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A Formative Evaluation of the Cooking with a Chef Program

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Abstract: The Cooking with a Chef a culinary nutrition education series teams a chef and nutrition educator during cooking sessions with parents. Pilot program results were shared in the *Journal of Extension* in 2006. This formative evaluation presents data collected through focus groups and individual interviews examining program implementation, participant impressions, and program objectives during four subsequent program trials. Findings indicate high level of potential for the program building self-efficacy and change within home environment, thus increasing participant motivation to cook. Lessons learned contribute to refinement of the program, and quantitative data is forthcoming as pilot testing continues with ongoing groups.

Background

As obesity rates rise and incidence of chronic diseases grows, Americans are increasingly advised to consume more fruits, vegetables, and foods that are less calorie-dense (Cullen, Baranowski, Klesges, Watson, Sherwood, & Story, 2004; Keystone, 2006). Healthy People 2010 advises anyone over 2 years of age to consume a minimum of five servings of fruits and vegetables per day (U.S. Department of Health and Human Services, 2000), and the 2005 Dietary Guidelines for Americans recommend consuming between nine and 11 servings of fruits and vegetables daily (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2005). In South Carolina, less than 20% of adults eat the recommended servings

of fruits and vegetables (Block, Patterson, & Subar, 1992), and only 16% of children consume five or more servings (Rafioura, Sargent, Anderson, & Evans, 2002).

Although these statistics are alarming, a desire remains among parents to provide healthy family meals. However, due to a lack of well-balanced nutrition (Position of the American Dietetic Association, 2004) and food preparation knowledge and skills (Shankar & Klassen, 2001; Condrasky, 2006a), many are unable to meet specific dietary recommendations, especially those regarding fruits and vegetables.

In response to this health crisis, the Cooking with a Chef (CWC) program was introduced to Cooperative Extension agents in the *Journal of Extension* and is an on-going program in South Carolina through Clemson University, with partnership from the Department of Health and Environmental Control (Condrasky, 2006a). Meal planning is a key element for building confidence in the kitchen. In fact, when parents and caregivers plan ahead and have well-stocked pantries and refrigerators, they cook at home more often (Position of the American Dietetic Association, 2004). Unfortunately, minority and low-income families have restricted resources, time, and skills to identify and prepare healthy foods, and they often have an inadequate knowledge of nutrition (Fleishhacker & Achterberg, 2003; Horodyski, Hoerr, & Coleman, 2004; Condrasky, Graham, Kamps, & Vinuya, 2006).

Convenience foods, restaurants, and drive-through windows are substituted for home-cooked meals now more than ever before. In 1981, 3.7 meals per week were eaten away from home, but that number rose to almost five per week in 2005 (Cullen et al., 2004). Restaurant and take-away foods often contain less fruits, vegetables, and milk, and more saturated fat and calories (Keystone, 2006). Restaurant portion sizes have also increased during this time period (U.S. Department of Health and Human Services, 2000; U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2005).

When combined, the insufficient intake of fruits and vegetables, the increased frequency of eating meals away from home, the lack of food preparation skills, and the increase in portion sizes contribute to the rise in obesity and related chronic diseases (Rafioura, Sargent, Anderson, & Evans, 2002). To respond to these needs, nutrition intervention programs should be theoretically based and include techniques that help families develop strategies for quick, nutritious meals, manage food resources, feel more confident in food preparation knowledge and ability, and improve nutrient composition of their diet.

Formative Evaluation

Formative evaluation is used to develop and improve interventions. Rossi, Lipsy, & Freeman (2004) state that formative evaluations are used to "to furnish information for guiding program improvements . . . to help form or shape the program to perform better."

This article to discuss the formative evaluation results of the Cooking with a Chef program, identifying or confirming key intervention elements, refining the understanding on how these elements are best addressed in the intervention, and acknowledging logistical issues that may affect intervention delivery and acceptance. This information is used to finalize the intervention design that will be tested through a larger, randomized controlled efficacy study. In the study reported here interviews were conducted as part of the formative evaluation process. This strategy, as a way to solicit feedback, is useful for outreach Extension programming evaluation and may yield valuable lessons learned.

