The Journal of the National Extension Association of Family and Consumer Sciences

Volume 14, 2019

President's Message

It is my pleasure to present to you the 2019 Journal of NEAFCS. This peer-reviewed, researched based journal is one way for our members to inform others in our field and related fields about our scholarly work as Family and Consumer Sciences professionals. The Journal highlights Research, Best Practices, and Implications for Extension Family and Consumer Sciences. It is also a valuable tool to help you stay current with programming, research, and methodology that is specific to our learning and teaching environment.

As you read the 14th volume of the Journal of National Extension Association of Family and Consumer Sciences (JNEAFCS), I know you will discover informative and thought-provoking information in each article. Consider what you have to share with your colleagues about impacts that have resulted from your programming. Make it one of your professional goals to submit an article for a future Journal issue.

JNEAFCS, an online resource, can be forwarded as a link along with a personal note to your administrators, local and state policymakers, advisory groups, and peers. Help them connect our efforts to the strong impacts we have across the nation such as reducing health care costs through our nutrition and health education programs. Extension work makes a difference! Research proves that!

Thank you to Co-Editors Dana Wright of West Virginia University Extension and Ashley Dixon of University of Arizona Cooperative Extension for their hard work and dedication to the journal. My appreciation goes out to the members of the subcommittee, peer reviewers, and to our Vice President of Members Resources, Cindy Schlenker Davies of New Mexico State University Cooperative Extension Service for a quality, peer-reviewed, professional publication that helps preserve our valuable research and resources for the future.

I challenge you to chart your course with NEAFCS by building capacity through people, programs and partnerships to share new approaches to extension education and the public value of the work we do with others.

Sincerely,

Karen Munden, President 2018-2019

National Extension Association of Family and Consumer Sciences

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From the Editors

Here is your 2019 edition of the *Journal of National Extension Association of Family and Consumer Sciences* (JNEAFCS). JNEAFCS is a refereed journal. We appreciate the opportunity we have had to edit the journal this year and have learned a lot throughout the process. We look forward to serving you in 2020.

Please consider submitting a manuscript for the 2020 edition of JNEAFCS to promote yourself or one of your programs. The submission deadline is April 1, 2020. Choose a program where you can demonstrate impact. Have your colleagues read your manuscript to get input before submitting it to ensure it is of high quality.

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Implications for Extension

Best Practices

Action Inquiry as a Strategy for Professional Development Increases Educator Self-Efficacy to Teach Nutrition

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Abstract

The study's purpose was to evaluate nutrition educator self-efficacy beliefs after participating in a professional development program using action inquiry. A convenience sample of California nutrition educators completed a retrospective self-efficacy questionnaire after participating in a 10-month professional development program for teaching nutrition and health related concepts. Data analyses included paired t-tests to evaluate differences from pre-to-post. Significant increases from pre-to-post were observed in teaching efficacies, confidence to teach nutrition, and inquiry facilitation skills. Study results suggest that using an action inquiry approach for educator professional development effectively increases educator confidence to teach nutrition and health related topics.

Action Inquiry as a Strategy for Professional Development Increases Educator Self-Efficacy to Teach Nutrition

There are many barriers associated with integrating nutrition education into K-8 public schools. Previous studies have identified self-efficacy to teach nutrition and other health-related topics to be strongly linked to educator effectiveness, teaching competence, curricular implementation, and student outcomes (Fahlman, McCaughtry, Martin, & Shen, 2011). Providing professional development (PD) is a common method to improve educator self-efficacy to teach nutrition. Each year, educational institutions allocate a significant amount of funding for PD to enhance educator knowledge, skills, and professional capabilities. However, they often do so without a comprehensive PD program or consideration of the effectiveness of the opportunities offered (Corcoran, 1995; Jayaram, Moffit, & Scott, 2012). This study proposes an action inquiry framework for PD. The use of this pedagogy for PD is a recent phenomenon, generating the need for researchers to evaluate effectiveness. During the action inquiry process, individuals form a Community of Practice in which they interact with others to revise tasks, actions and behaviors, and engage in collective learning to improve overall effectiveness (Torbert, 1999; Wenger, 1998). Previous studies show that PD models that use Communities of Practice are effective in identifying and eliminating barriers and advancing educator knowledge and skills (Lieberman & Pointer Mace, 2010; Wenger, 1998).

Employing action inquiry as a framework for PD allows individuals to recognize that everyone has their own limitations and abilities to make assumptions in all situations. During the action inquiry process, individuals test their assumptions with others, potentially learn something new, and make their actions more consistent with their intentions (Walsh & Fisher, 2005).

Objective

The objective of the current study was to determine if there was an improvement in educator self-efficacy beliefs as a result of participating in a 10-month PD program using action inquiry for the Shaping Healthy Choices Program (SHCP), a multicomponent school-based nutrition intervention (Scherr et al., 2014, 2017).

During the 2012-2013 academic year, the SHCP was pilot-tested in fourth-grade classrooms (Scherr et al., 2014, 2017). Subsequently, the intervention was implemented in the 2013-14 academic year primarily by fourth-grade teachers who indicated a need for more rigorous PD (Linnell et al., 2018). As a result of this need, the aforementioned PD program was designed to prepare nutrition educators and teachers to implement the SHCP and to understand and adopt an inquiry-based approach to learning and teaching. Throughout the PD program, participants engaged in a Community of Practice where they exercised active leadership, received direct feedback, and learned together in practical ways.

Method

The PD program used action inquiry, peer-led education, coaching, and advanced professional learning (Table 1). Action inquiry techniques involve dialogue, reflection in action, and individuals working in teams or as part of a Community of Practice to solve real world problems. The PD program was intended to help educators understand and adopt an inquiry-based approach to education while contributing to their knowledge base. Professional development consisted of a one-day in-person workshop that reviewed SHCP components which include: nutrition education and promotion; family and community partnerships; foods

available on campus; and school-site wellness. This was followed by a three-day in-person workshop designed to provide a foundation in guided inquiry and an understanding of the curricula. Workshop activities included facilitation of modules from SHCP curricula *Discovering Healthy Choices, Cooking Up Healthy Choices*, and *Healthy Choices in Motion*. Participants had the opportunity to share best practices for program implementation and discuss strategies to overcome challenges. New educators practiced facilitating lessons by modeling after experienced educators and all educators were invited to offer feedback after each lesson. Throughout the 2016-2017 academic year, 10 one-hour PD webinars were offered which covered a variety of topics including best practices for school recruitment, school wellness policies, garden sustainability, and promotion of regional agriculture. During each webinar participants shared successes, discussed challenges, and collaborated to solve problems in program implementation. The PD program concluded with a one-day in-person workshop to share program feedback.

Questionnaire Development and Distribution

To assess program effectiveness, changes in self-efficacy were measured through the *Retrospective Survey About Teaching Inquiry-Based Nutrition* after participants completed the PD program. This survey used a retrospective, post-then-pre design to reduce response shift bias (Howard & Dailey, 1979; Linnell et al., 2018). The questionnaire, adapted from two previously published questionnaires, was developed specifically for the PD program implemented during the 2016-2017 academic year (Linnell et al., 2016; Smith, 2013).

Questions were designed to identify the impact on respondents' self-efficacy beliefs after participating in the PD program, as well as changes in confidence to teach nutrition and lead groups of students through the inquiry-based learning process. The questionnaire included 15

two-part questions. Both parts of the questions asked respondents to rank their self-efficacy on a five-point Likert scale that ranged from *strongly disagree* (5) to *strongly agree* (1). Part one asked respondents to rank their current self-efficacy in teaching nutrition and leading students through the inquiry-based learning process. Part two asked respondents to rank their self-efficacy in the same areas prior to participating in the PD program. Data were collected at a single time point at the conclusion of the program. Survey participants were excluded if they did not attend any of the PD opportunities offered during the 2016-2017 academic year.

The *Retrospective Survey About Teaching Inquiry-Based Nutrition* was distributed through the Center for Nutrition in Schools at the UC Davis via email using methods adapted from Dillman's tailored design method for web-based surveys (Dillman, Smyth, & Christian, 2009). The initial email informed potential respondents of the study purpose and invited them to voluntarily complete the questionnaire. Two additional email reminders were sent at one-week intervals to thank those who had already participated and to remind those who had yet to respond. All emails included a link to the questionnaire, which was hosted on a web-based survey platform (Qualtrics, Provo, UT). Data were analyzed after administering the questionnaire. Paired-samples *t*-tests were conducted to compare responses. Statistical significance was set at $p < .05$. Statistical analyses were conducted using SPSS Version 24 (IBM Corp., 2016). This study was approved as an exempt study by the Institutional Review Boards at UC Davis and National University.

Results

Of those that were invited to complete the questionnaire, 10 responded, for a 30.3% response rate. There were 11 out of 15 questions in the questionnaire that exhibited statistically significant increases (Table 2). Of the 11 questions, three assessed educator

confidence that time spent teaching would produce changes in nutrition-related behaviors and students' knowledge. There was a significant increase in mean scores from pre to post (pre = 3.60; post = 4.80; p = .003) in ability to increase student knowledge about nutrients, as well as confidence to increase student knowledge about healthy diet recommendations (pre = 3.80; post = 4.70; p = .019). However, this was not the case for belief that increased teaching time significantly changes nutrition-related student behaviors (pre = 3.90; post = 4.60; p = .066).

Three questions assessed educator confidence to teach nutrition-related topics. There was a significant increase in educator confidence to teach students about consumerism (pre = 3.90; post = 4.80; p = .001) and nutrients (pre = 3.20; post = 4.40; p = .044). However, there was no difference in confidence to teach students about nutrition (pre = 3.60; post = 4.50; p = .054).

The questionnaire contained two questions regarding confidence to use inquiry-based learning approaches. Responses to the first question demonstrated a significant increase in confidence to lead students through inquiry-based learning (pre = 2.70; post = 4.70; p = .001). Responses to the second question demonstrated a significant increase in belief that using an inquiry-based approach is an effective way to learn and teach (pre = 3.50; post = 4.70; p = .003). A significant increase was also observed in educator ability to stimulate students to ask thoughtful questions about nutrition (pre = 3.10; post = 4.40; p = .002), and self-efficacy to evaluate improvements in nutrition skills increased significantly (pre = 3.70; post = 4.60; p = .019). Additionally, a significant increase was identified in educator confidence to act as a facilitator for youth as they work on their activities (pre = 2.80; post = 4.40; $p < .001$).

After participating in the PD program, educator confidence to ask youth open-ended

questions significantly increased (pre = 3.00; post = 4.80; $p < .001$). A significant increase was also identified in educator belief that participating in a Community of Practice is an effective way to strengthen skills (pre = 3.80; post = 4.60; $p = .037$). Questions regarding educator ability to teach youth through direct instruction such as lectures and demonstrations (pre = 3.90; post = 3.30; $p = .217$), and educator ability to encourage youth to apply concepts that they learned to new situations did not yield significant changes (pre = 3.80; post = 4.30; $p = .052$).

Discussion

Findings from the current study indicated a positive effect on educators' self-efficacy after participating in a PD program that uses an action inquiry approach. This is consistent with a previous study that reported an increase in self-efficacy beliefs of teacher candidates after participating in a 14-week course using action inquiry to improve teaching efficacy (Cabaroglu, 2014). Action inquiry techniques provide a more personalized approach to PD, as well as opportunities for coaching, growth, development, and improvement (Ginns, Heirdsfield, Atweh, & Watters, 2001). The current study demonstrated that an action inquiry approach to PD is a valuable way to enhance educator capabilities to teach nutrition and facilitate inquiry-based learning in elementary school settings. This approach gives individuals the opportunity to participate in collaborative learning and interact with others in a constructive environment (Torbert, 2006). These processes not only help others to improve, but also permit individuals to test assumptions in an innocuous environment (Basadur, 2004).

A key feature of the PD program was providing ongoing support to educators. A previous

study exploring the relationship between PD formats and teacher self-efficacy reported a decrease in efficacy when implementing a new teaching strategy associated with PD formats that lacked follow-up coaching (Tschannen-Moran & McMaster, 2009). However, when PD formats included ongoing support and follow-up coaching, they were associated with strong improvements in self-efficacy beliefs (Tschannen-Moran & McMaster, 2009). Study findings demonstrated that participation in a continual PD program that uses action inquiry and continuous coaching can contribute to educator effectiveness and growth in self-efficacy beliefs, providing further evidence to support the need for ongoing training and PD.

Growing evidence suggests that action inquiry as a framework for PD not only increases educator confidence but may also contribute to improvements in student achievement (Darling-Hammond, 2008). A review of 40 years of research emphasized the importance of teacher self-efficacy to a variety of student outcomes (Zee & Koomen, 2016). The authors found that studies consistently reported a positive relationship between self-efficacy and student achievement. For example, students of science teachers with higher self-efficacy had higher science test scores (Lumpe, Czerniak, Haney, & Beltyukova, 2012). In addition, teacher self-efficacy was linked to other positive student outcomes, including motivation and student self-efficacy. This suggests that improvements in student outcomes may be further enhanced and sustained by using an action inquiry approach and participating in ongoing PD.

Although several questions yielded statistically significant improvements, four questions did not. Two of these questions were related to educator confidence to teach students about nutrition and whether time spent teaching nutrition changes nutrition-related behaviors. It is likely that findings were not significant due to the convenience sample of nutrition educators, most of whom regularly taught nutrition prior to program participation. However, a similar

study demonstrated higher self-efficacy measures in students associated with increased time spent teaching nutrition to students (Brenowitz & Tuttle, 2003). Other questions that did not achieve statistical significance were related to teaching practices. One question may have confused respondents, as the scale was reversed. This question asked educators to agree or disagree on whether they teach through direct instruction, using techniques such as lectures or demonstrations. The inquiry-based techniques taught in this PD program were designed to encourage less direct instruction and more facilitation; therefore, educators would need to disagree with this statement if they followed the teaching techniques taught in the PD program. The other question asked about application of concepts in new situations. It is possible that the lack of significance is because the educators are not classroom teachers and therefore had limited opportunities to encourage application of the concepts in new situations.

The retrospective survey design was used to reduce the risk of response-shift bias, a source of contamination of self-report measures that can result in inaccurate pretest ratings (Rohs, 1999; Smith, 2013). Response-shift bias can occur with traditional pre-post designs in which learners answer questions prior to engaging in an activity or educational program and then answer the same set of questions after participating in the program. When educators report self-efficacy at two separate time points, they may initially overestimate their confidence, leading to non-significant or negative results. A retrospective design allows for reflection on improvement over a period of time. Previous studies using retrospective questionnaires to eliminate response-shift bias have demonstrated significantly greater validity in measures of change than with pre-post designs (Howard & Dailey, 1979; Howard, Dailey, & Gulanick, 1979).

This study used a retrospective self-report questionnaire, which is associated with limitations and subject to the vagaries of memory and information processing capabilities (Tomlinson, 1984). When asked about past experiences, participants may not recall accurately, especially regarding distant experiences or minor events (Metts, Sprecher, Cupach, Montgomery, & Duck, 1991). While recall can present an issue, the relatively short period (10 months) and the benefits of a retrospective design outweighed limitations. Other limitations include the lack of a control group due to funding constraints and the small sample size (n = 10). Although the sample size was small, significant improvements in self-efficacy were identified; however, it is recommended the study be replicated with a larger sample size and a control group.

While this PD model was demonstrated to be effective in California, it shows promise to educators throughout the country. Creating opportunities for PD in which educators can continually learn is essential and may result in greater student achievement (Darling-Hammond, 2008). It is suggested that research be conducted to investigate how action inquiry can influence student outcomes through improvements to educator self-efficacy.

References

Basadur, M. (2004). Leading others to think innovatively together: Creative leadership. *The Leadership Quarterly*, 15(1), 103-121. doi: 10.1016/j.leaqua.2003.12.007

Brenowitz, N., & Tuttle, C. R. (2003). Development and Testing of a Nutrition-Teaching Self-Efficacy Scale for Elementary School Teachers. *Journal of Nutrition Education and Behavior*, 35(6), 308-311. doi: 10.1016/s1499-4046(06)60345-x

Cabaroglu, N. (2014). Professional development through action research: Impact on self-efficacy. *System*, 44, 79-88. doi: 10.1016/j.system.2014.03.003

Corcoran, T. B. (1995). Helping teachers teach well: Transforming professional development. *CPRE Policy Briefs*. New Brunswick, NJ: Consortium for Policy Research in Education, Rutgers University.

Darling-Hammond, L. (2008). Teacher learning that supports student learning. In B. Z. Presselsen (Ed.), *Teaching for Intelligence* (pp. 91-100). Thousand Oaks, CA: Corwin Press.

Dillman, D. A., Smyth J. D., & Christian L. M. (2009). Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method. 3rd ed. Hoboken, NJ: Wiley & Sons.

Fahlman, M., McCaughtry, N., Martin, J., & Shen, B. (2011). Efficacy, Intent to Teach, and Implementation of Nutrition Education Increases after Training for Health Educators. *American Journal of Health Education*, 42(3), 181-190. doi: 10.1080/19325037.2011.10599185

Ginns, I., Heirdsfield, A., Atweh, B., & Watters, J. J. (2001). Beginning teachers becoming professionals through action research. *Educational Action Research*, 9(1), 111-133. 10.1080/09650790100200140

Howard, G. S., & Dailey, P. R. (1979). Response-shift bias: A source of contamination of self-report measures. *Journal of Applied Psychology*, 64(2), 144. doi: 10.1037/0021-9010.64.2.144

Howard, G. S., Dailey, P. R., & Gulanick, N. A. (1979). The feasibility of informed pretests in attenuating response-shift bias. *Applied Psychological Measurement*, 3(4), 481-494. 10.1177/014662167900300406

Jayaram, K., Moffit, A., & Scott, D. (2012). Breaking the habit of ineffective professional development for teachers. In: McKinsey on Society. Chicago: McKinsey & Company.

Lieberman, A., & Pointer Mace, D. (2010). Making practice public: Teacher learning in the 21st century. *Journal of Teacher Education*, 61(1-2), 77-88. doi: 10.1177/0022487109347319

Linnell, J. D., Smith, M. H., Briggs, M., Brian, K. M., Scherr, R. E., Dharmar, M., & Zidenberg-Cherr, S. (2016). Evaluating the Relationships Among Teacher Characteristics, Implementation Factors, and Student Outcomes of Children Participating in an Experiential School-Based Nutrition Program. *Pedagogy in Health Promotion*, 2(4), 256-265. doi: 10.1177/2373379916649603

Linnell, J. D., Zidenberg-Cherr, S., Scherr, R. E., & Smith, M. H. (2018). Building the Capacity of Classroom Teachers as Extenders of Nutrition Education through Extension: Evaluating a Professional Development Model. *Journal of Human Sciences and Extension*, 6(1), 58-75.

Lumpe, A., Czerniak, C., Haney, J., & Beltyukova, S. (2012). Beliefs about teaching science: The relationship between elementary teachers' participation in professional development and student achievement. *International Journal of Science Education*, 34(2), 153-166. doi: 10.1080/09500693.2010.551222

Metts, S., Sprecher, S., & Cupach, W. R (1991). Retrospective self-reports. In B. M. Montgomery, B. M. & S. Duck (Eds.), *Studying Interpersonal Interaction* (pp. 162-178). New York, NY: The Guilford Press.

Rohs, F. R. (1999). Response shift bias: A problem in evaluating leadership development with self-report pretest-posttest measures. *Journal of Agricultural Education*, 40, 28-37.

Scherr, R. E., Linnell, J. D., Dharmar, M., Beccarelli, L. M., Bergman, J. J., Briggs, M., . . . Zidenberg-Cherr, S. (2017). A Multicomponent, School-Based Intervention, the Shaping Healthy Choices Program, Improves Nutrition-Related Outcomes. *Journal of Nutrition Education and Behavior*, 49(5), 368-379.e361. doi: 10.1016/j.jneb.2016.12.007

Scherr, R. E., Linnell, J. D., Smith, M. H., Briggs, M., Bergman, J., Brian, K. M., . . . Keen, C. L. (2014). The Shaping Healthy Choices Program: design and implementation methodologies for a multicomponent, school-based nutrition education intervention. *Journal of Nutrition Education and Behavior*, 46(6), e13-e21. doi: 10.1016/j.jneb.2014.08.010

Smith, M. (2013). Findings show lesson study can be an effective model for professional development of 4-H volunteers. *California Agriculture*, 67(1), 54-61. doi: 10.3733/ca.v067n01p54

Tomlinson, B. (1984). Talking about the composing process: The limitations of retrospective accounts. *Written Communication*, 1(4), 429-445. doi: 10.1177/0741088384001004003

Torbert, W. R. (1999). The distinctive questions developmental action inquiry asks. *Management Learning*, 30(2), 189-206. doi: 10.1177/1350507699302006

Torbert, W. R. (2006). The practice of action inquiry. In P. Reason & H. Bradbury (Eds.), *The Handbook of Action Research* (pp.207-218). London: Sage.

Tschannen-Moran, M., & McMaster, P. (2009). Sources of self-efficacy: Four professional development formats and their relationship to self-efficacy and implementation of a new teaching strategy. *The Elementary School Journal*, 110(2), 228-245. doi: 10.1086/605771

Walsh, K., & Fisher, D. (2005). Action inquiry and performance appraisals: Tools for organizational learning and development. *The Learning Organization*, 12(1), 26-41. doi: 10.1108/09696470510574241

Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems Thinker*, 9(5), 2-3.

Zee, M., & Koomen, H. M. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, 86(4), 981-1015. doi: 10.3102/0034654315626801

Table 1

Professional Development Activities

ACTIVITY	OBJECTIVE	HOURS
Workshop 1	Workshop attendees gained an understanding of the comprehensive approach to the SHCP, engaged in brainstorming of the implementation of SHCP in their communities, and received guidance from counties who previously implemented SHCP.	8
Workshop 2	Participants gained a solid foundation in guided inquiry and an understanding of how each module in the SHCP curricula is facilitated.	24
Monthly Check-in Meetings:	Participants shared successes, discussed program challenges, and collaborated to solve problems on topics included SHC^2 Program Evaluation; Gardening; School Site Wellness; Modules 1 & 2, Cooking Demonstration 1; Health Fairs; Modules 3 & 4, Cooking Demonstration 2; Lunchroom Marketing & Promotion; Modules 5 & 6 - Cooking Demonstration 3 & 4; Summer Plan - Garden Sustainability; Cooking Demonstration 5	9
Focus Feedback Forum	The objective of the Focused Feedback Forum was to gather feedback from county teams in order to identify improvements to the SHCP.	5
TOTAL		46

Table 2

Mean Scores and Standard Deviations for Educator Self-Efficacy Before and After Participation in Professional Development

Questions	After participating in the SHCP Post Score Mean (SD)	Prior to participating in the SHCP Pre Score Mean (SD)	*t*-value	*p*-value
Q1A/1B: I believe I can do a good job teaching students about nutrition.	4.50 (.707)	3.60 (1.265)	2.212	.054
Q2A/2B: I am able to stimulate students enough so they ask thoughtful questions about nutrition.	4.40 (.699)	3.10 (.994)	4.333	.002 *
Q3A/3B: I believe I can do a good job teaching students about consumerism.	4.80 (.422)	3.90 (.738)	5.014	.001 *
Q4A/4B: I believe I can evaluate improvements in nutrition skills.	4.60 (.516)	3.70 (.949)	2.862	.019 *
Q5A/5B: I believe I can do a good job teaching students about nutrients.	4.40 (.843)	3.20 (1.751)	2.343	.044 *
Q6A/6B: I believe increased teaching time in nutrition produces significant changes in nutrition-related behaviors of many students.	4.60 (.516)	3.90 (.994)	2.090	.066
Q7A/7B: I believe the students I teach will become more knowledgeable about nutrients.	4.80 (.422)	3.60 (.843)	4.129	.003 *
Q8A/8B: I believe the students I teach will be more knowledgeable about the recommendations for a healthy diet.	4.70 (.675)	3.80 (.919)	2.862	.019 *
Q9A/9B: I act as a facilitator for youth as they work on their activities.	4.40 (.966)	2.80 (1.135)	6.000	.000 *

Q10A/10B: I understand how to lead a group of students through the inquiry-based learning process.	4.70 (.483)	2.70 (1.337)	5.071	.001 *
Q11A/11B: I believe that using an inquiry-based approach is an effective way to learn and teach.	4.70 (.483)	3.50 (.850)	4.129	.003 *
Q12A/12B: I ask youth open-ended questions, such as, "Explain what you know about XX."	4.80 (.422)	3.00 (1.054)	5.511	.000 *
Q13A/13B: I believe that participating in a community of practice is an effective way to strengthen educators' skills.	4.60 (.699)	3.80 (.919)	2.449	.037 *
Q14A/14B: I teach youth through direct instruction, using techniques such as lectures or demonstrations.	3.30 (1.337)	3.90 (1.197)	-1.327	.217
Q15A/15B: I encourage youth to apply concepts they learn to new situations.	4.30 (.823)	3.80 (.919)	2.236	.052

KEY

N = 10

1= strongly disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, 5 = strongly agree

***** Indicates statistical significance

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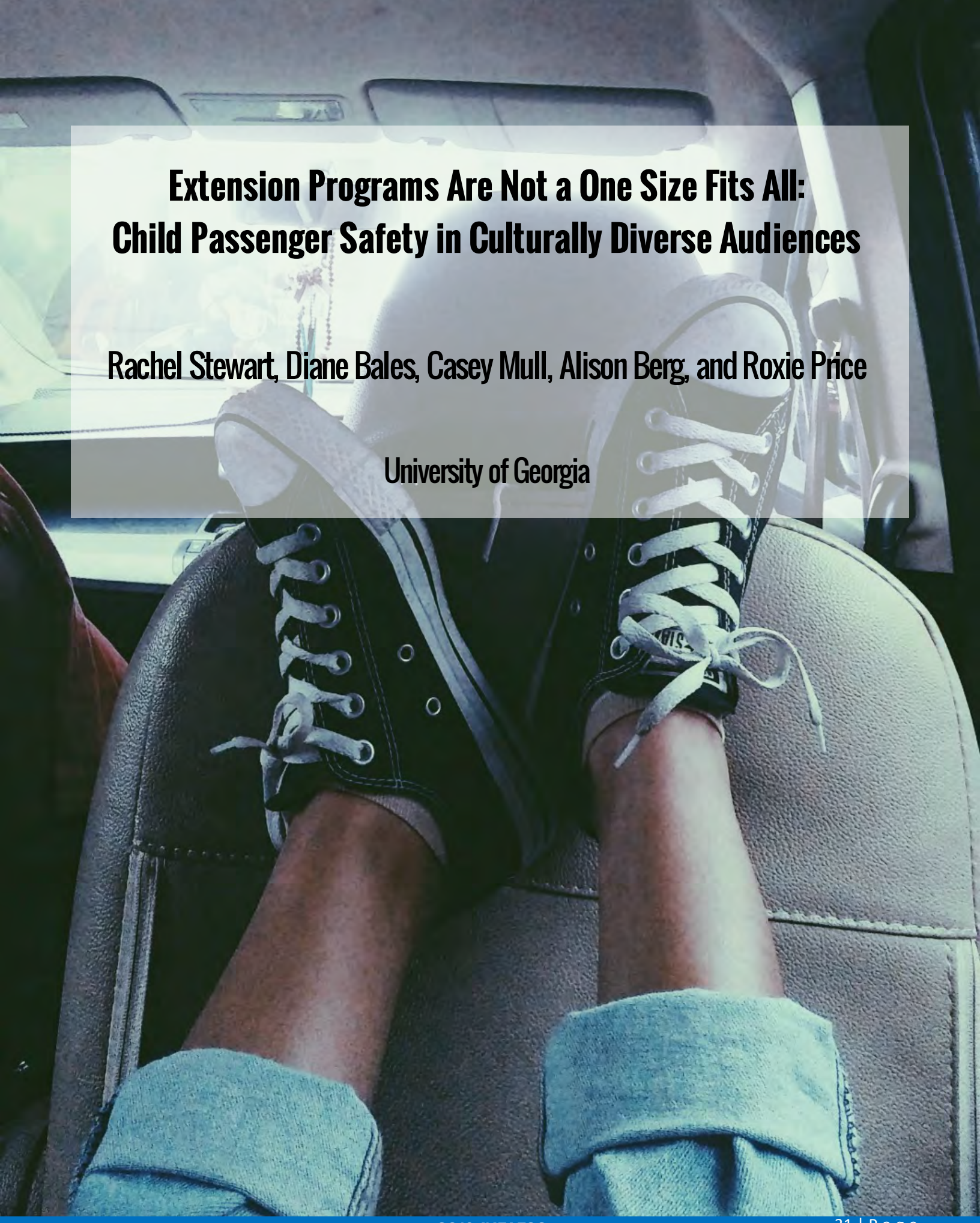

Extension Programs Are Not a One Size Fits All: Child Passenger Safety in Culturally Diverse Audiences

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University of Georgia

Abstract

Motor vehicle crashes are a leading cause of death for children across the United States. A 3-year study to identify factors that prevent parents from following proper safety protocol was conducted. A primary barrier identified was cultural differences. Because the trainer came to their community and made them comfortable to ask questions, 100% of the Latino respondents indicated that the training was very beneficial. Overall, this research showed that there is a lack of understanding in regards to child restraints. Classes, especially the one-on-one sessions can have a tremendous impact on proper use and adoption of safety device in vehicles.

Extension Programs Are Not a One Size Fits All: Child Passenger Safety in Culturally Diverse Audiences

According to the National Highway Traffic Safety Administration (NHTSA), a leading cause of death for children is caused by motor vehicle crashes (2018). Road traffic crashes are the second leading cause of death for those aged 5-14 years old and the leading cause of death in those aged 15-19 years old (Sauber-Schatz, Thomas, Cook, 2015). Injuries sustained in motor vehicle crashes are the leading cause of injury and death for U.S. children older than 1 year of age (NHTSA, 2018). Of the children killed in motor vehicle crashes, 50% are unrestrained (NCIP, 2004). In the U.S., all 50 states have laws that mandate child passenger restraint; however, having child restraint laws is not enough to keep children safe. A challenge leading to child injuries and deaths is parents' lack of knowledge about correct use of child restraints in vehicles (Sauber-Schatz et al, 2015). Most American adults assume that car seat installation is something everyone should know how to do. In reality, installation of a child restraint is a complex process that requires comprehension and application of instructions from the child restraint manual and the vehicle's owner's manual. Because there are many steps in the process of installation of a child restraint, many restraints are installed incorrectly.

