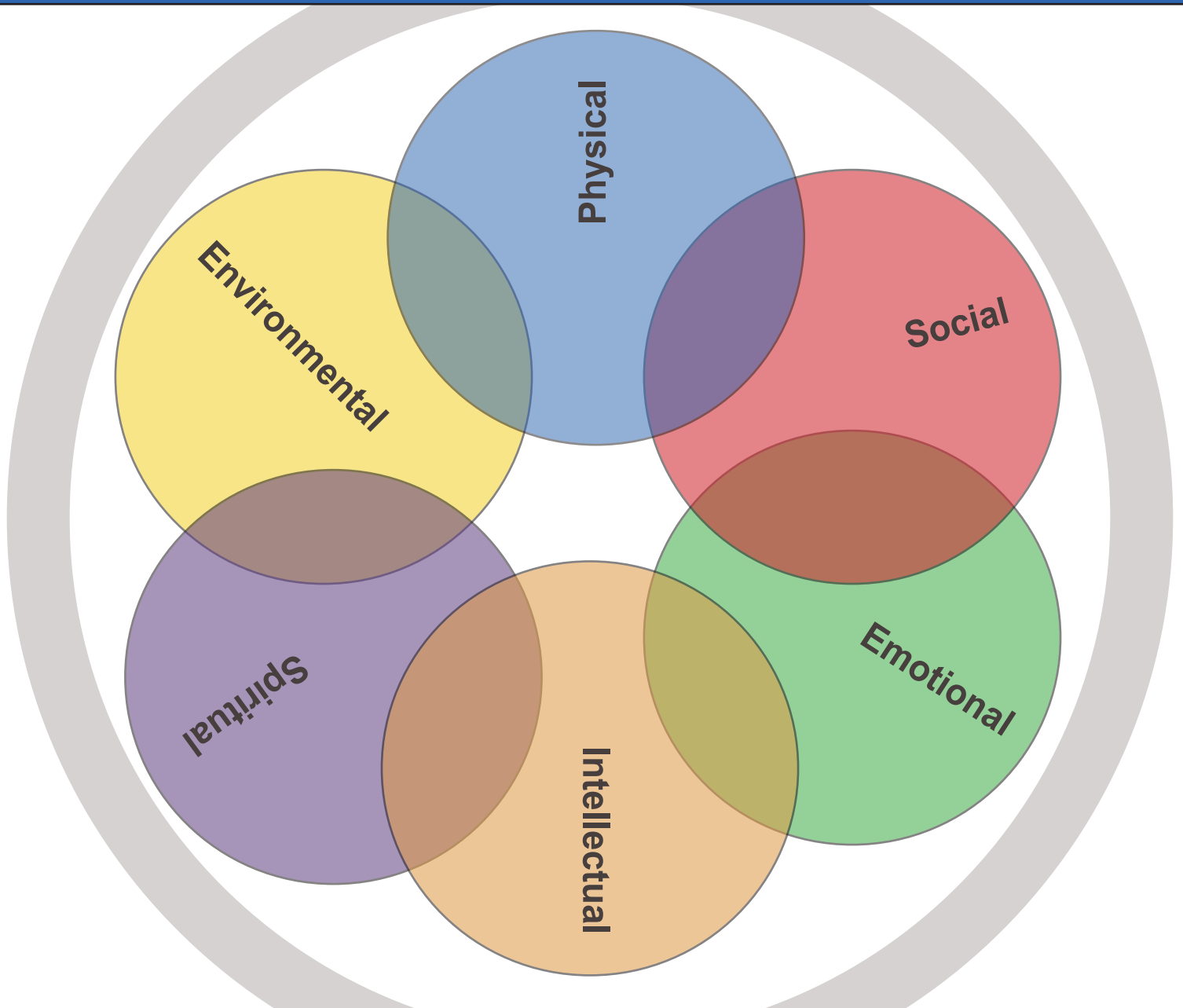


# JOURNAL



OF THE NATIONAL EXTENSION ASSOCIATION OF FAMILY AND CONSUMER SCIENCES



**VOLUME 19, 2024**

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# President's Message

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On behalf of the 2023-2024 NEAFCS Executive Board, the editors and the committee of the Journal of the National Extension Association of Family and Consumer Sciences (JNEAFCS), I am pleased to present to you the 2024 JNEAFCS. This refereed, research-based journal is one of our premier member resources and a benefit to our members. The JNEAFCS helps inform others in the profession of Family and Consumer Sciences about the scholarly work of Family and Consumer Sciences Extension professionals. The JNEAFCS highlights research, best practices, and implications for Extension Family and Consumer Sciences educators, agents, and state specialists. The JNEAFCS serves as a great tool to help you stay current with programming, research, and methodology that is specific to our learning and teaching environments.

As you read the 19th volume of the JNEAFCS, I know you will be inspired by the work of your colleagues throughout the U.S. Consider your own body of work, research, and impacts that could be shared with NEAFCS members in the future. Please consider making the submission of your program results among your professional goals for a future JNEAFCS article.

As an online resource, JNEAFCS can be shared as a link with a personal note to your administrators, local and state policymakers, advisory groups, and peers. By sharing the JNEAFCS, you can help connect efforts of Extension Family and Consumer Sciences professionals to the collective impact that Family and Consumer Sciences have across the nation.

Thank you to co-editors Ashley Dixon-Kleiber of University of Arizona Cooperative Extension and Rebecca Hardeman of University of Georgia Cooperative Extension for their dedication and hard work in creating an outstanding Journal. I appreciate the members of the Journal committee, peer reviewers, and Vice President for Member Resources, Michelle Wright of Texas A&M AgriLife Extension Service. Because of their commitment to NEAFCS and the Journal, we have a quality, refereed professional publication that helps preserve our research and resources for the future.

Sincerely,

Rick Griffiths, President 2023-2024  
National Extension Association of Family and Consumer Sciences



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# From our Editors

Today, we are filled with both reflection and optimism. Looking back, it's clear that we have navigated through numerous challenges and uncertainties. Our shared resilience and commitment have been instrumental in overcoming these obstacles, and for that, we extend our heartfelt thanks to each of you that joined us on this journey. Your dedication has illuminated our path and laid the groundwork for a brighter future.

The Journal of the National Extension Association of Family and Consumer Sciences stands as a testament to the collective efforts of our remarkable community. The contributions of our authors, subcommittee members, and peer reviewers have not only enriched our journal but have also driven forward the advancement of knowledge in our field. Your insightful work and critical evaluations have been the cornerstone of our success and have sparked meaningful dialogue and discovery.

As we look ahead, we are excited about the possibilities that 2025 holds. We invite all members, whether you are a seasoned researcher or an emerging scholar, to share your innovative work with us. Your research, perspectives, and methodologies are vital to the evolution of family and consumer sciences. We encourage you to contribute your insights and discoveries to our journal, thereby continuing to build on our tradition of scholarly excellence.

