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Evaluation of a Cooperative Extension Curriculum in Florida: Food Modification for Special Needs

Abstract

State and national surveys of adult family care homes identified a strong need for education on texture-modified food preparation and the nutritional needs of older adults. An Extension curriculum, Food Modification for Special Needs, was developed to provide an overview of chewing and swallowing problems, food texture, pureed food preparation, and the nutritional needs of older adults as well as hands-on skill development. An evaluation demonstrated that use of the curriculum resulted in significant impacts among workshop participants on perceived knowledge and skills gained and implementation of skills learned. Further in-state and national dissemination of the Food Modification for Special Needs curriculum is required.

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Introduction

Malnutrition among community-dwelling older adults and those residing in long-term care homes is a common concern. It is estimated that as many 13.8% of those living in nursing homes and 5.8% of community-dwelling older adults are malnourished (Kaiser et al., 2010). When older adults who are hospitalized or in rehabilitation are taken into consideration, the prevalence of malnutrition in older adults may be 46.2%, with many more at nutritional risk. Moreover, the nutritional statuses of older adults living in small residential care homes are not known.

Indicators for potential malnutrition in community-dwelling older adults include poor appetite, lack of teeth, prior hospitalization, and poor self-reported health (van der Pols-Vijlbrief, Wijnhoven, Schaap, Terwee, & Visser, 2014). In addition, a recent cross-sectional study suggests that chewing and swallowing problems contribute to poor nutritional statuses in community-dwelling older adults due to lower energy and nutrient intakes (Mann, Heuberger, & Wong, 2013). For older adults residing in nursing homes, depression, swallowing issues, and eating/chewing difficulties contribute to poor intake and malnutrition. These same risk factors may exist for older adults residing in small

residential care homes. Another factor contributing to malnutrition for these individuals may be menu acceptance, relevant to the quantity, quality, variation, choice, and so on of foods on a menu, as this is currently the number one complaint reported by older individuals living in Florida adult family care homes and their families or representatives (Florida Ombudsman Program, 2014) and is among the top complaints in long-term care facilities throughout the United States (U.S. Department of Health and Human Services, Administration for Community Living, 2005).

Malnutrition is strongly associated with reduced quality of life (Rasheed & Woods, 2013) and morbidity (van der Pols-Vijlbrief et al., 2014) and is a key factor leading to institutionalization (Marshall, >Bauer, & Isenring, 2014). Because malnutrition is a significant health issue of older adults requiring care (Kaiser et al., 2010), provision of nutrient-dense and acceptable foods is critical to their overall health and wellness. Previous research showed that there was a significant unmet educational need among those responsible for the planning and preparation of food for older adults in adult family care homes in Florida (Dahl, Ford, & Gal, 2014) and throughout the United States (Ford, Conover, Gal, & Dahl, 2015).

Marshall, Bauer, Capra, and Isenring (2013) reported that informal and community caregivers can be successfully educated to positively affect the nutritional statuses of community-dwelling older adults. Educational programming is needed to decrease risk of malnutrition and improve quality of life among older adults requiring care. Because chewing and swallowing problems contribute to nutritional risk in both community-dwelling older adults and those requiring care, the Food Modification for Special Needs curriculum was developed to improve the knowledge and skills of staff and caregivers responsible for the preparation of texture-modified foods, specifically pureed foods, provided to older adults in care. The long-term goal is to improve food and menu acceptance in adult family care homes, thereby leading to fewer menu- and food-related complaints. The purpose of the evaluation described in this article was to assess the Food Modifications for Special Needs curriculum.

Program Description

The educational program built around the Food Modifications for Special Needs curriculum targeted those involved in preparation of texture-modified foods in adult family care homes, senior services staff responsible for in-home meal preparation, and family caregivers. The core curriculum included active-learning modules on the nutritional concerns of frail older adults, sensory deficits of older adults, swallowing problems, and pureed food preparation. Management of chewing and swallowing problems (dysphagia) often involves the preparation of pureed foods to ensure safe swallowing and optimal nutrition. The curriculum was developed to be delivered by county Extension agents to target audiences in workshop format. County Extension agents were trained by the state specialist in the curriculum content. Pilot implementation of the program was conducted in Marion, Lake, and Sumter Counties in Florida, where training was provided to the three county Extension agents and to target audiences through in-person 1-day workshops. Following the pilot workshops, an additional six county agents received training in delivery of the program.

