significant changes in physical activity, meals prepared at home at least 3 times per week, and family mealtime at least 3 times per week.

Conclusion

- The series parent nutrition educations occurred over a period of 3 to 4 months. Parents completed a pre- and post evaluation. An analysis of the results found:
 - There was a significant decrease in parent BMI. Previous family-based obesity intervention studies have shown that parent weight change is correlated to child weight change.
 - There was a significant increase in fruit and vegetable consumption among children.
 - There was a significant increase in fruit consumption among parents.
 - There was no significant change in whole grain consumption among both the parents and children. Additionally, consumption of refined grains among children was significantly higher.
 - There was a significant increase in physical activity.
 - There was significant increase in the occurrence of family mealtime and home prepared meals.
- Fruit and vegetable consumption was discussed in each lesson. However, whole grains were mainly discussed in the last lesson. Which may account for the lack of change in whole grain consumption as it gave families little to no time to make changes to their diet before completing the post-evaluation.
- The series of parent nutrition educations improved family lifestyle behaviors by increasing fruit and vegetable consumption, physical activity, family mealtime occurrence, and frequency of home prepared meals.
- This program model can be shared with other extension service programs and may be effective in the prevention of childhood obesity.

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Evidence Based Outcome Driven

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Online Nutrition Education in SNAP-Ed Participants

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Abstract

In response to the need for a teaching tool that can reach potential SNAP-Ed participants at a low cost, the Utah SNAP-Ed program created an online nutrition education program. Preliminary data shows that low-income individuals can access online lessons and that some prefer online teaching. Utah SNAP-Ed will use the online program for participant education, conducting further research, and to share as a model for other similar public health programs. Further research and analysis of program results will be needed to determine participant satisfaction, intent to change behavior, and total potential program cost savings.

Introduction

Nutrition education is needed among low-income individuals as they are at increased risk for poor quality diets (high in fats and sugars and low in fruits, vegetables, and nutrients), obesity, and food insecurity (1-4). Supplemental Nutrition Assistance Program- Education (SNAP-Ed) programs have been shown to be beneficial in improving diets among low-income populations (4-6). Currently, not all qualifying individuals are receiving free nutrition education offered by SNAP-Ed due to lack of desire/ability to participate and/or program budget restraints. Because of the vast diversity of the population a variety of nutrition education methods are needed to appeal to every audience (7-9). An assortment of learning schedules, learning styles, and literacy levels present a challenge for SNAP-Ed program directors and management teams when creating teaching materials for this audience (7-9).

Utah SNAP-Ed is constantly seeking ways to improve program quality and reach while staying within a limited program budget. Providing DVD and/or online nutrition education can be beneficial as it may be cost-effective for large spread out areas where travel for nutrition educators incur significant program costs (9,10). This teaching method is also one way to cater to a sector of the low-income population who do not prefer to take traditional face-to-face group classes or individual classes in their home (7-9). Due to expansion of access to computers and internet in recent years, it is thought that even low-based audiences have access to the internet and can learn using web-based delivery methods (11-14).

Objective

The objective of this project was to create an online nutrition education program to be used for for:

- 1) SNAP-Ed participant education.
- 2) Data collection for program managers concerning cost-effectiveness, program reach, and participant intent to change behavior.
- 3) A model for other programs working with nutrition education in low-income individuals.

Chart 1. Program Creation Outline



Methods

Online nutrition lessons were created by the Utah SNAP-Ed program and posted on the program website. The lessons consisted of short videos posted to Utah State University Extension's online YouTube channel. Videos and lesson surveys were linked to a lesson outline that guided participants through the program. The lesson outline was created in Softchalk® lesson creation software and lesson surveys were created in Remark Web Survey® 5. Data was collected using an online password protected database created for Utah SNAP-Ed by Remark Web Survey®5 software on the Utah State University main internet server. Participants were recruited using postcards that were mailed to 6,150 Supplemental Nutrition Assistance Program (SNAP) participants in the state of Utah. The first 60 participants who completed the videos and surveys were rewarded with a \$25.00 pre-paid visa card for testing the online lessons. Refer to Chart 1 for project creation outline.

Results

Over 60 participants accessed the online lessons, videos and surveys within four days of when households began receiving marketing postcards. Survey results show that out of those who completed the program 80% were SNAP participants (Chart 2). Results also indicated that internet was the preferred learning method with 79% of those responding to a preferred teaching question reporting online to be their choice learning method (Chart 3).

Chart 2. Program Participants Who Receive SNAP Benefits
n = 60

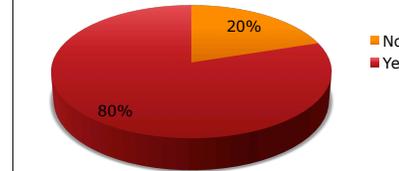
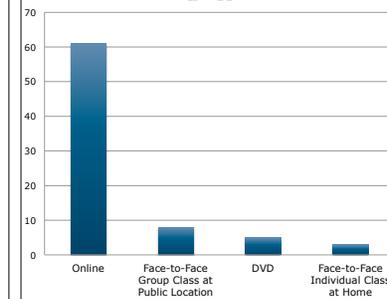


Chart 3. Preferred Learning Methods
n = 77



Conclusion

Although further research and analysis of results is needed to determine participant satisfaction, intent to change behavior, and program cost savings, it was found that an online nutrition education program could be created for and accessed by low-income participants. Online learning was also found to be a preferred learning method for study participants, the majority of which were low-income.