Theoretical Framework

The theoretical foundation of CWC comes from the Social Cognitive Theory (SCT) (Bandura, 1986). The CWC program uses the SCT by attending to the influences of personal characteristics, environmental events,

and behavior. Personal characteristics, including experience with herbs, spices, fruits, and vegetables, may influence opinions regarding taste, preferences, and ease related to food preparation. Environment and learning objectives center on how to have and prepare fresh fruits and vegetables such that they are available and accessible for snacks and meals at home. Through the concept of reciprocal determinism, parents/caregivers will become more comfortable with preparing home cooked meals with fruits and vegetable, they will offer these meals more frequently and children will subsequently develop a preference for these foods and ask for them.

Methods

Cooking with a Chef Program Description

The CWC program was inspired by another program supported by Tyson Foods, Share Our Strength's Operation Frontline. Operation Frontline is a program that trains chefs and dietitians to facilitate a 6-week course for low-income families nationwide focusing on basic nutrition education, food resource management, and healthy cooking (Share Our Strength What We Do Operation Frontline, 2007). A central element of the CWC program is the cooperation of a professional chef and a nutrition educator team (Condrasky, 2006b). The chef's role is to teach culinary techniques that correspond with the nutrition education lessons through meal planning activities and hands-on cooking guidance. In preparation for the current study, the initial four groups of low-income and minority caregivers that had participated in program development pilot studies for CWC were interviewed.

In order to recruit participants for these initial pilot group, fliers were distributed at Head Start centers and churches in the upstate of South Carolina. Three intervention and three control groups with an average group size of 14 participants were randomly designated by the location of the Head Start centers in three upstate South Carolina counties. All elements of the CWC program, including interaction with the chef and nutrition educator, hands-on cooking activities, nutrition education lessons, and meal planning guidance, were delivered to the intervention groups. Control group participants of CWC pilot programs received the printed material for the program only, with no chef-led interactive cooking activities. This program was developed by a faculty member in the Department of Food Science and Human Nutrition for the purpose of improving health disparities through a culinary nutrition intervention, and approved by the University Office of Research Compliance.

During the intervention program, the chef-nutrition educator team delivered five lessons complete with nutrition education and cooking activities. The 2-hour sessions included hands-on cooking and skill refinement in a group setting while preparing lunch for the conclusion of the class meeting. The recipes chosen for each lesson corresponded with the nutrition education lesson topic. For example, the participants prepared bean salad and pinto bean chili when discussing fiber during the Flavor and Nutrition on the Menu lesson. During all lessons, the chef shared tips on proper knife skills, recipe substitutions, timesaving techniques, and flavor development. The nutrition educator discussed the importance of meeting the Dietary Guidelines for Americans standards, especially fruit and vegetable intake, while sharing techniques for implementing those guidelines into family meals.

Focus groups were also conducted with participants at the conclusion of the CWC programs. This article includes data from these focus groups as well as from individual interviews conducted with 12 people involved in developing, promoting, and implementing the CWC program. Individual interviews were also used to collect data from program partners because of their different experiences and roles in advocating, coordinating, and implementing the CWC program. The CWC team interaction with each program director was vastly different, and it was determined that interviews would get the most in-depth information about unique experiences. Lessons learned from this formative research will contribute to the development and

administration of a more efficient and thorough evaluation.

Interview Participants

Individuals were selected from various organizational types for interviews with program directors. All of the potential interviewees who were asked agreed to participate in the interviews (n=12). Interviews were conducted with three chefs, one program developer, five local program supporters, one state-level supporter, and two program assistants. The local program supporters were directors and management staff from local Head Start centers where the CWC intervention and control programs were implemented. Comments from these interviews will be referred to as "interviewees."