Evaluation

Workshop participants were asked to complete an evaluation at the end of each workshop. Listed

below are the items used in the workshop evaluations; each item was rated using a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

- I have a better understanding of frailty and malnutrition.
- I have a better understanding of how to prevent weight loss and frailty.
- I have a better understanding of how to optimize foods to compensate for sensory deficits.
- I have a better understanding of the causes, health risks, and signs and symptoms of swallowing problems.
- I have a better understanding of how and why modifying food texture can improve swallowing for those with swallowing problems.
- I have a better understanding of the preparation of pureed food for individuals with swallowing problems.
- I have a better understanding of the quality control procedures needed to ensure the preparation of optimum pureed foods.
- I have improved my skills in pureed food preparation.
- I would recommend this workshop to a coworker.

In addition, the following open-ended questions were posed:

- What did you like best about today's workshop?
- What changes or improvements would you recommend?
- What other topics are you interested in?
- Do you have any other comments or suggestions?

Focused interviews with attendees were carried out 3 to 6 months after a workshop to determine the impact of participation on perceived knowledge and skill gains and implementation of practices learned during the workshop. The protocol for telephone interviews was submitted to University of Florida Institutional Review Board 2 and deemed exempt. Contact information was collected at the workshops for 57 workshop attendees, and interviews were conducted over the phone. Data relevant to direct impacts on frail older adults in care, the target audience, also were sought. The following questions were posed during the telephone follow-up survey:

- Are you directly involved in the menu planning or food preparation for residents at your facility/residence/care home?

- Are there any residents at your facility/residence/care home that have any chewing and/or swallowing problems?
- Are pureed foods served to one or more residents at this facility/residence/care home?
- Have your skills/knowledge increased as a result of participating in the workshop Food Modifications for Special Needs?
- Have you implemented any of the skills that you learned at the workshop? If yes, please explain.
- Have you made any changes in the foods that you have prepared for your residents (or family members) as a result of attending the workshop?
- What was the most valuable thing you learned during the workshop?
- Have you read any of the resources/handouts you received during the workshop?
- What did you like best about the workshop?

Results

The Food Modification for Special Needs workshops provided an overview of chewing and swallowing problems, food texture, and pureed food preparation and addressed food and nutrition issues relevant to frail older adults and sensory deficits. Summaries of the on-site evaluations of all workshops (pilot and implementation) are shown in Table 1. Evaluation questions were varied, depending on which modules were covered in the morning lecture/discussion sessions.

Table 1.
Participant Responses to Perceived Changes in Knowledge and Skills Following
Workshop Attendance

Response	Mean
I have a better understanding of frailty and malnutrition.	4.9±0. 4
I have a better understanding of how to prevent weight loss and frailty.	4.7±0. 6
I have a better understanding of how to optimize foods to compensate for sensory deficits.	4.8±0. 1
I have a better understanding of the causes, health risks, and signs and symptoms of swallowing problems.	4.7±0. 2
I have a better understanding of how and why modifying food texture can improve swallowing for those with swallowing problems.	4.8±0. 2
I have a better understanding of the preparation of pureed food for	4.8±0.

individuals with swallowing problems.	1
I have a better understanding of the quality control procedures needed to ensure the preparation of optimum pureed foods.	4.7±0. 2
I have improved my skills in pureed food preparation.	4.7±0. 2

The participants also commented on what they liked best about the workshops. Responses related to the major themes of hands-on activities, taste testing, interactivity, and informal and relaxed approach. Examples of specific comments are "fun, informative"; "made it easy to learn and they provided enough resources for everyone to participate"; and "fun! hands on learning, very interactive and enjoyed tasting pureed foods, experiencing what the residents may have to eat!" One of the county Extension agents being trained noted, "This is the best and most useful training I have attended in my Extension career."