We call upon our dedicated peer reviewers and editors to remain actively engaged. Your role in evaluating and refining submissions is crucial to maintaining the high standards of our publication. Your expertise and thoughtful feedback ensure that our journal remains a leading platform for cutting-edge research and knowledge dissemination. Additionally, we call upon the rest of the membership to join us as we always have room for more peer reviewers, academic integrity officers, editors, etc.

We are eager to see the dynamic and diverse range of submissions for the 2025 volume of the Journal of NEAFCS. Please mark your calendars: the deadline for submissions is April 1, 2025. Your involvement is instrumental in shaping the future of our discipline, and we look forward to another year of impactful research and collaboration.

Thank you for your unwavering support and commitment. Together, let's embrace the new year with renewed enthusiasm and continue to advance the field of family and consumer sciences.



Ashley Dixon-Kleiber  
Co-Editor



Rebecca Hardeman  
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RESEARCH

***Med Instead of  
Meds Curriculum  
Demonstrates  
Effectiveness for  
Behavior Change***

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## Abstract

Adherence to the Mediterranean diet reduces the risk of many chronic diseases and effectively manages cardiometabolic disorders. The MED instead of MEDS, a 6-lesson curriculum developed by North Carolina State University and North Carolina State Division of Public Health, was implemented in Florida and evaluated for its effectiveness. Following a 4-session training of educators, the program was evaluated in eight counties. Post-series surveys showed participants increased knowledge of the Mediterranean dietary pattern and its health benefits and confidence with its implementation. Additionally, skill development, such as label reading, preparation of healthful meals, and positive changes in overall health were reported.

## *Med Instead of Meds Curriculum Demonstrates Effectiveness for Behavior Change*

Adherence to healthful dietary patterns, providing vegetables, fruits, unsaturated vegetable oils, nuts, legumes, and fish, decreases the risk of cardiovascular disease (Chiavaroli et al., 2019), type 2 diabetes, cancer, and overall mortality (Wang et al., 2023). Additionally, healthful diets have been associated with less cognitive impairment and dementia (Boushey et al., 2020) and such dietary patterns continue to support cognitive health well into older adulthood (Aridi et al., 2017; Martínez-Lapiscina et al., 2014; Morris, Tangney, Wang, Sacks, Barnes, et al., 2015; Morris, Tangney, Wang, Sacks, Bennett, et al., 2015; Munoz-Garcia et al., 2020; Shakersain et al., 2018; Tangney et al., 2014). The Mediterranean dietary pattern, specifically, is associated with reduced risk of cardiovascular disease (Rosato et al., 2019), type 2

diabetes (Kotzakioulafi et al., 2023), kidney disease (Hansrivijit et al., 2020), autoimmune disease (Alfredsson et al., 2023), and cognitive decline and dementia (Scarmeas, Stern, Mayeux, et al., 2006; Scarmeas et al., 2009; Scarmeas, Stern, Tang, et al., 2006). Moreover, adopting a Mediterranean dietary pattern effectively manages glycemia and cardiovascular risk factors (Esposito et al., 2015).

Given the overwhelming evidence supporting the health benefits of adhering to healthful dietary patterns such as the Mediterranean diet, evidence-based Extension programming is needed to promote increased adherence and a concerted movement away from the Western dietary pattern to reduce chronic disease burden. In Florida, due to its preponderance of older adults (U.S. Census Bureau, 2023), there is an urgent need to mitigate not only cardiometabolic disease morbidity and mortality but also the burden of cognitive decline (CDC, 2021b) and dementia (CDC, 2021a), as efficacious medical therapies are lacking. Diet, as a modifiable risk factor for cardiometabolic and neurodegenerative diseases, is a logical and practical Extension target for behavior change.

Nutrition and health professionals with North Carolina State University and North Carolina Division of Public Health developed the MED instead of MEDS curriculum, outlining “7 simple steps to eating the Med Way’ (North Carolina State Extension, n.d.-a). The curriculum is described as a “six-session class series focused on eating a healthy Mediterranean-style eating pattern” and includes a curriculum guide, five evaluation tools, eight editable marketing tools, six PowerPoint presentations with educator scripts, and recipe cards (North Carolina State Extension, n.d.-b). Delivery of the MED instead of the MEDS curriculum may be a feasible and effective way of increasing adherence to the Mediterranean dietary pattern, thus potentially reducing the burden of chronic disease.

## Objective

This study aimed to assess the effectiveness of

the MED instead of MEDS curriculum in promoting healthful dietary patterns and, specifically, adherence to the Mediterranean dietary pattern. Secondary objectives were to assess how participation in the six-lesson MED instead of MEDS series impacted knowledge, implementation confidence, and healthful meal preparation related to the Mediterranean dietary pattern, as well as skill acquisition, behavior change, and health outcomes (e.g., weight loss, blood pressure, and medication reduction).

## Methods

### In-service Training

In April 2023, a state-wide virtual in-service training (IST), “MED instead of MEDS Curriculum IST: A Focus on Culinary Medicine and Science for Health,” was offered to Family and Consumer Sciences educators interested in delivering and evaluating the program. The one-hour sessions included the following topics: 1) a Mediterranean culinary demonstration by an executive chef, 2) an overview of the MED Instead of MEDS curriculum, 3) a research update on the evidence related to the Mediterranean diet and cardiovascular and brain health, and 4) an introduction collecting valid and reliable dietary change data using dietary screeners. Following the training, an anonymous Qualtrics<sup>®</sup> survey (Institutional Review Board Exempt Protocol ET00018574; Approval date: 04/20/2023) was sent out to participants to evaluate perceived knowledge gains and planned applications.

### *Med Instead of Meds* Series Evaluation

Family and Consumer Sciences educators from eight Florida counties participated in the statewide evaluation of MED instead of MEDS series, using the tools developed by North Carolina State University. The evaluation tools included a “Pre-Series Med Adherence Tool” and “Post-Series Med Adherence Tool” with a standardized answer key for scoring, and the pre-post “Evaluation Survey,” which

was designed to rate participants’ knowledge of the “Mediterranean-style eating pattern (i.e., the Med Way of eating),” “strategies for implementing the Med Way of eating in daily life,” “mindful eating,” and “mindful eating strategies for implementing mindful eating in daily life” using a rating scale from “very low” to “very high” (North Carolina State Extension, n.d.-b). Meal preparation behavior change, skills learned, and change in overall health were assessed using open-ended questions. The Pre-post and evaluation surveys, approved by the Institutional Review Board as an Exempt Protocol (ET00019674; Approval date: 07/19/2023), were primarily completed on paper by program participants, and results were later entered into Qualtrics<sup>®</sup> for analysis. Descriptive data of means and standard deviations were calculated. Unpaired t-tests were used to compare the Med Adherence score between the pre-program and post-program assessments and pre-post differences in perceived knowledge and confidence. A 5% Type I error rate was set as significant.