When correctly installed and used, car seats reduce the risk of death by 71% in infants and 54% in toddlers (NHTSA, 1996). NHTSA (2018) reported, 80 to 90% of car seats are installed or used incorrectly. In Georgia, 66% of all vehicle passenger fatalities age 5 years and older were unrestrained (Georgia Department of Law Consumer Protection Division, 2019). Georgia law for child safety changed in 2011 to state all children under eight years of age and 57 inches tall be restrained by a child safety restraint. However, many parents are unaware of these changes.

Safety experts recommend booster seats for children 4 to 8 years of age who are under 57 inches tall (NHTSA, 2018). Booster seats elevate children so the seat belt system fits across the hip bones limiting the risk of internal injuries. Seatbelts are made for adults, not children.

A study showed a difference in the vulnerability of Black and Latino populations (Sauber-Schatz, E., West, B., Bergen, G. 2014). A prior study found racial differences among child safety restraint use (Gunn & Cooper, 2006).

According to law enforcement (Kennedy, Personal Communication, March 1, 2017), there is a high rate of unrestrained children in Latino communities. This is a rapidly growing issue in rural areas of Georgia due to Latino population as the fastest growing segment (Latino American Association, 2019). Latino children are less likely to be properly restrained in the vehicle due to no previous experience or knowledge; therefore, they are at higher risk of injury in the event of a car crash (Ebel, et al, 2006). Existing research studies have indicated usage of child safety and booster seats is low among Latino parents because they are often less knowledgeable about proper use than non-Latino parents (Vaca, Anderson, Agran, Winn, & Cheng, 2002). In a previous study with Latino families, the fear of receiving a ticket (79%) was cited more often than child safety (70%) as a potential motivator for using a booster seat (Ebel et al, 2006). Research by Medoff-Cooper (2007) comparing cultural differences, a focus group of white mothers stated that their children were in a car seat nearly all of the time as compared to a focus group of African American and Latino Mothers who reported a mixed usage of child car seats. This study indicated a difference in parenting styles and the avoidance of confrontations to allow the children to ride without the car seat within the two groups. Thus, child passenger safety is a public health priority among all infants and children, however, Latino families might need particular support and education to improve child restraint behaviors.

Purpose

The purpose of this study is to identify the challenges and barriers that influence parents' use of child restraints in vehicles, particularly among Latino families. Southeast Georgia had a significant growth of Latino families (Torres, 2018). The Child Passenger Safety Program is provided by the University of Georgia (UGA) Traffic Injury Prevention, Governor's Office of Highway Safety, and NHTSA and implemented by University of Georgia Extension Family and Consumer Sciences (FACS) Extension. The educational program includes a 3-hour workshop including a presentation on current state law, best practices, and usage of different types of seats. The program included key concepts on safety such as seatbelts, projectiles, crash forces, and car seat expiration dates. The program concludes with a hands-on demonstration of car seat installation and installation test to ensure adults' mastery. Exposure to an educational intervention provided by child passenger safety technicians (CHST) was associated with car seats being used more properly than seats of families not exposed to the intervention in a Latino community (Martin, Holden, Chen, & Quinlan, 2006). To date, the training program has been implemented in five rural counties in Georgia. At the completion of this program, a questionnaire was given to participants to measure the impact of the program and barriers for families.

Method

Participants included parents of children under the age of 18 years old that attended a UGA Extension delivered child passenger safety program between September 2017 and February 2019, with no other restrictions. Participants ranged in age from 18 to 64 years old (mean = 35 years). Most respondents were female (95%), and 66% of the respondents self-identified as non-white race. These non-white race groups include Black, Latino, American

Indian, and Asian. The study questionnaire was completed by 99 parents (response rate: 66%).

Participants were asked to complete a quantitative and qualitative questionnaire that collected data about their demographic characteristics, knowledge of car seats, and behaviors associated with child restraints and seat belts. Participants were given the option of completing a written survey or invited to participate in a focus group. This study was approved by the University of Georgia Institutional Review Board.

The questionnaire included open-ended questions such as, “What do you remember about seatbelts?”, “What was your earliest memory of buckling up?”, and “How important are seatbelts?” Another set of questions sought knowledge-based content taught during the program such as “What are current State Laws for Child Passengers?”, “Do car seats expire?”, and “Is the pinch test the best way to ensure the harness is tight enough?” Another final series of questions sought the comfort level of the parent in using child restraints.

Data was analyzed using a combination of quantitative and qualitative methods. For quantitative data analysis, current UGA licensed version of Excel 2016 was used. For qualitative data, thematic coding was used to identify key concepts and themes. Qualitative data from focus groups was analyzed using Atlas.ti version 8.0. For the qualitative data, two researchers independently coded responses and identified themes and categories in the data. The researchers then compared codes in order to identify the most important overarching themes regarding parents’ perceptions and practices in child passenger safety.

Results

The leading motivator for parents using child restraints were child passenger laws; 97% of parents identified this as important. The leading barrier for parents who did not use appropriate child restraints was lack of knowledge. A notable barrier for parents in both groups (95% of users and 90% of non-users) indicated the cost of the seats was a struggle.

There were notable differences in child restraint use between Latino and non-Latino respondents. Prior to this class, 95% of Latino respondents reported never using a car seat or seatbelt before the class, and 99% of Latino participants were unaware of seatbelt or car seat laws. In contrast, 95% of respondents that identified as white or African American reported early memory of seatbelts and car seats as children. Ninety-five percent of participants identifying as Latino stated they did not have any early memory of using seatbelts. One female participant stated, “We did not wear seatbelts as children. I was an adult and had children of my own before I started using seatbelts.” Another participant stated, “I was in Mexico when I was a child, but I started to use my seatbelt when I got to the U.S.” In the non-Latino group, knowledge level varied with 55% stating they were comfortable with their level of knowledge and 40% stating they were not comfortable with their knowledge of child safety restraints in vehicles. A total of 95% of Latino respondents indicated low-level knowledge on basic use of car seats, and 90% Latino respondents indicated they were not comfortable with their ability to use car seats. When asked about the motivation to use child restraints, 100% of Latino respondents indicated the fear of getting a ticket.

After the class, 100% of the Latino respondents indicated that training was beneficial due to trainer coming to their community. In the focus groups, respondents noted that the educator traveling to their community helped them feel comfortable. As stated by a Latino mother in this

study, “A big difference in this program is the trainer came to our community and made us feel very comfortable.

Survey results indicated numerous barriers to proper restraints on children under the age of 18 in all demographics. In particular to the Latino population, lack of knowledge and experience of using child restraints were reported as the top barrier with other barriers indicated as the child’s comfort level in seat, parenting styles, and family/peer influences. Among non-Latino participants, there were many barriers including generational role modeling, and influences of family/peers.

The qualitative research was consistent with the participants’ responses on the quantitative survey. The overarching themes regarding parents’ perceptions and practices in child safety included level of knowledge and past experience with car seats. For example, most participants noted they had little prior knowledge on how to properly install a car seat. One participant noted, “We were new to the country and just started a job so all of the information was new and we didn’t have car seats.” Another theme reported was expiration dates. No participant reported knowledge of car seat expiration dates. Knowing when to transition from car seat to seat belts was identified in the survey results. The importance of buckling up with seats belts was identified with survey results.

Participants indicated their motivation was fear of a ticket from law enforcement to have a booster seat but they were not confident in its use. One participant stated, “A family member handed me an old seat and said you have to have it in the car.” She had no idea how to use it.

Summary/Discussion

This study showed that child passenger safety education is needed across all demographics, and is especially important for Latino parents because they may be less familiar with child restraints. While the instrument did not specifically ask how recently the Latino individuals immigrated to the United States or moved to Georgia, it is appropriate to assume that the majority of the respondents immigrated recently and were unfamiliar with the child safety laws of the United States and specifically Georgia. This study found a difference in the vulnerability of non-Latino and Latino populations. The results are consistent with prior research studies indicating that Latino parents are often ill-informed about the proper use of child safety seats and especially unlikely to use booster seats (Vaca et al, 2002). When a family immigrates to the United States or even relocates within the United States to a new state with different laws, there may be less experience or knowledge of using car seats or booster seats. In this study, results indicate 95% of Latino respondents never used a car seat or seatbelt before relocating to a southern state. Thus, this population may need a series of programs designed for each concept in the safety of children. Potential components to a program may depend on how recently the participants immigrated to the U.S. Programs such as Extension Child Safety help meet the needs of a community. Extension faculty must work to reach recently immigrated Latino audiences to ensure they are knowledgeable of local laws as well as correct use of child restraints.

Our findings were similar to that of other researchers (Ebel, 2006 & Medoff-Cooper, 2007) and suggest that Latino families may have less knowledge and experience with child safety restraints. Perhaps because of this lack of knowledge, our study and others (Vaca et al, 2002) found that a fear of receiving a citation was reported as a stronger motivator than child safety. In this study, participants report this to be a motivator in having a car seat but not understanding how to use it properly. We can conclude from this study that more education is

needed in the area of child safety. Through hands-on demonstration trainings, we can educate parents to use safety devices to protect their children in vehicles as a new concept (Knowles, Swanson, & Holton, 2011).

Overall, this study illustrated the lack of understanding of safety devices usage for children under the age of 18, especially in the Latino populations. Training can have a tremendous impact on proper use and adaption of safety devices in vehicles. Educational programs need to be developed to meet the needs of individual clients with no prior baseline knowledge. Considering cultural differences with clients is a must when developing programs. As stated in these results, gaining the trust and comfort level of clients is very impactful on the success of the parents' learning. As stated by a Latino mother in this study, "A big difference in this program is the trainer came into our community and made us feel very comfortable. This is very different for us. We had never used car seats or seatbelts until we came to the U.S." Another participant stated, "We were new to the country so all of the information was new and we didn't have car seats. We were borrowing seats." Responses indicated that this is a new concept for families that have not originated in the United States. With these results, it indicated the need to revise how programs on child restraints, seatbelts, and basic safety in vehicles are being taught. The success of the child safety program was due to introducing and offering this program in an environment that was comfortable and welcoming to the clients. To meet the needs of this clientele, extension educators must consider culturally diverse communities. This may affect the identification and recruitment of program participants. In implementation, educators should consider the experiences or lack of experiences to assist these clients in learning.

This study provides information about the parents' behaviors and attitudes regarding child restraint usage. This research can help inform future child passenger safety education and assist educators in an awareness of any cultural barriers that would influence the success of

the understanding of key concepts. Community education programs can have a tremendous impact on proper use and adoption of safety devices in vehicles. These programs are important for preventing child passenger injury and death in rural Georgia.

References

Baker, S.P., Braver, E.R., Chen L., Pantula, J. F., & Massie, D. (1998). Motor vehicle occupant deaths among Hispanic and Black children and teenagers. Archives of Pediatrics & Adolescent Medicine, *152*(12), 1209-1212.

Ebel, B.E., Coronado, G., Thompson, B., Martinez, T., Fitzgerald, K., Vaca, F., & Rivara, F. (2006). Child passenger safety behaviors in Latino communities. Journal of Health Care for the Poor and Underserved, 17(2), 358-373. Georgia Department of Law Consumer Protection Division. Child Car Seats. (2019) Retrieved March 28, 2019 from http://consumer.georgia.gov/consumer-topics/child-car-seats

Governors Highway Safety Association. Child passenger safety laws. (2012) Retrieved from http://www.ghsa.org/html/stateinfo/laws/childsafety_laws.html. April 1, 2019.

Gunn, V., Phillippi, R., & Cooper, W. (2005). Racial differences in child safety restraint use in Tennessee. Injury Prevention, *11*(6), 340-342.

Johnston, B., Bennett, E., Quan, L., Gonzalez-Walker, D., Crispin, B., & Ebel, B. (2009). Factors influencing booster seat use in a multiethnic community: lessons for program implementation. Health Promotion Practice (10(3), 411-418.

Kennedy, B. J. (2017, October 4). Personal Interview. Latin American Association. The Latino Population. (2019) Retrieved from https://crashstats.nhtsa.dot.gov/Api/Public/Publication/812491

Martin, M., Holden, J., Chen, Z., & Quinlan, K. (2006). Child passenger safety for inner-city Latinos: new approaches from the community. Injury Prevention, *12*(2), 99-104.

Medoff-Cooper, & B., Tulman, L. (2007). Using a focus group to determine car seat usage among mothers of children aged 3-7 years (2007). The American Journal of Maternal/Child Nursing, *32*(3), 165-169.

National Highway Traffic Safety Administration. (2018). Traffic Safety Facts. Retrieved from https://crashstats.nhtsa.dot.gov/Api/Public/Publication/812491

National Highway Traffic Safety Administration. Revised estimate of child restraint effectiveness. Research Note. December 1996; US Department of Transportation. Washington DC.

Peden, M., Oyegbite, K., Ozanne-Smith, J., Hyder, A., Branche, C., Rahman, A., & Bartolomeos, K. (2008). World report on child injury prevention. Retrieved from http://whqlibdoc.who.int/publications/2008/9789241563574_eng.pdf

Raman, S., Landry, M., Ottensmeyer, C., Jacob, S., Hamdan, E., & Bouhaime, M. (2013). Keeping our children safe in motor vehicles: knowledge, attitudes and practice among parents in Kuwait regarding child car safety. International Journal of Injury Control and Safety Promotion, *20*(4), 358-67.

Sauber-Schatz, E., Thomas, A., & Cook, L. (2015). Motor vehicle crashes, medical outcomes, and hospital charges among children aged 1-12 years, crash outcomes data evaluation system, 11 states, 2005-2008. Centers for Disease control and Prevention, 64(8), 1-32.

Sauber-Schatz, E., West, B., & Bergen, G. (2014). Vital signs: restraint use and motor vehicle occupant death rates among children aged 0-12 years-United States, 2002-2011. Morbidity and Mortality Weekly Report, 63(5), 113-118.

Torres, A. (2018). 2017 Annual Report. Retrieved from https://thelaa.org/wpcontent/uploads/2009/02/17_12_THELAA_Annual-Report_Visualizacion.pdf

Vaca F., Anderson C., Agran P., Winn, D., Cheng, G. (2002). Child safety seat knowledge among parents utilizing emergency services in a level I trauma center in Southern California. Pediatrics, *110*(5), e61.

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Measuring the Regional Impact of Extension Home Food Preservation Education Using Standardized Evaluation Tools

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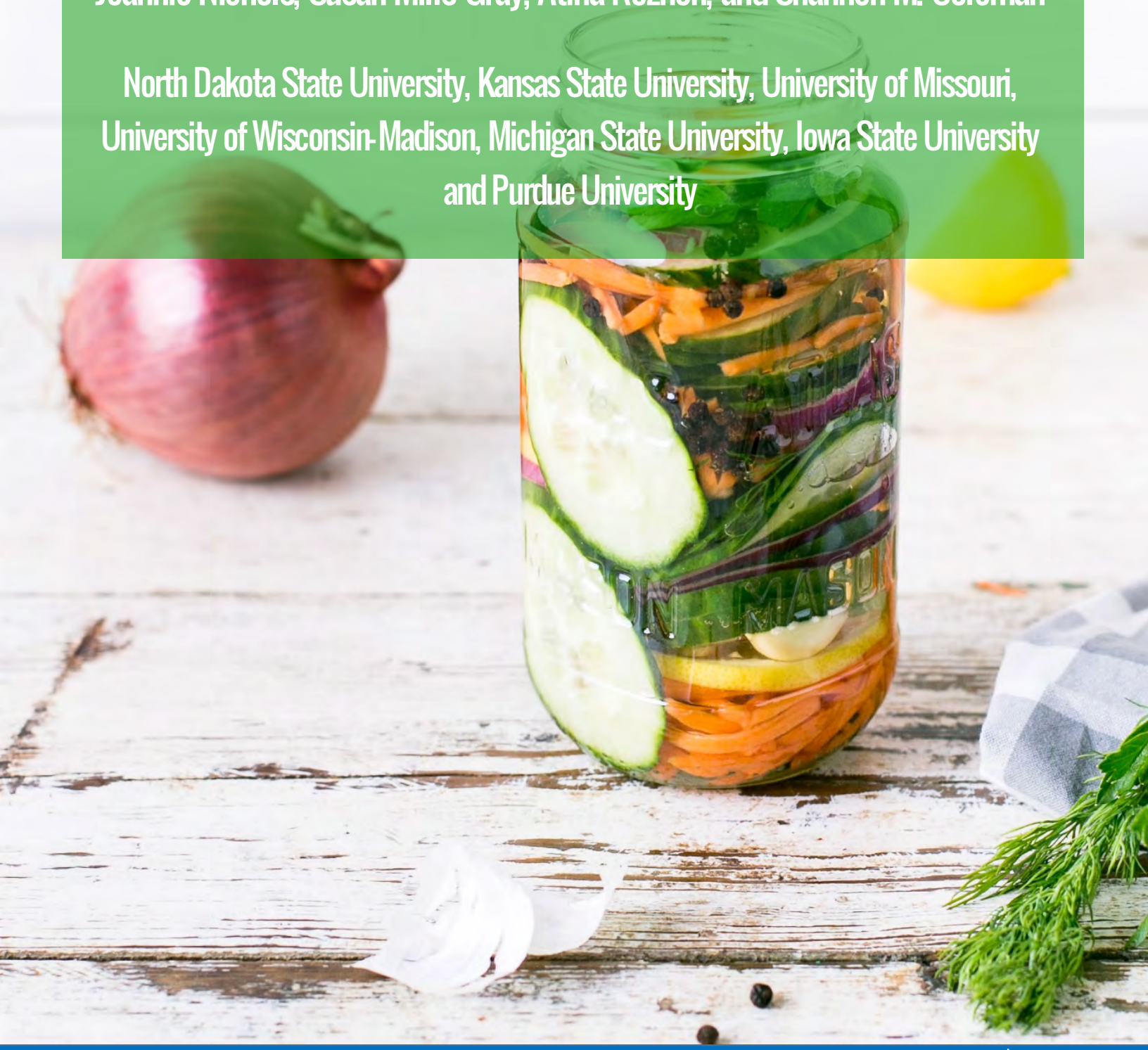


Abstract

Home food preservation education has been implemented through the Extension system for more than 100 years, but the efforts have not been evaluated systematically and collectively across states. A five-state team created a standardized evaluation tool for home food preservation programs that was administered to more than 1,600 participants. Results showed that, after participating in an Extension program, individuals were significantly more confident in their home food preservation knowledge and their ability to share research-tested Extension recommendations with friends and family. A 3-month follow-up evaluation completed by 201 participants indicated 67% had changed their practices and 93.5% had shared research-tested recipes. Using standardized evaluation tools allowed the sharing of impacts across several states.

Measuring the Regional Impact of Extension Home Food Preservation Education Using Standardized Evaluation Tools

Cooperative Extension, through the Smith-Lever Act of 1914, has provided home food preservation information and education for more than 100 years (National Center for Home Food Preservation, 2019). Recently, consumers have become increasingly interested in gardening and home food preservation, with canning supply manufacturers reporting increased sales (Parekh, 2013). Food preservation recommendations continue to evolve with scientific discovery. Taylor, Nichols, & Cook, (2014) reported that using informal sources of home food preservation information, including family members, friends, and the Internet, were most common among those with fewer years of canning experience. Food improperly canned at home has been linked with botulism outbreaks, including a 2018 outbreak linked to homemade potato salad made with home-canned peas, and a 2015 outbreak linked to potato salad made with home-canned potatoes, and processed in a boiling water canner (Ingham, 2019; McCarty et al., 2015).

Historically, Extension home food preservation information has been provided through federal farmers' bulletins (dating to 1909), wartime publications (1943 to 1944), home and garden bulletins (1945 to 1982), and the "Complete Guide to Home Canning" (National Center for Home Food Preservation, 2019). Currently, a range of home food preservation educational strategies are used by Extension educators, including interactive-online modules, videos, hands-on workshops, and hybrid programs that combine in-person workshops with online lessons (Driessen, 2013; Dye & Hoffman, 2014; Francis, 2014; Goard, Hill, Shumaker, & Warrix, 2013; Nummer, 2004).

Extension educators routinely evaluate food safety programs for their influence on increasing knowledge and changing behavior, and various evaluation techniques are used to determine impacts on attitudes, knowledge and/or behavior. The advantages of using a retrospective post-then-pre design in Extension programming were reported by Rockwell & Kohn (1989). This design allows participants to report current knowledge or behaviors and compare their previous knowledge (University of Wisconsin Extension, 2005). This method, which differs from the typical pre-test/post-test design, is designed to minimize "response-shift bias," where participants may overestimate their abilities at the beginning of an educational program (University of Wisconsin Extension, 2005).

Purpose

The goal of this project was to evaluate Extension home food preservation efforts across several states to create regional impact reports on food preservation outreach. The objectives were (a) to develop a standardized set of evaluation tools that were piloted and then administered to a wide audience; (b) to measure participants' confidence and understanding of the content in trainings using the developed tools; (c) to improve behavior related to food preservation; and (d) to increase use of Extension home food preservation materials. This manuscript describes the process and results of implementing standardized evaluation tools for Extension home food preservation education.

Method

The multi-state North Central Region Extension Food Safety Team, formed in 2016, developed end-of-session and follow-up home food preservation evaluation tools, which were

approved by the respective states' institutional review boards. The retrospective post-then-pre evaluation tool was designed to be general enough to be used with any home food preservation educational program, regardless of topic, format or length. The tool provided impact data from individual states and from the entire region to share with constituents and decision makers.

Along with collecting information about workshop topics and home food preservation experience, the tool was comprised of four distinct 5-point Likert-type items that asked participants to rate their level of agreement before and after the workshop. A five-item follow-up online evaluation was administered at least three months after the training to participants who provided contact information.

Prior to implementation, evaluation specialists and state and regional/county Extension educators/agents reviewed and pilot-tested the evaluation tools. Then project team leaders conducted training on using the tool for Extension agents in their respective states, and the evaluation tools were piloted in five states by Extension agents. In the initial year of data collection, the following states participated (number of participants in each state listed after that state): Indiana-62, Kansas-210, Michigan-915, Missouri-455, North Dakota-78. For 34 participants, a location was not recorded. Incomplete evaluations (e.g. page 1 or page 2 not completed) were excluded from statistical analysis. A subset of participants who provided contact information (N = 201) were invited to complete an online follow-up evaluation 3 to 6 months after the initial training. Responses were entered into a database program (Qualtrics, 2002) at the lead author's university, with data distributed to the state contacts. A collective impact report was shared regionally on a website developed for the project (https://www.ag.ndsu.edu/ncrfoodsafety).

Data Analysis

Qualtrics software (Provo, UT) was used for collection and preliminary analysis of evaluation data, with output analyzed using Statistical Package for the Social Sciences (SPSS) (Version 24.0, 2015). Data were analyzed using paired *t*-tests. Participants who were missing values for either post- or pre-survey were not included in the analysis of that item.

Results

Participants (N=1,620) in various trainings held in five states learned about boiling water canning (28% of respondents), pressure canning (17%), jams, jellies, and sweet spreads (13%), pickling (11%), freezing (8%), drying (4%), fermentation (2%), and other topics. Most of the trainings were 1-3 hours in length (89%), with some (7%) more than 3 hours and 5% less than 1 hour. Many participants (30%) reported that they have been preserving food at home for more than 10 years, while 27% have been preserving food for less than one year. Almost all (96%) said that they learned information in the program that was new to them. When thinking retrospectively, as a result of Extension training, most participants indicated significant increases in confidence in their food preservation abilities ($p < 0.001$), understanding of the importance of following research-tested recipes ($p < 0.001$), and ability to identify trustworthy sources ($p < 0.001$). The paired sample *t*-test results of the evaluation are presented in Table 1, and the mean ratings of the four items before and after training are shown in Figure 1.

According to respondents of the 3-month post-workshop follow-up online survey (N=201), 67% had changed their food preservation practices, and 93.5% indicated they always practice safe food preservation practices at home. In addition, 94.5% had shared Extension resources, and 96% indicated greater confidence in their ability to preserve food safely at home (Table 2).

About 7% said that they had contacted Extension since the training to follow up on the topic(s) presented at the training, 11% said they had contacted Extension to follow up on other topic(s), 62% said they would contact Extension in the future, and 19% said they had not contacted Extension.

Discussion

This project showed use of standardized evaluation tools across five states. Participants in Extension training were significantly more confident in their knowledge of research-based recommendations and skills in food preservation. Using a consistent research protocol and uniform evaluation tool allowed the regional team to show impact of a variety of Extension home food preservation trainings across a wide range of formats and instructional modalities. As a strength of the study, this project supported enhanced regional partnerships among the specialists and agents from five states, implemented new evaluation tools, and promoted sharing of resources through a website and regular communication through monthly web-based meetings.

Although evaluation indicated statistically significant differences, some Extension agents using the tool reported that some learners were confused by the post-then-pre nature of the evaluation tool because they were used to a different method, which was a potential limitation of the project. As a result, additional explanation of the tool was necessary, and a how-to-use guide was revised and disseminated to all the participating states so that the explanation of the tool was as consistent as possible. The team has begun using a revised pre-post evaluation tool and how-to-use guide to conduct a multi-state evaluation.

In summary, multi-state partnering promotes the development of future regional research, education and Extension projects and represents an opportunity for Family and Consumer Sciences educators. When educational programs are evaluated consistently, the compiled results can be used to show impact to administrators, constituents and decision makers on a state, regional, and national level. This group created impact statement handouts that were disseminated in several states and online to show regional results of home food preservation educational trainings.

References

Driessen, S. (2013). Food preservation mini-modules offer options for learners and extension staff. *Journal of Extension*, *51*(6). Retrieved from https://www.joe.org/joe/2013december/pdf/JOE_v51_6iw7.pdf

Dye, L., & Hoffman, K. (2014). 5 Steps to Food Preservation Program Meets the Needs of Idaho Families. *Journal of Extension*, *52*(2). Retrieved from https://joe.org/joe/2014april/pdf/JOE_v52_2iw4.pdf

Francis, S. L. (2014). Hybrid food preservation program improves food preservation and food safety knowledge. *Journal of Extension*, *52*(4). Retrieved from https:/www.joe.org/joe/2014august/tt8.php

Goard, L. M., Hill, M., Shumaker, K., & Warrix, M. (2013). Home food preservation training for extension educators. *Journal of Extension*, *51*(4). Retrieved from https://joe.org/joe/2013august/pdf/JOE_v51_4tt7.pdf

IBM SPSS, I. S. (2015). *Version 24.0*. USA: IBM Corp.

Ingham, B. H. (2019). Botulism outbreak linked to home-canned peas. Retrieved August 19, 2019, from https://fyi.extension.wisc.edu/safepreserving/2019/04/02/botulism-outbreak-linked-to-home-canned-peas/

McCarty, C. L., Angelo, K., Beer, K. D., Cibulskas-White, K., Quinn, K., De Fijter, S., … Rao, A. K. (2015). Large outbreak of botulism associated with a church potluck meal — Ohio, 2015. *Morbidity and Mortality Weekly Report*. Retrieved from https://doi.org/10.15585/mmwr.mm6429a6

National Center for Home Food Preservation, N. C. for H. F. P. (2019). Evolution of USDA Home Canning Recommendations. Retrieved August 19, 2019, from https://nchfp.uga.edu/educators/historical/usda_pubs_evolution.html

Nummer, B. A. (2004). Creating an interactive home food preservation tutorial in flash. *Journal of Extension*, *42*(1). Retrieved from https://www.joe.org/joe/2004february/tt3.php

Parekh, R. (2013). Ball and its mason jars get better with age – Thanks to Pinterest, DIY. Retrieved August 19, 2019, from https://adage.com/article/behind-the-work/ball-mason-jars-age-pinterest-diy/240911

Qualtrics (2002). XM Platform. Provo, UT, USA: Qualtrics. Retrieved from https://www.qualtrics.com/about/

Rockwell, S. K., & Kohn, H. (1989). Post-Then-Pre Evaluation. *Journal of Extension*, *27*(20). Retrieved from https://www.joe.org/joe/1989summer/a5.php

Taylor, G., Nichols, A., & Cook, A. (2014). How knowledge, experience, and educational level influence the use of informal and formal sources of home canning information. *Journal of Extension*, *52*(5). Retrieved from https://joe.org/joe/2014october/pdf/JOE_v52_5rb6.pdf

University of Wisconsin Extension, U. of W. E. (2005). Quick tips 27: Using the retrospective post-then-pre design. Retrieved from https://fyi.extension.wisc.edu/programdevelopment/files/2016/04/Tipsheet27.pdf

Table 1
North Central Region Home Food Preservation Training Evaluation Results Using Paired Sample t-test

Item	*N* (% of *N*)	Mean Difference (After – Before)	*t*	*p*
I am confident in my ability to safely preserve food at home.	1620 (92.3%)	1.505	45.743	<0.001
I understand the importance of following up-to-date, research-tested recipes.	1604 (91.4%)	1.367	40.510	<0.001
I will seek Extension resources if I have questions about safely preserving food at home.	1598 (91.1%)	1.321	40.182	<0.001
I am confident I can find and share research-based food preservation recommendations with friends/family.	1581 (90.1%)	1.362	41.398	<0.001

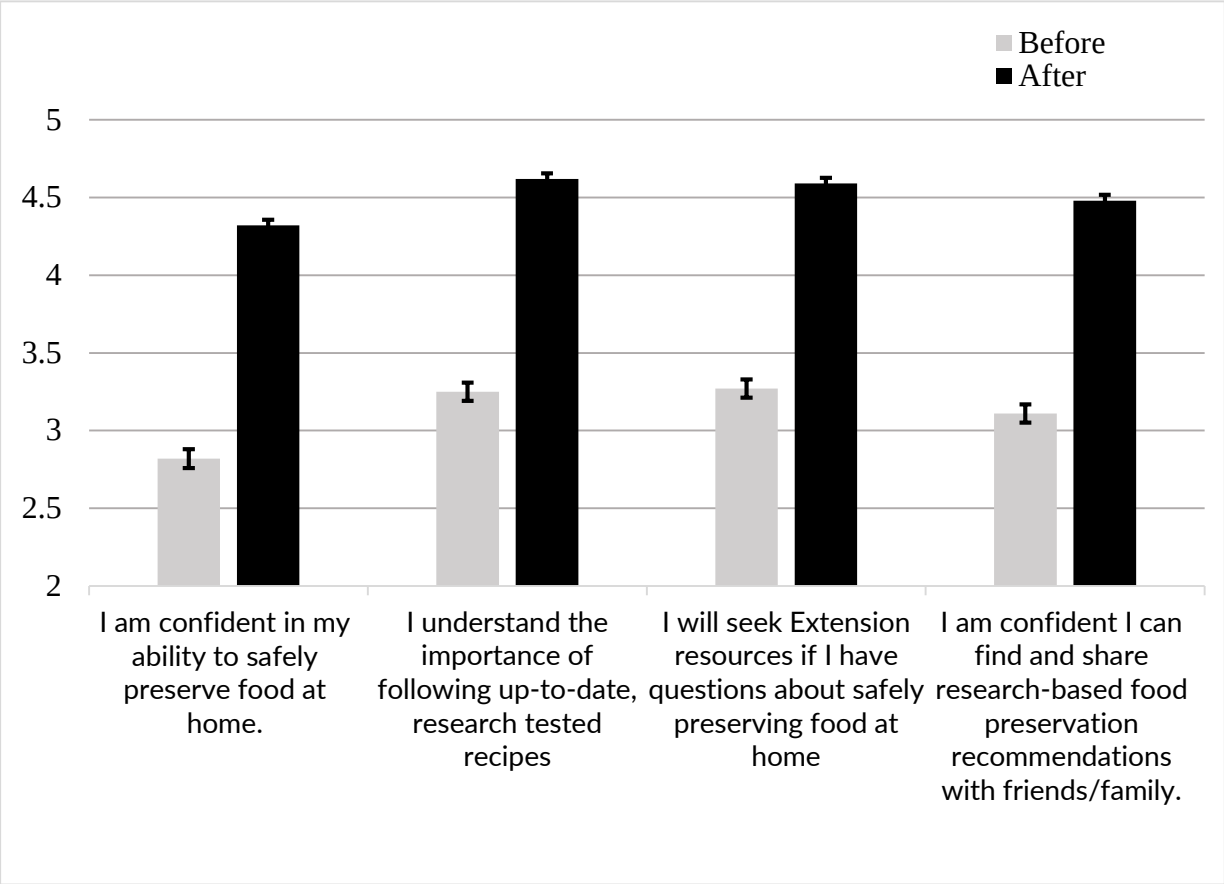
Table 2

Participants' Responses Related to Confidence and Behavior According to Follow-up Survey Administered at Least 3 Months After Participating in Home Food Preservation Education (5 = Strongly agree).