Focus group participants consisted of parents and caregivers who participated in either the CWC pilot intervention or control group. Focus groups were held 2 weeks after the conclusion of the CWC programs at the program site. These sessions were conducted separately for CWC intervention group participants and control group participants. Comments from these interviews will be referred to as "participants."

Discussion Guide Questions

The interview discussion guide for the 12 individual interviewees was developed by the program developer and program assistants in collaboration with an outside evaluation consultant (Table 1). The questions focused on detailing the steps taken to develop and implement CWC and the lessons learned.

The focus group discussion guide (Table 2) was developed by the program developer with input from nutrition educators and health outreach professionals. The questions were written to learn both the participants' perceptions about the program impact and suggestions for improvement. The questions were different for the interviews and the focus group discussion guides. We received different types of information from different sources, thus we provide full disclosure so as not to risk presenting anything in a biased way.

Table 1.
Interviewee Discussion Guide

<p>Program Developer</p>	<p>How do you get chefs involved? How do you get a support center (ex: Head Start center) cooperation? How do you advertise program to attract participants? How do you maintain participant attendance? What characteristics/skills do you look for in a cooperating chef? What characteristics/skills do you look for in the supporting staff? What characteristics/skills do you look for in the nutrition educator? What types of financial sponsorship is available? What are some techniques used to build community partnerships? What is the overall cost of the Cooking with a Chef program? What is the overall goal of the Cooking with a Chef program? How can you determine who would benefit from this program?</p>
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	(i.e. family characteristics, participant skill level, participant language competency)
Program Assistants	<p>What logistics need to be considered to offer a complete program?</p> <p>How long did it take to prepare for each session?</p> <p>How long did it take to set-up on site before each session?</p> <p>How long did it take to teach each session?</p> <p>How long did it take to clean-up after each session?</p> <p>Describe the adequacy of the time allotted for each lesson.</p> <p>How did you plan for the number of people that would attend each lesson?</p> <p>What characteristics and skills did you bring to this program?</p> <p>Describe the ease or difficulty in contacting participants before each session.</p> <p>Describe changes you saw in participants while observing the lessons.</p>
Cooking with a Chef Site Staff	<p>How did you advertise and encourage parents to participate?</p> <p>What was done well in this program? (i.e. logistics, topics, activities, time)</p> <p>What improvements could be made to Cooking with a Chef?</p> <p>Why is this program beneficial to the parents you work with?</p> <p>Do you think the program would work without a chef?</p> <p>How often should the program be offered?</p> <p>How did you hear about the program?</p> <p>How has this program improved since the initial pilot series?</p> <p>In your opinion, what was the best part of the program?</p>
Program Supporters	<p>How did you advertise and encourage parents to participate?</p> <p>What was done well in this program? (i.e. logistics, topics, activities, time)</p> <p>What was the benefit of having a chef involved?</p> <p>What were the benefits of a hands-on cooking class for parents?</p>
Chefs	<p>Describe the training you received for participation in Cooking with a Chef.</p> <p>What improvements could be made in the training?</p> <p>Did you feel comfortable with the tasks assigned to you?</p> <p>Why did you choose to become involved in this program?</p> <p>How did you first become aware of this program?</p> <p>Do your beliefs coincide with the messages of the program?</p> <p>In your opinion, what were the most important lessons taught?</p> <p>Why do you think it is important to have a chef involved in this program?</p> <p>Would you participate again? Why or why not?</p> <p>Would you recommend participating in this program to fellow chefs?</p> <p>Describe the time commitment you made for this program.</p>

Table 2.