## Results

### In-service Training

The IST series was attended by 9 or 10 educators per session (n = 38 aggregate attendance) and recorded and posted online for educators’ additional review. Educators who attended were asked, “What was your most significant gain from the MED Instead of MEDS IST sessions?” The main themes were the cooking demonstration, the research update, and the curriculum overview. Specific responses included “Med diet resources and cooking demonstration,” “Deeper understanding of the benefits of this dietary pattern, as well as the latest research and developments related to it,” “The importance of the [M]ed diet for promoting gut health and ultimately brain health,” “applicable material to implementing the curriculum.” In response to the statement, “As a result of the MED instead of MEDS IST, I increased my knowledge related to...,” attendees selected culinary medicine and the nine points of the Mediterranean Diet (n

= 8), tips for making Mediterranean food that is affordable, delicious, and nutritious (n = 9), commonly used methods for assessing adherence to a Mediterranean-Style Diet (n = 7), simple recipes using easy-to-find ingredients for satisfying meals (n = 8), limitations of methods commonly used to assess adherence to a Mediterranean-Style Diet (n = 5), and differences between the typical American diet and the Mediterranean Diet (n = 7). Six attendees increased their knowledge of how the traditional Mediterranean diet differs from the Dietary Guidelines for Americans, eight on how the Mediterranean diet impacts heart health, and seven on how the Mediterranean diet impacts brain health. Most attendees also increased their knowledge of successfully implementing the MED instead of MEDS curriculum (n = 6).

The attendees planned to apply the knowledge gained to teach using the MED instead of MEDS curriculum (n = 9), answer questions related to the Mediterranean diet (n = 7), teach or present on topics related to the Mediterranean diet and health (n = 6), and create blogs, newsletter articles or social media content (n = 5). Two of the attendees planned to provide training and support to Extension paraprofessionals. As a result of the MED instead of MEDS IST, attendees increased their ability to discuss the topic with clientele (n = 9), increased their confidence in discussing the topic with clientele (n = 9), and planned to integrate the information into my Extension programming (n = 10). The target audiences for implementation of the MED instead of MEDS curriculum included working, older, and retired adults. One attendee specified older adults in rural communities.

## *Med Instead of Meds* Series Evaluation

The MED instead of MEDS series evaluations from eight Florida counties were included in the analysis. All but four of the program participants included in the statewide evaluation attended the program in person (n = 118). Demographic information of the

series participants is provided in Table 1. Following the 6-session series, participants reported a significant increase in the primary outcome, Mediterranean dietary adherence score, from  $5.35 \pm 2.12$  pre-program (n = 101) to  $6.88 \pm 2.76$  post-program (n = 34) out of a possible 13 points ( $p < 0.001$ ), as assessed by the Pre-Series and Post-Series Med Adherence tools. Following the program, 100% of reporting participants used olive oil as their main culinary fat, consuming an average of 2.6 tablespoons per day, and 83% preferred to eat chicken or turkey instead of beef, pork, hamburger, or sausage. Additionally, participants reported an average daily intake of 2.9 cups of vegetables and 2.6 cups of fruit, and a weekly intake of 1.5 cups of beans.

The pre-post knowledge assessment showed significant increases in all items assessed, including the Mediterranean-style eating pattern and its health benefits and mindful eating (Table 2). Similarly, perceived confidence in participants' ability to implement various dietary changes, such as limiting highly processed foods and planning healthy Mediterranean-style meals, showed significant improvements (Table 3). Responses to the stem, "As a result of this program, I now..." are shown in Table 4. Most participants noted they used olive oil in food preparation, planned healthy Mediterranean-style meals more often, and consumed vegetables, fruit, nuts and seeds, and whole grains more often. There were also significant improvements in flavoring foods with herbs and spices, portion control, and using food labels to choose healthy foods.

Participants were asked to share one or more ways that the MED instead of MEDS program helped them prepare more healthful meals for themselves and their families. Participants responded, "It helps because I am more mindful of what to cook along with the provided recipes. I plan with my family and they enjoy the meals. I enjoy seeing them change to a good lifestyle." Many comments were related to increasing consumption of beans. One participant commented, "I made the white [pinto] bean burgers and it was a hit. I learned that you don't always need meat to have a fulfilling meal." Other participants noted their incorporation of whole

grains, fruits, and vegetables. Some comments included, “to be confident to cook with whole grains...to consciously make sure to eat more fresh fruits and vegetables,” “be more mindful of incorporating fruits and veggies throughout the day,” and “[the MED instead of MEDS program] introduced me to new types of fruits and veggies and how to use them.”

Next, participants were asked about what the most helpful skill was they learned from the MED instead of the MEDS program. The most frequently noted skill was label reading, followed by cooking with whole foods/ingredients, using olive oil, herbs, and spices, and portion control. Mindful eating and meal planning were also highlighted. When asked whether participation in this program corresponded with any changes in their overall health, attendees primarily reported weight loss and improved blood pressure. Participants in the MED instead of MEDS program found various aspects of the program enjoyable and beneficial, i.e., what they liked best were the recipes and cooking demonstrations, instructor engagement, learning about the Mediterranean diet, hands-on activities, sharing knowledge and experiences, exploration of different foods and techniques, and the relaxed environment. Finally, participants provided some suggestions for potential improvements to the MED instead of MEDS program, although many expressed satisfaction with the program as it was. Suggestions for improvement included providing more recipes, preparing more warm main course meals, more details on label reading, and more information on herbs and spices. Overall, 98% of participants were very satisfied or satisfied with the program materials, and 96% were very satisfied or satisfied with the quality of the program. Similarly, 96% were very satisfied or satisfied with the quality of the instructors’ presentations and knowledge of the instructors. Participants commented, “The instructor was amazing! Fun to listen to. She was very impressionable and encouraging to want to change your lifestyle to a healthy one,” and “[the] instructor [was] supportive, knowledgeable and very encouraging in implementing the Mediterranean ways.”

physical activity guidelines for different life stag-

es (95%), and exercising safely with osteoporosis (95%). Many noted increased confidence in setting up a home fitness center (77%). Survey respondents intended to increase bone-building exercises (82%), try an exercise they enjoy and fits into their life (64%), hydrate more often when exercising (55%), exercise safely with osteoporosis (42%), and purchase hand-held weights (18%).

## Discussion

The Western dietary pattern, dominated by processed and animal-sourced foods, is deeply entrenched in the United States. Although socioeconomic, cultural, accessibility, availability, and financial barriers impede the adoption of the Mediterranean diet (Tsofliou et al., 2022), the results of this study support the effectiveness of the MED instead of MEDS series to improve adherence to this healthful dietary pattern. Additionally, participants demonstrated highly significant increases in knowledge of the Mediterranean dietary pattern and its health benefits, confidence in their abilities to adopt behaviors supporting adherence, healthful dietary and meal preparation behavior changes, and some positive health outcomes. The program participants were primarily older adults. This was an expected finding given that some educators who attended the MED instead of MEDS Curriculum IST intended to target this age cohort. Regarding the overall program and instructor quality, participants were satisfied and had few recommendations for program improvement; suggestions generally focused on providing more recipes and more opportunities for meal preparation.