The follow-up survey of participants from the six pilot workshops in the three pilot counties reported both perceived knowledge and skill gain and skill implementation. Of the respondents ($N = 23$, response rate of 40%), 46% worked at adult family care homes, 4% worked at assisted care facilities, and 50% were in other situations (i.e., were family caregivers, etc.). Sixty-one percent of respondents reported that they were directly involved in menu planning or food preparation for residents at care homes or facilities; 64% reported that they had residents with chewing and/or swallowing problems; and 57% reported that pureed foods were being served to one or more individuals in their facility, residence, or care home. All respondents (100%) reported that their knowledge and skills increased as a result of participating in the workshop, and 80% reported that they had implemented skills learned during the workshop.

During the follow-up survey, workshop attendees responded to the question "What was the most valuable thing you learned during the workshop?" with answers such as the following:

- "learning about swallowing abilities of the residents";
- "how to puree different types of foods";
- "learning about pureeing to the ideal thickness and learning about modifying the texture using sauces, etc.";
- "how to puree food and make it appetizing"; and
- "texture modification, calorie intake, and to focus on calorie-dense food."

Obstacles in carrying out implementation of the Food Modifications for Special Needs program were identified as well. One challenge was the recruitment of family and consumer sciences (FCS) county Extension agents. Although many FCS county Extension agents expressed interest in the program, there are competing programs that they may choose to offer. Another challenge was the level of training needed by FCS county Extension agents to successfully deliver the program. Although it

was expected that a 1-day training would be adequate, findings indicate that participation in more than one workshop might be needed to ensure competence.

Discussion and Conclusion

The results of the evaluation reported here suggest that Extension programming may be effective in training adult family care home providers and other caregivers to recognize and respond to the special nutrition and food preparation needs of individuals with chewing and swallowing problems, especially older adults. Participants reported that the knowledge and skills they gained as a result of attending the workshop helped them implement practices at their care homes for preparing nutritious and acceptable texture-modified foods. Extension programming may successfully meet the documented need among providers for education in properly preparing texture-modified foods for improved acceptability, thereby helping prevent poor nutritional statuses among older adults and leading to their improved quality of life and well-being.

In a nutrition climate that focuses on obesity, consideration of, and potentially advocacy for, Extension programming for populations at risk for malnutrition is needed. Although frail older adults and older adults at risk for frailty were the primary focuses of this program, other at-risk populations exist. Following implementation of the program, a need to expand the scope of the program to include others—caregivers of individuals with developmental disorders and older adults who have dental issues or are devoid of teeth, those who provide food to homeless persons, and members of various disease-related support groups (e.g., *amyotrophic lateral sclerosis* [ALS] support groups, Alzheimer's disease support groups)—was identified.

As mentioned, findings indicate that successful implementation of the program by participating Extension agents may require training beyond participation in a 1-day workshop. A potential solution to this challenge may involve offering online access to resources for further training, such as by establishing a website to provide educational videos of preparation techniques, further reading on chewing and swallowing problems and texture modification of foods, and recipes.

The long-term goal of the Food Modifications for Special Needs program is to improve the acceptability of food served to older individuals residing in care facilities by (a) improving the knowledge of staff regarding nutritional concerns and the sensory deficits and preferences of frail older people and (b) improving the skills of food service staff regarding the preparation and sensory acceptability of texture-modified foods. The results of the program evaluation described here suggest that use of the Food Modification for Special Needs curriculum may be an effective means of increasing the knowledge and skills of staff and family caregivers serving older adults with chewing and swallowing disorders. Further research is needed to evaluate actual knowledge and skill change through pre- and posttesting. The validity and reliability of the tool used to assess perceived knowledge and skill gains and its correlation with actual knowledge and skill gains is needed. In addition, further exploration of potential program impacts is needed.

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