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EARs-Adults

| 1a. Direct Education: SNAP -Ed PARTICIPANTS by Age and SNAP Status | | | | | | |
|--|-------------|------------|--------------|------------------|------------|-------------------|
| X Actual Counts of Participants unduplicated | | | | | | |
| Estimated Counts of Participants | | | | | | |
| | Less than 5 | 5-17 Years | 18-59 years | 60 Years or more | No Data | All Ages Combined |
| Number of SNAP Recipients in SNAP-Ed | 5 | 58 | 1,680 | 250 | 80 | 2,073 |
| Number of All Other Participants in SNAP-Ed | 0 | 205 | 2,698 | 1,091 | 108 | 4,102 |
| No data | 0 | 40 | 157 | 67 | 17 | 281 |
| Total Number of SNAP-Ed participants | 5 | 303 | 4,535 | 1,408 | 205 | 6,456 |
| Source: Adult Class Participant Form | | | | | | |

| 2a. SNAP ED Participants by Gender Adults | | | | |
|--|--------|------|---------|-------------|
| X Actual Counts of Participants unduplicated | | | | |
| Estimated Counts of Participants | | | | |
| | Female | Male | No Data | Total |
| Number of SNAP Ed Participants | 4894 | 1410 | 152 | 6456 |

EARs-Adults

3. Direct Education: Race and Ethnicity Adults

X Actual Counts of Participants unduplicated

Estimated Counts of Participants

| | | Number of Hispanic or Latina SNAP-Ed Participants by Race | Number of non Hispanic or Latina SNAP-Ed Participants by Race |
|--------------------------------------|---|---|---|
| Individuals Reporting ONLY ONE RACE | 1. American Indian or Alaska Native | 78 | 110 |
| | 2. Asian | 15 | 381 |
| | 3. Black or African American | 2 | 176 |
| | 4. Native Hawaiian or other Pacific Islander | 9 | 44 |
| | 5. White | 575 | 3,839 |
| | no data | 734 | 305 |
| Individuals Reporting MULTIPLE RACES | 6. American Indian or Alaska Native and White | 15 | 114 |
| | 7. Asian and White | 3 | 20 |
| | 8. Black or African American and White | 1 | 20 |
| | 9. American Indian or Alaska Native and Black or African American | 3 | |
| | 10. All Others Reporting More than One Race | 4 | 8 |

EARs-Adults

4. Direct Education: Numbers of SNAP-Ed Delivery Sites by Type of Setting

| Type of Setting | Number of Different Sites/Locations | Type of Setting | Number of Different Sites/Locations |
|--|-------------------------------------|---|-------------------------------------|
| Adult Education and Job Training Sites | 10 | Libraries | 13 |
| Adult Rehabilitation Centers | 18 | Churches | 32 |
| Worksites | 5 | Public/Community Health Centers | 19 |
| Community Centers | 12 | Public Schools | 97 |
| Elderly Service Centers | 18 | Head Start Programs | 29 |
| Emergency Food Assistance Sites | 25 | Other Youth Education Sites (includes parks and recreation) | 22 |
| Extension Offices | 45 | Shelters | 1 |
| Farmers Markets | 2 | WIC Programs | 7 |
| SNAP Offices | 17 | Other (Please specify): Baby Your Baby | 2 |
| Food Stores | 3 | Other (Please specify): | |
| Public Housing | 16 | Other (Please specify): | |
| Individual Homes | 1166 | Other (Please specify): | |

EARs-Adults

| 5. Direct Education Programming Format | | |
|--|--------------|-------------------|
| Format | # of Lessons | Length of Class |
| Single Session | 0 | Less than 30 Min |
| | 495 | 30 to 60 minutes |
| | 280 | 61 to 90 minutes |
| | 94 | 91 to 120 minutes |
| | 47 | Display Booth |
| | 7 | no data |
| 2-4 Session | 222 | Less than 30 Min |
| | 203 | 30 to 60 minutes |
| | 55 | 61 to 90 minutes |
| | 22 | 91 to 120 minutes |
| | 43 | Over 120 minutes |
| | 2 | Display Booth |
| 5-9 Session | 5 | no data |
| | 13 | Less than 30 Min |
| | 814 | 30 to 60 minutes |
| | 295 | 61 to 90 minutes |
| | 48 | 91 to 120 minutes |
| | 11 | More than 120 |
| | 1 | mail |
| | 1 | Display Booth |
| 10 or More Sessions | 5 | no data |
| | 30 | Less than 30 Min |
| | 1298 | 30 to 60 minutes |
| | 280 | 61 to 90 minutes |
| | 15 | 91 to 120 minutes |
| | 14 | Display Booth |
| | 3 | no data |
| | 1 | mail |
| | 1 | Display Booth |
| 5 | no data | |