To our knowledge, this is the first systematic study on the effectiveness of the MED instead of MEDS series post-curriculum release. However, there is related educational research supporting educational programming to promote adherence to the Mediterranean dietary pattern. In a randomized controlled study, culinary medicine education was shown to improve



Mediterranean diet adherence in diverse families (Razavi et al., 2021). Also, education on the Mediterranean diet demonstrated adherence scores of adolescents using the Mediterranean Diet Quality Index (KIDMED) (Sahingoz & Dogan, 2019). Additionally, there is evidence to support interventional studies, primarily utilizing nutrition counseling, on Mediterranean dietary adherence and healthy eating (Maderuelo-Fernandez et al., 2015); however, reach, efficiency, and cost-effectiveness may favor Extension education.

As with all evaluation surveys, there are biases that may have impacted the findings. Participants in this study may not be representative of the population. Thus, the present findings for program delivery may not demonstrate external validity in other areas of the U.S. and elsewhere. Furthermore, most participants were middle-aged and older adults, and thus, comparisons to younger age groups were not possible. The effectiveness of the program may differ if delivered to young adults. Responding participants' overall impression of Extension, Extension agents, or the Mediterranean dietary pattern may have influenced their ratings. Responding participants may have provided answers they believe are socially acceptable or desirable rather than their true opinions or behaviors, which may have impacted the responses of this primarily older adult cohort. However, educators asked participants not to write their names on the surveys to help reduce bias. Additionally, participants who completed the post-program survey may differ from those who did not, leading to an unrepresentative sample.

There was an additional limitation to this study. Only four participants included in this evaluation attended the program virtually, which precluded a comparison between in-person and virtual attendance. It is possible that virtual attendance may not result in similar improvements in Mediterranean diet

adherence and other outcomes, especially given participants' interest in and appreciation for hands-on meal preparation.

In conclusion, delivery of the MED instead of the MEDS curriculum was effective at improving adherence to the Mediterranean dietary pattern by increasing knowledge and supporting healthful meal preparation behaviors, skill development, and confidence. The findings suggest improved health outcomes; however, this data was self-reported through an open-ended, potentially leading question. Further research is needed to evaluate the MED instead of MEDS on long term dietary behaviors and quantitatively and qualitatively assessed health outcomes.

**Funding:** This study was supported by the Institute of Food and Agricultural Sciences, University of Florida.

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## Table 1

Demographic characteristics of participants of the MED instead of MEDS series.

Gender, male/female, n	13/84
Age, n, (%)	(n = 87)
18-24 years	1
25-34 years	1
35-44 years	3
45-54 years	11
55-64 years	17
65+ years	54
Race, n	(n = 97)
American Indian or Alaska Native	1
Asian	2
African-American/Black	9
White	77
Other	3
Prefer not to answer	5
Ethnicity, n	(n = 97)
Hispanic	5
Non-Hispanic	88
Prefer not to say	4

## Table 2

Perceived knowledge change of participants of the MED instead of MEDS series.

Please rate your knowledge of the following*	Pre-program (n=50)	Post-program (n=50)	p-value
The Mediterranean-style eating pattern (i.e., the Med Way of eating)	2.22 ± 0.86	4.40 ± 0.57	<0.001
Health benefits associated with the Mediterranean-style eating pattern (i.e., the Med Way of eating)	2.46 ± 0.85	4.51 ± 0.58	<0.001
Strategies for implementing the Med Way of eating in daily life	2.02 ± 0.84	4.46 ± 0.61	<0.001
Mindful eating	2.64 ± 0.93	4.58 ± 0.57	<0.001
Strategies for implementing mindful eating in daily life	2.42 ± 0.87	4.52 ± 0.64	<0.001

\*Rating scale: 1, very low; 2, low; 3, moderate; 4, high; 5 very high.

## Table 3

Perceived confidence of participants of the MED Instead of MEDS series.

How confident were you in your ability to:*	Pre-program (n=50)	Post-program (n=5)	p-value
Choose healthy proteins	2.96 ± 0.80	4.58 ± 0.53	<0.001
Use olive oil in cooking and food preparation	3.28 ± 1.17	4.64 ± 0.52	<0.001
Eat 5 servings or more of fruits and vegetables a day	2.96 ± 1.18	4.60 ± 0.53	<0.001
Include nuts and seeds in meals and snacks	2.78 ± 1.08	4.60 ± 0.53	<0.001
Choose whole grain options	2.92 ± 1.02	4.56 ± 0.54	<0.001
Limit the amount of added sugar you eat and drink	3.28 ± 1.22	4.72 ± 0.60	<0.001
Limit the amount of highly processed foods you eat and drink	3.20 ± 1.06	4.70 ± 0.54	<0.001
Use herbs and spices to flavor food	2.92 ± 0.96	4.56 ± 0.61	<0.001
Plan healthy Mediterranean-style meals	2.30 ± 0.98	4.38 ± 0.77	<0.001
Utilize mindful eating strategies	2.69 ± 1.07	4.47 ± 0.61	<0.001
Plan meals	2.86 ± 1.05	4.44 ± 0.73	<0.001
Right-size your portion	2.46 ± 0.98	4.54 ± 0.73	<0.001
Read food labels	2.94 ± 1.19	4.68 ± 0.51	<0.001

\*Rating scale: 1, very unconfident; 2, unconfident; 3, neutral; 4, confident; 5, very

## Table 4

Health behavior changes of participants of the MED Instead of MEDS series.

<b>As a result of this program, I now (check all that apply):</b>	<b>N = 50</b>
Serve and eat healthy proteins more often (i.e. beans, legumes, nuts, seeds, fish, seafood, and white meat poultry)	46 (92%)
Use olive oil in cooking and preparing food more often	47 (94%)
Serve and eat vegetables more often	47 (94%)
Serve and eat fruit more often	46 (92%)
Serve and eat nuts and seeds more often	47 (94%)
Serve and eat whole grains more often	42 (84%)
Serve, eat, and drink added sugar less often	40 (80%)
Serve, eat, and drink highly processed foods less often	37 (74%)
Flavor foods with herbs and spices more often	39 (78%)
Plan healthy Mediterranean-style meals more often	45 (90%)
Serve and eat appropriately sized portions more often	39 (78%)
Use labels to select and serve healthy food choices more often	42 (84%)

RESEARCH

**How Does Living Alone  
& Inability to Drive  
Affect Dietary Intake &  
Physical Limitations?  
Nutrition & Health  
Outreach Implications  
for Extension Education**

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## Abstract

Older adults have increased nutrient needs, such as calcium and vitamin D, while generally eating less than younger adults, making dietary intake a key factor in healthy aging. In particular, dietary intake is important for maintaining function and preventing disability. Through a nationwide, convenience survey of 1,650 participants, this study aimed to determine the relationships among dietary intake, living alone, motor vehicle use, and/or self-reported physical limitations. Living alone was associated with lower intakes of lean meat ( $p = 0.050$ ), and vegetables ( $p = 0.007$ ). Overall, the results from our study informed the development of an Extension education program for older adult audiences focused on increasing intakes of lean protein and vegetables, as part of a balanced diet, and increasing physical activity.