Participant Discussion Guide

<p>Intervention and Control Groups 2005 and 2006</p>	<p>How did the Cooking with a Chef program influence your food choices? How did the Cooking with a Chef program affect your family's life? What impact did the chef have on you and the program? How would you describe Cooking with a Chef to a friend? Initially, what made you decide to attend this program? What made you keep coming? What was the most helpful lesson? Did you feel lesson were taught at your level? Were messages of the lessons important to you and your family? Do you have any ideas for program improvement?</p>
<p>Additional Questions from Intervention and Control Groups 2006 a</p>	<p>Has this program influenced your at-home cooking confidence? Comment on the amount of at-home cooking you currently do. Did participating in this program encourage you to cook more at home? Do you feel that your family is eating more fruits and vegetables? What new foods have you tried in the last few weeks at home? What new recipe ideas or flavors have you used at home? What suggestions do you have for eating more fruits and vegetables? Comment on the participant manual provided during the program.</p>
<p>a- These questions were added to the discussion guide for intervention and control groups in 2006</p>	

Data Collection

Data for the study reported here were collected via individual interviews with chefs, program supporters, program developers, and program assistants (interviewees) and focus group discussions with CWC program participants (parents and caregivers).

The individual interviews were audio taped and conducted in-person or over the phone by two graduate

students with knowledge of and experience with the CWC program. Prior to conducting the interviews, the graduate students were trained in interviewing techniques, note taking, and development of note-based transcripts.

Focus groups were conducted by CWC program staff at the end of the CWC program. This facilitator was trained and had experience in facilitating focus group interviews. Focus group sessions were also audio taped and transcribed by graduate students involved with the CWC program.

Analysis

Content analysis of transcripts and interview notes was conducted using an open coding process. The questions used in the interviews as presented in Tables 1 and 2 provided clues to themes that might be in the interview transcripts as well as to other themes that might emerge that were unanticipated. As themes, patterns of words, perceptions, ideas, and program suggestions emerged, they were classified into categories (Strauss & Corbin, 1998). From this list, a code book was developed and then used to code the focus group transcripts and interview notes. Each transcript was coded independently by two people who then compared codes. Inter-rater reliability between the coders ($r = 0.70$) indicates acceptable levels of agreement. After the transcripts were coded, the codes were reviewed for content analysis structures outlined by Miles and Huberman to identify sub-categories (1994). Through this inductive process, emerging themes were identified. Themes were defined as categories or sub-categories that were discussed or identified by more than two interviewees or participants.

Results

These data yielded four major themes relating to program logistics, suggestions, perceived impressions and impacts, and chef involvement as seen in Table 3. Several of the themes that were commented upon solely by interviewees included program logistics and perceived impact and impressions of the CWC program on participants. Chef interviewees, alone, addressed the benefit of chef participation in CWC from the chef's perspective. Themes made only by participants regarded the impact and impressions of the CWC program on participants and increased use of herbs and spices. Remaining themes including program suggestions, chef involvement, and the remaining three core goals of the CWC program were remarked upon by both interviewees and participants.

Table 3.
Key Themes and Sub-Themes identified by the Participants and the Interviewees

Key Themes and Sub-Themes	n_p^a	Participant Comments ^b	n_i^c	Interviewee Comments ^d
Logistics				
Preparation	0		12 ^e	
Participant Recruitment	0	f	6	"Fliers and press releases to advertise Cooking with a Chef"
Chef Recruitment	0	f	4	"Advertise program at chef meetings, community colleges, and chef networking events"

				<p>"Recruit chefs with well-developed social and teaching skills, and who are confident in producing a meal while demonstrating techniques"</p> <p>"Chefs should be enthusiastic about the program and have a commitment to healthy cooking and eating for the purpose of improving quality of life"</p> <p>"Provide program manual and discuss main goals to emphasize during class"</p>
Facility Recruitment	0	f	3	"Establish rapport with center staff"
Program Assistant Recruitment	0	f	2	<p>"Recruit volunteers with interest in the program topics, organizational, cooking, social and evaluation skills"</p> <p>"Obtain funding for staff"</p>
Logistics of Program Preparation	0	f	2	<p>"Obtain funding for supplies"</p> <p>"Transportation"</p> <p>"Purchase and allocation of program incentives"</p>
Delivery	0	f	9	<p>"Scheduled program at a time of day most convenient for participants and chefs"</p> <p>"Allotted time period (9-11 am) was sufficient for lesson and hands on activities"</p> <p>"Chef was able to stretch or condense program content as needed"</p> <p>"Collecting contact information for participants important for reminders about class meetings"</p> <p>"Incentives including groceries, manual and cookbook are key to attracting participants"</p> <p>"Materials for class include grocery items, evaluation, and participant manual"</p>
Program Suggestions				
Format	5	"Wanted more time to ask chef questions and to learn more"	6	"Involve or hire a chef/culinary arts students with free afternoons for full time"