Survey item	N (% of *N*)	Mean	Standard Deviation
As a result of the workshop, I have used Extension home food preservation resources.	190 (94.5%)	4.33	0.783
As a result of the workshop, I always practice safe food preservation skills at home.	188 (93.5%)	4.54	0.606
As a result of the workshop, I am more confident in my ability to preserve safe food.	193 (96.0%)	4.53	0.669
As a result of the workshop, I have shared research-based home food preservation information with family and friends.	188 (93.5%)	4.24	0.914
As a result of the workshop, I changed my food preservation practices to ensure food safety.	135 (67.2%)	4.28	0.769

Figure 1

Participants' Mean Ratings of Survey Items Before and After Home Food Preservation Education (5 = *Strongly agree*).



Acknowledgments

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Understanding Food Pantry Users' Perception of Healthy Food Access in Utah Pantries

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Abstract

In six urban food pantries in Utah, clients (n=235) were surveyed about their level of interest in programs that improve healthy food access. The majority of respondents agreed or strongly agreed that making healthy choices in the pantry was important to them. The most commonly reported barriers included lack of availability of healthy foods and limited time to compare products. Interventions that address these barriers by increasing the amount and visibility of healthy foods in pantries may improve dietary quality of this vulnerable, food-insecure population. Chi-square tests were used to determine associations between demographic characteristics and responses.

Understanding Food Pantry Users' Perception of Healthy Food Access in Pantries

Food insecurity is defined by the United States Department of Agriculture (USDA) as inadequate access to sufficient amounts of food that allow for an active and healthy lifestyle (USDA, 2016). While there are three major federal food programs, Supplemental Nutrition Assistance Program (SNAP), Special Supplemental Nutrition Program for Women, Infants and Children (WIC), and the National School Meal Program that aim to reduce food insecurity and hunger in the United States, 41.2 million Americans, including 6.5 million children, still struggle with hunger (USDA, 2016). In these instances, many turn to local emergency food sites, including food pantries, to ensure they have enough food to last the month (Weinfeld et al., 2014). Historically, emergency food sites supplied food for individuals and families for short periods of especially dire times. However, many pantries have noticed a shift from temporary food suppliers toward a longer-term strategy to fight food insecurity (Weinfeld et al., 2014). This longer-term reliance on pantries to fight food insecurity increases the importance of interventions that improve the availability, appeal, and visibility of healthful foods for pantry clients.

The poor diet quality of many low-income, food-insecure Americans further heightens the need for healthy foods at pantries, yet the availability of such items is often limited (Akobundo, Cohen, Laus, Schulte, & Sousloff, 2004; Byker Shanks, 2017; Kaiser & Hermsen, 2015; Knoblock-Hahn, Murphy, Brown, & Medrow, 2017; Martin, Wu, Wolff, Colantonia, & Grady, 2013; Seligman, Laraia, & Kushel, 2010; Simmet, Depa, Tinnemann, & Stroebele-Benschop, 2017a, Simmet, Depa, Tinneman, Stroebele-Benschop, 2017b). Several studies have found that adult food pantry users are at a high risk for malnutrition related health outcomes (Kaiser & Hermsen, 2015; Robaina & Martin, 2013; Simmet et al., 2017a). Furthermore, children who

experience food insecurity during their developmental years are at an increased risk for worse academic performance, higher body mass index (BMI), and poorer emotional development as compared to food secure counterparts (Jyoti, Frongillo, & Sonya, 2005; Kaiser & Hermsen, 2015). These health disparities could potentially be reduced by offering a wider variety of nutritious foods in food pantries (Byker-Shanks, 2017). However, increasing the amount of healthy options in food pantries is just one step toward improving diet quality of pantry users (Simmet et al., 2017a). In order for programs such as the Supplemental Nutritional Assistance Program-Education (SNAP-Ed) to develop and implement effective nutrition interventions, more research is needed to determine barriers experienced by pantry clients, as well as strategies to make healthy choices easier. Through a literature review, the authors determined no studies to date have asked pantry clients about their perceptions of healthy food access in pantries.

Objective

The objective of this study was to assess the desire for healthy foods in pantry settings, barriers to making healthy selections, and strategies of interest to Utah urban food pantry clients.

Methods

Study Design

The researchers surveyed a convenience sample (n=235) of clients in six urban food pantries in Utah to assess if food pantry users were interested in making healthy choices within a pantry setting. All pantries used a client-choice distribution model. Survey respondents were also asked about common barriers to making healthy choices in the pantry, as well as the

types of program components they felt would be the most valuable. The protocol for this study was approved by the Utah State University Institutional Review Board (IRB). The study was funded through a Utah State University Extension grant. Food pantries were offered an incentive valued around $250 for allowing researchers to survey their clients. Respondents were offered an incentive valued around $10 for their participation. Incentives included a cookbook or small kitchen tool. Researchers visited the pantries two to four times for data collection.

Data and Instrumentation

The survey used in the study was available to participants electronically via a tablet or as a paper copy. The survey contained two tracks of questions. One track was for clients who were familiar with a nudge program implemented by the local SNAP-Ed program and the other was for clients not familiar with the program. Both tracks included seven questions that were answered by all participants. These questions included demographics, frequency of food pantry use, and the recognition of the logo used by the SNAP-Ed nudge program. One question asked participants to rate the importance of making healthy choices within the pantry on a 5-point Likert scale.

Participants who were not familiar with the nudge program were directed to a set of four questions. The questions included level of interest in food pantry programs to make healthy choices easier, which participants answered using a 5-point Likert scale. Participants were also asked to identify barriers they experienced to making healthy choices. Researchers selected six barrier options that were feasible for SNAP-Ed to improve. The barrier options included limited availability, no time to compare products, unsure how to identify healthy foods, uncertain how to prepare healthy foods, do not like healthy foods, and not interested in making healthy choices. They were able to select more than one, as well as manually enter any

barriers not listed. Finally, they were asked about specific types of food pantry program components they felt would be the most valuable to make it easier to make healthy choices. Program components listed included strategies that the SNAP-Ed program could implement, such as shelf signs/labels, posters, recipe cards, nutrition classes and recipe samples.

Data Analysis

Data analysis was conducted using SPSS 25.0 (version 25.0, SPSS Inc., Chicago, IL, 2017). Frequencies of responses were identified and used for program development and improvement. Chi-square associations were used to identify associations between a variety of categorical variables including demographic characteristics of gender, age, ethnicity and race, frequency of pantry use and responses to the questions of program interest, barriers to making healthy choices, and valuable program components.

Results

Two hundred thirty-five unique survey respondents reported not being familiar with the SNAP-Ed nudge program. Missing data were dispersed randomly throughout the survey and managed through the addition of a no response category in applicable questions. The majority of survey respondents were non-Hispanic (68%, n=159) females (61%, n=144) with ages distributed evenly from 25 years old to 55 or older (94%, n=221) (Table 1). Ninety-three percent (n=218) of respondents agreed or strongly agreed that making healthy choices at the food pantry was important to them. Age and ethnicity were not significantly associated with how participants responded to this question about importance of making healthy choices ($p=.55$, $p=.23$). However, there was an association between gender and the importance of making healthy choices at the food pantry ($p=.002$) with females being more likely to agree than males. Seventy-eight percent (n=183) of respondents also agreed or strongly agreed that

they were interested in programs that make selecting healthy foods easier in the pantry. Age and gender were not associated with response to this question. However, ethnicity was significantly associated with the response (p=.025) with Hispanic respondents showing more interest in these types of programs than non-Hispanics.

Respondents were also asked to choose common barriers that prevented them from making healthy choices at the pantry. The most commonly reported barrier was lack of healthy choices available (25%, n=58), followed closely by not having time to compare foods (22%, n=51). Unsure how to identify (15%, n=36) and prepare (6%, n=13) healthy foods were also selected as common barriers. The least commonly chosen barriers were not liking to eat healthy foods (4%, n=9) and lack of interest in making healthy choices (3%, n=6). Respondents could also select “other” and manually enter a barrier. The most commonly reported “other” barrier was the poor quality and short shelf life of perishable items. There were no significant associations found between gender or ethnicity and experienced barriers. However, there was a significant association between age group and not having time to compare foods (p=.014) with the barrier being most commonly reported by participants aged 35 and older. Age did not significantly affect response to the other barriers. No significant associations were found between frequency of pantry use and reported barriers (Figure 1).

Finally, respondents were asked to choose what types of program components would be helpful in making the healthy choice the easy choice in a food pantry. The most commonly selected component was shelf signs/labels (68%, n=160) and the least commonly selected component was recipe samples (29%, n=68). There was not a significant association between ethnicity and program components of interest. Sample sizes of race groups were too small to identify significant associations. However, age did have a significant association with the program components of shelf signs/labels (p=.041) as well as nutrition and cooking classes

(p=.007). The youngest age group, 18-24, was the least likely to select shelf signs as a useful intervention. Interest in nutrition classes decreased as age increased, with the age group of 55 and older being the least interested in having access to nutrition classes.

Discussion

Multiple studies discussing the promotion of client nutrition in food pantries have advocated for interventions that improve availability of healthful foods, yet few have reported input from food pantry users themselves (Akobundo et al., 2004; Duffy, Zizza, Jacoby, & Tayie, 2009; Simmet, et al., 2017b). The findings of this study suggest that food pantry clients, especially female clients in Utah, highly value access to healthy foods in pantry settings. This reported value spanned across ethnicities and age groups. Similarly, the vast majority of respondents, especially Hispanic respondents, expressed interest in programs that make healthy choices the easier choice. These consistently reported values of healthy foods and interest in such programs suggesting that interventions which improve visibility and access to healthy foods would be well received at many Utah pantries regardless of the specific demographic characteristics of clients. Identifying and reporting food pantry clients' interest in these types of programs could further justify the development and funding of effective programs aimed at improving access and appeal of healthy foods at pantries.

The findings of this study also identified the most commonly experienced barriers and program components of interest among food pantry users in urban Utah. Some of the most commonly reported barriers were environmental factors, such as limited access to healthy foods and not enough time within the pantry to compare products. Others included individual characteristics such as the skills necessary to identify and prepare healthy foods. In order to

help pantry clients overcome barriers at both the individual and environmental level, multi-level interventions would likely be the most effective (Byker Shanks, 2017; Gittelsohn & Lee, 2013; Story, Kaphingst, Robinson-O'Brien, & Glanz, 2009).

Availability of healthful foods could be addressed through a variety of strategies. Pantries often receive the majority of their food from central distribution centers such as large food banks and individual donations (Verpy, Smith, & Reicks, 2003). Pantries could work with community partners to conduct healthy food drives to request the donation of specific, nutritious items. In addition to community based healthy food drives, policy changes that address the donation of foods from central suppliers such as food banks or corporate donors hold the potential to significantly improve the nutritional quality of items available. As healthy options in the pantry become more available, nudge strategies such as product placement and promotion could be implemented to increase the visibility of these items. Shelf labels and recipe cards, which pantry clients reported as valuable, may be effective strategies to improve visibility and appeal of healthy foods. Nutrition educators could also provide education directly in the pantry. These types of multi-level approaches have shown promise to improve the selection of healthy items by consumers in a variety of retail settings (Gittelsohn, Kim, He, & Pardilla, 2013; Gittelsohn & Lee, 2013, Gittelsohn et al., 2010; Jilcott Pitts et al., 2016). Similar outcomes may also be experienced in client-choice food pantries where clients are able to make their own food selections.

Several previous studies have evaluated the nutritional quality of items available in different settings as well as the health disparities experienced by pantry users (Kaiser & Hermsen, 2015; Robaina & Martin, 2013; Simmet et al., 2017b). However, to the authors' knowledge, no studies have surveyed pantry users about the importance of healthy food access and barriers to making healthy

choices in the pantry. These findings can help direct the development and implementation of strategies that help food pantry clients overcome these barriers by utilizing respondents' input on the most effective program components. Another strength of this study is its recognition of need for multi-level interventions that affect both the environment and the individual characteristics of people being reached. Improving the food environment is equally as important as improving the knowledge and self-efficacy of individuals. The use of these types of interventions is gaining the interest of national nutrition programs including SNAP-Ed.

In addition to the strengths of the study, there were also limitations. While respondents reported that shelf labels would be the most effective program component, they were surveyed in a pantry that had the SNAP-Ed Thumbs Up for Healthy Choices nudge program, which utilized large shelf labels, for at least four months. However, participants were not asked how long they had used the specific pantry services. Lack of familiarity could have been related to being new to the pantry, or it could suggest that shelf labels are not visible enough to be noticed by all clients and should be accompanied by larger marketing pieces such as posters and banners. Another limitation is the potential impact that social desirability bias had on participants' response to specific questions, including the importance of making healthy choices in the pantry (Fischer & Katz, 2000). Social desirability bias may have influenced participants to select responses they felt were the most favorable rather than those that most accurately reflected their opinion. Future research that monitors the frequency of healthy food selection in pantries could provide further evidence that food pantry users value healthy food options.

In summary, it is important that nutrition programs such as SNAP-Ed utilize evidence-based programming to serve their priority populations (USDA, 2017). This study supports the need for interventions that improve access and visibility of healthy choices in food pantries by determining that pantry users in Utah do value healthy food access and are interested in

programs that make the healthy choice the easy choice. Improving access and visibility of healthy choices in food pantries has the potential to improve the diet quality of this vulnerable population.

References

Akobondu, U.O., Cohen, N.L., Laus, M.J., Schulte, M.J., & Soussloff, M.N. (2004). Vitamins A and C, calcium, fruit, and dairy products are limited in food pantries. *Journal of the American Dietetic Association, 104(5), 811-813.*

Byker Shanks, C. (2017). Promoting food pantry environments that encourage nutritious eating behavior. *Journal of the Academy of Nutrition and Dietetics, 117(4), 523-525.*

Duffy P., Zizza C., Jacoby J., & Tayie F. (2009). Diet quality is low among female food pantry clients in Eastern Alabama. *Journal of Nutrition Education and Behavior, 41(6), 414-419.*

Fisher, R.J., & Katz, J.E. (2000). Social-desirability bias and the validity of self-reported values. *Psychology & Marketing, 17(2), 105-120.*

Gittelsohn, J., Kim, E.M., He, S., & Pardilla, M. (2013). A food store-based environmental intervention is associated with reduced BMI and improved psychosocial factors and food-related behaviors on the Navajo Nation. *Journal of Nutrition, 143, 1494-1500.*

Gittlesohn, J., & Lee, K. (2013). Integrating educational, environmental, and behavioral economic strategies may improve the effectiveness of obesity interventions. *Applied Economic Perspectives and Policy, 35(1), 52-68.*

Gittlesohn, J., Song, H.J, Suratkar, S., Kumar, M.B., Henry, S., Sharma, M., Anliker, A. (2010). An urban food store intervention positively affects food-related psychosocial variables and food behaviors. *Health Education & Behavior, 37(3), 390-402.*

Jilcott Pitts, S.B., Wu, Q., Sharpe, P.A., Rafferty, A.P., Elbel, B., Ammerman, A.S., Wall-Bassett, E.D. (2016). Preferred healthy food nudges, food store environments, and customer dietary practices in 2 low-income southern communities. *Journal of Nutrition Education and Behavior, 48, 735-742.*

Jyoti, D.F., Frongillo, E.A., & Sonya, J.J. (2005). Food insecurity affects school children's academic performance, weight gain, and social skills. *Journal of Nutrition, 135, 2831-2839.*

Kaiser, M.L., & Hermsen, J. (2015). Food acquisition strategies, food security, and health status among families with children using food pantries. *Families in Society: The Journal of Contemporary Social Services, 96(2), 83-90.*

Knoblock-Hahn, A., Murphy, A., Brown, K., & Medrow, L. (2017). Integrative nutrition and health models targeting low-income populations: A pilot intervention in three food banks. *Journal of the Academy of Nutrition and Dietetics, 117(1), 128-131.*

Martin, K.S., Wu, R., Wolff M., Colantonia, A.G., & Grady, J. (2013). A novel food pantry program: Food security, self-sufficiency, and diet-quality outcomes. *American Journal of Preventative Medicine, 45(5), 596-575.*

Robaina, K.A. & Martin, K.S. (2013). Food insecurity, poor diet quality, and obesity among food pantry participants in Hartford, CT. *Journal of Nutrition Education and Behavior, 45(2), 159-164.*

Seligman, H.K., Laraia, B.A., & Kushel, M.B. (2010). Food insecurity is associated with chronic disease among low-income NHANES participants. *The Journal of Nutrition, 140, 304-310.*

Simmet, A., Depa, J., Tinnemann, P., & Stroebele-Benschop, N. (2017a). The dietary quality of food pantry users: A systematic review of existing literature. *Journal of the Academy of Nutrition and Dietetics, 117, 563-576.*

Simmet, A., Depa, J., Tinnemann, P., & Stroebele-Benschop, N. (2017b). The nutritional quality of food provided from food pantries: A systematic review of existing literature. *Journal of the Academy of Nutrition and Dietetics, 117, 577-588.*

Story, M., Kaphingst, K.M., Robinson-O'Brien, R., & Glanz, K. (2008). Creating healthy food and eating environments: Policy and environmental approaches. *Annual Review of Public Health, 29, 253-272.*

United States Department of Agriculture Economic Research Service. (2016). Food security status of U.S. Households in 2016. Retrieved from https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics.aspx#foodsecure

United States Department of Agriculture, Food and Nutrition Service, Supplemental Nutrition Assistance Program. (2017). SNAP-Ed Plan Guidance FY 2018, Nutrition Education and Obesity Prevention Grant Program. Retrieved from https://snaped.fns.usda.gov/snap/Guidance/FY2018SNAP-EdPlanGuidance.pdf

Verpy, H., Smith, C., & Reicks, M. (2003). Attitudes and behaviors of food donors and perceived needs and wants of food shelf clients. *Journal of Nutrition Education and Behavior, 35, 6-15.*

Weinfeld, N., Mills, C., Border, M., Gearing, M., Macaluso, T., Montaquila, J., & Zedlewski, S. Hunger in America 2014: A national report prepared for Feeding America, final report. 2014. Washington D.C.: Westat and Urban Institute. Retrieved from http://www.feedingamerica.org/research/hunger-in-america/

Table 1

Demographic Characteristics of Survey Respondents

Gender	No. of Respondents	Percent of Total
Female	144	61%
Male	91	39%
Age, years		
18-24	9	4%
25-34	54	23%
35-44	56	24%
45-54	52	22%
55 or older	59	25%
No response	5	2%
Race		
American Indian/Alaskan native	8	3%
Asian	3	1%
Black	7	3%
Native Hawaiian/Pacific Islander	5	2%
White	182	77%
No response	30	13%
Ethnicity		
Hispanic	65	28%
Non-Hispanic	159	68%
No response	11	5%

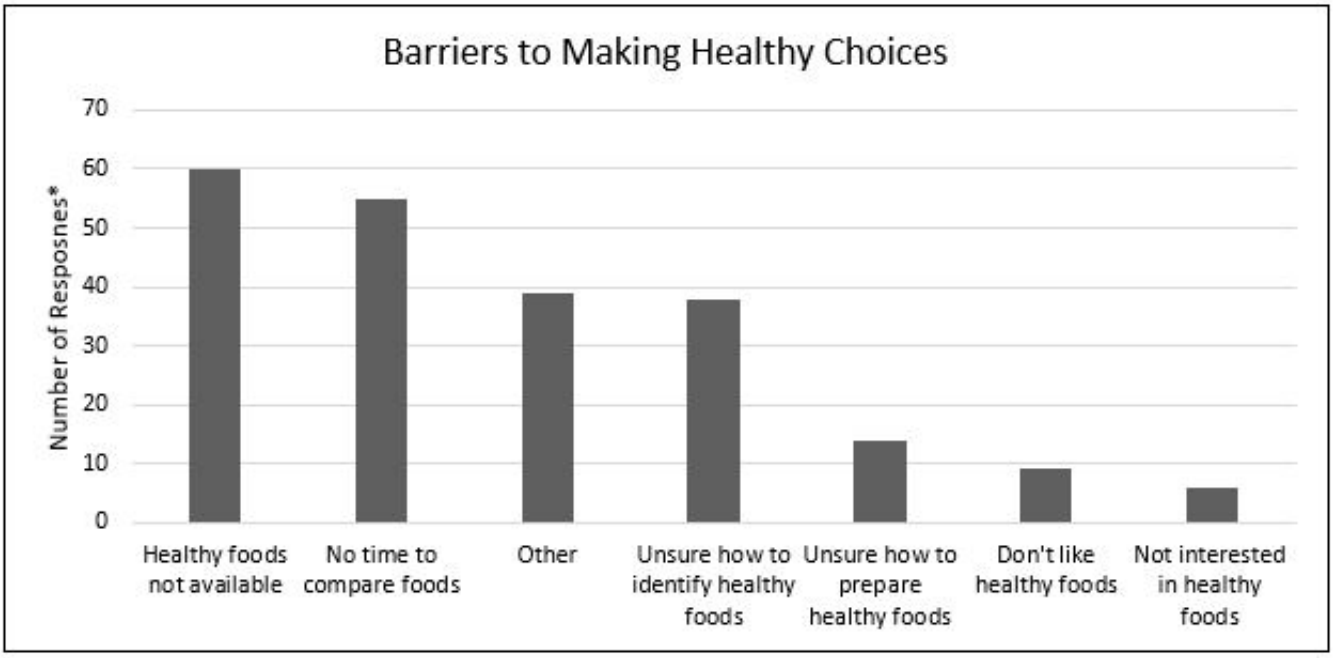
Table 2

Program Components of Interest (n=235)

Component	No. of Respondents	% of Total
Shelf signs/labels	160	41%
Recipe Cards	68	18%
Posters	65	17%
Nutrition/cooking classes	55	14%
Recipe samples	40	10%

Figure 1

Reported Barriers to Making Healthy Choices in Food Pantries (n=235)



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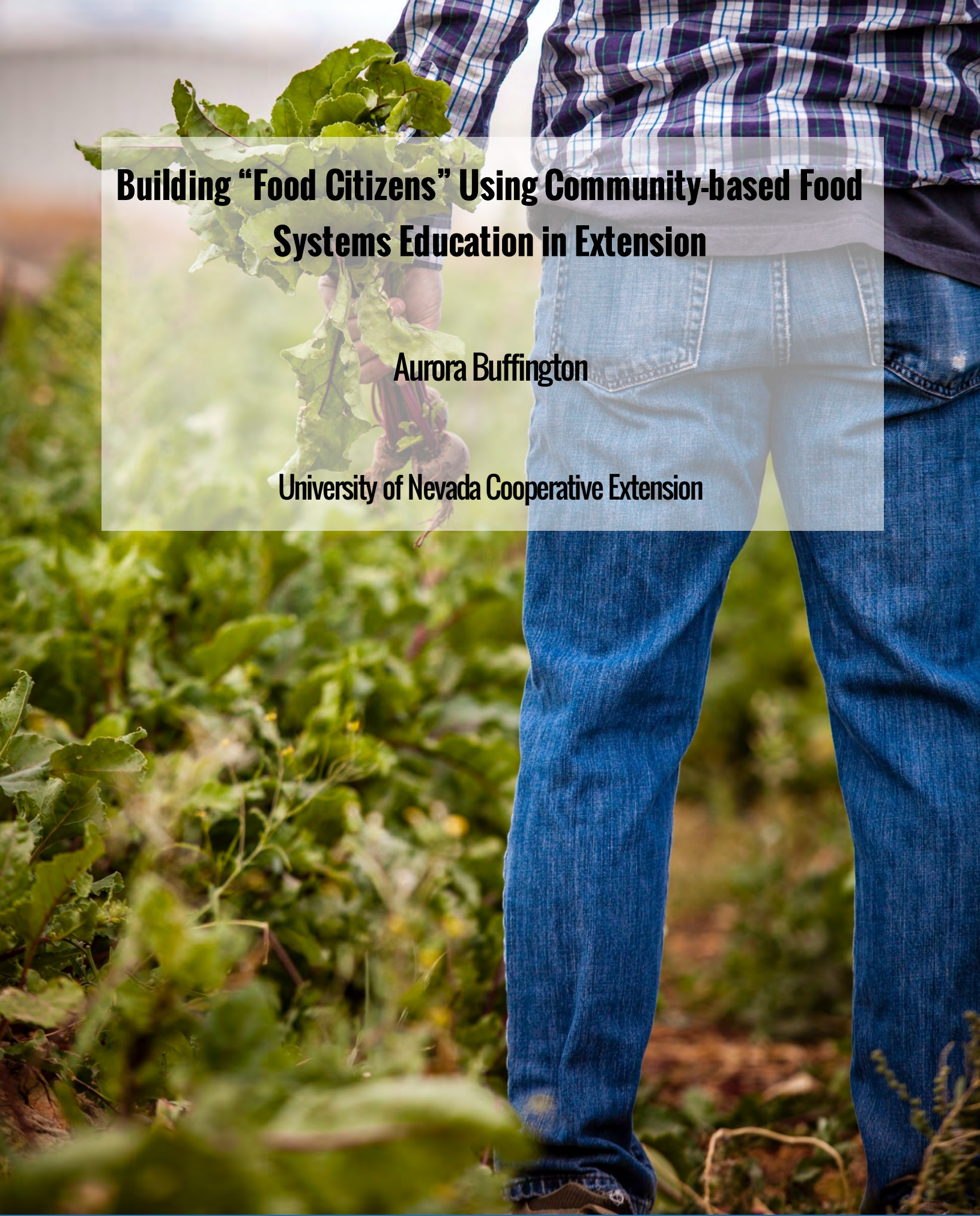

Building "Food Citizens" Using Community-based Food Systems Education in Extension

Aurora Buffington

University of Nevada Cooperative Extension

Abstract

FoodSpan lessons were provided to two cohorts to increase knowledge and awareness of food systems and to promote civic engagement through a culminating project. Adults completed the curriculum and received funding for seven Food Citizen Action Projects to be implemented in a large urban community. Rural high school students completed nine lessons and four project presentations. Student concern regarding the effects of the food system on the surrounding environment and natural ecosystems increased significantly from pre- to post-survey. Extension is ideally poised to leverage its interdisciplinary structure around food and build “Food Citizens” using food system education.

Building "Food Citizens" Using Community-based Food Systems Education in Extension

Youth development, agriculture, family and consumer sciences, health and nutrition, community development, water and natural resources, climate variability, and human science are all examples of Extension programming that often overlap and may be unified whenever food is involved. The vast expertise around food that is often found within Extension lends itself well to support initiatives that enhance community food security and support food policy councils through service, research, or education. Given that Extension is a purveyor of community-based education – quite often centered on food – it makes good sense for Extension to lead the way in providing innovative and engaging community-based sustainable food systems education.

The United States is the leading exporter of food and is among the world's top ten food-producing countries (Food and Agriculture Organization of the United Nations, 2018). Despite its abundance of food, 11.8% of US households struggle with food insecurity, a state of uncertain access to, or inability to acquire, enough food to meet the needs of all their members due to insufficient money or other resources during any time of the year (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2018). Paradoxically, poor diet is associated with 4 of the top 10 leading causes of death in the US, including heart disease, certain types of cancer, stroke, and diabetes (Murphy, Xu, Kochanek, & Arias, 2018). Besides being the leading risk factor for mortality, poor diet is also one of the three leading risk factors accounting for the most significant percentage of disability-adjusted life years (DALY's) – a population health metric that is computed using years of life lost and years lived with disability (Mokdad et al., 2018). While some Americans suffer from hunger, others are overfed, and most do not consume the

right amounts of nutrient-rich foods, leading to poor health and quality of life, early mortality, and a burden on society.