## How Does Living Alone & Inability to Drive Affect Dietary Intake & Physical Limitations? Nutrition & Health Outreach Implications for Extension Education

Muscle mass and strength are key to preventing disability (Beaudart et al., 2017), but unfortunately muscle mass and strength decline with age (Agostini et al., 2023). Although there are variety of reasons muscle mass and strength decline (Agostini et al., 2023), one factor is that older adults produce

less muscle protein in response to dietary protein (Moore et al., 2015). As a result, older adults have greater protein needs than younger people (Moore et al., 2015). Recommended levels of protein for older adults have been suggested to be higher than the RDA of 0.8 g per kg of body weight per day at 1.2 g/kg/day (Bauer et al., 2013; Deutz et al., 2014) or 25 to 30 grams of protein at each meal (Padon-Jones & Rasmussen, 2009). Dietary protein quantity is not only important but so is dietary protein quality, with higher quality proteins leading to greater net protein balance in older adults (Kim et al., 2018). However, not all high-quality proteins share similar nutrient profiles with many sources of protein also being sources of saturated fat and sodium (Beasley et al., 2020).

Generally, lean and low sodium dietary sources of high-quality protein are non-fat or skim dairy products, eggs, whole, minimally processed lean meats, and soy (Haytowitz et al., 2019; Herreman et al., 2020). This is in contrast to processed meats which are typically high in both saturated fat and sodium (Rohrmann & Linseisen, 2016) while providing less protein. For example, a 100 gram serving of pastrami, processed turkey has 26 grams of protein, 1.4 grams of saturated fat, and 1,120 mg of sodium, whereas an equivalent serving of whole turkey breast provides 30 grams protein, 0.6 grams of saturated fat, and 99 mg of saturated fat. (Haytowitz et al., 2019). In fact, processed but not unprocessed red meat intake is related to increased odds of mortality (Rohrmann & Linseisen, 2016). Thus, selecting the right source of dietary protein is critically important for healthy aging.

Unfortunately, only 50% of older adults in the United States meet FDA protein recommendations (Choi et al., 2021). and some of the top protein sources in older adults' diets come from processed meat, such as cold cuts and cured meats (Beasley et al., 2020). The regular consumption of nutrient-rich foods, containing enough protein, and at least three times per day is hindered by problems that occur with older adults. Common problems include poor dentition, limited resources and ac-

cess to healthy food, decreased vision, taste, and olfactory sense, reduced appetite, and other physical or environmental constraints (e.g., isolation in winter exasperated by inability to drive) (Nieuwenhuizen et al., 2010). Older adults are expected to have a reduced total calorie requirement as a result of a reduced amount of physical activity and resting metabolic rate as attributed to age (Roberts & Rosenberg, 2006). However, there is a point at which a reduction in appetite is indicative of an increased risk of malnutrition. Lack of appetite or decreased food intake in older adults, or the "anorexia of aging" as first described by Morley and Silver in 1988, is a common concern in older populations (Morley & Silver, 1988).

Many older adults live alone and, therefore, do not wish to cook only for themselves, and often lack the social interaction they formerly had at mealtimes when their families were present (Whitelock & Ensaft, 2018), affecting dietary intake (Holmes et al., 2008; Hughes et al., 2004); Isolation, loss of a spouse or divorce, retirement, moving from their long-time family home, side effects from medications (e.g., lack of saliva production), lack of enthusiasm for current living situation, economic hardships, medical problems such as chronic pain, and feelings of diminished power and influence that comes with aging in American culture are obstacles for optimal dietary intake in adults (Landi et al., 2016). These and other stressors detract from motivation to purchase or prepare needed nutrient-rich meals.

## Purpose

This project aimed to develop, implement, and evaluate a survey which was available nationwide to examine the association between aspects of dietary intake and self-reported physical limitations and to investigate the effects of living alone and the ability to operate a motor vehicle on dietary intake. The results from this survey were analyzed and leveraged to develop an evidence-informed Extension nutrition and health program for older adults.

## Method

### Questionnaire Development & Data Collection

A 79-item, online survey (Qualtrics®) was designed to assess current lifestyle choices among adults aged 50 and older living in the United States. Most items for the survey were borrowed with approval from other surveys, namely the Diabetes Eating Problems Survey – Revised (Markowitz et al., 2010) and the 2021 version of the CDC Behavior Risk Survey (CDC, 2022). After review and approval by the university's Institutional Review Board (#IRB0004482) the survey was administered in spring 2023 and used mixed methods including dichotomous and Likert-type scale questions. The survey was disseminated in e-newsletters, through state news releases, through county-based listservs, through social media (Facebook), and through a nutrition column that appears in 50 newspapers and online. The questionnaire also was made available as a paper copy, and 500 copies were distributed to county Extension offices throughout the state to gather responses from in-person events not related to this project. Participants were offered a chance at winning small prizes for participating.

## Statistical Analyses

Descriptive statistics are presented as frequencies and are presented for the entire sample. However, subsequent analyses contained fewer participants as those with missing values or who answered the questions as "Prefer were not to answer" were unable to be included in the analysis due to a lack of information.

To examine the relationship between dietary intake and physical limitations, a mixed linear model controlling for age, sex, race/ethnicity, education, and income, was used. Age, education, income, and dietary intake of lean meats, processed meats, fruits, vegetables, leafy greens, nuts and seeds, and

legumes were entered into the model as ordinal variables, whereas sex (female = 0; male = 1) and race/ethnicity (all other races and ethnicities = 0; non-Hispanic White = 1) were entered as categorical variables. All dietary intake variables were entered into one model to control for other aspects of dietary intake.

To investigate the association between living alone and not being able to drive on dietary intake, mixed linear models controlling for self-reported age, sex, race and ethnicity, education, income, depression, anxiety, pain, sleep, and perceived health were used. Social isolation affects dietary intake (Holmes et al., 2008; Hughes et al., 2004); however, other aspects of health, such as depression are also associated with social isolation (Das Gupta et al., 2020) and with poorer dietary intake (Payne et al., 2012). We sought to control these confounding effects on dietary intake by including self-reported depression, anxiety, pain, sleep, and perceived health in these analyses. Age, education, income, depression, anxiety, pain, sleep, and perceived health were entered as ordinal variables, whereas living alone (lives with other(s) = 0; lives alone = 1), not being able to drive (can drive = 0; cannot drive = 1), sex (female = 0; male = 1) and race/ethnicity (all other races and ethnicities = 0; non-Hispanic white = 1) were considered categorical variables. Only the main effects related to living alone and being unable to operate a motor vehicle alone were investigated, as we did not hypothesize there to be an interaction.

## Results

Table 1 provides the demographics for our sample. Most survey participants were ages 50 to 61 years of age (71.6%), male (58%), and non-Hispanic/white (56.8%). Most participants were from North Dakota (35.9%), California (12.0%), Alabama (5.3%), Alaska (4.3%), and Washington (4.2%) with the remaining 38.3% coming from all other states. The majority had an associate's or bachelor's degree (46.5%).

Questions related to the purpose of our project were statistically analyzed. Table 2 details the

relationship between dietary intake of lean meats, processed meats, fruits, vegetables, leafy greens, nuts and seeds, and legumes on self-reported physical limitations. A total of 1,645 participants were included, and the model was statistically significant ( $R^2 = 0.265$ ;  $F = 10.252$ ;  $p < 0.001$ ). Greater reported intakes of lean meats ( $p < 0.001$ ) and vegetables ( $p = 0.002$ ) were associated with decreased report of physical limitations, whereas greater intake of processed meats was associated with increased report of physical limitations ( $p < 0.001$ ).