		about nutrition"		"Include nursing or dietetic students who have knowledge of health and nutrition"
Expansion	12	Expand program offering to more preschools at Head Start centers, churches, etc	7	"Expand advertising techniques through television and radio announcements" "Supplement program with CDs/DVDs, more recipes, menus, Spanish language materials"
Impact and Impressions				
By Participants	23	"Increased awareness of importance of eating fruits and vegetables" "Learning how to prepare healthy meals with fruits and vegetables" "Helpful for figuring out how many vegetables to buy for the week" "More conscious of nutrition labels; more confident with spices and cutting vegetables" "Cut back on frying; started baking, broiling and grilling" "Kids eat more fruits and vegetable and program encouraged me to keep giving them to try so they will find what they like and eat more." "Hands on learning is more powerful"	0	f
By Interviewees	0	f	10	"Chef helped participants learn skills (like using knives and how to chop/dice/etc) by first demonstrating, then let them do it on their own, then helped them correct their mistakes. Some participants were shy and scared

				<p>at first but then soon built their confidence"</p> <p>"Parents have a desire to learn these things like how to prepare healthy meals, menu planning, and how to prevent things they see in the media like childhood obesity"</p> <p>"Participants now know that preparing healthy meals is not difficult"</p> <p>"Shows participants what they can do and then builds on it"</p> <p>"Remove barriers on how and what to cook"</p> <p>"Majority of parents in low-income families are intimidated by learning, but depend primarily on hands on training"</p> <p>"There is a definite need for a program that increases confidence and knowledge in the kitchen"</p>
Chef Involvement				
Benefit of Having a Chef Present	8	<p>"Chef is the draw"</p> <p>"Easy and informative way to add nutrition in a hands-on experience"</p> <p>"More fun if it is visual and entertaining"</p> <p>"A way for mom's to cook over and cook healthier"</p>	5	<p>"Important to have a chef present to show that professionals are motivated to preparing nutritious meals"</p> <p>"Opportunity to work with a chef with knowledge about how you can cook with what's in your pantry, options for other meals they may not know about"</p> <p>"Translating the health messagesâ with a chef more of how-to to actually follow the suggestions of how to eat healthy and prepare those meals"</p>
From the Chef's Perspective	0	f	4	<p>"Teaching confidence with cooking skills to encourage cooking at home"</p> <p>"Liked hearing participants say thank you at the end of each class and hearing what new things people have tried."</p> <p>"To give chefs notoriety and community support for their</p>

				roles within and outside the program"
<p>a- n_p: number of participants commenting on the theme or sub-theme b- Participants: Parents and caregivers who participated in the focus group sessions following Cooking with a Chef pilot intervention and control group studies. c-n_i: number of interviewees commenting on the theme or sub-theme d- Interviewees: Individual interviews with chefs, program developers, program supporters, and program assistants e-Number of interviewees commenting on the various aspects of preparation do not sum, as ` commented on each aspect f-No comment data available from participants or interviewees, respectively, on these topics</p>				

Program Logistics

Interviewees commented on the logistics of implementing the CWC program. This category of comments included factors related to preparation and delivery of CWC. Interviewees described recruitment methods used to inform and attract program participants, potential program sites, cooperating chefs, and support staff to the CWC program. Statements regarding funding, transportation, and elements of effective program delivery including session time management issues, participant tracking data, and educational materials were also made.