Community food security, defined as *"…a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance, social justice, and democratic decision-making"* (Hamm & Bellows, 2002) may help alleviate food insecurity and improve both diet and population health. A community's level of food security depends on its demographic and economic profile, as well as is its available food resources which may include food assistance programs, food retail, food affordability, food production, and resource accessibility (Chen, Clayton, & Palmer, 2015). A Food Policy Council (FPC) may also enhance community food security by providing a venue to convene stakeholders that can influence policy, systems, and environmental changes to local and regional food systems (Chen et al., 2015). A framework developed by Calancie et al. (2018) determined that social capital and community context were among the essential elements of effectiveness for FPCs. The social capital of FPC members may be built upon with added knowledge about the food system, and community context relies upon community support of FPC work – something that may prove difficult without awareness of food system issues. Both of these concepts are modifiable and thus may be the focus of interventions designed to improve FPC capacity (Calancie et al., 2018).

Food systems consist of all of the resources, human capital, and activities that revolve around food **(Johns Hopkins Center for a Livable Future, 2016)**. Because they are vast, include multiple disciplines, and are dynamic, a systems approach is needed when considering how food systems affect public health, equity, and the environment. Many universities offer certificates and degrees to help equip students with the necessary skills and knowledge to

tackle challenging food system problems; this learning is termed *sustainable food systems education*. Valley, Wittman, Jordan, Ahmed, & Galt (2017) proposed a signature pedagogy for sustainable food systems education based on their research of four leading university programs which incorporate the following emerging common pedagogical themes: collective action, systems thinking, experiential learning, and interdisciplinarity (Valley et al., 2017).

Purpose

The purpose of providing community-based food system education was to increase knowledge and awareness about the interrelationship of food, equity, the environment, and public health among FPC members and the community. This education was also an effort to motivate class participants toward greater civic engagement in food-related issues.

Method

A Health and Nutrition faculty member from a large urban Extension office facilitated a series of lessons using the FoodSpan curriculum in order to increase knowledge and awareness about the interrelationship of food, public health, the environment, and social justice. The FoodSpan curriculum consists of a series of 17 lessons designed to teach high school students about the food system, from farm to fork and beyond. The curriculum was created by the Johns Hopkins Center for a Livable Future and is a second-generation version of their first curriculum, *Teaching the Food System*, which was initially designed for adults. After a conversation with the creators of the curriculum, it was deemed appropriate to use the second-generation series of lessons with adult learners, as well as high school students.

Two separate cohorts were taught using the curriculum. The first consisted of adults from a large urban setting who were FPC members or were otherwise interested in learning about the food system (community class) and the second consisted of junior and senior horticulture students at a rural high school. Lesson structure was similar for both cohorts; however, the high school students only received nine lessons due to meeting constraints, while the adult cohorts received all 17 lessons. An optional culminating "Food Citizen Action Project" provided class participants with an opportunity to apply for a mini-grant to fund an action project designed to improve the local food system. Both cohorts were provided with an opportunity to complete a culminating project, but only high school students presented their project in class.

The community class attended biweekly meetings on Saturday mornings during a three-hour class. In order to condense the entire 17-lesson series into five meetings, three lessons were provided during each meeting. The final meeting; however, was an all-day class consisting of 5 lessons, an invitation to apply for the Food Citizen Action Project, and a lunch sponsored by the regional food bank.

The following year, rural high school students were provided the same FoodSpan lessons starting with two introductory food system lessons, followed by the seven food system topics the class selected as their top interests. The 50-minute lessons were delivered biweekly on two consecutive days during horticulture class, over ten weeks. Ten class periods were used, with the final class period devoted to student Citizen Action Project presentations. Students were allowed to work individually or submit group project proposals; however, these projects were not funded and were only presented as project ideas. Since there was no evaluation tool associated with the FoodSpan curriculum, a pre- and post-survey was created

to assess changes in concern for food system related issues using 6-point Likert responses. The seven questions asked students about the level of their concern between the food system, the environment, and the ecosystem; waste; community impact; frequency of discussing and thinking about how issues related to food affect the community; and the effects of the food system on climate change and natural resources. A qualitative question, "*Why do you eat what you eat?"* was also included.

Results

Community Class

Sixteen adults attended the community class, and the instructor used a variety of teaching tools suggested by the Foodspan curriculum, including short videos, group activities, lectures, and a guest speaker – the Chief Communications Officer (COO) of the regional food bank, who spoke on hunger initiatives. After the final meeting, class participants were given two weeks to submit Food Citizen Action Projects. The following proposals were funded by Extension and did not exceed $599 per project: (a) the mobilization of a volunteer task force in support of the regional food bank's grocery rescue program with the goal of increasing participation by a major grocery chain, (b) creation of a culinary composting program to divert food scraps produced by a local community college's culinary classes, (c) enhancing access to church community garden planting beds for people with disabilities, (d) the addition of perishable foods for a small neighborhood food pantry, (e) the addition of a tower garden and composter to an existing Title 1 elementary school garden, (f) the creation of a youth food crop planting project using 5-gallon buckets, soil and seeds, and (g) the creation of a mini mobile produce market set atop a rolling trailer.

High School Students

A total of 16 junior and senior level students attended most or all FoodSpan classes. After the two introductory lessons, the students were asked to select the top two lesson topics they desired to learn about in class based on the FoodSpan infographic, a graphic representation of the 17 lessons focused on different aspects of the food system. The seven selected lessons were: Crops: Growing Problems; Animals: Field to Factory; Seafood: Wild and Farmed; Processing: Farm to Factory; Our Wasted Food; The Hunger Gap; and Our Changing Climate.

During the final class meeting, four presentations were provided by students and the horticulture teacher, focused on the following topics: community garden revitalization, a school food composting and recycling project, the need to protect the Great Barrier Reef, and energy alternatives for vehicles. A 7-item Likert type scale survey where 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Slightly Disagree*, 4 = *Slightly Agree*, 5 = *Agree*, and 6 = *Strongly Agree* was given to the students before and after receiving the FoodSpan classes. Although six out of seven statements had mean responses that increased from pre- to post- suggesting greater student engagement, only one was statistically significant due to the small sample size (Table 1).

The primary emerging themes from the qualitative question asking, "*Why do you eat what you eat?*" included the following: "*I'm hungry*," "*It tastes good,"* "*It's already made/prepared by mom or dad*," "*It's affordable*," "*I like it*," and [it provides] "*protein and nutrition*." Additional responses included: "*personal morals, makes me feel good, animals aren't treated horribly, for my body, and the environment*."

Discussion

The purpose of providing community-based food system education was to increase knowledge and awareness about the interrelationship of food, equity, the environment, and public health as well as to provide an opportunity for civic engagement using food. The first cohort of participants were adults, some of whom were members of the local food policy council. Nine of the 16 class attendees submitted Food Citizen Action Projects, and seven were funded. Although no formal evaluations were provided to this cohort, verbal feedback indicated that while classes were well-received, some activities seemed more appropriate for younger people, and more in-depth coverage of food system topics was desired. This desire for deeper learning may have been attributed to the education level of the adult learners as many represented professional careers, including community college instructors, chefs, a city planner, an urban agriculture start-up executive, farmers market managers, college students, and other engaged food system advocates. Although it was thought that the FoodSpan curriculum would be suitable for teaching adults, this cohort of adult learners probably had more knowledge about food system issues than the average person and would have benefited from a more advanced course.

The FoodSpan curriculum engaged the high school student cohort well as evidenced by student participation in classroom activities and discussions. These observations are consistent with the suggested audience of high school students for the curriculum. A typical class period provides adequate time to go over one lesson lasting approximately 45-50 minutes, and the 15 lessons that come after the introductory lessons presented in Unit One, “Meet the Food System” may be presented as stand-alone lessons, providing flexibility for use in the high school setting.

A significantly higher mean score was observed from pre- to post- for the question about concern over the effects the food system on the surrounding environment and natural ecosystems. However, since only nine lessons were provided to this cohort, it is difficult to know if a complete series of 17 lessons would have resulted in significant differences for the other pre- and post-survey responses. The student Food Citizen Action Projects included two projects that were actionable and could be carried out with modest funding and an organized student-led group paired with teacher advisor to provide guidance.

Seven Food Citizen Action Projects (two were team efforts) totaling just under $5,400 were funded by Extension in the community class cohort, yet only three final project reports were received. The three completed reports; however, elaborated on projects with great potential to improve their community food system. The projects allowed class participants to apply and further their learning through civic engagement and experiential learning. For those that completed their reports, it also provided an opportunity for critical reflection.

The next step for community-based food systems education is to apply the following lessons learned from both of these cohorts:

- Use the FoodSpan curriculum to teach high school students during the school day, preferably a complete series of 17 lessons delivered during a regular class period.
- Provide funding to meritorious high school Food Citizen Action Project proposals.
- Require a final report upon project completion that incorporates critical reflection to help assess learning and impact, and conduct a civic engagement survey after 6-12 months.
- Seek or create a food systems course suitable for adult learners that will provide them with deeper understanding paired with civic engagement opportunities.
- Modify pre- and post-surveys to use 5-point Likert responses, rather than 6-points.

The time is right for Extension to leverage its interdisciplinary structure around food, and build “Food Citizens” that engage in their local food system and enhance community food security.

References

Calancie, L., Allen, N., Ng, S., Weiner, B., Ward, D., Ware, W., & Ammerman, A. (2018). Evaluating Food Policy Councils Using Structural Equation Modeling. *American Journal of Community Psychology, 61*:251–264.

Chen, W., Clayton, M., & Palmer, A. (2015). Community Food Security in the United States: A Survey of the Scientific Literature, Volume II. *John Hopkins Center for a Livable Future.* Retrieved from https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/research/clf_publications/pub_rep_desc/CLF-Surveys-Community-Food-Security-Updated-Report.html

Coleman-Jensen, A., Rabbitt, M., Gregory, C., & Singh, A. (2018). Household Food Security in the United States in 2017, ERR-256, U.S. Department of Agriculture, Economic Research Service. Retrieved from https://www.ers.usda.gov/webdocs/publications/90023/err-256.pdf?v=0

Food and Agriculture Organization of the United Nations (2018). World Food and Agriculture – Statistical Pocketbook 2018. Rome. Licence: CC BY-NC-SA 3.0 IGO. Retrieved from http://www.fao.org/3/CA1796EN/ca1796en.pdf

Hamm, M., & Bellows, A. (2003). Community Food Security and Nutrition Educators. *Journal of Nutrition Education and Behavior, 35*:37-4.

Johns Hopkins Center for a Livable Future. (2016). FoodSpan. *Curriculum.* Retrieved from http://www.foodspanlearning.org/

Mokdad, A., Ballestros, K., Echko, M., Glenn, S., Olsen, H., Mullany, E., . . . Murray, C. (2018). The state of US health, 1990-2016 burden of diseases, injuries, and risk factors among US states. *Journal of the American Medical Association, 319*:1444-1472.

Murphy, S., Xu, J, Kochanek, K., & Arias, E. (2018). Mortality in the United States, 2017. NCHS Data Brief, no 328. Hyattsville, MD: National Center for Health Statistics. Retrieved from https://www.cdc.gov/nchs/data/databriefs/db328-h.pdf

Valley, W., Wittman, H., Jordan, N., Ahmed, S., & Galt, R. (2017). An emerging signature pedagogy for sustainable food systems education. *Renewable Agriculture and Food Systems: 33*(5); 467–480.

Table 1

Mean differences in pre- and post-survey responses for high school students, N = 16.

Statement	*M* pre-response	*M* post-response	*t*	*M* difference	*p*-value
I am concerned about the effects our food systems have on the environment and natural ecosystems that surround us.	4.07	4.91	2.31	0.67	.0497*
I am concerned that the waste and outputs produced within a food system are often overlooked and discarded.	4.79	5.18	1.51	0.44	*.169*
I care that food systems impact communities and the people in them.	4.71	4.72	0.23	0.11	*.824*
We all have an important role to play and voice to contribute within food systems.	4.57	5.00	1.00	0.33	*.347*
I recognize the climate change is closely related to food production.	4.14	4.50	0.94	0.50	*.381*
I care about conserving, protecting, and regenerating the natural	5.00	4.91	0.29	0.11	*.782*

resources, landscapes, and biodiversity that provide us with food.					
I often think about how issues related to food affect the community.	3.07	4.09	1.70	1.11	*.128*

*Note. * p < .05*

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Expanding and Replicating the Evaluation of Extension Marriage Celebrations: Impacts of Single-Session Relationship Marriage Education

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Abstract

Relationship Marriage Education (RME) varies, and multiple studies show effectiveness among programming, including single-session events. This paper explores participant perceived relationship knowledge gained from two different single-session RME events delivered in urban areas in Utah. Using data from 2016 - 2019, over 3,000 participants evaluated perceived knowledge, the event attended, participant age, and sex. Results suggest single-session RME has positive implications for relationship knowledge ($p < .001$). There were no sex differences; however, differences emerged around participant age (younger > middle < older). Implications for Extension and future directions related to this finding and others are discussed in detail.

Expanding and Replicating the Evaluation of Extension Marriage Celebrations: Impacts of Single-Session Relationship Marriage Education

The interest and availability of marriage and relationship education programs have increased in the United States since the 1950s (Cowan & Cowan, 2014; Cowan, Cowan, & Knox, 2010), creating a movement in community education to strengthen marriage and decrease risk of divorce (Larson, 2004). Relationship and marriage education (RME) programs, sometimes called marriage enrichment programs, refer to preventative educational programs that work with couples before conflicts or problems become too serious, rather than remedial or therapeutic approaches that are aimed at relationship repair (Larsen, 2004).

RME programs vary in structure, curriculum, moderators, and dosage (Cowan et al., 2010). However, despite differences in programming, many studies show that RME is effective (Cowan et al., 2010; Duncan, Steed, & Needham, 2009) in improving communication skills and conflict management, enhancing positivity, decreasing negativity, improving relationship quality, satisfaction, and family strengths (Adler-Baeder et al., 2013; Blanchard, Hawkins, Baldwin, & Fawcett, 2009; Cowan et al., 2010; Duncan et al., 2009; Hawkins, Blanchard, Baldwin & Fawcett, 2008; Hawkins, Stanley, Blanchard & Albright, 2012). Given the effectiveness, preventative RME programs exist all over the country in various formats (e.g., multiple-session, single-session, online, in-person).

RME programs consisting of multiple sessions have faced some challenges related to recruiting (Duncan et al., 2009) and retaining participants (Hawkins et al., 2012). Research has called for further studies that examine programmatic factors related to program outcomes in order to show best practices (Hawkins et al., 2012). There has also been a call for the

expansion of evidence-based RME programs (Halford, 2004; Larson & Halford, 2011) that include more flexible, creative formats (Hawkins et al., 2012), including those that are less-intensive, less-costly and more broadly available (Halford, 2004). As single-session programs can produce significant results, they are appropriate in the playing field (Hawkins et al., 2012). Single-session events can be an effective way for Extension programs to reach an audience and provide impactful programming by minimizing the challenges of participant attrition. In addition, it may be that single-session events appeal to more couples, particularly if the event is promoted as a date night and seen as entertaining education (Brower & Payne, 2018). Prior research (Brower, Payne, & Simmons, 2019; Payne, Brower, & Lefthand, 2019) has demonstrated that "Marriage Celebration" events are an effective single-session approach to RME in Extension. As such, this paper answers the call of prior research in attempt to replicate and demonstrate in a larger sample in multiple counties the efficacy of a single-session RME event.

Objective

The objective of this paper is to show the effectiveness of replicating the Marriage Celebration model by Brower and Payne (2018) and to expand research on single-session RME events in Cooperative Extension. The Marriage Celebration model expands RME programs and research in diverse, creative approaches, as encouraged by researchers Hawkins et al. (2012), and makes Extension RME more accessible, appealing, flexible, and convenient to participants. Utah State University Extension instituted Marriage Celebration events each year from 2016- 2019 in two different urban areas in Utah. The main objectives of this paper are:

1. Does an event modeled after the Northern Utah Marriage Celebration (NUMC), called Date Your Mate Celebration (DYMC), produce similar positive results in participant perceived knowledge gains? Results from initial years of the NUMC are available in Payne et al. (2019).
2. Do both the DYMC and NUMC (including additional years of data since Payne et al. (2019)) uniquely produce similar positive perceived relationships knowledge gains?

Results will contribute to the body of evidence-based research and programming in RME that emphasizes single-session events. In order to meet these objectives, the following research questions will be addressed:

1. Does participant perceived knowledge increase from pre-program to post-program regardless of event attended?
    a. Does participants perceived knowledge increase from pre-program to post-program uniquely at DYMC and NUMC?
2. Does event attended (DYMC vs. NUMC) impact the difference in participant perceived knowledge gained from pre-program to post-program?
3. Does participant perceived relationship knowledge gain vary by participant sex?
4. Does participant perceived relationship knowledge gain vary relative to participant age?

Method

Procedures

Marriage Celebrations, date nights of education and entertainment with the purpose of helping couples strengthen their relationships (Brower & Payne, 2018) were held in key populated areas in Utah. These annual events were held on Friday nights in February and included several workshops to choose from, including a keynote speaker at the end of the night. While the general format, topics, and even some presenters were similar at both events, the length of the workshops and the number of total workshops available varied due to venue size. The NUMC was held from 4:00 p.m. to 9:30 p.m. and included four 50-minute break-out workshop sessions and a keynote speaker at the end of the night. The DYMC was held from 6:30 p.m. to 9:30 p.m. and included three 35-minute workshop sessions followed by a keynote speaker. While the format continued consistently from year-to-year, speakers and program content/theme varied, as did participants.

Speaker topics were based on feedback from participants and committees who organized the events. While workshop topics vary slightly each year and at each location, the topics most often requested included conflict resolution, communication, intimacy, staying connected (fun), parenting as a couple, finances, stepfamily relationships, and protecting relationships from negative outside influences (Brower & Payne, 2018; Brower et al., 2019). Speakers for the conference were professionals from the community and were selected based on topic expertise, relevant experience, and educational background, with an added emphasis on selecting dynamic speakers. Efforts were also made to select keynote presenters who were well-known and engaging relationship experts or entertainers who had experience incorporating relationship messages into their presentations (Brower & Payne, 2018; Brower et al., 2019).

In order to encourage attendance, the event was advertised as a fun educational date night (Brower & Payne, 2018; Brower et al., 2019). A variety of workshop topics were offered that would appeal to couples in any phase of relationship and efforts were made to make workshops titles sound fun and engaging, while knowing that presentations would be based in solid relational education. Door prizes donated from local businesses also added to the fun atmosphere.

Participants

The number of participants who submitted evaluations for either the DYMC or the NUMC over the course of the four years (2016-2019) was 3,393 participants. Over the four years of the program, approximately 378 participants from DYMC completed the evaluation compared to 2,831 from the NUMC. Participation has gradually increased at both events. There were 2,832 participants who completed data regarding their sex with 1,341 males (47.3%) and 1,491 (52.6%) females in the entire sample. The average age of participants was 41.3 years old (*SD* = 11.3) with a range of 19-76 years. See Table 1 for additional demographic information by year and program. This sample is representative of the Utah population (U.S. Census Bureau, 2015) in terms of sex, age, and ethnicity.

Evaluation

A pen and paper evaluation, approved through the University's Institutional Review Board, was given to each individual in their participation packets to determine the impact of the event. A door prize ticket was attached to each questionnaire and participants were encouraged to complete and return the evaluation and door prize ticket prior to the keynote presentation of the night. To retain anonymity, door prize tickets were separated from the evaluations as they were received.

The evaluation included presenter feedback, posttest-then-retrospective-pretest questions about understanding of relationship skills, demographic data, and open-ended questions (Marshall, Higginbotham, Harris, & Lee, 2007). To assess impact of the RME event, the Perceived Relationship Knowledge Scale (PRKS) (Bradford, Stewart, Higginbotham, & Skogrand, 2015), a six-item measure used to assess understanding of various relationship skills, questionnaire was utilized. Participants rated their perceived relationship knowledge before and after the program on a rating scale from poor (1) to perfect (5) (e.g., "how to effectively communicate with my spouse/partner," and "how to settle disagreements well"). For a more detailed explanation of the evaluation see Brower and Payne (2018).

Cronbach's coefficient alpha-measure of internal consistency (Cronbach & Shavelson, 2004) for participants' knowledge before the program and after the program in the present study was good (α = .86 and .85, respectively). The PRKS was used in methods similar to those of Bradford et al. (2015), who viewed the scale as categorical. Initial validation of the measure by Bradford et al. (2015) resulted in similar reliability (.83–.88).

Results/Findings

To address the first research question, does participant knowledge increase through participation at the event, a single-sample t-test was run using SPSS software. Result indicate a significant ($p < .001$) and positively correlated ($r = .51$) increase in participants' scores from the preprogram assessment to the post program assessment across all years and events (Table 2). To answer sub-question a, t-tests were performed, and results indicate that both DYMC and NUMC participants make significant gains ($p < .001$) in perceived relationship

knowledge (Table 3). This suggests that both the NUMC and DYMC are meeting the goal of increasing participants' perceived knowledge in their relationships.

To address "differences in knowledge gained" aspect of the second, third and fourth research questions, analysis of variance tests were performed. To account for the difference in sample sizes, associated to the two events, tests of equal variances and additional post hoc analyses were conducted, and it was found that results were not different based on the assumption of equal variances.

In order to address the second research question, "Does participant knowledge gain vary based on whether they attended the DYMC or the NUMC?", authors performed analysis of variance (ANOVA) tests. This analysis allows for the determination of differences in perceived participant knowledge relative to the county/event they attended. Results indicated there were no significant differences at pre-program knowledge relative to event attended; however, participants perceived post program knowledge was significantly different between DYMC and NUMC with participants at NUMC having more perceived post program knowledge ($F = 22.7$, $p < .000$) (see Table 4).

Research question three examines whether participant knowledge gained varies by participant sex. Results indicated that there were no differences based on participant sex ($F = 0.1$, $p < .78$, *ns*). Results indicated that there were differences relative to age in participants reported related to both preprogram ($F = 2.3$, $p < .02$) and post program knowledge levels ($F = 2.8$, $p < .01$). There is a general pattern, depicted in Figure 1 and Table 5, whereby the younger and older participants rated perceived knowledge higher than participants in the middle years who showed the lowest gains in perceived knowledge.

Discussion

The evaluation results document the Marriage Celebration model is an effective way to deliver RME programs in two different counties in Utah. The results of this study indicate that both the NUMC and DYMC provide individuals and couples with an effective single-session RME event annually. For both events, overall participants gained significantly in perceived relationship knowledge as measured by the PRKS. In addition, researchers replicated results from Payne et al., (2019) in terms of participant sex, no significant differences found, and age. The forty-year-old age group was significantly different from those participants who are both younger and older than themselves.

As with all research, there are limitations. One limitation is the data represents a sample from Utah and further research is needed in more demographically diverse audiences, as this study may not generalize to all populations. The results imply that the Marriage Celebration model is replicable within Utah. As such, Utah can use this model for RME and other Extension education programs, such as women's issues, finance, health and wellness, within Utah but generalizing and disseminating to more diverse populations will require additional research. Future research could explore replication and effectiveness of "celebration" type programs in other Extension FCS programs nationwide.

While results showed positive knowledge gain at both events, there are differences in gains between the two events (see Table 3). Differences could be related to event logistics such as session length, number of sessions, and venue size. For instance, DYMC is held in a smaller venue, and NUMC had ability to hold one additional session and each NUMC session was 15 minutes longer than at the DYMC. Further research on dosage (contact hours, number

of sessions attended), and additional differences between these two events will further explore the details of providing effective single-session RME through events using the Marriage Celebration model.

One additional next step and call for action is related to age differences. As reported in Figure 1, there were interesting results related to age, particularly participants in the 40-44 age range. This is especially interesting as it is consistent with prior research (Payne et al., 2019). Further exploration is needed to determine if the difference was due to a stage-of-life, years of marriage, cohort difference or programmatic factors such as dosage (number of sessions attended or duration of programming). Relatedly, future research should explore longer term participant follow-up to explore potential long-term knowledge gain, or gains related to attendance at multiple events.

References

Adler-Baeder, F., Calligas, A., Skuban, E., Keiley, M., Ketring, S., & Smith, T. (2013). Linking changes in couple functioning and parenting among couple relationship education participants. *Family Relations, 62*(2), 284-297. Retrieved from http://www.jstor.org.dist.lib.usu.edu/stable/43695345

Blanchard, V. L., Hawkins, A. J., Baldwin, S. A., & Fawcett, E. B. (2009). Investigating the effects of marriage and relationship education on couples' communication skills: A meta-analytic study. *Journal of Family Psychology, 23,* 203-214. doi:10.1037/a0015211

Bradford, K. Stewart, W. J., Higginbotham, B. J., & Skogrand, L. (2015). The perceived relationship knowledge scale: An initial validation. *Family Relations, 64*(2), 305-318. doi:10.1111/fare.12116

Brower, N. & Payne, P. B. (2018). Lessons learned from organizing a multi-county marriage celebration event. *Journal of Human Sciences and Extension, 6*(1), 125-140.

Brower, N., Payne, P. B., & Simmons, M. (2019). Measuring the effectiveness of a multi-year multi-county marriage celebration: Qualitative findings. *Journal of Marriage and Family Review.* doi: 10.1080/01494929.2019.1589616

Cowan, P. A. & Cowan, C. P. (2014). Controversies in couple relationship education (CRE): Overlooked evidence and implications for research and policy. *Psychology, Public Policy & Law 20*, 361-383.

Cowan, P. A., Cowan, C. P., & Knox, V. (2010). Marriage and fatherhood programs. *The Future of Children, 20*, 205-230. doi:10.1353/foc.2010.0000

Cronbach, L. J., & Shavelson, R. J. (2004). My current thoughts on coefficient alpha and successor procedures. *Educational and Psychological Measurement*, *64*, 391-418.

Duncan, S. F., Steed, A. & Needham, C. M. (2009). A comparison evaluation study of web-based and traditional marriage and relationship education. *Journal of Couple & Relationship Therapy, 8*(2). DOI: 10.1080/15332690902813836

Halford, W. K. (2004). The future of couple relationship education: Suggestions on how it can make a difference. *Family Relations*, *53*(5), 559-566. Retrieved from: https://www-jstor-org.dist.lib.usu.edu/stable/20456773?seq=6#metadata_info_tab_contents

Hawkins, A. J., Blanchard, V. L., Baldwin, S. A., & Fawcett, E. B. (2008). Does marriage and relationship education work? A meta-analytic study. *Journal of Consulting and Clinical Psychology, 76,* 723-734. doi:10.1037/a0012584

Hawkins, A. J., Stanley, S. M., Blanchard, V. L., & Albright, M. (2012). Exploring programmatic moderators of the effectiveness of marriage and relationship education programs: A meta-analytic study. *Behavior Therapy, 43*(1), 77-87.

Larson, J. (2004). Innovations in marriage education: Introduction and challenges. *Family Relations, 53*(5), 421-424. Retrieved from http://www.jstor.org.dist.lib.usu.edu/stable/20456757

Larson, J. & Halford, W. K. (2011). One size does not fit all: Customizing couple relationship education for unique couple needs. In J. L. Wetchler (Ed.), *Handbook of clinical issues in couple therapy* (2nd ed., pp. 294-310). New York, NY: Routledge.

Marshall, J. P., Higginbotham, B. J., Harris, V. W., & Lee, T. R. (2007). Assessing program outcomes: Rationale and benefits of posttest-then-retrospective-pretest designs. *Journal of Youth Development 2*(1), 118-123.

Payne, P. B., Brower, N. & Lefthand, M. (2019). Outcomes of a Multi-Year Multi-County Marriage Celebration. *Journal of Extension* 57(1). Article 1RIB9 Available at: https://www.joe.org/joe/2019february/rb9.php

Payne, P. B., & McDonald, D. A. (2014). The importance of understanding dosage when evaluating parenting programs: Lessons from a pilot study. *Journal of Human Sciences and Extension, 2,* 120-132.

U.S. Census Bureau. (2015). *Utah Quickfacts.* Retrieved from https://www.census.gov/quickfacts/table/PST045216/49

Table 1

Sample Demographics by Event Attended

		Participant sex		Participant age		Pre-Program Knowledge	Post-Program Knowledge
		Male	Female			*M*	*M*
Program	Year	% (#)	% (#)	*M* (*SD*)	Range	*(SD)*	*(SD)*
NUMC	2016	47.2 (260)	52.8 (291)	42.0 (11.0)	19 - 74	3.3 (.62)	4.0 (.50)
DYMC	2016	47.1 (40)	52.9 (45)	38.0 (9.0)	23 - 63	3.2 (.53)	4.0 (.45)
NUMC	2017	46.7 (321)	52.6 (356)	40.6 (11.4)	19 - 75	3.3 (.60)	4.1 (.50)
DYMC	2017	44.9 (35)	55.1 (43)	39.8 (10.8)	23 - 69	3.2 (.49)	3.8 (.40)
NUMC	2018	47.5 (312)	52.5 (345)	42.2 (11.4)	19 - 76	3.3 (.62)	4.0 (.50)

	2018	45.7 (59)	54.3 (70)	39.9 (9.7)	20 - 73	3.3 (.44)	3.9 (.36)
NUMC	2019	48.2 (274)	51.8 (294)	41.8 (11.4)	19 - 76	3.4 (.60)	4.1 (.50)
DYMC	2019	46.5 (40)	53.5 (46)	42.7 (10.6)	21 - 71	3.2 (.51)	3.9 (.51)

To examine difference in perceived knowledge gained relative to participant age, researchers **(or evaluators)** clustered participants to yield balanced groups for analysis as has been done with other measures (e.g., dosage) (Payne & McDonald, 2014; Payne, Brower & Lefthand, 2019). Age groups were as follows: 18-25 (*n* = 184), 26-30 (*n* = 313), 31-35 (*n* = 369), 36-40 (*n* = 511), 41-45 (*n* = 475), 46-50 (*n* = 318), 51-55 (*n* = 243), 56 – 60 (*n* = 217), 61 or older (n = 141).