Table 3 describes the main effects of living alone and an inability to drive a motor vehicle on various aspects of dietary intake while controlling for self-reported age, sex, race and ethnicity, education, income, depression, anxiety, pain, sleep, and perceived health. These analyses included 1,650 participants. The mixed linear models were all statistically significant ( $p < 0.001$ ). Living alone was associated with decreased dietary intake in general, with lower reported intakes of lean meat ( $p = 0.050$ ), processed meat ( $p = 0.011$ ), fruits ( $p < 0.001$ ), vegetables ( $p = 0.007$ ), and nuts and seeds ( $p = 0.019$ ). Not being able to operate a motor vehicle was associated with increased intake of lean meat ( $p = 0.025$ ) and processed meat ( $p = 0.001$ ), and decreased intake of fruit ( $p = 0.028$ ).

## Discussion

Overall, the results from our study indicate the nutrition education programs intended to mitigate physical limitations in populations of older adult populations with many members living alone and/or unable to operate a motor vehicle, should focus on increasing intakes of lean protein and vegetables while decreasing intake of processed meats. Our findings, specifically those described in Table 2, show that lean meat and vegetable intakes are inversely related to self-reported disability status, whereas processed meat intake was positively related to disability status. Moreover, our results in Table 3 show that even when controlling for age, sex, education, income, depression, anxiety, pain,

sleep, and perceived health, those who live alone had lower dietary intakes in general compared to those who live with others, reporting lower intakes of lean meat, processed meat, fruits, vegetables, and nuts and seeds. As we found inverse associations between lean meat and vegetable intakes and self-reported disability status, nutrition programs working with older adults who live alone should focus on increasing lean protein and vegetable intakes. Participants who reported being unable to operate a motor vehicle reported increased intake of lean and processed meats and decreased intake of fruits. Thus, nutrition education programs intended to help reduce physical limitations in older adults should focus on increasing the intake of lean proteins and vegetables, while decreasing the intake of processed meats, particularly for those older adults who live alone and cannot drive. Increased food delivery services could benefit this population. Extension educators can use this information to help guide their outreach to similar audiences. Research is continuing to show that older adults have nutritional needs, including protein needs.

Informed by this research, the project team developed or revised Extension materials that can be delivered both as online self-paced modules, and/or as face-to-face presentations to meet the needs of older adult audiences who may have technology available but are unable to drive to a face-to-face class. The content of the online modules was developed based on published nutrition research and national nutrition recommendations. The online modules were designed to be easy to navigate, especially for those with less experience with technology-based delivery. The narrated self-paced modules allow for clicking on images, answering review questions and online surveys to complete a module. The coordinators are available to answer questions and social media (Facebook) and a monthly e-newsletter provided additional information. The face-to-face version of the program includes scripted lesson plans, handouts, PowerPoint slides, hands-on activities, and surveys for delivery in community settings by Extension agents in multiple counties especially in rural areas of the state.

The topics of the classes include nutrition and physical activity concepts related to muscle health, bone health, joint health, brain health, heart health, eye health, and other topics related to aging. Lean protein consumption and fruit and vegetable consumption, which were significant in the research, is a topic of focus in many of these modules, along with other nutrients of concern. Each of the classes also has a component that reminds participants about the importance of physical activity as part of an active lifestyle. A “cooking for one or two” module for online delivery and the associated teaching program for face-to-face delivery are among the next programs to be released. All online and face-to-face participants had the opportunity to receive a prize, a completion certificate, and an opportunity for a gift card if they completed a follow-up interview. This study had limitations. We used a snowball approach and experienced some “robot” takers of the online survey, but those responses were identified and excluded. To avoid excluding people who did not have access to a computer, tablet, or other device, we also made paper copies available of the survey. Although attracting participants to complete long surveys can be challenging, we had more participants than expected. We offered small rewards through prize drawings.

## Implications for Extension Professionals

Extension programs, by definition, are based on published research or other evidence-based sources. The current research provided evidence to move forward with the target audience to help participants meet their evolving dietary needs throughout life, based on awareness of current recommendations and personal practices. Improving nutrition and physical activity may help reduce their risk for disability. In addition, the project can introduce other Extension program areas, including gerontology and physical activity. We had an unexpectedly high number of valid responses from throughout the U.S. as a result of creative ap-

proaches to eliciting survey responses.

As we progress with the research through follow-up surveys and interviews, additional Extension programs will be developed into online and face-to-face formats, revised as needed, and implemented based on the participants' feedback and the analysis of additional survey results. The large dataset gathered in this project will allow us to explore further relationships of aging to nutrition and health. The Extension handouts developed are available from [www.ag.ndsu.edu/nourish](http://www.ag.ndsu.edu/nourish).

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## Appendix

Demographics for the sample are displayed in Table 1. A total of 1,788 people completed the survey.

### Table 1

Demographics of the total 1,788-person sample.

<b>Age</b>							
	<b>50-55</b>	<b>56-61</b>	<b>62-64</b>	<b>65-70</b>	<b>71+</b>		
n	785	495	288	145	74		
%	43.9%	27.7%	16.1%	8.1%	4.1%		
<b>Sex</b>							
	<b>Female</b>	<b>Male</b>	<b>Other</b>	<b>Prefer Not to Answer</b>			
n	720	1,037	22	9			
%	40.3%	58.0%	1.2%	0.5%			
<b>Race and Ethnicity</b>							
	<b>African American</b>	<b>American Indian / Alaska Native</b>	<b>Asian American / Pacific Islander</b>	<b>Hispanic</b>	<b>Non-Hispanic White</b>	<b>Other</b>	
n	255	124	231	142	1016	20	
%	14.3%	6.9%	12.9%	7.9%	56.8%	1.1%	
<b>Education</b>							
	<b>Did not finish high school</b>	<b>High school graduate</b>	<b>Associate's Degree</b>	<b>Bachelor's Degree</b>	<b>Some Graduate School</b>	<b>Post-Graduate Degree</b>	
n	64	359	351	481	97	88	
%	3.6%	20.1%	19.6%	26.9%	5.4%	4.9%	

<b>Household Income</b>							
	<b>\$0-24,999</b>	<b>\$25,000-49,999</b>	<b>\$50,000-74,999</b>	<b>\$75,000-99,999</b>	<b>\$100,000-149,999</b>	<b>≥\$150,000</b>	<b>Prefer not to answer</b>
n	71	377	454	446	230	160	50
%	4.0%	21.1%	25.4%	24.9%	12.9%	2.8%	2.8%
<b>Cohabitation Status</b>							
	<b>Lives Alone</b>	<b>Lives with a spouse or partner</b>	<b>Lives with other persons</b>				
n	360	1,369	59				
%	20.1%	76.6%	3.3%				
<b>Number in Household</b>							
	<b>1-3</b>	<b>4-6</b>	<b>7+</b>				
n	810	905	73				
%	45.3%	50.6%	4.1%				
<b>Able to operate a motor vehicle</b>							
	<b>No</b>	<b>Yes</b>					
n	268	1520					
%	15.0%	85.0%					



## Table 2

The association of dietary intakes of lean meats, processed meats, fruits, vegetables, leafy greens, nuts and seeds, and legumes on disability status when controlling for age, sex, race/ethnicity, education, and income.

