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## Evaluation of a Cooperative Extension Service Curriculum on Empowering Older Adults with Assistive Technology to Grocery Shop, Prepare Food, and Eat

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**Abstract:** *The Empowering Older Adults with Assistive Technology to Shop, Cook and Eat curriculum was designed to provide education about concepts of empowerment and assistive technology for grocery shopping, preparing food, and eating. The curriculum included examples and hands-on demonstrations of assistive*

*technology devices for grocery shopping, food preparation, and eating. Results of post-then-pre evaluation with 100 participants revealed significant increases in awareness and comfort using assistive technology devices. Evaluation indicated education and hands-on demonstrations increased awareness of the importance of older adult nutrition and older adult empowerment through use of assistive technologies designed to facilitate independent living.*

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## **Introduction**

Physical limitations may occur with aging that can negatively affect older adults' abilities to grocery shop, prepare food, and eat (Keller, 2005). Physical limitations can also result in increased dependency and a sense of powerlessness (Keller, 2005; Johnson, Mahon, & McLeod, 2006).

Extension can address many challenges older adults face (Gerrior & Crocoll, 2008). Using the concept of empowerment, Extension can provide education that can assist older adults in finding solutions to enable them to maintain control over their lives (Bekingham & Watt, 1995). Providing education and linking to resources on assistive technology are ways to empower older adults to address some difficulties they may face with grocery shopping, preparing food, and eating. Assistive technology is any device that improves engagement in everyday life (Oklahoma ABLE Tech, 2011). Assistive technology can also improve safety and independence among older adults.

## **Program**

The Empowering Older Adults with Assistive Technology to Shop, Cook and Eat curriculum was developed by a multidisciplinary team including individuals from Oklahoma Cooperative Extension Service, Oklahoma State University Department of Human Development and Family Sciences, and Oklahoma ABLE Tech, the Oklahoma Assistive Technology Act Program.

The curriculum was designed to educate older adults, their family members, and aging services community care providers about assistive technology for transportation, grocery shopping, preparing food, and eating. The curriculum objectives were to increase:

- Awareness of the importance of older adult nutrition.
- Awareness of the concept of older adult empowerment.
- Awareness and comfort using assistive technology for transportation, grocery

shopping, preparing food, and eating.

- Awareness of Oklahoma ABLE Tech.

Linking older adults with assistive technology experts is important because appropriate assistive technology devices are highly individualized. State Assistive Technology Act Programs work to increase access to appropriate assistive technology through device demonstration centers, short-term device trial programs, device exchange or reuse programs, and low-interest bank loans (Oklahoma ABLE Tech, 2011).

The Empowering Older Adults with Assistive Technology to Shop, Cook and Eat curriculum included a leaders' guide, PowerPoint presentations, handouts, and video clips of older adults discussing the impact of assistive technology in their lives. The curriculum also included a kit containing example assistive technology devices for transportation, grocery shopping, food preparation, and eating that allowed for hands-on demonstration.

## Evaluation

The Empowering Older Adults with Assistive Technology to Shop, Cook and Eat curriculum was piloted by Oklahoma Cooperative Extension Service County Educators with Oklahoma Home and Community Educator (OHCE) members in six Oklahoma counties. Prior to piloting, Oklahoma Cooperative Extension Service county educators attended a 1-day in-service training on implementing and evaluating the curriculum. The curriculum evaluation was approved by the Oklahoma State University Institutional Review Board for Human Subjects.

The curriculum was evaluated with a seven-item post-then-pre questionnaire using a 3-point Likert scale: very, somewhat, not at all. The questionnaire also included an open-ended question, "What was most helpful about this program?" Post-then-pre has been reported to be a reliable and valid method for measuring program impact, particularly when participants may have limited subject knowledge at the beginning of a program (Rockwell & Kohn, 1989). Questionnaire item responses were coded very = 3, somewhat = 2, and not at all = 1. For each questionnaire item, the percent of participants who increased questionnaire item rankings from then-pre to post were analyzed using frequencies; differences in mean questionnaire item rankings from post-then-pre were analyzed using a Wilcoxon matched-pairs signed-ranks test using PC SAS for Windows, Version 9.1 (SAS Institute, Cary, NC). For each questionnaire item, data were only included in analyses if both post and then-

pre rankings were provided. Significance level was set at  $P < 0.05$ .

