

Cooking Classes Increase Fruit and Vegetable Intake and Food Safety Behaviors in Youth and Adults

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INTRODUCTION

Adequate fruit and vegetable intake may help protect against many chronic diseases and promote healthy bowel function.¹ However, many Americans do not eat the recommended number of fruit and vegetable servings each day. According to the Behavioral Risk Factor Surveillance System, less than 23% of Americans consume at least 5 fruit and vegetable servings per day.² Added to the problem are occasional outbreaks of foodborne disease associated with fruits and vegetables, which threaten to overshadow the importance of fruits and vegetables in a healthful diet. According to the Centers for Disease Control and Prevention, a majority of traceable foodborne disease outbreaks result from improper handling of food in the home, including poor sanitation, improper hygiene, and cross-contamination.³

PROGRAM

The Oklahoma Cooperative Extension Service developed a program using produce cooking classes to provide education on basic fruit and vegetable preparation skills, food safety practices, and nutrition related to produce. The objective was to increase fruit and vegetable intake and improve food safety behaviors related to produce among both youth and adults.

The program included classes on a variety of fruit and vegetable preparation methods, including microwaving,

stir-frying, baking, pressure cooking, steaming, grilling, and slow cooking, and on incorporating fruits and vegetables into smoothies, salads, snacks, desserts, soups, and one-dish meals. Classes were designed to be used with both youth and adult audiences and so that food preparation could be presented by demonstration or as a hands-on experience. To increase participation and interest, participants were allowed to taste the products prepared at each class. The program was implemented in 28 counties by County Extension educators who attended in-service training on conducting and evaluating the program. Trained educators received a program compact disc that included PowerPoint presentations, handouts, recipes, background information for each class, promotion tools, and evaluation questionnaires for youth and adults. Each taught an average of 8 classes over a period of 2 months.

EVALUATION

The impact of the program on fruit and vegetable intake and food safety behaviors was evaluated using a pre-versus posteducation questionnaire that had been pilot-tested for reliability. Evaluations reflected the content of classes provided. Data were analyzed using means, frequencies, and paired *t* tests.

Six hundred two individuals participated in and completed the evaluation of the program, including 229 youth and 373 adults. The average youth age was 12, and the average adult age was 57. Significant increases in the number of fruit and vegetable servings consumed per day were observed for both youth and adults (Table 1). The average number of fruit servings per day in-

creased significantly ($P < .0001$) from 1.1 to 2.3 servings per day for youth and from 1.5 to 2.1 servings per day for adults. There was a 39% increase in the number of youth and a 17% increase in the number of adults who consumed the recommended 2 fruit servings per day. The average number of vegetable servings significantly ($P < .0001$) increased from 1.4 to 2.4 servings per day for youth and from 2.1 to 2.7 servings per day for adults. There was a 25% increase in the number of youth and an 18% increase in the number of adults who consumed the recommended 3 vegetable servings per day.

Significant improvements were also observed in safe food-handling behaviors for both youth and adults (Table 2). Thirty-eight percent of youth and 11% of adults increased ($P < .0001$) their behavior of "washing hands before preparing or eating fruits or vegetables." Twenty-nine percent of youth ($P < .0001$) and 8% of adults ($P < .0008$) increased their behavior of "washing fresh fruits and vegetables before preparation." Thirty-six percent of youth ($P < .0001$) and 7% of adults ($P < .0125$) increased their behavior of "using a clean knife and cutting board to prepare fruits or vegetables" to avoid cross-contamination.

In addition to improvements in fruit and vegetable intake and safe food-handling behaviors, on the post-evaluation, 69% of youth and 48% of adults reported "eating a new fruit or vegetable" and 67% of youth and 47% of adults reported "preparing fruits or vegetables in a new way." Increasing the variety of produce eaten improves the nutritional value of the diet and reduces the risk of exposure to pesticide residues and other toxins.

Table 1. Number of Fruit and Vegetable Servings Consumed Pre- and Posteducation by Youth and Adults

Servings per day	Youth		Adults	
	Pre	Post	Pre	Post
Number of fruit servings/day	1.1	2.3	1.5	2.1
Number of vegetable servings/day	1.4	2.4	2.1	2.7

Table 2. Percent Increase in Safe Food-Handling Behaviors by Youth and Adults.

Safe Food-Handling Behaviors	Youth	Adult
Washing hands before preparing or eating fruits or vegetables	38	11
Washing fresh fruits and vegetables before preparation	29	8
Using a clean knife and cutting board to prepare fruits or vegetables	36	7

IMPLICATIONS

Using fruit and vegetable cooking classes as an education approach was effective in increasing fruit and vegetable intake and improving food safety behaviors related to produce. Although improvements were observed for both youth and adults, the

youth particularly benefited from the hands-on approach related to improving food safety behaviors.

NOTE

This project was approved by the Oklahoma State University Institutional Review Board for Human Subjects.

REFERENCES

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