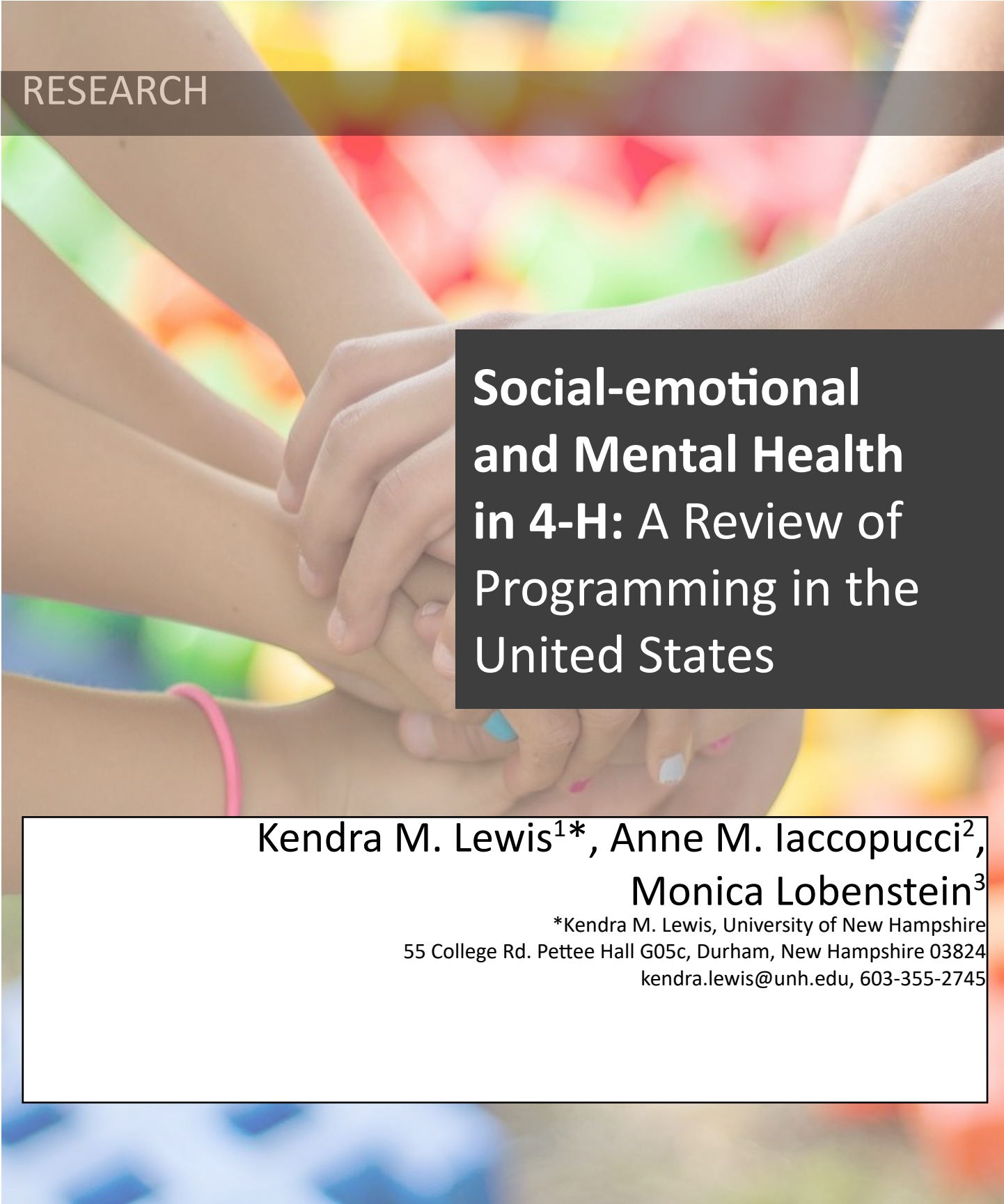
<b>Model</b>	<b><math>\beta</math></b>	<b>SE</b>	<b>p</b>
<b>Constant</b>	0.846	0.097	<0.001
<b>Age</b>	0.036	0.011	0.001
<b>Sex (Male =1)</b>	0.015	0.025	0.559
<b>Race/Ethnicity (Non-Hispanic White = 1)</b>	-0.090	0.026	0.001
<b>Education</b>	-0.012	0.009	0.176
<b>Income</b>	-0.044	0.010	<0.001
<b>Lean Meat</b>	-0.041	0.011	<0.001
<b>Processed Meat</b>	0.041	0.010	<0.001
<b>Fruit</b>	-0.001	0.012	0.964
<b>Vegetables</b>	-0.038	0.013	0.002
<b>Leafy Greens</b>	0.017	0.011	0.133
<b>Nuts &amp; Seeds</b>	-0.001	0.011	0.907
<b>Legumes</b>	0.013	0.010	0.195

## Table 3

The effects of living alone and an inability to drive a motor vehicle on various aspects of dietary intake while controlling for self-reported age, sex, race and ethnicity, education, income, depression, anxiety, pain, sleep, and perceived health.

		Overall Model			Lives Alone		Cannot Drive		
	R2	F	p	$\beta$	SE	p	$\beta$	SE	P
<b>Processed Meat</b>	0.078	11.564	<0.001	-0.216	0.085	0.011	0.293	0.092	0.001
<b>Fruit</b>	0.126	19.622	<0.001	-0.282	0.074	<0.001	-0.174	0.079	0.028
<b>Lean Meat</b>	0.078	11.476	<0.001	-0.137	0.070	0.050	0.169	0.075	0.025
<b>Vegetables</b>	0.132	20.702	<0.001	-0.196	0.072	0.007	-0.077	0.077	0.324
<b>Leafy Green</b>	0.117	18.065	<0.001	-0.117	0.078	0.135	0.036	0.084	0.667
<b>Nuts and Seeds</b>	0.061	8.934	<0.001	-0.194	0.083	0.019	-0.060	0.089	0.497
<b>Legumes</b>	0.058	8.326	<0.001	0.117	0.085	0.171	0.071	0.092	0.439

RESEARCH



## Social-emotional and Mental Health in 4-H: A Review of Programming in the United States

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## Abstract

Youth in the United States have reported dramatically increasing rates of social-emotional and mental health challenges. As the largest youth-serving organization in the nation, the 4-H youth development program has the potential to support youth's mental health and well-being. To assess this potential, the researchers surveyed 4-H State Extension Staff on which programs are being used in 4-H to address mental health needs, how these programs are selected, and current staffing needs in terms of mental health programming. Results highlight the benefits of shared resources, expertise, and training materials that address youth mental health challenges.