Program Suggestions

Interviewees and participants provided suggestions for the continued development of the CWC program. Comments ranged from recruiting additional qualified culinary and nutrition professionals, to providing additional time for hands-on cooking experiences. Interviewees and participants overwhelmingly encouraged program expansion through advertising in various media outlets, building partnerships with other community organizations, and by providing supplemental materials to participants who complete the program.

Perceived Impact and Impressions

The third theme identifies the perceived impact and impressions of the CWC program. Statements were made by both interviewees and participants regarding the overall program quality and the benefits of CWC for program participants. Participants described increased awareness of healthy eating guidelines and preparation techniques for fruits and vegetables. Comments from interviewees detailed the importance of hands-on learning and skill-building activities inherent in the CWC. They also noted the community's need for an interactive culinary nutrition education intervention like CWC.

Chef Involvement

Interviewees and participants also commented on the impact of chef involvement in the CWC program. Participants indicated that having a chef present during the lessons to share technical culinary knowledge and guide their learning of how to prepare meals consistent with dietary guidelines is an integral asset to the CWC program. Chefs also shared their own perspectives on their motives for participation and their expectation of changes in participant awareness, knowledge, and behavior.

Comments on CWC Core Goals

The core goals of the CWC program are: 1) to increase fruit and vegetable consumption, 2) to increase the occurrence of and confidence in at-home meal preparation, and 3) to decrease the use of salt in cooking through increased application of herbs and spices in cooking applications. Participants described in detail the positive changes made at home regarding these three goals as a result of participation in CWC as seen in Table 4.

Table 4.
Comments of Participants and Interviewees as Related to Core Program Goals

Core Program Goals	n_p^a	Participant Comments^b	n_i^c	Interviewee Comments^d
Increase Fruit and Vegetable Consumption	17	"Husband [of a participant] has nutrition concerns and enjoys the fruits available at home" "Eating more fruits and vegetables by making a conscious effort each day" "Kids are eating more fruits and vegetables, which encouraged me to keep giving them to try so kids will find what they like and eat more fruits and vegetables" "[Program is] helpful for figuring out how many vegetables to buy for the week" "Kids asked for a salad instead of macaroni and cheese"	3	"to increase the consumption of fruits and vegetables"
Increase Occurrence of and Confidence in At-Home Meal Preparation	14	"Confidence to try new things and not be afraid of failing" "Use binder/recipe book for meal ideas" "Encouraged me to do more chopping - practice is important" "Did not eat out one time last month; kids	8	"Chef helped participants learn skills, like using knives and how to chop and dice by first demonstrating, then letting participants do it on their own. Finally, the chef helped them correct their mistakes. Some participants were shy and scared at first but then soon built their confidence"

		are excited to cook now"		"Teaching confidence with cooking skills to encourage cooking at home" "There is a definite need for a program that increases confidence and knowledge in the kitchen"
Increase Use of Herbs and Spices	4	"More confident with spices" "Tried new spices including cilantro"	1	"to reduce sodium intake by utilizing other spices and flavoring"
<p>a- n_p: number of participants commenting on the theme or sub-theme b- Sample comments from participantsâ Parents and caregivers who participated in the focus group sessions after CWC pilot intervention and control groups c- n_i: number of interviewees commenting on the theme or sub-theme d- Sample comments from intervieweesâ Individual interviews with chefs, program developers, program supporters, and program assistants e- Number of interviewees commenting on the various aspects of preparation do not sum, as commented on each aspect. F- No comment data available.</p>				

Formative Evaluation used to improve CWC Core Program

Formative evaluations, often through process evaluations strategies, are used to finalize intervention designs. We demonstrate how the findings from this formative study were used develop a logic model and refine the CWC program. During this evaluation process, logic models are often developed to help define the scope of the intervention and what constitutes complete and full intervention delivery (Funnell, 2000, Carroll & McKenna, 2001). A CWC logic model (Figure 1) was developed retrospectively as a product of the formative evaluation process for use as an evaluation tool for the CWC program. It outlines background factors, inputs and resources available, program activities, external factors, and the goals and impact of CWC.