Table 2

T-Test of Perceived Knowledge Scale Results, All Participants Both Events

Scale	Mean (*SD*)	*df*	*T*
Perceived Knowledge Pretest	3.3 (.6)	2355	272.2***
Perceived Knowledge Posttest	4.0 (.5)	2148	394.4***

****p<.001*

Table 3

T-Test of Perceived Knowledge Scale, by Event

Event	Scale	Mean (*SD*)	*df*	*T*
DYMC	Perceived Knowledge Pretest	3.3 (.5)	274	110.7***
DYMC	Perceived Knowledge Posttest	3.9 (.4)	265	150.1***
NUMC	Perceived Knowledge Pretest	3.3 (.6)	2080	251.1***
NUMC	Perceived Knowledge Posttest	4.0 (.5)	1881	367.7***

****p<.001*

Table 4

Perceived Knowledge Scale by Event Attended

Scale	Time 1: *F* Value	Time 1 Group Differences	Time 2: *F* Value	Time 2 Group Differences	Direction of Difference
Perceived Knowledge	1.7	*ns*	22.7*	$p < .000$	NUMC > DYMC

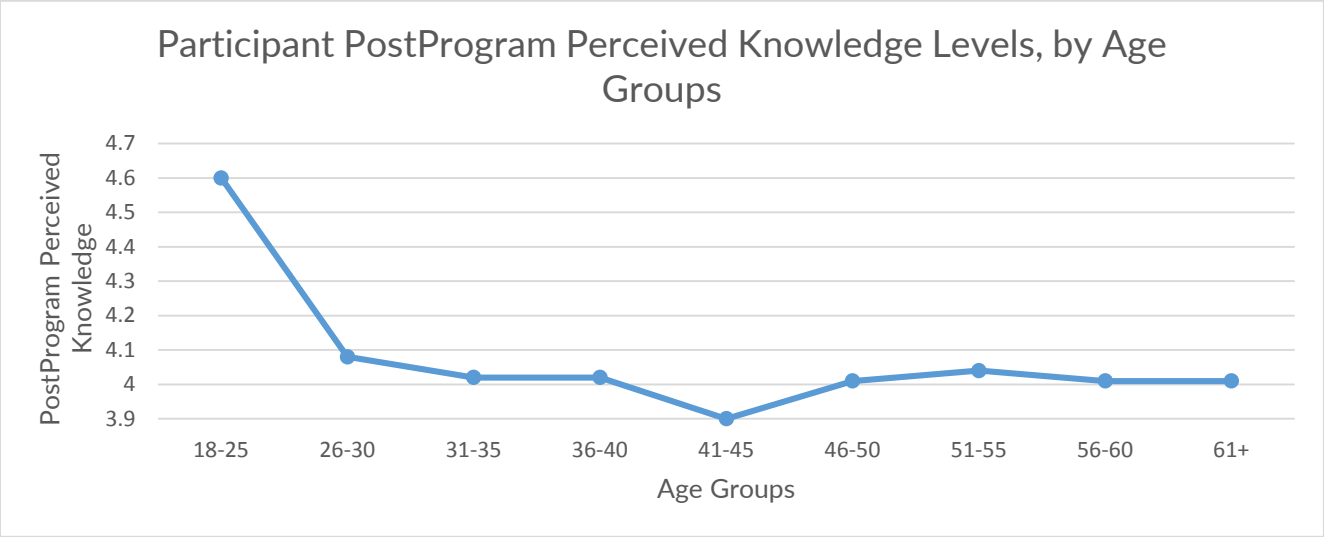
Table 5

Perceived Knowledge Scale by Age of Participant

Scale	Time 1: *F* Value	Time 1 Group Differences	Time 2: *F* Value	Time 2 Group Differences	Direction of Difference (Figure 1)
Perceived Knowledge	2.3	$p < .02$	2.8	$p < .01$	Younger > Middle < Older

Figure 1

PostProgram Knowledge Levels by Age Groups



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FoodCorps/Cooperative Extension Collaborations Strengthen Outreach

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Abstract

Collaboration with FoodCorps presents an opportunity for Cooperative Extension to enhance school wellness outreach. In New Jersey, FoodCorps service members helped Cooperative Extension by building edible gardens, providing nutrition lessons and cooking demonstrations in schools, and participating in parent engagement and teacher training activities, enabling Cooperative Extension agents to expand outreach and programmatic offerings.

FoodCorps/Cooperative Extension Collaborations Strengthen Outreach

Utilizing experiential learning to teach nutrition is a trusted strategy to motivate children to make healthier dietary choices. School gardens are one example of experiential learning that is gaining popularity in the nation's schools. The steady increase in the number of schools building and using gardens in the United States suggests that schools are taking note of the benefits gardens offer to students, teachers, schools, and communities (Robert Wood Johnson Foundation, 2014). Demands for schools to provide education on healthy living do not have to compete with demands to improve core academic performance. Many schools now understand how the two may interact beneficially according to Berezowitz, C.K., Bontrager Yoder, A.B., & Schoeller, D.A. (2015). Gardens are one vehicle many are using to deliver mutually beneficial programming.

Gardening offers hands-on, experiential learning opportunities in a wide array of disciplines, including natural and social sciences, math, language arts, visual arts, and nutrition/healthy living. While many organizations offer resource guides to support their development, it can be challenging for schools to identify individuals with the expertise and training to support the development, use, and sustainability of school gardens. Often, Cooperative Extension plays a role in this process. Even for an organization such as Extension, which is committed to bringing evidence-based science and modern technologies to farmers, consumers, and families and addressing public needs, this can be a challenge. Cooperative Extension offices don't always have the financial and staffing resources to support schools with garden-based education. Extension, itself, is transforming to stay relevant amid smaller budgets, reduced staff, more diverse populations, and technology (DeBord, 2005). Collaboration with FoodCorps affords Extension agents and educators the ability to engage in

garden-based school wellness programming that supports schools and enhances Extension outreach.

Purpose

Children, nutrition educators, and schools are embracing “edible education”, that is, school gardens and/or food and nutrition education, as a tool to enhance and enrich academic instruction. Likewise, Cooperative Extension’s National Framework for Health and Wellness identified integrated nutrition, health, environment and agricultural systems as a program priority for Cooperative Extension health programs through 2020 (ECOP Health Task Force, 2014). The Framework notes that working across systems is required to improve the Nation’s health and that “…efforts to promote healthy eating are not likely to be successful without considering the process by which food is produced, distributed, and marketed.” Land-grant universities, through the Cooperative Extension system, have a “unique capacity to support projects that span the boundaries” of both systems, leading to what the authors describe as work that will yield higher-ordered wins for all parties (ECOP Health Task Force, 2014).

While a strategic analysis included in the National Framework for Health and Wellness identifies Cooperative Extension’s strengths in the delivery of nutrition, health and wellness information, it also identifies needs that include developing/expanding funding resources and community-based partnerships. In New Jersey, FoodCorps was identified as one such community-based partnership.

FoodCorps is a nationwide team of AmeriCorps leaders whose mission is to, in partnership with communities, connect kids to healthy food in school, so they can lead healthier lives and reach their full potential. Service members deliver programs in limited-resource schools, focusing on:

- Hands-On Lessons: They teach cooking, nutrition, and gardening, and conduct taste-tastings.
- Healthy School Meals: They create a cafeteria that steers students towards the healthiest options and gets them excited to try new, healthy foods, including fruits, vegetables, plant-based proteins (beans/legumes, edamame), reduced-fat dairy foods, and whole grains. Service members do this by connecting the classroom, garden, and cafeteria to create hands-on, interactive food experiences.
- Schoolwide Culture of Health: They help the whole school community – everything from the teachers to the hallways to the bake sales – celebrate healthy food.

FoodCorps has a national network of offices and service, collaborating to deliver programs to students. See Figure 1.

Methods

Working with the New Jersey Farm to School Network, Rutgers Cooperative Extension's (RCE) Department of Family and Community Health Sciences (FCHS) successfully secured funding and sponsorships in 2013 to serve as the state partner for New Jersey's FoodCorps program. In 2015, partnership transferred to the New Jersey Department of Agriculture and FCHS. As of 2019, all funding and sponsorships are managed directly by FoodCorps.

The vision of FoodCorps is complementary to that of FCHS; both strive to promote health and wellness through food and nutrition education and collaboration. Serving as the FoodCorps New Jersey state partner supported FCHS's mission to bring edible education to schools throughout the state.

On the local level, RCE of Gloucester County is one of New Jersey's ten FoodCorps service sites. FCHS faculty and staff partner with FoodCorps service members in the county to provide and implement *Grow Healthy*, the FCHS school wellness initiative. *Grow Healthy* targets a number of audiences within schools – children, their families, school foodservice personnel, and teachers/administrators. Given the ambitious scope of this project compared to the small FCHS staff and limited access to the RCE over-burdened home horticulture program, FoodCorps collaboration is invaluable. It enables FCHS to offer experiential nutrition education to students, professional development opportunities to teachers and administrators, and after-school programs to families.

FCHS and FoodCorps work together to recruit schools, market and deliver programs, develop partnerships and wellness councils, identify funding sources, write grants, develop instructional materials and social media posts, build gardens, **provide** food and nutrition education, and develop strategies to source local ingredients for the cafeteria. Partners also work with schools to develop sustainability plans, to assure that gardens and wellness initiatives are sustained at the conclusion of FoodCorps service and FCHS programming. In the upcoming school year, service members will also collaborate to support school-based SNAP-Ed outreach in Gloucester County.

Findings

Identifying the resources to staff, train, and implement edible education projects can be challenging. Stimulating change requires multiple exposures to nutrition messages; yet, most organizations – including Extension – do not possess funding to support extensive outreach.

Starting with seven sites across the state in 2013, the effort has expanded to ten service sites that host twelve FoodCorps service members who work with schools and organizations throughout New Jersey. In Gloucester County, the Cooperative Extension/FoodCorps collaboration has strengthened FCHS outreach in a number of ways:

- Service members supplement FCHS outreach to reinforce nutrition education in schools in which FCHS works.
- Service members expand school wellness outreach to new schools, enabling FCHS to work with other venues and audiences. To date, FoodCorps has supported FCS outreach to provide school wellness services to fourteen schools.
- Service members support FCHS professional development programs for teachers, school nutrition professionals, and administrators by presenting sessions at workshops. Sessions have included *Edible Education 101, Healthy Gardens/Healthy Schools, Using the Cafeteria as a Classroom, Edible Education Networking,* and *Using the Garden's Harvest to Support Classroom Instruction.*
- Service members co-author instructional materials, create online media, conduct taste-testing, and build gardens to support FCHS school wellness activities.

Figure 2 highlights key outreach achieved by FoodCorps service members at the local county level.

Summary

Collaboration with FoodCorps presents an opportunity for Cooperative Extension to partner with a like-minded organization with members who are passionate about food, nutrition, and agriculture. In New Jersey, FoodCorps collaboration has resulted in:

- Greater support for FCHS outreach: New partnerships with elected officials, school administrators, local businesses, and consumers;
- Sustainable changes to schools' wellness environments: The addition of local foods to cafeteria menus, new vegetables introduced on lunch menus, linking the school garden and its harvest to the classroom, and cafeteria "share tables;"
- Increased school participation in the FCHS school wellness initiative, Grow Healthy: 14 new edible gardens, integration of food and nutrition messages across the curriculum, school walking clubs, and the establishment of a countywide edible school garden network.

References

Berezowitz, C.K., Bontrager Yoder, A.B., & Schoeller, D.A. (2015). School gardens enhance academic performance and dietary outcomes in children. *Journal of School Health,85*(8), 508-518.

DeBord, K. (2005). Communicating program value of family life and parenting education programs to decision makers. *Journal of Extension*, *43(2)*. Article 2IAW2. Available at: http://www.joe.org/joe/2005april/iw2.php

ECOP Health Task Force (2014). Cooperative Extension's national framework for health and wellness. Retrieved from: http://www.aplu.org/members/commissions/food-environment-and-renewable-resources/CFERR_Library/national-framework-for-health-and-wellness/file

Robert Wood Johnson Foundation (2014). School Garden Programs are on the Rise in US Public Elementary Schools, but are Less Common in Schools with Economically Disadvantaged Student Populations. *Bridging the Gap: Research Informing Policy and Practices for Healthy Youth*. Available at: http://www.bridgingthegapresearch.org/asset/4q28pc/BTG_gardens_brief_FINAL_March2014.pdf

Figure 1

Overview of FoodCorps Structure

Figure 2

How FoodCorps Service Members Support Cooperative Extension School Wellness Initiatives

Local Impacts (in 1 New Jersey County) Supported by a FoodCorps /FCHS Collaboration
▪ 1,754 hours per year of FoodCorps service via such activities as direct education, gardening, fundraising, teacher and staff trainings, and development of instructional materials and lessons.
▪ Works with up to 2 limited-resource elementary schools per year, for 3 years, supporting general school wellness and gardening initiatives, including SNAP-Ed.
▪ An average of 483 classroom and garden-based lessons presented annually
▪ Policy/Systems/Environmental Changes Since 2013: - 14 garden projects - 5,863 children reached - 1 community farmstand opened - 1 new school salad bar opened - New vegetables added to school lunch menus - Locally grown produce featured in school cafeterias
▪ 3 Rutgers Cooperative Extension fact sheets on school gardens published

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Supporting Economic Development Through Cottage Food Business Development Curriculum

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Abstract

Extension has a strong background in helping farms, small businesses, and families develop the tools necessary to thrive in their communities. As interest in starting and expanding cottage foods businesses grows, Extension is uniquely positioned to provide business-enhancing educational resources and training for these businesses. In the fall of 2018, a group of Colorado State University Extension professionals in Family and Consumer Sciences and Food Systems conducted a survey of cottage foods producers to inform the creation of meaningful business development curriculum for cottage food producers.

Supporting Economic Development Through Cottage Food Business Development Curriculum

In 2012, the Colorado legislature enacted the Colorado Cottage Foods Act, allowing for the production and sale of limited food products produced in the producer's home kitchen or a commercial, private, or public kitchen direct to consumers without commercial licensing or inspection by local or state health departments. Amended in 2013, 2015, and 2016, the bill was intended to improve consumers' access to fresh and value-added foods from small local producers with the goal of fostering direct connections between consumers and producers. Legislators hoped this bill would provide a number of positive outcomes including supporting economic development and agritourism in Colorado by expanding entrepreneurial opportunities and job creation, invigorating local food systems by easing impediments to local markets, and increasing the self-reliance of Colorado communities (Schwartz et al., 2012). The extent to which cottage food operations can achieve these outcomes is often limited due to the size of their operations (Hughes & Boys, 2015).

The Colorado Cottage Foods Act allowed producers to earn a net revenue of up to ten thousand dollars per calendar year per eligible product (e.g. blueberry muffin, raspberry muffin, chocolate chip muffin). Twenty-eight states and the District of Columbia place limits on the amount of income a cottage food operation can earn in a year (Rice, 2018). Few Colorado cottage food producers ever reach this level of production, finding that it makes more sense to become a licensed food manufacturer rather than trying to produce large quantities of products in their own homes. Yet, many

find the transition from cottage food business to licensed manufacturer overwhelming (Rice, 2018).

In a Journal of Extension article, two Extension administrators encouraged Extension to "evolve rapidly to provide business-enhancing educational and training services and grow to serve in even more significant roles for economic development" (as cited in Angima & Stokes, 2019, p. 2). In the spirit of this request, Extension agents and specialists in Family and Consumer Sciences and Food Systems in the fall of 2018 developed and implemented a survey of Colorado cottage foods producers to assess the interest and need for a business development curriculum to supplement the existing food safety course offered by Colorado State University (CSU) Extension. Results from the survey were used to create a one-day business training to expand existing curriculum to help producers consider the challenges and opportunities to scale up their enterprises.

Objective

The purposes of this manuscript are twofold: 1) Share lessons learned from implementing a survey of cottage foods producers and 2) Encourage Extension staff to expand curriculum offerings to small scale food producers to support economic development in their communities. This article describes the process of implementing a survey and using the results to inform the creation of a business development curriculum for cottage foods producers.

Method

The Colorado Cottage Foods Act stipulated that all cottage foods producers must take a safe food handling and processing training by a third-party entity, comparable to and including the United States Department of Agriculture or the CSU Cooperative Extension Service. At the time of the law's passage, the only food safety training options for cottage foods producers were retail food service manager and food handler classes. Although these trainings covered basic food safety topics, the training did not cover specific foods items eligible under the Colorado Cottage Foods Act and included information regarding foods not eligible in the act (low acid foods, meats, fish, cooked vegetables, etc.). This resulted in increased confusion for cottage foods producers.

CSU Extension specialists worked with agents to develop, test, modify and retest the food safety for Colorado cottage foods producers' workshop and certificate program in 2014. CSU Extension is the only resource in Colorado with a course developed specifically to address food safety for cottage foods producers. The four-hour in-person course certificate is good for three years. Participants learn food safety guidelines and the specifics of operating a small home-based cottage foods business from a home kitchen. Training covers basics of foodborne illnesses, proper hygiene; preventing cross contamination and cross-contact of food allergens; temperature control for safe food preparation, storage, and transporting product; and sales. The eligible and not eligible food products are highlighted and explained. Instructors also go over required product ingredient labeling, packaging requirements, marketing, and preparation at elevation.

Between 2012 and 2019 CSU Extension agents trained over 3,000 cottage foods producers. As a result, CSU Extension has become the preferred resource for answering questions about cottage foods, assisting clients interested in starting a cottage foods business and obtaining a food safety certification as required by the state of Colorado. Cottage food producers are able to ask for additional information during the course, over the phone, in-person, or through email. CSU Extension maintains an email list serve for cottage foods producers. CSU Extension Agents participate in answering questions, promoting training, and monitoring trends in locally established Facebook groups. These social media groups were formed to help producers find support, build connections, and learn about topics of interest to Colorado cottage foods operators. The Colorado Department of Public Health and Environment and the Colorado Department of Agriculture do not require cottage foods producers to register with the state. As a result, CSU Extension maintains the most complete list of cottage foods producers in Colorado. Starting in 2017, CSU Extension began maintaining a centralized database of individuals who completed the food safety training.

In the fall of 2018, CSU Extension specialists and agents in Family and Consumer Sciences and Food Systems developed a survey for cottage foods producers and food manufacturers. The goal of the survey was to assess the interest in and need for business development curriculum to supplement the existing cottage foods safety course offered by CSU Extension (a full copy of the survey is available from the corresponding author upon request).

An invitation to the survey was sent to cottage foods producers who had supplied email addresses after taking the food safety course between 2014 and 2018. The list included 1,023 verified email addresses. There were 170 total responses from the email invitation, seven chose not to participate, and another 10 were excluded because the respondent answered less than 70% of the survey questions. An invitation to the survey was also posted on the Colorado Cottage Food Operators Facebook group page. Forty-eight survey responses were received from the Facebook group, with 44 usable responses.

Results

There were a total of 197 useable survey responses. The survey captured individuals who continue to operate food businesses (n = 119), planned to start a business (n = 61), did not intend to start a business (n = 10), and no longer operated a business (n = 7). Of those currently operating businesses and those planning to, 120 identified as cottage foods businesses, and 42 identified as farmers/ranchers in addition to cottage foods producers. On average, current businesses had been in operation for four years.

Of the seven who were no longer in operation, the survey asked respondents to explain why. Four had personal or family obligations/health issues that impacted their ability to continue their business. Four of the seven found the business not profitable, lost interest, and/or found the government regulations too limiting. One individual reported a lack of access to technical assistance.

Of the 10 not planning to start a business, two lost interest and two found the business not to be profitable. Three respondents noted they changed their business plan based on what they learned in the food safety training. One respondent explained they wanted to sell fish, which is not eligible. Another said "The class I took on Cottage Foods Training was pretty overwhelming and honestly [I] didn't really understand the legal ramifications and how to prevent a legal concern with a client, i.e., self-protection from a lawsuit." These barriers to starting and operating a cottage foods business directly supports the need for business development training.

Business Planning and Decision Making

Respondents currently operating and planning to operate were evenly split on their level of confidence in their skills and ability to create a business plan for their food business, with 87 (48%) responding yes and 93 (52%) responding no. Sixty-eight respondents (80%) indicated they used a business plan to inform their business decisions. Seventeen respondents (20%) said while they were confident in their skills and ability to create a business plan, they did not use it to inform their business decisions.

Markets

Direct markets (e.g. farmers' markets, roadside stands, online sales, etc.) were the most popular outlet for currently operating food businesses, with 89 businesses using direct markets (75%). For those planning to start a business, direct markets were the most popular potential market with 51 of 60 respondents (85%). Only 12 respondents (10%) sold through intermediated markets (to restaurants, wholesalers, distributors, and grocery stores), which cottage foods producers are excluded from using. Twenty-nine

producers (40%) selling exclusively through direct markets are interested in adding intermediated sales in the next two years. Six respondents (10%) who are planning to start a business also wanted to seek out intermediated markets.

Producer Goals

One hundred seventy-nine survey respondents listed the top three goals of their business (Figure 1). The top cited goal was to achieve financial sustainability (n=109). This was followed by creating jobs for myself and/or family members (n=87), growing the scale of my business (n=77), and supporting lifestyle (n=68). Qualitative responses demonstrated the connection between their cottage foods business and their community. For example, “to sustain elementary school garden”, “share my passion and talent with others to help make their special events that more special”, and “support local community and master my craft”. Their responses also illustrated the unique financial possibilities embodied in running your own food business, for example “profitable hobby”, “make enough money to be able to finance health insurance”, “just a side income”, and “pay off student loan from 2008”.

Education needs

One hundred and seventy-nine respondents indicated business development topics they felt would help advance their business goals. Of the 18 options offered, six were selected by over half of the respondents: record keeping/financial statements/taxes (n=112), production costs and pricing (n=108), marketing and promotion (n=99), developing a business plan (n=93), and packaging and brand design (n=85). Less than one third of the respondents voted for the remaining 12 options. Respondents were also asked to write in additional recommendations. Their responses captured the general

need for business development training, as one respondent said, “Honestly, I don’t even know where to start! Do I need a business license? Insurance? What factors are included in the “net” part of net income? I think I’ve got a good prospective product, but don’t really know the next step…” Others just noted a need for scaling up; “How to go from cottage to commercial?” and “…would be nice to know how to quickly scale business; find co-packers; operate as a wholesaler; find a mentor”.

In terms of curriculum delivery, 89 respondents (58%) reported a preference for online learning and 67 respondents (44%) preferred in-person training. Respondents’ preferences appeared to be related to location with those outside the Front Range (the Colorado Rocky Mountains and Eastern Slope area), preferring an online format. All respondents requested education materials in English, with four asking for Spanish in addition to English (2.5%).

Benefits Experienced from Operating Food Business

Respondents were asked about the non-monetary benefits they experienced as a result of operating a food business. Eighty-eight survey respondents answered the opened-ended question. Their responses were organized into categories: connecting with their community and educating them about their passion (50%), supporting their related hobby (11%), being their own boss/flexibility of schedule (11%), and allowing them to produce a quality of product they want to share with their family (2%). The cottage foods safety course offered by CSU Extension appears to support and encourage the building of community, and as one respondent explained, “I enjoyed taking the classes in person, because it helped build camaraderie between the

community of cottage foods businesses; I drove to the Longmont class from Colorado Springs (212 mile round trip) and it was well worth it! What an amazing service."

Implementation

A one-day training was held in November of 2018 largely shaped by the responses to the survey. The training featured two panels. The first was comprised of retailers and food product developers, who explained what buyers look for in new food products. The second panel featured cottage foods businesses that had successfully scaled up their operations. There were also three presentations by campus specialists on identifying market niches, how to price your products, and the current regulatory landscape for food manufactures. The training also included two breakout sessions where participants had a choice to attend two of three sessions:

1. Strategic labeling
2. Contracts and agreements
3. Supply chain logistics

CSU Extension is working to create a replicable model of the training that can be implemented across the state combining in-person and webinar presentations.

Discussion

Cottage foods can be a springboard to developing a commercial scale food business with the potential to be a major economic driver. Bobo's Oat Bars, based in Loveland, Colorado, started as a cottage foods business. Now, the 100-employee company has annual revenue of $15 million with products available nationwide (Castle,

2018; Laxen, 2019). The full potential of cottage food businesses is often limited by the rules and regulations of operating a business out of a home kitchen. Many cottage foods producers lack the basic business acumen to achieve financial stability. Extension has a strong background in helping farms, small businesses, and families develop the necessary tools to thrive in their communities and beyond. This paper has demonstrated how Extension agents and specialists from different disciplines worked together to rapidly respond to needs in their community and develop new curriculum to support economic development. Additional research is needed to evaluate the impact of a one-day workshop training and if this is the most event method for curriculum delivery.

References

Angima, S., & Stokes, A. M. (2019). Engage the Future: The New Extension Learners. *The Journal of Extension*, *57*(2). Retrieved from https://joe.org/joe/2019april/comm1.php?utm_source=email&utm_medium=email&utm_campaign=2019april

Castle, S. (2018, January 4). Boulder's Bobo's Oat Bars caps record revenue year - with a little help from Amazon. *Boulder Daily Camera*. Retrieved from http://www.dailycamera.com/boulder-business/ci_31570410/boulder-bobos-oat-bars

Hughes, D., & Boys, K. (2015). What we know and don't know about the economic development benefits of local food systems. *Choices: The Magazine of Food, Farm, and Resource Issues*, *30*(1). Retrieved from http://www.choicesmagazine.org/UserFiles/file/cmstheme_415.pdf

Laxen, J. (2019, January 31). How Bobo's went from a rainy day experiment to a multi-million dollar snack company. *The Coloradan*. Retrieved from https://www.coloradoan.com/story/news/2019/01/31/bobos-oat-snacks-boulder-expands-loveland-colorado-factory/2730861002/

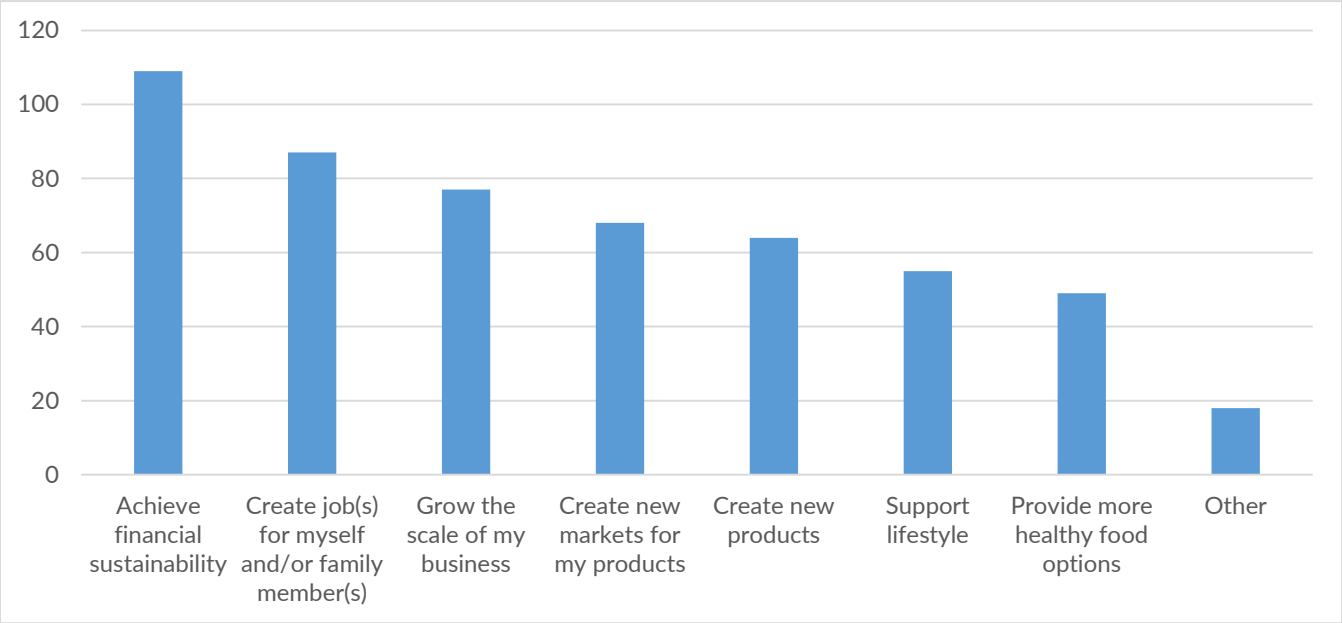
Rice, C. (2018). *Cottage food laws in the United States*. Retrieved from Harvard Food and Law and Policy Clinic website: https://www.chlpi.org/wp-content/uploads/2013/12/FLPC_Cottage-Foods-Report_August-2018.pdf

Schwartz, Aguilar, Bacon, Foster, Giron, Grantham, . . . Williams. (2012). *Colorado Cottage Foods Act* (No. 12–048 Section 5: 25-4-1614). Denver, CO.

U.S. Census Bureau Population (2018). *Annual estimates for the resident population in Colorado: 2018 population estimates*. Washington, D.C.