EARs-Adults

| 8a Indirect Education | | | |
|--------------------------------|--|---------------------|----------------|
| | | Check if applicable | Number Reached |
| Types of Materials Distributed | Fact Sheets/ Pamphlets/ Newsletters | TRUE | 49,743 |
| | Posters/ Calendars | TRUE | 65,138 |
| | Promotional Materials w/nutrition messages | TRUE | 14,620 |
| | Website | TRUE | 53,508 |
| | Electronic (Email) materials/info distribution | TRUE | 136,852 |
| | Videos/CD ROM | TRUE | 5,497 |
| | Other | TRUE | 4,410 |
| Recruiting | Mailings | TRUE | 6,368 |
| | Email | TRUE | 3,823 |
| | Phone | TRUE | 1,806 |
| | Other | TRUE | 916 |

| 8b Estimated Size of Audiences Reached Through Communication and Events | | |
|---|---|------------------------|
| | Estimated Number of Target Population Reached | Source of Data |
| Nutrition Education Radio PSAs | 738,050 | Commercial Market |
| Nutriton Education TV PSAs | 1,096,707 | Commercial Market |
| Nutrition Education Articles | 258,717 | Commercial Market |
| Billboard, Bus or Van Wraps, or Other Signage | 12,113 | Visual Estimate |
| Community Events/Fairs - In which Participated | 20,375 | Visual Estimate/Survey |
| Community Events/Fairs - Only Sponsored | 2,674 | Visual Estimate/Survey |
| Other contacts | 2,559 | Visual Estimate/Survey |

EARs-Youth

1a. Direct Education: SNAP-Ed PARTICIPANTS by Age - Youth

X Actual Counts of Participants unduplicated

Estimated Counts of Participants Youth

| | Less than 5 | 5-17 Years Grades K-12 | No Data | All Ages Combined |
|--|-------------|---------------------------|---------|----------------------|
| Total Number of SNAP-ED Participants - multiple classes | 491 | 16,620 | | 17111 |
| Total Number of SNAP-ED Participants - one time class | 822 | 6,589 | 171 | 7582 |
| *all youth sites are 50% or more eligible for SNAP Ed benefits | | | | |

2a. Direct Education: SNAP-ED PARTICIPANTS by Gender - Youth

X Actual Counts of Participants unduplicated

Estimated Counts of Participants

| | Female | Male | Total |
|---|--------|-------|---------------|
| Number of SNAP Ed Participants - Multiple classes | 8,234 | 8,877 | 17,111 |

Source: Youth Enrollment Form

3. Direct Education: Race and Ethnicity - Youth

X Actual Counts of Participants unduplicated

Estimated Counts of Participants

| | | Number of Hispanic or Latino SNAP-Ed Participants by Race- multiple lessons | Number of non Hispanic or Latino SNAP-Ed Participants by Race- multiple lessons | Number of Hispanic or Latino SNAP-Ed Participants by Race- one time lesson | Number of non Hispanic or Latino SNAP-Ed Participants by Race- one time lesson | Totals |
|-------------------------------------|--|---|---|--|--|---------------|
| Individuals Reporting ONLY ONE RACE | 1. American Indian or Alaska Native | | 2,640 | | 254 | 2894 |
| | 2. Asian | | 283 | | 92 | 375 |
| | 3. Black or African American | | 430 | | 82 | 512 |
| | 4. Native Hawaiian or other Pacific Islander | | 214 | | 54 | 268 |
| | 5. White | 3,222 | 10,322 | 1,306 | 5,590 | 20,440 |
| | no race | 204 | | | | 204 |

EARs-Finances

| 9. Expenditures by Sources of Funding | |
|--|---------------------------------|
| | Expenditures for Reporting Year |
| 1. Public Cash Contributions -- State and Local Tax Revenue only | \$ 0.00 |
| 2. Public and Private Cash Contributions -- other than State and Local Tax Revenue | \$ 285,920.74 |
| 3. Sum of Lines 1 & 2 | \$ 285,920.74 |
| 4. Public In-Kind Contributions (non-cash) | \$ 14,887.47 |
| 5. Private Cash Contributions to State SNAP Agency only | \$ 0.00 |
| 6. Indian Tribal Organization Contributions | \$ 0.00 |
| 7. Sum of Lines 4, 5 & 6 | \$ 14,887.47 |
| 8. Federal Reimbursement | \$ 923,811.17 |
| 9. TOTAL SNAP-Ed EXPENDITURES: Sum of Lines 3, 7 & 8 | \$ 1,224,619.38 |
| 10. Expenditures by Category of Spending | |
| 1. Total Expenditures for SNAP-Ed Program Delivery | \$ 773,960.96 |
| 2. Total Expenditures for Administrative Costs | \$ 450,658.42 |
| 3. TOTAL SNAP-Ed Expenditures (State and Federal) | \$ 1,224,619.38 |

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 - Dr. Charles Carpenter
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-



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 - USU Extension Service
 - Utah State Office of Education, Family and Consumer Sciences
 - USU Department of Nutrition, Dietetics and Food Science
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 - WIC
 - Utah Food Bank
 - Utahns Against Hunger
 - Americorps
-