Figure 1.
Logic Model Product

Background Factors	Inputs and Resources	Program Activities	External Factors	Goals and Impact
<i>Income</i>	<i>Chefs</i>	<i>Teaching knife skills</i>	<i>Community agencies:</i>	Immediate:
<i>Education</i>	<i>Nutrition educator</i>	<i>Teaching basic cooking techniques</i>	Head Start	<i>Increase consumption of fruits/vegetables</i>
<i>Ethnicity</i>	(i.e. university nutrition faculty)		Church preschools	<i>Increase confidence in the kitchen</i>
<i>Eating habits</i>			DHEC	
<i>Prior cooking</i>	<i>Support staff</i>	<i>Cooking tips</i>		

<i>skills and experience</i>	(i.e. graduate students) <i>Community agencies:</i> Head Start Church preschools Department of Health and Environmental Control (DHEC) Department of Social Services (DSS) Corporate Sponsors (i.e. grocery stores) Research and evaluation knowledge and skills Grant funding Participant support systems	<i>and advice</i> <i>Meal planning activities</i> <i>Increase awareness of food variety</i> <i>Participant manual</i> <i>Incentives for attendance</i>	DSS Healthcare facilities Participant support systems	<i>Reduce sodium intake</i> Involve chefs in changing eating habits Change shopping habits Improve flavor in meals Strengthen community through partnerships Projected Long Term: Decrease incidence of diseases associated with poor diet Maintain good health throughout life Improve eating habits of next generation Decrease obesity
<p>Bold and Italics-core goals of the Cooking with a Chef program <i>Italics</i>-elements of the Cooking with a Chef program discussed at length in the article</p>				

The evaluation process described in the study reported here led to a number of changes and improvements in the CWC program. Some of the most important modifications were in the areas of logistical, site preparation, and time allotment changes. It became evident that the planning and the preparation for the program required more time and support staff than originally predicted. We added a technician (graduate student) to assist in the organization of the materials, ingredients, and resource boxes for the program. At the site we observed what specifics in the kitchen and the general meeting space were necessary for safety, comfort and efficiency of the participants and the staff. The site set-up required our arrival approximately 1 hour in advance and that amount of time to clean-up afterwards as well.

Allowing for more flexible time during the sessions was key to enabling the participants to ask their questions of the chef during and following the sessions. Time spent in training the chef varies with the experience of that professional. Some chefs are more comfortable in the CWC situation, and development of chef training materials was necessary. Time requirement for the individual sessions was more easily gauged after these initial offerings were performed and evaluated. The 2-hour time frame was the preferred time frame by the staff and participants. The chefs indicated that they needed more time in the beginning to determine the culinary skill and kitchen safety competence of the participants. Thus we have added a get-to-know-the-participant time in the early session of the program. Although at the time of the study reported here the CWC program had not yet been tested for efficacy, the formative evaluation improved our understanding of how key elements were or were not being addressed in the program and how to best delivery the program.

Discussion

Qualitative research findings have indicated a high level of potential in the CWC program for building self-efficacy and changing the home environment by improving availability and accessibility of fruits and vegetables and increasing frequency of at-home cooking. Nutrition interventions that incorporate hands-on cooking activities have proven effective for increasing motivation (Condrasky, 2006a; Reed & Schuster, 2002; Kamps, 2006). The CWC program builds upon that tenet by including a chef in the CWC facilitator team and providing incentives that include a variety of ingredients for at-home preparation of class recipes.

This process as a strategy for program evaluation and improvement can be adapted by outreach programs and Extension agents in many disciplines and activities. There are valuable lessons learned for Extension faculty and county agents involved in foods and nutrition, youth, 4-H, and other related health promotion programs that want to replicate CWC as well. CWC can be implemented in a variety of practice settings, including faith-based organizations, rural preschools, public school programs, community programs, scouts, and 4-H gatherings. These are relevant to Extension and community outreach focused on improving eating, menu planning ability, and access to food resources.