## Results

One hundred OHCE members participated in the Empowering Older Adults with Assistive Technology to Shop, Cook and Eat curriculum pilot. Results of the evaluation revealed significant increases in mean then-pre to post rankings for awareness of the importance of nutrition; awareness of empowerment and likeliness of using information about empowerment; awareness and comfort using assistive technology devices; and likelihood of contacting Oklahoma ABLE Tech about assistive technology and the Extension educator about topics covered in the program (Table 1).

For all questionnaire items, except "awareness of the importance of nutrition for older adults," approximately half to two-thirds of participants increased questionnaire item rankings from then-pre to post (Table 1). The relatively lower percent of participants increasing their ranking for "awareness of the importance of nutrition for older adults," could be due to participants already having an awareness of the importance of nutrition, as indicated by the relatively higher then-pre ranking (Table 1).

**Table 1.**

Differences in Mean Questionnaire Item Rankings and Percent of Participants Who Increased Questionnaire Item Ranking From Delayed Pre to Post

Questionnaire Items	Then-Pre Rank <sup>1</sup> (Mean ± SE)	Post Rank <sup>2</sup> (Mean ± SE)	P Value <sup>3</sup>	Percent Who Increased Rank <sup>4</sup>
How aware are you of the importance of nutrition for older adults (n = 88)	2.59 ± 0.05	2.89 ± 0.03	<0.0001	30%
How aware are you of the concept of empowerment (n = 92)	2.09 ± 0.07	2.73 ± 0.05	<0.0001	60%

How likely are you to use information about empowerment in your own life (n = 88)	2.27 ± 0.07	2.80 ± 0.04	<0.0001	48%
How aware are you of assistive technology devices (n = 94)	2.10 ± 0.06	2.87 ± 0.04	<0.0001	68%
How comfortable are you using assistive technology devices (n = 93)	2.09 ± 0.07	2.68 ± 0.05	<0.0001	53%
How likely are you to contact Oklahoma ABLE Tech about assistive technology (n = 88)	1.63 ± 0.07	2.44 ± 0.06	<0.0001	67%
How likely are you to contact your Extension Educator about topics covered in this program (n = 90)	1.98 ± 0.07	2.59 ± 0.06	<0.0001	52%
<sup>1</sup> Then-Pre mean ± standard error questionnaire item rank. <sup>2</sup> Post rank mean ± standard error questionnaire item rank. <sup>3</sup> P value calculated using Wilcoxon matched-pairs signed-ranks test. <sup>4</sup> Percent of participants who increased questionnaire item rank from then-pre to post.				

Responses to the open-ended question "What was most helpful about this program" provided additional indication curriculum objectives were met. A few selective responses were:

- "Learning about empowerment for myself"
- "Seeing actual products and how you use them was very beneficial"
- "Seeing the tools and knowing the service (ABLE Tech) is available"

- "Knowing there is someone else that cares"
- "Seeing AT, finding out about ABLE Tech, reinforcing empowerment, it's everything to seniors"

## Conclusion

Extension professionals are positioned to address many of the challenges older adults face with grocery shopping, preparing food, and eating. Providing education and hands-on demonstration can increase awareness of and help build confidence in using assistive technologies designed to facilitate independent living. Extension professionals can also provide an important role in connecting older adults to their state's Assistive Technology Act Program, which is positioned to offer individualized solutions for managing physical challenges.

Potential partners for Extension professionals to engage and educate older adults include state Home and Community Education groups, farm and rancher groups such as Farm Bureau and Women in Agriculture, Older American Act Nutrition Programs, county health departments, Area Agencies on Aging, and Veterans Administrations.

For further information about the Empowering Older Adults with Assistive Technology to Shop, Cook and Eat curriculum, contact Jan H. Johnston, Oklahoma Cooperative Extension Service Aging Specialist, at [jan.johnston@okstate.edu](mailto:jan.johnston@okstate.edu).

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