Figure 1

Top goals for food business



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Cooking Under Pressure: Train-the-Trainer Webinar for Extension Professionals

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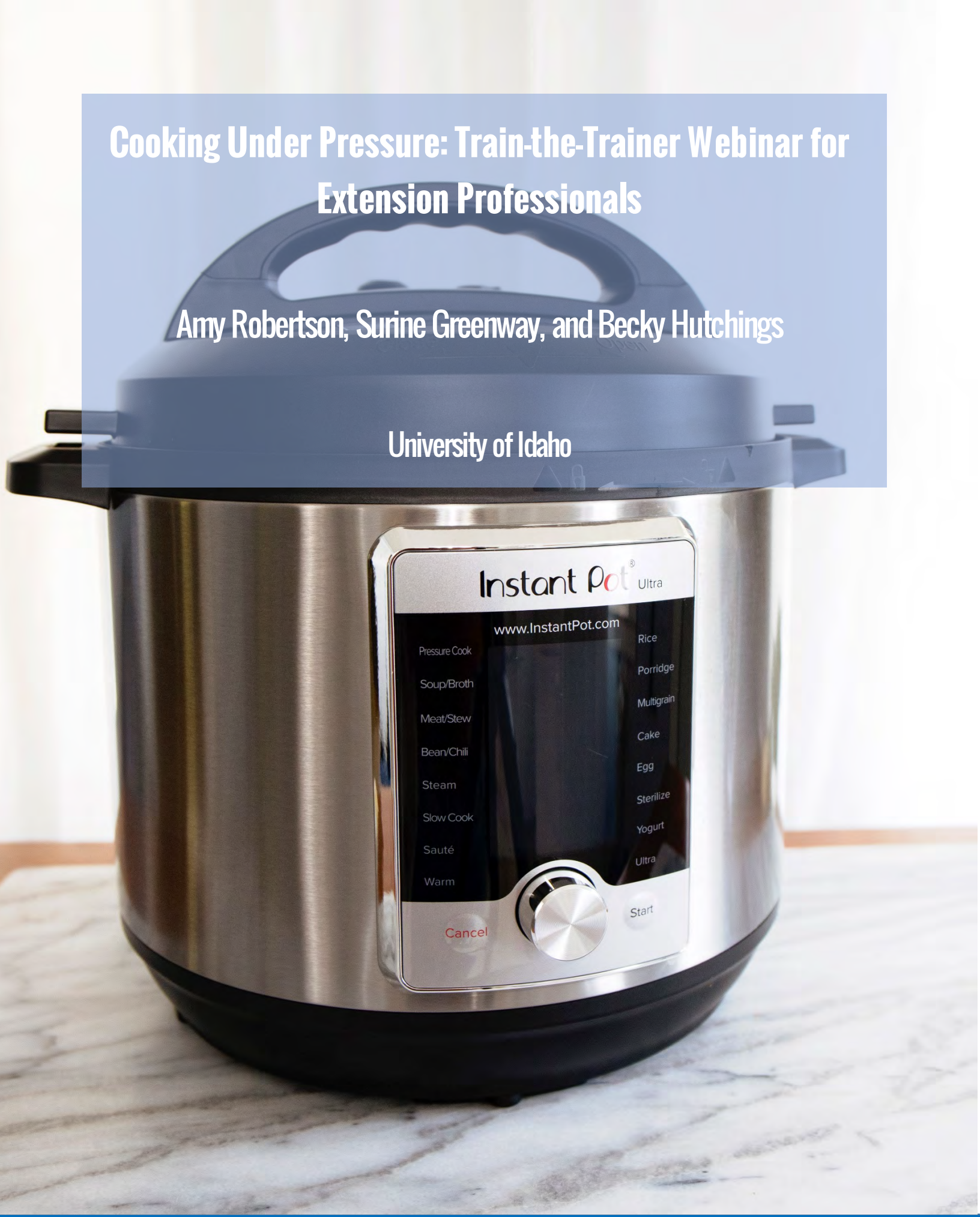

Abstract

A three-member team of Idaho Extension Educators with expertise in teaching hands-on electric pressure cooking workshops provided a free professional development webinar in September of 2018 on extension.org. Collectively, these three educators have taught this topic to over 250 consumers. This webinar highlighted program impacts, successful program structures, potential implementation obstacles, and general information for attendees. Webinar presenters provided marketing materials, a PowerPoint presentation, handouts and an evaluation tool for Extension professionals across the nation to utilize in the hands-on electric pressure cooking workshops they provide to clientele.

Cooking Under Pressure: Train-the-Trainer Webinar for Extension Professionals

With surging popularity in electric pressure cooking appliances, consumers are interested in utilizing these appliances to save time and money while preparing nutritious meals at home. Research also shows that cooking at home is associated with better diet quality (Tiwari, Aggarwal, Tang & Drewnowski, 2017; Wolfson & Bleich, 2015). While individuals have a high level of interest in electric pressure cooking, research-based information on appropriate appliance use is lacking for consumers.

Approximately 70% of mothers with children under the age of 18 are employed outside the home (DeWolf, 2017), thus needing a way to feed their families nutritious meals with limited amounts of time (Hamrick & McClelland, 2016). This need created an opportunity for Extension professionals to educate these individuals, resulting in the development of the Cooking Under Pressure program. This program features hands-on workshops that are structured to provide educational content, build meal preparation skills, and increase the confidence level of individuals preparing meals in their electric pressure cookers. Extension Educators in Idaho developed and implemented this successful hands-on program statewide, thus filling a potential need for Extension personnel across the nation who were seeking a successful program model for conducting hands-on electric pressure cooking workshops within their communities. Extension educators across the country are facing challenges such as reduced budgets, increased geographic boundaries, and new client demographics, which force them to find new and efficient methods to provide quality programming (Rich et al., 2011; Barbercheck et al., 2009).

Extension Professionals Train-the-Trainer Webinar

In September 2018, a team of Idaho Extension Educators partnered with eXtension to present a one-hour webinar providing professional development for Extension personnel across the United States, featuring the hands-on electric pressure cooking program entitled Cooking Under Pressure. The webinar provided participants with the information and materials needed to provide hands-on workshops to consumers. Participants also engaged in a question and answer period following the webinar which expanded this learning opportunity, allowing them to gain additional expertise and program insight. Following the webinar, presenters provided a PowerPoint presentation, a post-program evaluation tool, and marketing materials for Extension professionals to use in structuring and implementing their own hands-on electric pressure cooking workshops. These materials comprise a toolkit including everything necessary for a ready-to-go educational program. The PowerPoint slides contained information needed for a 30-minute presentation covering food safety, proper appliance operating procedures, appliance cleaning tips, and recommendations for basic cooking times for various foods. The post-program survey provides Extension professionals with a tool to analyze the value of this program to their local community. Most importantly, this class is designed for Extension to give clientele an opportunity for hands-on contact with the appliance in a safe and supportive environment while overcoming common fears and hesitations many people have regarding pressure cookers.

Objective

This train-the-trainer opportunity was offered to meet the needs of both Extension professionals and their clientele. With increasing interest in electric pressure cooker appliance education and limited research-based resources available, consumers are seeking practical information and education on these appliances to safely use them in their homes. Extension professionals need to acquire expertise on this topic in order to answer questions from the public and meet the demand for hands-on classes on this topic. The team utilized eXtension Learn, an online platform for Extension personnel, to provide this learning opportunity for Extension professionals across the nation in an easily accessible format.

Method

To determine the effectiveness of this training, participants were asked to complete an anonymous post-program online survey immediately following the webinar. To ensure a high response rate, attendees were required to complete the survey to receive the materials developed to teach the program. At the end of the survey, a link was included to access the teaching materials for the course.

Questions asked in the survey focused on both knowledge gained regarding electric pressure cooking as well as the value of the webinar as a learning tool. A second survey was emailed to participants three months later in order to determine how they had utilized the information from the webinar.

Participants

More than 150 Extension professionals participated in the live train-the-Trainer webinar session. The recorded presentation was also viewed by several professionals who were unable to attend the live session. Of the total webinar attendees (live and recorded), 173 individuals completed the post-webinar evaluation. Participants varied widely in how many years they had been affiliated with Extension. The largest group of participants had fifteen or more years of experience (40%), and the second largest group were new professionals with one to four years of experience (32%). Of these respondents, 96% identified as female, and their age ranged from 23 to 82 years. The attendees had a variety of roles within the Extension system, with 74% of participants reported holding the role (or equivalent title) of an Extension Educator.

Results

Initial Survey

The initial survey showed this was a new topic for most Extension personnel with 87% of attendees reporting they had never taught an electric pressure cooking class before. When asked, “How do you plan to use the information from this webinar in your area?” 145 participants (84%) responded that they planned to teach workshops or share the information learned in the webinar to answer clientele’s questions. Respondents were asked “If you plan to teach a Cooking Under Pressure workshop, how competent do you feel to teach it after attending this webinar?” Before attending the webinar, 60% reported feeling “not very competent” and 6% reported “very competent.” After attending the webinar, these answers changed dramatically with only 1% reporting they felt “not

very competent" and 49% reporting they felt "very competent." Clearly the webinar was effective in providing appropriate content and instilling confidence in the participants so they could teach these workshops in their own geographical regions.

Ninety-three percent of respondents agreed or strongly agreed with the statement "I will use information from this webinar training for teaching purposes." When asked, "Would you be interested in attending further trainings on this subject?" 69% of respondents stated "yes." These responses lead to the conclusions that this was an effective educational opportunity for Extension professionals and that there are further opportunities to provide educational webinars on electric pressure cooking appliances to this audience. Potential additional webinars include classes focusing on using electric pressure cookers for specific diets, preparing meals on a budget, making ethnic foods, and more advanced uses such as yogurt-making or creating extracts.

Many participants provided feedback on what they found to be the most helpful information shared during the webinar. Comments included the following:

- "The food safety information was very helpful and made me more confident in answering client questions."
- "Logistical details of how to set up the class."
- "Getting a ready-to-go program that will be of interest to my county residents."
- "General information about the program and ideas on how to teach it successfully."

Participants were also asked questions about how this webinar met their training

needs. Sixty-one percent stated they liked the webinar because "It was convenient to watch on my own time." Just under one quarter (23%) of participants enjoyed interacting in real time during live broadcasts, and another one-quarter (26%) liked being able to leave comments and interact with other participants. These finding were similar to other research supporting the use of online education because of its flexibility, increased exposure, and real-time communication (Dromgoole & Boleman, 2006; Futris, Adler-Baeder, & Dean, 2004; Parker, 2009). Participant responses for the initial survey can be found in Table 1.

Three-Month Follow-Up Survey

An online three-month follow-up survey was disbursed via email to those who attended the train-the-trainer webinar to evaluate how the information from the webinar was used. The response rate for this survey was 24%, with 42 out of the original 173 responding. These respondents have either scheduled or taught a total of 21 hands-on workshops for consumers as a result of attending the webinar training, reaching over 400 attendees for these programs. This supports the conclusion that the webinar contributed to the opportunity for Extension to extend its reach in allowing professionals to offer hands-on workshops in their communities across the nation.

Summary

This one-hour webinar was successful in meeting the needs of the participants while removing barriers for participation. Unlike many professional development opportunities, no travel was required in order to attend this training. Attendees could

view the webinar at work, home, or other convenient locations. The potential barrier of cost was also removed as this webinar was provided free of charge to attendees, regardless of their affiliation with Extension. While the webinar was only offered once as a live training session, it was recorded and archived so individuals unable to attend could view it at a later time that was convenient for them. With targeted outreach, this training opportunity through an archived webinar may reach a much larger audience as a recorded session.

While webinars such as this are helpful teaching tools, there are limitations. One of the main limitations is the inability to show live footage such as a hands-on demonstration. Webinars are also good avenues for teaching content knowledge, but are harder to make gains in learner confidence. Participant responses reflect these drawbacks:

- "I think if you would have shown me how to actually cook with it would have been helpful."
- "Perhaps some sort of video clip to show segments of an actual workshop might be helpful."
- "I would like to also attend an in-person training, but I understand that would be more difficult to carry out."
- "I will need to have hands on experience to increase my confidence in teaching Cooking Under Pressure."

This training has allowed Extension professionals across the nation to provide hands-on electric pressure cooking workshops and expand research-based outreach to consumers, therefore offering more face-to-face experiences for consumers to gain the knowledge and skills for utilizing an electric pressure cooker while in a safe setting. This translates into an increased number of consumers gaining knowledge and confidence to use their electric pressure cooking appliance to prepare meals in the home. Subsequent Cooking Under Pressure trainings can lead to healthier eating habits and more time for family-focused activities due to the decrease of time needed for meal preparation.

References

Barbercheck, M., Brasier, K. J., Kiernan, N. E., Sachs, C., Trauger, A., Findeis, J., Stone, A., & Moist, L. S. (2009). Meeting the extension needs of women farmers: A perspective from Pennsylvania. *Journal of Extension*, *49*(6), Article FEA4. Retrieved from http://www.joe.org/joe/2009june/a8.php

DeWolf, M. (2017). 12 Stats About Working Women. U.S. Department of Labor. Retrieved from https://blog.dol.gov/2017/03/01/12-stats-about-working-women

Dromgoole, D. A., & Boleman, C. T. (2006). Distance education: Perceived barriers and opportunities related to extension program delivery. *Journal of Extension*, *44*(5), Article 5RIB1. Retrieved from http://www.joe.org/joe/2006october/rb1.php

Futris, T. G., Adler-Baeder, F., & Dean, K. J. (2004). Using technology to link researchers and educators: Evaluation of electronic conferencing. *Journal of Extension*, *42*(1), Article 1RIB1. Retrieved from http://www.joe.org/joe/2004february/rb1.php

Hamrick, K. S., & McClelland, K. (2016). Americans' Eating Patterns and Time Spent on Food: The 2014 Eating & Health Module Data. *United States Department of Agriculture, Economic Research Service.* Retrieved from https://ageconsearch.umn.edu/record/262141/files/60064_eib158.pdf

Parker, R. T. (2009). Distance education: Taking the first steps. *Journal of Extension*, *47*(3), Article 3IAW5. Retrieved from http://www.joe.org/joe/2009june/iw5.php

Rich, S.R., Komar, S., Schilling, B., Tomas, S.R., Carleo, J., & Colucci, S.J. (2011). Meeting Extension Programming Needs with Technology: A Case Study of Agritourism Webinars. *Journal of Extension*, *47*(3), Article 3FEA8. Retrieved from https://www.joe.org/joe/2011december/a4.php

Tiwari, A., Aggarwal, A., Tang, W., Drewnowksi, A. (2017). Cooking at Home: A Strategy to Comply with U.S. Dietary Guidelines at No Extra Cost. *American Journal of Preventive Medicine, 52*(5), 616-624.

Wolfson, J.A., Bleich, S. (2015). Is cooking at home associated with better diet quality or weight-loss intention? *Public Health Nutrition, 18*(8), 1397-1406.

Table 1

Frequency of Participant Responses on Webinar Format and Subject Matter from the Initial Survey (n=173)

Question	Agree/Strongly Agree	Disagree/Strongly Disagree
This class format was helpful and informative	96.0% (n=166)	3.47% (n=6)
I would attend another webinar in this format	93.1% (n=161)	2.3% (n=4)
I will recommend this training to another Extension Educator/Professional	96.0% (n=166)	1.7% (n=3)
I will use information from this training in my personal life	89.0% (n=154)	3.5% (n=6)
I will use information from this training for teaching purposes	93.7% (n=162)	2.3% (n=4)
After attending this training, my capacity to teach Cooking Under Pressure has been strengthened	91.9% (n=159)	1.1% (n=2)

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Discover 4-H Clubs: Evaluation and Outcomes of the Essential Resource for 4-H

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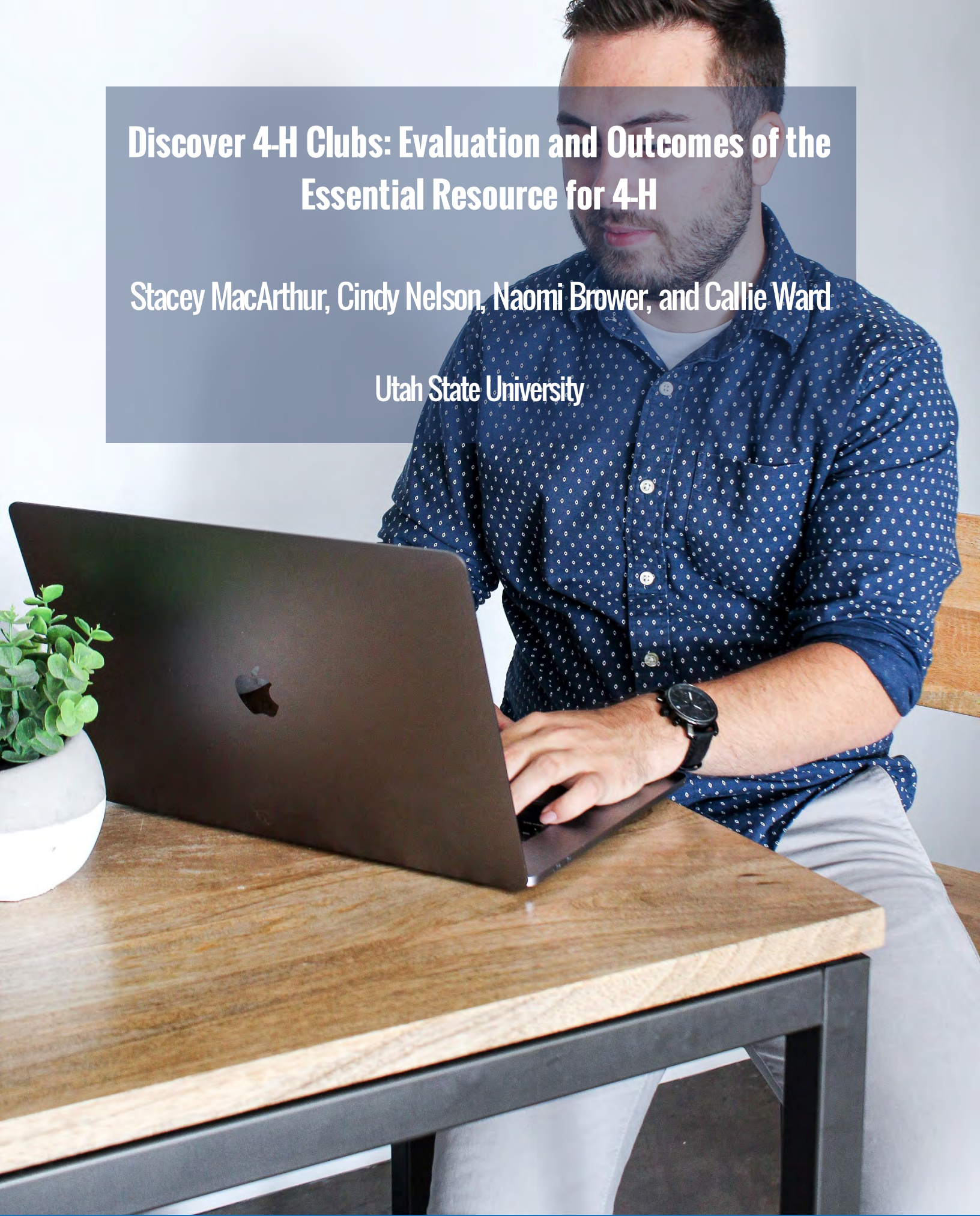


Abstract

Discover 4-H Clubs curriculum offer free, innovative, online resources to anyone working with youth, and fills a need to provide quality hands-on Family and Consumer Sciences programming regardless of prior knowledge on the topic. The guides offer a new approach to support program delivery for both staff and volunteers to start new clubs, explore new project areas, recruit new volunteers, and train professionals. An evaluation assessing the effectiveness of the guides was sent via email to all individuals that downloaded the guides over the past three years. Responses indicated that participants increased in knowledge (33%), skills (25%), understanding (18%), application (8%), and positive change in behavior (12%).

Discover 4-H Clubs: Evaluation and Outcomes of the Essential Resource for 4-H

Family and Consumer Sciences (FCS) subject matter seems to increasingly take a backseat to other education where youth programming is concerned. A study from Pittsburg State University indicated a steady decline in both FCS teachers and students enrolling in FCS classes over the past 10 years (Werhan, 2013). Additionally, current FCS teachers expressed a concern that they do not have enough time or topic-specific expertise required to create learning experiences for all of the various FCS topics that interest youth.

An assessment conducted with 4-H faculty, staff, and volunteers revealed that volunteers are also often overwhelmed with finding curricula, resources, and teaching topics outside their area of expertise such as FCS topics (MacArthur, Nelson, Brower, Memmott, & Peterson, 2016). The assessment also indicated a clear need to simplify the process of starting and maintaining a 4-H club.

Volunteer leaders are vital to providing educational activities and experiences for youth and enabling Extension to expand the reach of 4-H to additional youth (National 4-H Council, n.d.). New volunteers bring various levels of knowledge and skills to Extension programs. Individual or group trainings that include information about available resources are needed to assist volunteers in becoming successful 4-H leaders (Culp, 2012). Additionally, with limited time for preparation, accessibility to high quality curricula and planning aids is essential to recruiting and retaining volunteers and allows

volunteers to spend more time and energy on the program and less time planning (Culp et al., 2009; Worker et al., 2017).

As a solution to these obstacles and an aid to volunteers and others in the community in becoming confident in delivering information to youth, content experts produced the Discover 4-H Clubs curriculum. These innovative peer reviewed resources are available online, free of charge, to assist them in easily starting a new club and preparing and teaching various 4-H project areas, including FCS topics (MacArthur et al., 2016).

Objective

Previous publications (MacArthur et al., 2016) have provided an overview of the innovative design of the 4-H curriculum and the aim of this project is to further explore the outcomes and impacts of the Discover 4-H Clubs Clubs curriculum. This paper will explore who is using the curriculum, how it is being utilized, and the impact of the curriculum on the youth.

Methods

In 2016-17, an assessment of the Discover 4-H Clubs curriculum was conducted to evaluate the outcomes and impacts through an IRB approved online survey sent to email addresses connected to free curriculum download requests (available at www.discover4h.org). This short online Qualtrics survey included several short open-ended response questions and check box or rating questions. The information

requested included which guide they used, how they used the guides, and how the guides have benefited their 4-H program. Additional questions asked the number of participants taught, the usefulness of the guides (Likert scale of 1-5, with 1 being not useful and 5 being extremely useful), how likely they were to recommend the guide to others (scale from 1 being not at all likely to 10 being extremely likely), and results of using the guides (i.e., increase in knowledge, skills, understanding, or applied knowledge, concepts or life skills). Demographic information collected from participants included their state/country and how they were involved in 4-H.

Participants

There were 472 participant evaluations received from 42 states and 4 foreign countries. Individuals responding included 4-H professionals (42%), established 4-H volunteers (21%), new volunteers (10%), afterschool personnel (8%), 4-H military organizations (5%), youth and families with promise (YFP) mentoring staff (3%), not associated with 4-H (5%) and other (7%).

Results

Survey results indicate the Discover 4-H Clubs curriculum are useful for a variety of 4-H and other positive youth development personnel. The guides are being used for a myriad of purposes for both volunteers and 4-H personnel (see Figure 1). For clarification, the “Other” category answers included: FCS teachers, train new 4-H leaders in Paraguay, leader’s council, orienting new leaders, day camps, leader’s training, teens as teachers, 4-H mentoring, afterschool programming, homeschool, research, etc. In addition, users reported the guides were very or extremely (84%) useful. Lastly, users

reported increases in knowledge (32.8%), skills (25%), and understanding (17.6%), as well as implementing positive changes in behavior (11.7%), and application of concepts (8.4%) as a result of using the guides (see Figure 2).

Discover 4-H Clubs Curriculum Usage

Participants have reported using the guides with over 18,449 youth and 396 adults. Table 1 shows the download information for each current Discover 4-H Club's curriculum. The large difference in downloads, in part, can be explained by the length of time curriculum has been published and made available on the website versus newer curriculum.

Benefits of the Discover 4-H Clubs Curriculum to Youth Programming

Individuals across the country have utilized these guides. Some Extension county faculty using the guides have reported that they can "solve any volunteer concern" with the Discover 4-H Club curriculum. For example, they cited using the curriculum to resolve concerns about not knowing enough about a topic or having the resources to teach a club, as well as preparation time, etc.

The following are respondent answers to the question: How have the Discover 4-H curriculum benefited your 4-H program?

- New clubs,
- Help to guide information in a fun and meaningful way to incorporate in after-school programming,
- It has made it easy to teach new topics,

- Keeps kids engaged,
- I see them as a way for volunteers to get involved without having to come up with materials on their own,
- It helps to give us a timeline and quality material to work from,
- It's nice to have ideas in one place that are already put together. Saves time,
- They have given us new ideas and allowed us to structure clubs,
- Have provided more project variety. Makes it easier for a new leader to start a project,
- Helped volunteers feel comfortable teaching material,
- Great resource for ideas, how to implement activities, and explanation of applying knowledge applied to life skills,
- Gives me structure for meeting topics,
- They are easy to use and offer activities that are easy to plan, set up and follow through with,
- They have increased our participant numbers due to the variety of subjects,
- New members joined,
- Easy to show at "What is 4-H?" events and a quick way to get new people interested,
- It's SO easy when a volunteer comes into the office and I can quickly evaluate their needs and their wants and their vision with the Discover 4-H Clubs curriculum,
- It has helped recruit new leaders by giving something to go with right away,
- Teach faculty & staff, train volunteers.

Summary

Initially the Discover 4-H Clubs curriculum was created in response to 4-H volunteer needs. An unexpected result was that topics such as family finance, family history, kitchen science, and sewing appealed to and filled the needs of other youth audiences such as FCS teachers, homeschool and afterschool groups, religious groups, community groups, and FCS Extension and non-Extension faculty. As a result, the guides are regularly used when teaching FCS topics to youth.

This innovative curriculum allows leaders and staff to adapt to changing times in overcoming obstacles and deliver better results to keep the 4-H organization moving forward. Discover 4-H Clubs curriculum has been proven to be an excellent resource for both adult and teen volunteers.

Evaluations from users in four countries and 42 states indicate the guides are effective and being used to strengthen 4-H volunteer development. Not only does it serve volunteers, it is versatile enough to be used as an onboarding tool for new faculty and staff and an option for exploring a new project area for experienced club leaders and Extension or FCS professionals. These guides are an innovative resource for 4-H Club staff and volunteers in overcoming obstacles in time constraints, difficulty finding project-specific information, resources, and opportunities.

References

Culp, K. (2012). Overview of the GEMS model of volunteer administration (Generate, educate, mobilize and sustain). *Journal of Extension* [on-line], 50(6). Article 6TOT10. Available at: https://www.joe.org/joe/2012december/tt10.php

Culp, K., Bentley, G., Conway, C., Kelley, D., Mays, M., & Turley, J. (2009). Planning aids: tools to ensure volunteer and event successes. *Journal of Extension* [On-line], 47(4). Article 4TOT2. Available at: http://www.joe.org/joe/2009august/tt2.php

MacArthur, S., Nelson, C., Brower, N., Memmott, M., & Peterson, M. (2016). Discover 4-H Clubs: The essential resource for 4-H. *Journal of Extension* [On-line], 54(5). Article 5TOT4. Available at: https://www.joe.org/joe/2016october/tt4.php

National 4-H Council (n.d.). Retrieved from: http://www.4-h.org

Werhan, C. (2013). Family and Consumer Sciences Secondary School Programs: National Survey Shows Continued Demand for FCS Teachers. *Journal of Family and Consumer Sciences*. *105* (4), 41-45.