While the start-up procedures for the CWC program require a significant initial time commitment from coordinators, volunteers, and staff, the process is fairly simple and can be done collaboratively with the help of trained associates. Practitioners should connect with chefs in their community who are enthusiastic, competent, and confident in their teaching ability and whose values align with the goals of CWC. When choosing organizations to partner with, it is important to match the needs and mission of the organization with CWC contributions and objectives. Logistical considerations, such as obtaining participant contact information, transportation, and procurement of lesson materials, is vital for successful implementation. Providing incentives is a way to encourage caregivers to return to the next class, practice learned culinary skills, and reinforce the CWC program objectives. Incentives provided during the CWC program included grocery bags of the ingredients for the recipes prepared during class, the course manual, and a cookbook emphasizing fruits, vegetables, whole grains, herbs, and spices.

The unique component of this program is the inclusion of a chef. Chefs are often natural teachers who are passionate and knowledgeable about cooking techniques, ingredients, and using the pantry method of cooking (Condrasky, 2006a). Chefs help motivate participants by providing individual attention, sharing industry tips and techniques, and encouraging them to spend more time cooking. Chefs who assist the nutrition educator in delivering the program must possess social skills for group interaction, technical ability in demonstrating meal preparation, and teaching skills. They must be enthusiastic about the mission of the CWC program and committed to healthy cooking and eating and possess an interest in improving quality of life through better nutrition.

Limitations

One limitation to the findings of the study reported here is that program staff, not an independent moderator, conducted the focus group interviews at the end of the program. Still, valuable information was gathered concerning how to improve the program as well as participants' perceptions of how the program did and did not impact them.

Participants who were unable to finish the program did not participate in the focus group. Thus another limitation to the qualitative findings is that there are no comments from those with potentially different views of CWC because they did not attend all of the lessons. Data were collected using different methods; different interviewees with varying experiences were questioned as the CWC program evolved over several years. These data were later condensed into tables. Also, interviews were conducted only with people who completed the program and the attrition is not discussed in this review; however, this factor was a consideration in planning further recruitment actions. Because there was no actual behavior observed, behavior change was self-reported in the interview, which may be subject to response bias driven by the interviewees' desire to please the interviewer or say what he/she thinks is a "correct" answer.

Conclusion

The delivery of the intervention has been refined and the process of testing the program for self-efficacy related to the participants preparation and cooking skills has begun. CWC intervention will be tested for self-efficacy regarding preparation skills and self-efficacy regarding cooking skills leading to individual eating behavior changes in the program and in the home through participative research in faith-based organizations. The program complements the skills of the Extension agent in food preparation and nutrition education. CWC relates to the traditionally difficult-to reach audience, from adolescents to the busy mom, as well as diverse cultural population groups.

CWC is a new way to enhance the family dining experience at home, make healthy ingredient choices, and enjoy mealtimes together. Extension agents have a unique opportunity to enhance their programs in working with the CWC program in their community and eliciting the assistance of professional chefs. The chefs bring the passion for cooking and for presentations of new and tasty foods for the family. Qualitative data from CWC indicates that this program is effective in promoting skill development, behavior change, and increasing the awareness, knowledge, and self-efficacy in food preparation techniques, meal planning, and cooking skills.

Involvement in the CWC program can change home environment, specifically by increasing the availability of fruits and vegetables and frequency of at home meal preparation. Central to the CWC program is the goal of improving participants' culinary skill set of basic cooking techniques and the preparation of fruits and vegetables through hands-on interaction with a professional chef. Potentially, with an improved skill level, participants have the ability to increase the volume and frequency of incorporating produce into meals. Interviews with CWC participants have revealed a noteworthy increase in the awareness of appropriate portion sizes and the need for increased consumption of fruits and vegetables. CWC will continue to be tested to show that the methods utilized are indeed effective.

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