Worker, S., Schmitt-McQuitty, L., Ambrose, A., Brian, K., Schoenfelder, E., & Smith, M. (2017). Multiple-methods needs assessment of California 4-H science education programming. *Journal of Extension* [On-line], 55(2). Article 2RIB4. Available at: https://www.joe.org/joe/2017april/rb4.php

Table 1
Discover 4-H Clubs Curriculum Download Information

Topics	Downloads	States	Foreign Countries
Aerodynamics	157	36	ESP, JOR
African Safari	30		
Ancient Egypt	77		
Archeology	1026	49	BMU, BRB, CAN, CUB, ESP, JAP, JOR, KOR, KOS, TUR, WAL, ZMB
Art of Math	1620	49	BRB, CAN, CUB, ENG, ESP, GER, IND, JAP, JOR, KNA, KOR, KOS, NEP, PRY, TUR, ZMB
Beef	1149	50	AUS, BMU, BRB, CAN, ENG, ESP, GER, JAP, JOR, KOR, KOS, NEP, PRY, TUR, ZMB
Cake Decorating	2401	49	BMU, BRB, CAN, CHN, ENG, ESP, EU, GEO, GER, JAP, JOR, KNA, KOS, LKA, NEP, TUR
Candy Company	33	13	ESP, JOR
Citizenship	1908	50	BMU, BRB, CAN, CUB, ENG, ESP, GER, JAP, JOR, KOR, KOS, NEP, PRY, SPG, TUR, ZMB
Code	2153	49	ARG, BMU, BRB, CAN, CUB, ENG, ESP, GER, JAP, JOR, KOS, NEP, SPG, TUR, WAL, ZMB
Craft Beading	1770	49	BMU, BRB, CAN, ENG, ESP, GER, JAP, JOR, KNA, KOR, KOS, LKA, NEP, TUR, WAL, ZMB
Communicative and Expressive Arts	1788	50	BRB, CAN, CUB, ENG, ESP, GER, IND, JAP, JOR, KOR, KOS, PRY, TUR
Consumer Science	2368	49	BRB, CAN, CUB, ENG, ESP, GER, IND, JAP, JOR, KNA, KOR, KOS, NEP, PRY, SGP, TUR, ZMB

Topics	Downloads	States	Foreign Countries
Crime & Spy	2667	50	ARG, BMU, BRB, CAN, CHN, CUB, ENG, ESP, GEO, GER, JAP, JOR, KOR, KOS, NEP, PRY, SPG, TUR, ZMB
Crochet	1923	49	ARG, BMU, BRB, CAN, ENG, ESP, GER, JAP, JOR, KNA, KOS, LKA, NEP, TUR, WAL
Dairy Heifer	830	49	BRB, CAN, ENG, ESP, GER, JAP, JOR, KOR, KOS, NEP, PRY, TUR, ZMB
Dog	1672	50	ARG, BMU, BRB, CAN, ENG, ESP, GER, JAP, JOR, KOR, KOS, NEP, TUR
Duct Tape	1079	49	BMU, BRB, ESP, JAP, JOR, KOS, LKA, TUR
Edible Science	392	42	ESP, JOR
Emergency Preparedness	1317	49	BRB, CAN, CUB, ENG, ESP, JAP, JOR, KOR, KOS, TUR, ZMB
Engineering an Empire	263	42	BMU, ESP, JOR
Entomology	355	44	BMU, ESP, JOR
Environmental Earth Science	15		
Environmental Education & Citizenship	311	42	ESP, JOR
Exploring Energy	226	41	ESP, JOR
Family History	1545	48	BRB, CAN, CUB, ENG, ESP, GER, JAP, JOR, KNA, KOR, KOS, NEP, TUR, ZMB
Fitness	2670	49	ARG, BMU, BRB, CAN, CHN, CUB, ENG, ESP, EU, GEO, GER, ITA, JAP,

Topics	Downloads	States	Foreign Countries
			JOR, KNA, KOR, KOS, NEP, PRY, TUR, ZMB
Flight	21	11	ESP, JOR
Flight School	250	40	BMU, ESP, JOR
Food Preservation	139		
Forces of Nature	2319	50	ARG, BMU, BRB, CAN, CHN, CUB, ENG, ESP, EU, GEO, GER, JAP, JOR, KNA, KOR, KOS, NEP, TUR, ZMB
Leadership	243	42	ESP, JOR
Geology	2059	49	BRB, CAN, CHN, CUB, ENG, ESP, EU, GER, GEO, JAP, JOR, KOR, KOS, NEP, TUR, ZMB
Goat	1309	50	BRB, CAN, ENG, ESP, GER, JAP, JOR, KOR, KOS, NEP, TUR, ZMB
Healthy Relationships	895	50	BMU, CAN, ESP, IND, JAP, JOR, KOR, KOS, LKA, TUR, ZMB
Healthy Snacks	2444	49	AUS, BMU, BRB, CAN, CUB, ENG, ESP, GER, JAP, JOR, KNA, KOR, KOS, LKA, PRY, TUR, ZMB
Horse First Aid	1101	50	BRB, CAN, ENG, ESP, GER, JAP, JOR, NEP, KOR, KOS, PRY, TUR
Horse Showmanship	186	36	ESP, JOR
Incident Command	229	40	ESP, JOR
Interior Design	778	47	BRB, ESP, JAP, JOR, KOR, KOS, LKA, TUR, WAL
Junior Gardener	502	44	ESP, JOR

Topics	Downloads	States	Foreign Countries
Kitchen Science	3338	50	BRB, CAN, CHN, CUB, ENG, ESP, EU, GER, JAP, JOR, KNA, KOS, KOR, LKA, NEP, PRY, TUR, ZMB
Makey Makey®	49		
Mission to Mars	279	39	BMU, ESP, JOR
Money Mentors	2082	49	AUS, BMU, BRB, CAN, CHN, COL, CUB, FRA, ENG, ESP, GEO, GER, IND, ISR, ITA, JAP, JOR, KNA, KOR, KOS, NEP, SPG, TUR, ZMB
Mountain Bike	141	31	ESP, JOR
OnShape™ 3-D Modeling	177	36	ESP, IND, JOR
Pack Goats	452	45	BMU, BRB, CAN, ESP, JAP, JOR, KOR, KOS, TUR
Paper Craft	2618	49	BMU, BRB, CAN, CHN, CUB, ENG, ESP, EU, GEO, GER, IND, ITA, JAP, JOR, KNA, KOR, KOS, LKA, NEP, TUR, WAL, ZMB
Personal Development & Leadership	1425	49	BRB, CAN, CUB, ENG, ESP, JAP, JOR KOS, PRY, TUR, WAL, ZMB
Photography	2571	49	BMU, BRB, CAN, CHN, CUB, ENG, ESP, EU, GEO, GER, JAP, JOR, KNA, KOR, KOS, LKA, NEP, SPG, TUR, WAL, ZMB
Planet Energy	1823	50	ARG, BMU, BRB, CAN, CHN, CUB, ENG, ESP, GER, JAP, JOR, KOR, KOS, NEP, TUR, ZMB
Plants & Animals	222	39	ESP, JOR
Poultry Production	703	47	BMU, BRB, ESP, JAP, JOR, KOR, KOS, PRY, TUR, ZMB

Topics	Downloads	States	Foreign Countries
Poultry Showmanship	636	48	BRB, ESP, JAP, JOR, KOR, KOS, PRY, TUR
Python Code	1340	49	BRB, CAN, CHN, CUB, ENG, ESP, EU, GER, JAP, JOR, KOS, NEP, SGP, TUR, WAL, ZMB
Robotics	2579	50	ARG, BRB, CAN, CHN, CUB, ENG, ESP, EU, GER, IND, JAP, JOR, KNA, KOR, KOS, NEP, SPG, TUR, ZMB
Science & Technology	1535	49	BRB, CAN, CUB, ENG, ESP, IND, JAP, JOR, KOR, KOS, SPG, TUR, ZMB
Scratch Code	1451	49	BRB, CAN, CUB, ENG, ESP, GER, JAP, JOR, KOS, NEP, SGP, TUR, WAL, ZMB
Seeds	468	45	ESP, JOR, KOS, TUR
Sewing	2940	49	BMU, BRB, CAN, ENG, ESP, EU, GER, JAP, JOR, KNA, KOR, KOS, LKA, NEP, TUR, WAL
Sheep	1275	50	BMU, BRB, CAN, CHN, ENG, ESP, GER, JAP, JOR, KOR, KOS, NEP, PRY, TUR, ZMB
Spa & Relaxation	2075	49	BMU, BRB, CAN, CHN, CUB, ENG, ESP, EU, GER, ITA, JAP, JOR, KOR, KOS, NEP, SGP, TUR
Swine	1165	50	CAN, ENG, ESP, GER, NEP, JAP, JOR, KOR, KOS, PRY, TUR, ZMB
Tinkercad™	172	36	ESP, JOR
T-Shirt Quilts	859	48	BMU, BRB, ESP, JAP, JOR, KOR, KOS, TUR, ZMB
Theatre Arts	1674	50	BMU, BRB, CUB, ENG, ESP, EU, GEO, GER, JAP, JOR, KNA, KOR, KOS, NEP, TUR

Topics	Downloads	States	Foreign Countries
U-Sing	73		
Urban Gardening	311	39	ESP, JOR
Wildlife	113	26	ESP, JOR
Wonders of Water	30	13	ESP, JOR
World of Work	257	42	ESP, JOR
TOTAL:	**79,376**	**50**	**31**

Note: Foreign Countries = Argentina (ARG); Australia (AUS); Bermuda (BMU); Barbados (BRB); Canada (CAN); China (CHN); Colombia (COL); Cuba (CUB); England (ENG); U.S. military base in Europe (EU); France (FRA); Republic of Georgia (GEO); Germany (GER); India (IND); Israel (ISR); Italy (ITA); Japan (JAP); Jordan (JOR); Kosovo (KOS); Nepal (NEP); Netherlands (NLD); Paraguay (PRY); Puerto Rico (PRI); Singapore (SGP); South Korea (KOR); Spain (ESP); Sri Lanka (LKA); St. Kitts / Nevis (KNA); Turkey (TUR); Wales (WAL); Zambia (ZMB).

Figure 1

Participant uses of the Discover 4-H Clubs Curriculum

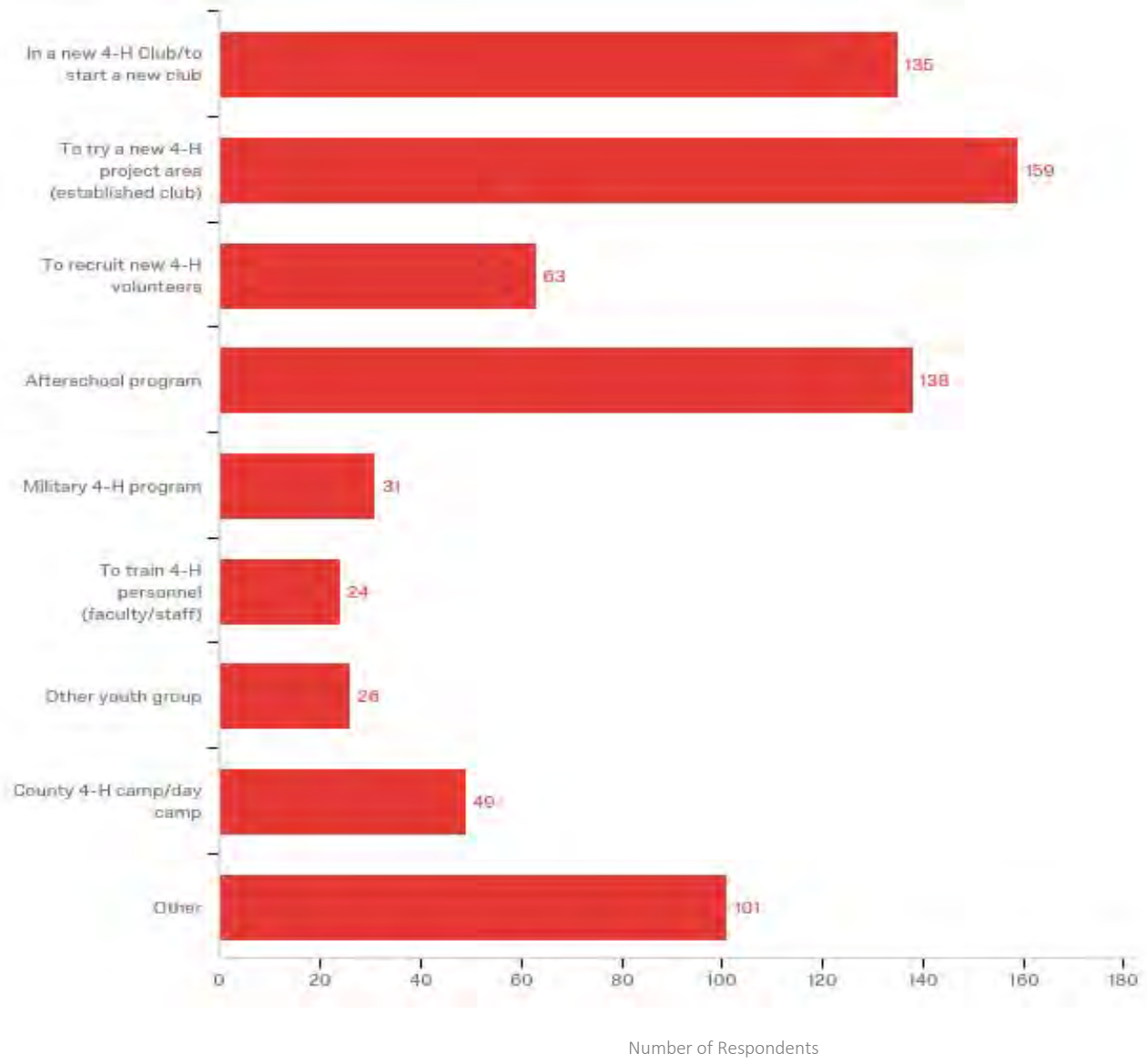
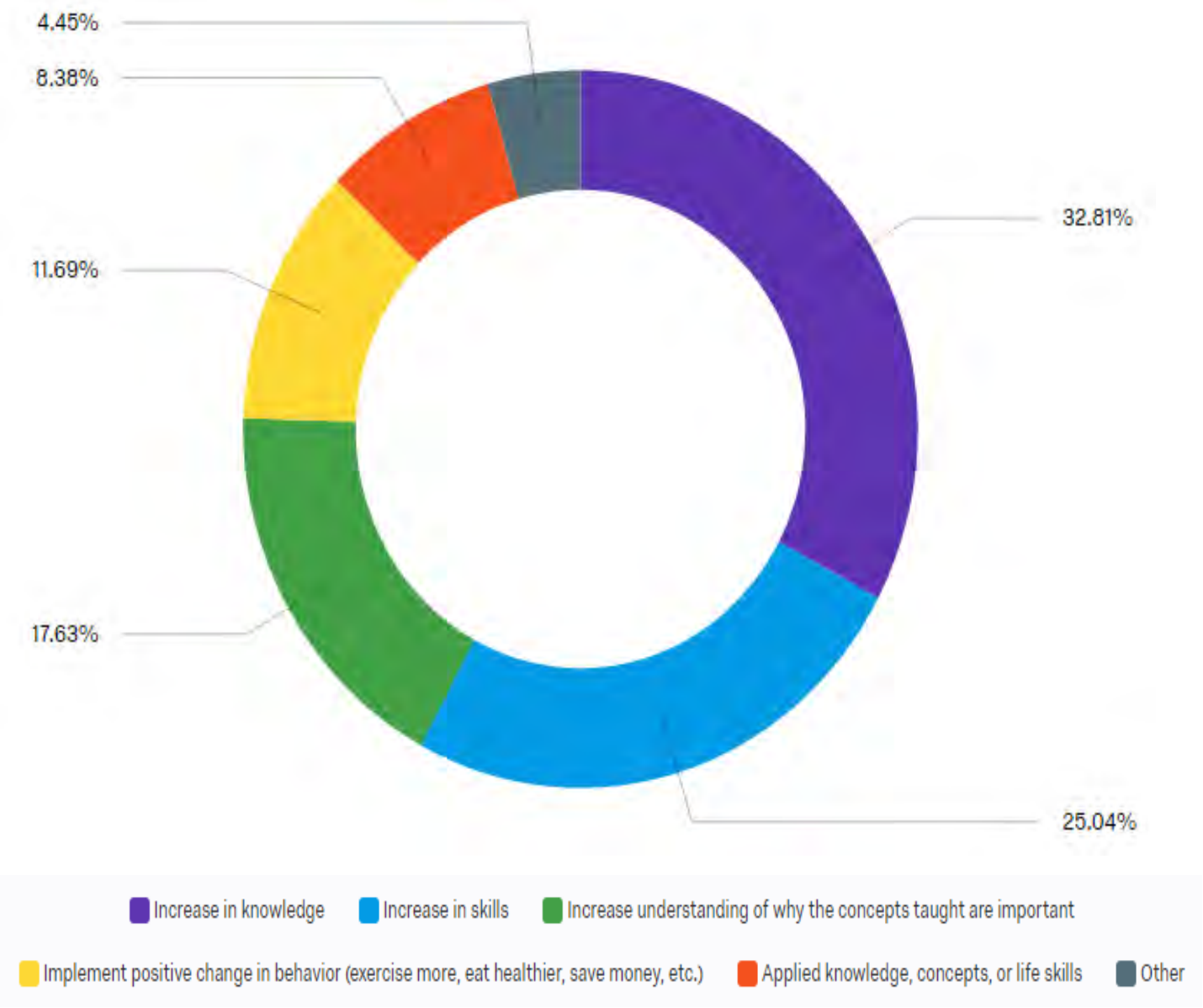


Figure 2

Participant impacts as a result of using the guides



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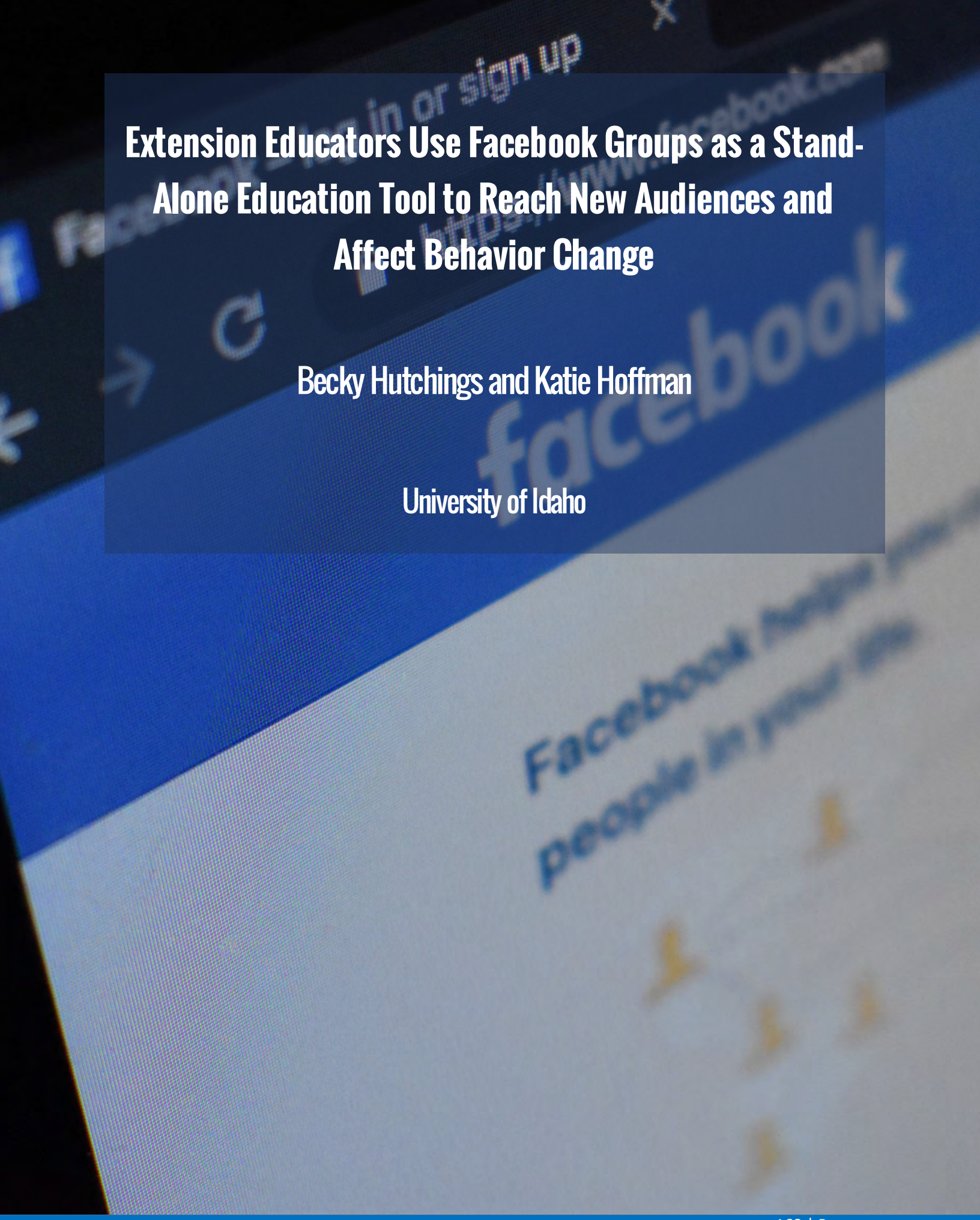


Extension Educators Use Facebook Groups as a Stand-Alone Education Tool to Reach New Audiences and Affect Behavior Change

Becky Hutchings and Katie Hoffman

University of Idaho

Abstract

Two private Facebook groups were created to share a series of family and consumer science demonstration videos produced using Facebook Live. The two groups reached 173 participants. The innovative use of the social media platform enabled the Extension educators to reach larger, new, non-traditional audiences. Survey results indicated an increase in participant knowledge and a positive effect on behavior changes.

Extension Educators Use Facebook Groups as a Stand-Alone Education Tool to Reach New Audiences and Affect Behavior Change

Recent research indicates a steady increase in the use of social media by adults across the United States over the past seven years (Smith & Anderson, 2018). Seventy-five percent of Facebook users utilize Facebook every day. Users turn to Facebook for interaction with friends and family and as a source of information. Through articles, videos, and infographics, users gain knowledge about the world around them. Extension educators are recognizing the value of social media outlets to disseminate scholarly work. More scholars are incorporating social media tools into scholarly programming. These tools could prove to inform a larger audience, report faster impact, and complement traditional programming (Priem, J., Piwowar, H., & Hemminger, B., 2012).

Objective

For decades, Extension professionals have been seeking innovative ways to disseminate information to the public. As Extension continues to maintain its relevance and broaden its reach, it is critical for educators to seek innovative methods (Franz, Garst, & Gagnon, 2015). Extension educators have been using social media in several ways since at least 2005 (Gharis, Bardon, Evans, Hubbard, & Taylor, 2014; Wagenet et al., 2005). This includes using Facebook to market programs, increase awareness of Extension, increase social media presence, and supplement existing traditional Extension programs (Skrabut, 2014; Kocher, Luambardo, & Swietzer, 2013; Gharis & Hightower, 2017).

Utilizing social media as a stand-alone educational method has been untapped by Extension. A survey in 2016 indicated that current Extension audiences desired stand-alone Extension education on social media platforms (Vines, Jeannette, Euabanks, Lawrence, & Radhakrishina, 2016). Social media presents a chance to extend the reach of Extension programming to new audiences, considering the broad demographic among social media users (Smith & Anderson, 2018). A majority of Extension clientele are accessing Facebook as their preferred social media platform (O'Niell, Zumwalt, & Becham, 2011). Two Extension educators from Idaho are taking advantage of social media platforms and meeting the need for a stand-alone program by implementing Facebook Live and Facebook group workshops to teach family and consumer science topics to audiences new to Extension. Both the rural nature of these counties and the demands on young families' time made a stand-alone social media learning environment a viable alternative to a traditional workshop. The Social Media platform allowed clientele participation anytime and anywhere.

Methods

Taking a cue from direct sales and health, two educators created an online social media group to use as an educational platform to engage online participants. A closed Facebook group was established in each of two Idaho counties to host a series of Family and Consumer Sciences videos. A closed group is available by invitation or membership request, and outside Facebook users cannot see who is in the group or what members post. The Facebook platform was used to create the groups, hosted on the Extension Educator's private Facebook account. Clientele were recruited through both private and University of Idaho (UI) Extension Facebook pages to join the groups, titled "Families on

the Move!" (98 members) and "Cooking Under Pressure" (75 members). During the initial set-up, guide hosts are allowed to send invitations to their "friends list" associated with the group. The two groups' links were also posted on the UI Extension page encouraging membership. Members who joined the group also had the option, through Facebook, to invite friends from their "friends list".

Seven videos were produced for "Families on the Move!" and six videos were produced for "Cooking Under Pressure". Content in these videos included the following topics: freezer meals, healthful lunches, cook-once-eat-twice methods, slow cooker recipes, home organization, developing a cleaning schedule, and electric pressure cooker methods. Videos were recorded using the Facebook Live feature daily for one week. Facebook Live is a live video format posting feature available on Facebook where content generators are able to record video livestream and then post the recording to be viewed later. Viewers can interact in real-time during the live stream by posting comments and likes. Viewers can also post comments to the recorded video post later. The comments made during live streaming are also posted with the achieved video and have a time stamp to signify they were made during a live video. The live videos were recorded at a high use time on each site based on metric data from the county UI Extension page showing when a high use time of day was.

Each video length was 15 minutes and featured the Extension educator teaching a recipe or concept while using visual aids and narrating the process to the camera in a demonstration style. The videos were produced using the educator's cell phones on tripods, but any web enabled device with Facebook access could be used. If the videos are done in a well-lit, quiet room, no lighting, editing or sound equipment is necessary. The educators prepared outlines to use as talking points, highlighting important

information to be shared in the demonstration. These videos remained available to view later. Throughout the week, links to recipes or other related information were shared by both the educator hosts and group members.

Results

Twenty-seven participants in “Families on the Move!” and twenty-one participants in the “Cooking Under Pressure” completed the electronic survey posted one month after the conclusion of the video week. An approved survey by the University Internal Review Board measured knowledge gained, short-term behavior changes, and evaluation of the delivery method.

All respondents agreed that the class format was helpful and informative, and indicated that they would take another class in a Facebook format in the future. Seventy-one percent (N = 48) of participants in both groups were new to Idaho Extension classes. Of those participants, 86% said they would take another class from the University of Idaho Extension identifying convenience and topics of interest chosen as the main reasons (100% and 87%, respectively).

Responses to the survey questions demonstrated that participants not only learned from the program, but also applied behaviors learned in the video. An average of 70% in both groups reported that they put their knowledge into practice (see Figure 1). Participants actively engaged in the program, with averages of 52 and 37 views per video in the two programs respectively. Participants shared the following comments regarding the program and its usefulness in their lives:

- "It was convenient to watch on my own time."
- "Class topics were interesting to me."
- "I enjoyed interacting in real time during live broadcasts."
- "I was able to leave comments and interact with other participants."

Summary

This program demonstrates the effectiveness of a stand-alone social media based educational method. This pilot program demonstrates that Facebook groups and Facebook Live video can be a used to expand extension audiences and education beyond the physical classroom. Stand-alone social media education can provide an effective and convenient learning environment for Family Consumer Science Extension clientele.

References

Franz, N., Garst, B., & Gagnon, R. (2015). The cooperative extension program development model: Adapting to a changing context. *Journal of Human Sciences and Extension*, 3(2), 3- 12. Retrieved January 17, 2019, from https://www.jhseonline.com/past-issue

Gharis, L., Bardon, R., Evans, J., Hubbard, W., & Taylor, E. (2014). Expanding the reach of extension through social media. *Journal of Extension, 52*(3). Article 3FEA3. Available at www.joe.org/joe/2014June/a3.php

Gharis, L., & Hightower, M. (2017). A practical method for collecting social media campaign metrics. *Journal of Extension*, 55(2). Article 2IAW6. Available at https://www.joe.org/joe/2017april/iw6.php

Kocher, K., Lombardo, A., & Sweitzer, R. (2017). Using social media to involve the public in wildlife research - the SNAMP Fisher sock collection drive. *Journal of Extension*, 51(1). Article 1IAW3. Available at https://joe.org/joe/2013february/iw3.php

O'Niell, B., Zumwalt, A., & Becham, J. (2011). Social media use of cooperative extension family economic educators: Online survey results and implications. *Journal of Extension,* 46(6). Article 6R1B2. Available at https://www.joe.org/joe/2011december/rb2.php

Priem, J., Piwowar, H., & Hemminger, B. (2012). Almetrics in the wild: Using social media to explore scholarly impact. *Computer Science*, 1203(4745). Available at https://arxiv.org/abs/1203.4745

Skrabut, S. (2014). Save time and increase social media research using IFTT- If this then that. *Journal of Extension*, 52(5). Article 5TOT2. Available at https://www.joe.org/joe/2014october/tt2.php

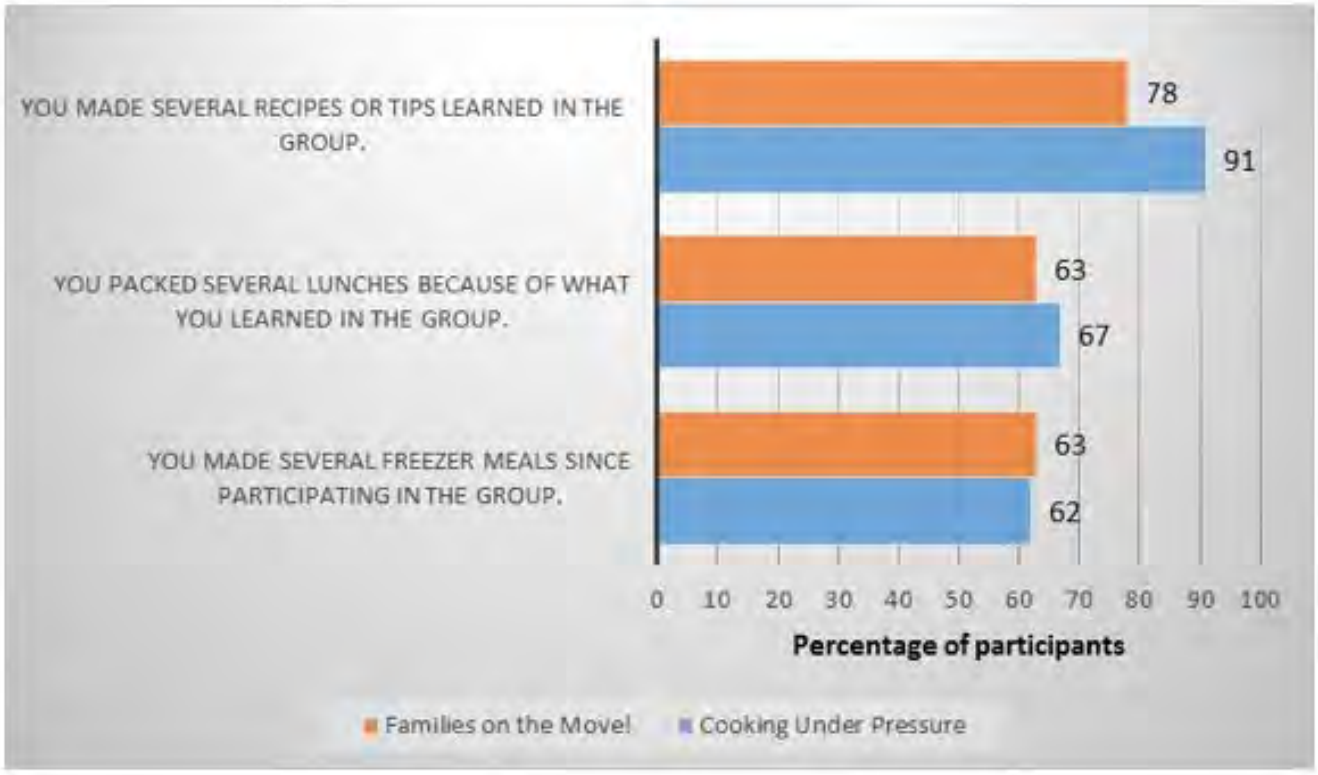
Smith, A., & Anderson, M. (2018). Social Media Use in 2018. Pew Research Center. Retrieved from http://www.pewinternet.org/2018/03/01/social-media-use-in-2018

Wagenet, L., Lemley, A., Grantham, D., Harrison, E., Hilman, K., Mathers, K., & Younge, L. (2005). Evaluating the effectiveness of public television as a method for watershed education. *Journal of Extension*, 43(2). Article 2FEA5. Available at https://joe.org/joe/2005april/a5.php

Vines, K., Jeannette, K., Eubanks, E., Lawrence, M., & Radharishna, R. (2016). Extension master gardener social media needs: A national study. *Journal of Extension*, 54(2). Article 2FEA5. Available at https://www.joe.org/joe/2016april/a5.php

Figure 1

Comparative positive responses to survey questions answered by participants for each group, shown in percentages



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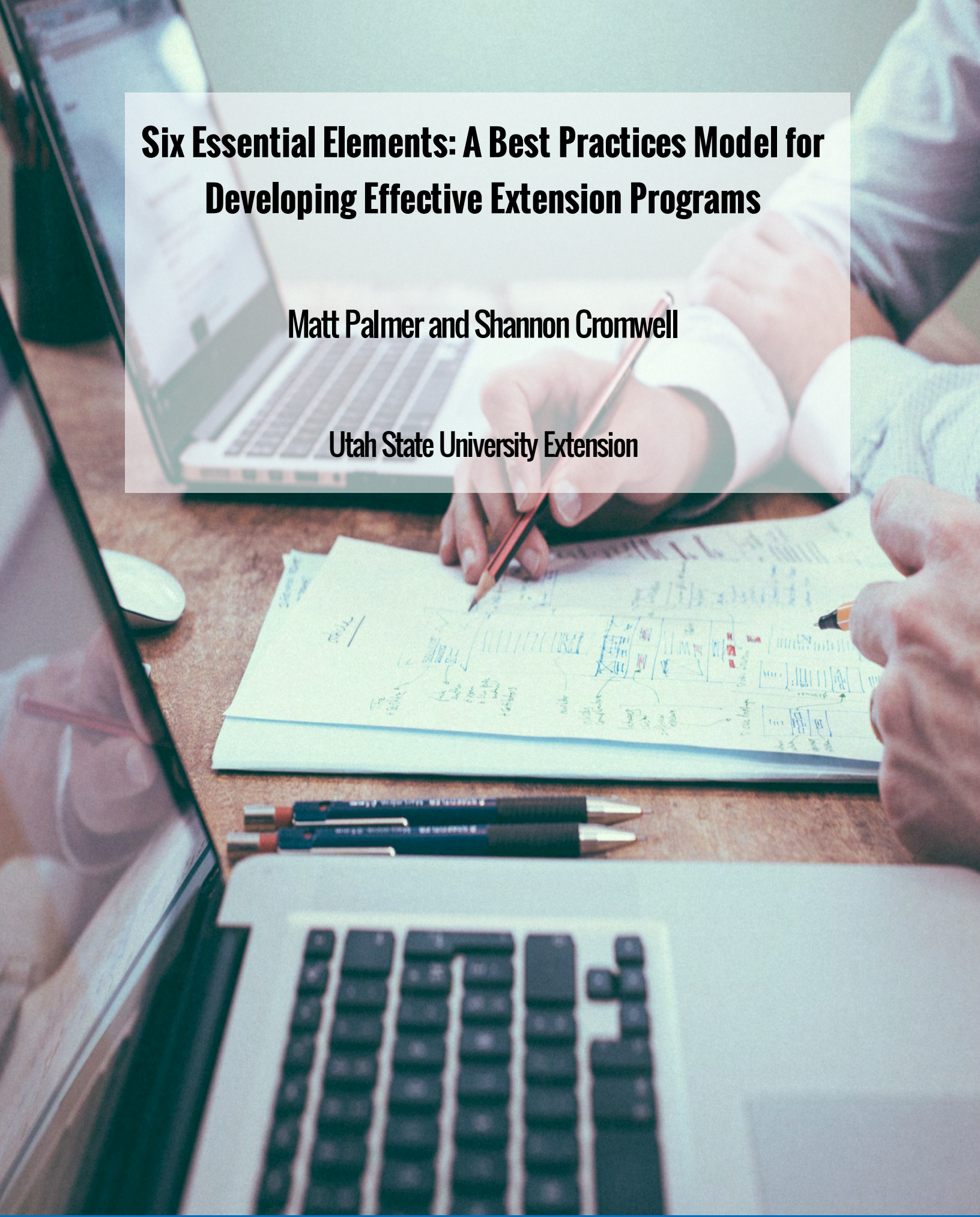


Six Essential Elements: A Best Practices Model for Developing Effective Extension Programs

Matt Palmer and Shannon Cromwell

Utah State University Extension

Abstract

Extension faculty are faced with the challenge of delivering effective programs that generate impactful results for community residents. The Six Essential Elements Model was developed to serve as a resource that guides Extension faculty in their pursuit of discovering, developing, promoting, delivering, and evaluating effective programs for their respective communities.

Six Essential Elements: A Best Practices Model for Developing Effective Extension Programs

Extension programs are viewed as educational processes designed to create knowledge, attitude, skills, and behavior changes in clientele. Extension programming is multidisciplinary, covering a broad range of subjects including family and consumer sciences, 4-H/youth development, horticulture, and agriculture. Additionally, developing Extension programs is a complex process based on the expertise and interests of Extension professionals and the diverse and multifaceted needs of communities (Arnold, 2015; Place & Bailey, 2010). Extension careers offer both personal and professional rewards when they result in positive impacts among individuals and communities. However, Extension faculty members have complex, challenging appointments requiring them to balance university and community demands. The complexity of Extension appointments is further increased due to the diversity of job responsibilities, including developing, implementing, and evaluating programs, assisting with office duties, and administering a wide range of subject matter resources (Conklin, Hook, Kelbaugh, & Nieto, 2002). Extension faculty can become overwhelmed and experience job related stress when attempting to balance various job expectations and program requirements while navigating organizational policies and procedures.

Research suggests that the use of program models or theoretical frameworks can serve as a helpful strategy in the development of effective Extension programs (Place & Jacob, 2001). Program models such as the Extension program development framework offer a comprehensive approach to planning and implementing programs, as well as focuses on the connections between program design, implementation, and evaluation

(Arnold, 2015; Seevers, Graham, Gamon, & Conklin, 1997). Building upon principles of current models, Utah State University Extension faculty developed the Six Essential Elements Model to produce effective Extension programs.

Purpose

The six essential elements provide a framework for extension programming that can be successfully adapted to a wide range of educational programs. Additionally, the model provides intentional focus on each element to inform program design, marketing, and implementation in order to meet the needs of community residents while effectively completing University Extension job requirements and responsibilities.

Methods

The model incorporates six essential elements: Program Discovery, Program Development, Program Promotion, Program Delivery, Program Evaluation, and Program Scholarship (see Figure 1).

Essential Element 1: Program Discovery

The first stage of the Six Essential Elements Model revolves around assessing and discovering the most critical needs of the clientele or community. Program discovery can occur through multiple mediums, including conducting in-depth needs assessments, consulting advisory boards, or obtaining input from county commissioners

and community stakeholders. County demographics and collaboration with other community agencies can also serve as tools to determine and identify the needs and priorities of the community. After an important issue or need has been identified, Extension faculty should determine if the issue or need could be changed or improved upon through research and education.

Essential Element 2: Program Development

The program development stage of the Six Essential Elements Model entails multiple steps:

1. Identify Educational Resources

   Determination of available educational resources and materials such as curricula to conduct programs is crucial in responding to the needs of community clientele. In addition, locating and securing funding sources and facility space is important in the program development stage.

2. Establish Key Partnerships

   Building and maintaining strong partnerships with other agencies has become important in providing quality services to clientele (Franz, 2014). University specialists, community coalitions, and State and Federal agencies can serve as valuable assets by providing program expertise, educational resources, and recruitment strategies.

3. Formulate Objectives and Evaluation Plan

   Objectives are the clearly defined outcomes that should result from the implementation of the program (Phillips & Phillips, 2010). Program objectives should be concrete and measurable in order to report program results and impacts. It is also important during this stage to plan and design evaluation tools that will determine if program objectives have been met. A proactive approach to identifying evaluation techniques lends itself to high-impact results.

4. Design Program

   Program design focuses on creating activities that will provide the desired outcomes to support the program objectives. The diversity of Extension programming allows for the conception of various program mediums; including, but not limited to a series of classes, tours, research, and demonstrations. Extension faculty should determine which delivery method would best serve the needs of clientele and lead to intended outcomes.

Essential Element 3: Program Promotion

Following the program development stage, Extension faculty should devise a marketing or promotion plan. Program marketing and promotion is a vital component when aiming to reach the program's target audience. Extension faculty have many options when deciding upon media sources, including cable T.V., local radio stations, newspapers, social media, newsletters, and websites. Determining which media source will yield the best participation rate can be a critical decision that may impact program results.

Getting to know the audience by asking intentional questions pertaining to the specific group will provide Extension faculty with the knowledge to determine which promotional tactics they will need to implement in order to reach the intended clientele. For example, if a parenting class is directed toward parents and guardians of young children, Extension faculty must decide the best time of day and which media source will reach that particular group of individuals. Would advertising through the local school district be the best approach to reaching parents and guardians? Is childcare provided during the program? By focusing on the particular audience, Extension professionals can make informed decisions on media sources to use in order to best market their programs.

Essential Element 4: Program Delivery

After identifying community needs, accessing resources, establishing partnerships, developing objectives, and promoting the program, it is time to put the program into action. The implementation stage activates the goals and objectives of the program. Programs may take on different appearances during the implementation stage depending upon the delivery method and the target audience (Radhakrishna, Nelson, Franklin, & Kessler, 2003). For example, the implementation of a hands-on canning workshop will appear drastically different than that of a classroom-based, lecture-style program covering positive parenting practices.

Regardless of the chosen delivery method, the following best practices can help Extension faculty reach the desired program goals and objectives:

- Have a well thought out, detailed agenda available to all program participants.

- Start and end the class, tour, etc., on time.
- Use a variety of teaching techniques such as PowerPoint presentations, small group discussions, clickers, etc. to engage all participants.
- Allow for interactive time in which participants can ask questions about the program.
- Provide incentives or take-home resources to reinforce important program objectives.

Essential Element 5: Program Evaluation

The fifth stage of the Six Essential Elements Model is program evaluation, in which Extension faculty determine if the established program met the desired goals and objectives. According to McClure, Fuhrman, & Morgan (2012), the evaluation process determines program validity and provides rationalization for the use of resources. In addition, program evaluation provides support, supported by data, which can be used to modify, expand, or improve existing programs or warrant the establishment of new programs to meet clientele needs.

Program evaluation also provides the basis to which Extension faculty can determine program impacts. Program impacts document changes in participant knowledge, skills, and behaviors. In order to show relevance, it has become increasingly important for Extension faculty to document impacts. In addition, Extension programs often rely on internal or external grant funding; and therefore, are accountable to stakeholders and funding agencies increasing the need to document program impacts.

Essential Element 6: Program Scholarship

Scholarly outputs can take on many forms, including research-based fact sheets, refereed journal articles, peer-reviewed presentations, webinars, and adoption of program components. It has become increasingly more important to share program results and impacts to remain relevant in Extension and to justify the value of programs (Culp, 2009; Powell, 2011). By intentionally incorporating each of the previous five essential elements (program discovery, development, promotion, delivery, and evaluation) into Extension activities, faculty will have the foundation for producing quality scholarship that expand and enhance their competencies, while impacting the profession.

Results

Incorporating the Six Essential Elements has resulted in the development and sustainability of impactful community-based educational programs for Extension faculty. In addition, faculty have received opportunities to increase their scholarship portfolio through scholarly presentations, publications, and extramural funding due to the intentional focus on the model components.

Discussion

Providing programs to clientele that aim to enhance lives and generate impacts by creating changes in knowledge, attitude, and behavior can be a challenging process for

Extension faculty. The Six Essential Elements Model provides a foundation to guide Extension faculty in discovering, delivering, evaluating, and reporting impacts of effective programs to meet the needs of their respective communities. The model can be easily integrated into a variety of Extension programs in order to meet university and local community demands.

References

Arnold, M. (2015). Connecting the dots: Improving Extension program planning with program umbrella models. *Journal of Human Sciences and Extension, 3*(2). 48-67.

Conklin, N. L., Hook, L. L., Kelbaugh, B.J., & Nieto, R.D. (2002). Examining a professional development system: A comprehensive needs assessment approach. *Journal of Extension, 40*(5). Retrieved from http://www.joe.org/joe/2002october/a1.php

Culp, K. (2009). The scholarship of Extension: Practical ways for extension professionals to share impact. *Journal of Extension, 47*(6). Retrieved from https://www.joe.org/joe/2009december/comm1.php

McClure, M. M., Fuhrman, N. E., & Morgan, A. C. (2012). Program evaluation competencies of Extension professionals: Implications for continuing professional development. *Journal of Agricultural Education, 53*(4), 85-97. doi:10.5032/jae.2012.04085

Fanz, N. (2014). Measuring and articulating the value of community engagement: Lessons learned from 100 years of Cooperative Extension work. *Journal of Higher Education Outreach and Engagement, 18*(2), 5-15.

Phillips, J. J., & Phillips, P. P. (2010). The power of objectives: Moving beyond learning objectives. *Performance Improvement, 49*(6), 17-24. doi:10.1002/pfi.20155

Place, N. T., & Bailey, A. (2010). Extension mentoring: Steps leading to greater program effectiveness. *Journal of Extension, 48*(4). Retrieved from http://www.joe.org/joe/2010august/a3.php

Place, N. T., & Jacob, S. (2001). Stress: Professional development needs of Extension faculty. *Journal of Agricultural Education, 42*(1), 96-104. doi:10.5032/jae.2001.01096

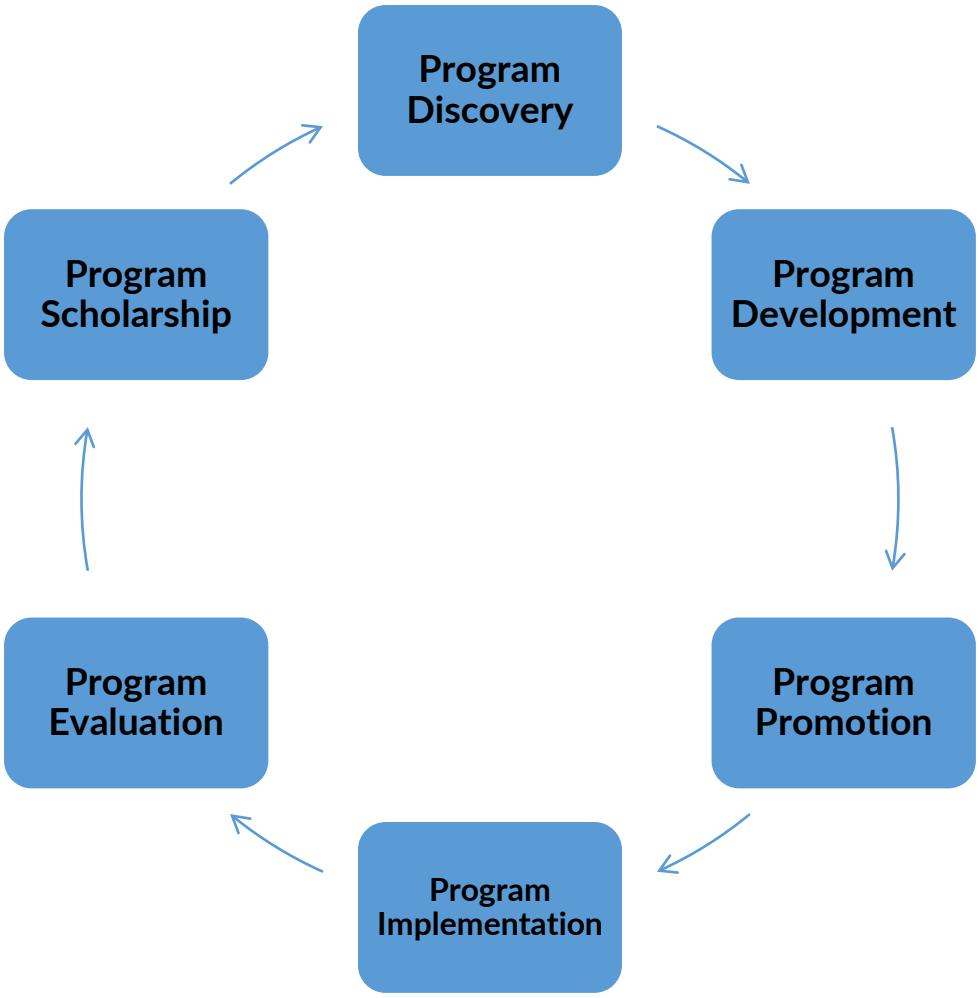
Powell, G. (2011). Strategies for ensuring high-impact outreach and scholarship. *Journal of Extension, 49*(1). Retrieved from https://joe.org/joe/2011february/tt2.php

Radhakrishna, R. B., Nelson, L., Franklin, R., & Kessler, G. (2003). Information sources and Extension delivery methods used by private longleaf pine landowners. *Journal of Extension, 41*(4). Retrieved from http://www.joe.org/joe/2003august/rb3.php

Seevers, B., Graham, D., Gamon, J., & Conklin, N. (1997). *Education through Cooperative Extension.* Albany, NY: Delmar Publishing.

Figure 1

Six Essential Elements Model for developing effective Extension programs.



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Why FCS Professionals Need to Use Social Media and Best Practices for Getting Started

Alice Henneman, Cami Wells, Kayla Colgrove, and Lisa Franzen-Castle

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Abstract

Sixty-nine percent of Americans use social media. To reach a larger number and variety of people who could benefit from Extension programs, Family and Consumer Science (FCS) professionals need to establish a social media presence. This article's purpose is to help FCS educators utilize social media by providing "basics" for getting started. Best practices for establishing a social media identity, determining which platforms to use, learning how to use different platforms, selecting content for posts, and building an audience are given. These practices helped our team grow a website to about 2.8 million pageviews in 2018 from 230 countries.

Why FCS Professionals Need to Use Social Media and Best Practices for Getting Started

Social media is becoming an increasingly important way for family and consumer science (FCS) professionals to share information and engage with clientele. In 2005, when the Pew Research Center began tracking social media adoption, 5% of American adults used at least one platform. That number grew to half of all Americans by 2011, and in 2018, 69% used some type of social media (Pew Research Center, 2018).

Social media sites have surpassed print newspapers as a news source for most Americans. In 2018, 20% of American adults said they often get news from social media compared to 16% who often do from print newspapers. In 2017, the percentages were about equal. Though television is still the most popular platform for obtaining news, its use is also declining from 57% of adult Americans often getting news from television in 2016 compared to 49% in 2018 (Shearer, 2018).

Age gaps exist between how younger and older Americans obtain news; 81% of those 65 and older and 65% of those 50 to 64 get news from television. However, only 42% of 30 to 49-year-olds and 16% of those 18 to 39 often get news from television. Newsprint's popularity continues only among those 65 and older at 39%; no more than 18% of the other age groups often get news from print newspapers. The age divide goes in the opposite direction for often getting news from social media: ages 18-29 (36%); ages 30-49 (22%); ages 50-64 (14%); and ages 65 and older (8%) (Shearer, 2018).

Though younger generations stand out in their technology use, older generations are beginning to embrace greater use of social media. The percent of millennials (born 1981-1996) using social media has increased from 81% to 85% between 2012 and 2018;

at the same time, Boomers' (born 1946-1964) usage increased from 40% to 57% and the Silent Generation (born 1945 or earlier) increased from 15% to 23% (Jiang, 2018).

Purpose

This article describes the "how-to" basics the authors learned when creating their social media presence, both as FCS professionals and as members of an Extension team promoting a shared food-related website. The objective in sharing these best practices is to help other FCS educators establish their own social media presence.

Method

The basics to consider before getting started are the following: Establish a social media identity, decide which social media platforms to use, learn how to use a social media platform, select content for social media posts, and build an audience.

Establishing Your Social Media Identity

Most social media channels have people create a "username" and a "display name." The display name is usually your own name, company name, or organizational name and helps identify you on social media. Your username, sometimes referred to as a "handle", is a unique name that describes you (Grant, 2018) with no two usernames the same for a specific social media platform. A username is often your own name, some variation of it, or possibly a term that describes you (the last example is not used as much unless you are well known and will continue to be known by a descriptive term). For example, on Twitter, your display name might be "Jane Jones" and your username

might be “@janejones” or “@jjones.” A username becomes part of your social media web address for each social media platform. For example, the web address for Jane Jones’ account on Twitter would be: https://twitter.com/janejones. Our team used our social media web addresses in our email signatures and our newsletter.

Tips for choosing a username include:

- Keep it short. For example, Twitter limits usernames to 15 characters and display names to 50 characters (Twitter website, n.d.). Choosing a name that would be suitable for Twitter will likely also work for other social media platforms. Some additional guidelines may apply. Check specifics for your chosen social media platforms. For example, Twitter does not permit hyphens in your username.
- Select a username that has “staying power” so it will continue to be meaningful even if there is a change in area of emphasis and/or job. This is one reason why many people use their real name rather than one related to their specific job function. If the name chosen is already taken, consider a variation of it, such as using initials for your first and/or middle name. Using your photo, as opposed to some object, as the profile picture also aids in your identification.
- If you change your name for personal or professional reasons, your social media username can usually be changed and your posts will still be distributed to your followers. You might identify the change in your display name. For example, if you changed your name because of a change in marital status, you might display your first name and then adjust your last name based on the applicable change. Be aware that if you or others have linked to your social media account in blogs, newsletters, email signatures, etc. that your originally linked address will no longer work because of the name change.

- The same guidelines apply when choosing a username for Extension organizational social media accounts. As an example, our team chose a username across platforms of UNLfoodfitness, relating back to our university.

Deciding Which Social Media Platforms to Use

To increase efficiency and efficacy among chosen social media platforms, it is recommended to focus on one or two. What is trendy can change very rapidly as well as some of the features associated with them. Social media channel choices should be made based on clientele served and the type of messages that will be shared.

To keep up-to-date on what is popular in social media and what demographic groups are using it, check the Pew Research Center Internet and Technology research area at http://www.pewinternet.org and search for the latest fact sheets on social media. The Pew Research Center is a nationally recognized nonpartisan fact tank that conducts public opinion polling, demographic research, media content analysis and other types of empirical social science research to inform the public about issues, attitudes, and trends shaping the world. Social media identified that might be helpful to FCS educators working with adults. The following are the five most popular platforms and percentage of adults who use them (Pew Research Center, 2018): YouTube (73%), Facebook (68%), Instagram (35%), Pinterest (29%), and Twitter (24%). The Pew Research Center's 2018 Fact Sheet also provides extensive data on usage according to gender, age, race/ethnicity, education, and suburban/rural.

Learning How to Use a Social Media Platform

Below is a brief overview of what each platform does, adapted from information provided by Constant Contact (2018), a provider of small business email marketing and social media plans:

- YouTube: A video sharing platform.
- Facebook: Users can add friends and share messages, links, and images. It is possible to form groups built around special interests. Groups may be public, closed (with approval to join needed from the administrator or a member), or secret (a member must invite you).
- Instagram: Images and videos are shared through posts.
- Pinterest: Images are shared by "pinning", now referred to as "saving" them to a "board" that can be organized by subject or interest area. These images can be linked to a website where a person can obtain more information about them.
- Twitter: People can send text and image messages.

As social media specifics change so rapidly, the best place to locate answers to specific questions on how to use the platform is the "help" section of their websites. The following are the help sections of the social media highlighted in this section:

- YouTube: https://support.google.com/youtube
- Facebook: https://www.facebook.com/help
- Instagram: https://help.instagram.com
- Pinterest: https://help.pinterest.com
- Twitter: https://help.twitter.com

When possible, it also may be beneficial to have a colleague who uses a specific form of social media help you get started. As you first begin using a social media platform, you might do the following:

- Observe what others are doing regarding the type and frequency of their postings. Guidelines can vary. Overall, quality rather than quantity is most important. Some general recommendations from Social Report (2018), a social media management platform, on how often to post daily are: Facebook: 1-2 posts, Instagram: 1-2 posts, Pinterest: 3 pins, and Twitter: 3-5 tweets.
- Know how to delete posts before you post them so any mistakes can be corrected before few, if any, people see them.
- Check information available on your chosen social media platform regarding privacy settings, blocking people, etc.
- Master the basics first rather than trying to learn and do everything at once.

Selecting Content for Social Media Posts

In keeping with Extension's reputation for providing reliable, current, science-based information, remember the following as you use social media:

- Use information from reliable and up-to-date sources. MedlinePlus Medical Encyclopedia (2018) lists several criteria for evaluating information. These include starting by examining the source: Scientific references from professional journals and sources with ".gov" (government), ".edu" (education), or ".org" (organization, which often means that a professional organization runs the website) should be in the web address. These sources are more likely to provide accurate information. Always check the date of publication and see if there is additional information at

the bottom (or elsewhere) on when it was last updated. Medline suggests looking for content that is no more than two to three years old. Do not rely on just one website; compare the information to the information found on other sites. A ".com" address indicates a for-profit company runs the website. While the information may still be accurate, consider whether the content might be biased. As a general policy, our team chose to promote only information from ".edu," ".gov," and ".org" websites.

- Always read a post from someone else before sharing it. A study by computer scientists at Columbia University and the French National Institute (Gabielkov, Ramachandran, Chaintreau, & Legout, 2016) found 59% of the links on Twitter were shared without the people sharing them ever reading them. MIT researchers (Vosoughi, Roy, & Aral, 2018) found that, in general, false news was 70% more likely to be retweeted than the truth on Twitter.

Building an Audience

Once your social media platforms are established, begin building your audience. The following are some simple strategies for getting started. Observe others and do internet searches for additional, advanced ideas after you feel comfortable with these basics:

- Display links (and hyperlink when you can) to your social media platforms, i.e. in email signatures, handouts, PowerPoint and other presentations, blogs, websites, and so forth.
- Choose topics likely to spark interest among potential followers. You might start by selecting content that corresponds to national days, weeks, and months related

to your target audience. For example, on National Bean Day (January 6), give tips for incorporating healthy economical beans into meals (Colgrove, Henneman, & Franzen-Castle, 2014).

- Use visual content to draw attention to social media marketing. A compilation of information by HubSpot, a firm specializing in social media marketing, summarized 45 visual content marketing statistics to know in 2019. These included: Tweets with images are retweeted 150% more than those without images, and Facebook posts with images experience 2.3 times more engagement than those without images (Mawhinney, n.d.).
- Some online photo editing websites (i.e. canva.com and spark.adobe.com) provide templates that help create optimal-sized posts for various social media platforms. Find additional sites that may be helpful through an Internet search. Avoid using copyrighted photos without permission. Copyright begins the moment a work is created. Saying a photo is for "educational use" may not protect you. Henneman (2016) provides a list and samples of twelve free photo sources. While the article focuses on food-related photos, these sources also provide other types of images.
- Follow social media accounts from people/organizations who provide useful, interesting information. In turn, they may follow you back.
- Use "hashtags" (#) where appropriate. A hashtag before a word (without a space between the symbol and the word(s) identifies messages with a specific topic, such as #foodsafety. When people click on the hashtag or search for that hashtag, it brings up other food safety social media posts. If you are creating a hashtag for an event, search to learn what that hashtag brings up to avoid some

potentially inappropriate posts associated with it or to ensure that it is not connected with something else.

- Observe what times and days the most people respond to your social media posts.

Results

As our team developed its social media skills, we were able to promote what Extension was doing in our state to the point where it achieved regional, national, and international visibility. Examples include:

- In 2018, according to Google Analytics, the food-related website for which the authors shared responsibility had about 2.8 million pageviews from 230 countries. There was an increase from about 940,000 pageviews and 200 countries in the first full year on the internet (2011) to about 2.8 million pageviews (198% increase) and 230 countries (15% increase) in 2018. Comparing the number of pageviews and countries by years; however, is not as helpful as the increase in discovery by “organic search.” The addition of more content yearly also contributes to pageview numbers and there need be only one visit from a country for it be counted. “Organic search” refers to visits that arrive at a website through a person searching for a topic that brings up the website vs. traffic that arrives through a link or paid search. Our university did not track organic search until 2013, so a comparison since 2011 is not possible. The percent of pageviews from organic search from 2013 through 2018 increased from 72.2% to 84.8% (12.6% increase) and would likely be much higher if earlier data were available.

- According to our University media department, Media Team, our website became the 3rd most visited website at our university with only the university's main website and a tech-related website receiving more visitors yearly.
- Social media grew the base of people using our food-related program materials and social media strategies from local and state to worldwide. In turn, our work has been recognized by over 40 peer-reviewed publications, posters, and presentations.

Summary

With 69% of Americans using social media, it is important that FCS educators establish a social media presence. Getting started can be the hardest part. With a knowledge of the "basics," FCS educators can ease into using social media platforms. Through social media, Extension programming can be promoted to a larger number of people who can benefit from our programs. And the easiest way to get started: Just start!

References

Colgrove, K., Henneman, A., & Franzen-Castle, L. (2014). Using a food-themed calendar to engage the public and promote Extension from field to fork. *Journal of Extension*. Retrieved April 12, 2019 from https://www.joe.org/joe/2014april/iw3.php

Constant Contact Website (2018). Definition of Common Social Media Terms. Retrieved April 9, 2019. Retrieved from https://knowledgebase.constantcontact.com/articles/KnowledgeBase/6260-definition-of-common-social-media-terms

Gabielkov, M., Ramachandran, A., Chaintreau, A., & Legout, A. (2016). *Social clicks: What and who gets read on Twitter?* ACM SIGMETRICS Performance Evaluation Review, 43(4). doi:10.1145/2897356. Retrieved April 9, 2019 from https://hal.inria.fr/hal-01281190

Grant, A. (2018). *How to Claim Social Media Handles and Why You Should Do It Now*. GoDaddy website. Retrieved August 30, 2019 from https://www.godaddy.com/garage/how-to-claim-social-media-handles-and-why-you-should-do-it-now

Henneman, A. (2016). *Free Food-Related Photo Sources.* Retrieved August 21, 2019 from https://food.unl.edu/free-food-related-photo-sources

Jiang, J. (2018). *Millennials Stand Out for Their Technology Use.* Retrieved April 9, 2019, from https://www.pewresearch.org/fact-tank/2018/05/02/millennials-stand-out-for-their-technology-use-but-older-generations-also-embrace-digital-life

Mawhinney, J. (n.d.). *45 Visual Content Marketing Statistics You Should Know in 2019*. HubSpot website. Retrieved April 12, 2019 from https://blog.hubspot.com/marketing/visual-content-marketing-strategy

MedlinePlus Medical Encyclopedia. (2018). *Online Health Information - What Can You Trust?* Retrieved April 9, 2019, from https://medlineplus.gov/ency/patientinstructions/000869.htm

Pew Research Center. (2018). *Demographics of Social Media Users and Adoption in the United States.* Retrieved April 9, 2019, from https://www.pewinternet.org/fact-sheet/social-media

Shearer, E. (2018). *Social Media Outpaces Print Newspapers in The U.S. As a News Source.* Retrieved April 9, 2019, from https://www.Pewresearch.org/fact-tank/2018/12/10/social-media-outpaces- print-newspapers-in-the-u-s-as-a-news-source

Social Report Website. (2018). *How Often Should You Post on Social Media?* Retrieved April 9, 2019, from https://www.socialreport.com/insights/article/115003574046-How-Often-Should-You-Post-On-Social-Media

Twitter Website (n.d.). *Help with Username Registration.* Retrieved April 9, 2019, from https://help.twitter.com/en/managing-your-account/twitter-username-rules

Vosoughi, S., Roy, D., & Aral, S. (2018). *The spread of true and false news online.* Science. 359(6380). DOI: 10.1126/science.aap9559. Retrieved April 9, 2019, from https://science.sciencemag.org/content/359/6380/1146

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