## Social-emotional and Mental Health in 4-H: A Review of Programming in the United States

Social-emotional and mental health challenges in children and adolescents are occurring at alarming rates in the United States (US). Data from the 2021 Youth Risk Behavior Survey (Centers for Disease Control and Prevention [CDC], 2023) show that 42% of teens feel sad or hopeless for more than two weeks in a row, impacting their daily activities. Twenty-nine percent of teens report experiencing poor mental health, and 22% have seriously considered attempting suicide. Eighteen percent made a suicide plan, and 10% attempted suicide. These rates increase for teen in minorities; 57% of females and 69% of lesbian, gay, bisexual, transgender, queer or questioning, or other identities (LGBTQ+) youth felt sad or hopeless for more than two con-

secutive weeks, and Hispanic and multiracial youth have higher rates of sadness and hopelessness than their Black, Asian, or White peers. Thirteen percent of females and 22% of LGBTQ+ teens attempted suicide, and Black youth have higher suicide attempt rates than other racial groups.

In a recent Harris Poll (2020), 35% of teens surveyed reported feeling anxious daily, with the top stressors reported as schoolwork (71%) and thinking about the future (65%). The COVID-19 pandemic also had a negative impact on youth mental health, due in part to social isolation, inactivity, increased drug use, and susceptibility to abuse at home. The Annie E. Casey Foundation reports that 11.8% of youth in the US had anxiety or depression in 2020, an increase of 25.5% from 2016. Suicide rates have increased over the past decade and continue to be the second leading cause of death for young people (CDC, 2022).

In addition to the COVID-19 pandemic, today's youth are impacted by other social determinants of their mental health, including having basic needs met, caregiver parenting behaviors, and experiences with their home and community environments (Velez et al., 2022). A unique factor for younger generations is social media usage. Social media provides opportunities such as social connection and identity exploration, but can also pose risks such as bullying, social exclusion, exposure to risk-taking behaviors in media content, social comparison, and less time spent on other (and potentially more important) activities such as sleep (Nesi, 2020). Research on the impact of social media on youth mental health is mixed, with evidence that social media can have a small but negative impact on youth (Nesi, 2020). Further, approximately two-thirds of youth have experienced some form of trauma, such as abuse, school or community violence, terrorism, racism, assault, or neglect (Substance Abuse and Mental Health Administration, 2023). The impact of climate change on youth mental health is also gaining more traction, with research showing climate change can influence youth distress, depression, anxiety, bipolar disorder, and other challenges (Clayton et al., 2023).

There are many programs that exist for K-12 schools to address mental health, generally as part of social-emotional learning programming. The most recent data reports that 76% of school principals and 53% of teachers implemented an social-emotional learning program in the 2021-22 academic year (Schwartz et al., 2022). While some of these programs are used in schools (Youth Mental Health First Aid, teen Mental Health First Aid), some are less prevalent in school settings. Therefore, out-of-school-time programs, like 4-H, are well-positioned to address this gap in social-emotional learning programming.

4-H programming varies in how it is delivered and by whom. Programming may be delivered in community clubs, in short-term special interest clubs, in schools both during and after school hours, and more. Programs and curricula may be delivered by volunteers, 4-H staff, or other individuals such as by teachers or afterschool program staff. Training needs vary by program or curricula; some may require formal training and others may be “grab and go” style, where the program leader can use them without training. Social-emotional and mental health programming can be embedded into 4-H in various ways. One is that programming specifically targeting skill-building in social-emotional learning and mental health can be delivered. Another way is for 4-H staff and volunteers to model and promote social-emotional skills, such as through recognition of youth mental health challenges and supporting youth in moments of need, creating safe environments, encouraging identification and regulation of emotions.

As the largest youth-serving organization in the nation, with specific goals related to health, academic success, and life skills, the 4-H youth development program is poised to support efforts toward promoting youth’s mental health and well-being. Several existing 4-H curricula seek to address the social-emotional needs of today’s youth and teens, such as *Your Thoughts Matter* (The Ohio State University, 2023), *Mindful Me* (Regents of the University of California, 2023), *Mindful Mechanics* (Regents of the University of California, 2023), *4-H Yoga for*

*Kids* (University of Arkansas, 2023), and *GEM: Get Experiences in Mindfulness* (University of Delaware, 2023). These curricula are all activity-based programs that teach participants strategies and tools for health and well-being. Another training, *Youth Mental Health First Aid*, is a certification program that trains adults and teens to notice the signs and symptoms of youth in mental health crises (YMHFA; developed by the National Council on Mental Well-being, 2023a). While these curricula and training may be growing in popularity, it is unclear to what extent they are being implemented, how they are selected, and what delivery support is needed across Extension.

A recent review of youth mental health curricula that address access, equity, and belonging identified four programs recommended for use by Extension educators (Lobenstein et al., 2022). These programs included *Sources of Strength*, *teen Mental Health First Aid*, *Dynamic Mindfulness*, and *Youth Mental Health First Aid*. An additional eight programs were conditionally recommended but were considered difficult for Extension educators to access or implement or were less strong in evidence base. It is currently unknown how prevalent the use of these recommended programs is throughout 4-H.

## Objective

To assess current needs, resources, and youth mental health programming, we surveyed 4-H Extension Leaders across the nation. The purpose of this study was to answer the following:

1. What programs are being used to address mental health needs among youth in Extension programming?
2. How do staff choose which programs to implement in their state?
3. What are the current needs of staff in terms of youth mental health programming?

Note that we use the term “youth” to be inclusive

of children, pre-teens, and teens. We also use the term “program” to be inclusive of curricula, workbooks, trainings, activity guides, and other learning tools to simply the language within the results.

## Method

This study was approved by the Institutional Review Board at the University of California, Davis. We developed a survey that asked participants about current needs, resources, and mental health programming for youth in their state. The survey was collected online using Qualtrics. The survey link was emailed to state 4-H program leaders as well as staff that have a health and/or well-being component to their position. We asked that the survey be completed by someone in the state who could best speak to the mental health programming in the state. Data were collected from 31 of the 50 states and five territories, a response rate of 60% (33/55 for the 50 states and five major territories). We had responses from each region of the 48 contiguous states, giving us responses across the country. Seven states had two people respond to the survey, providing us with a total of 40 survey responses. Some participants did not answer all the questions; the sample sizes noted below indicate the number of responses for each question.

## Survey

Participants provided information on what state they represented and their role or title. We asked participants to share which programs they currently offer in their state. A provided list of programming options also offered participants an “other” choice where they could share programs not listed. One question focused on how decisions are made about which programs are implemented, with five options: community needs, availability, funding, training requirements, and other, with the opportunity to write in other reasons. Another item asked participants to rank the order of importance for each of these options. Finally, participants had an

open-ended opportunity to describe their needs in delivering mental health programming within Extension. These responses were reviewed to examine overall themes. A co-author reviewed open-ended responses and color-coded different portions of the response based on themes. Other project staff reviewed the codes; any discrepancies were discussed until a consensus was reached. All other questions were analyzed using frequencies. The survey also asked some preliminary questions about the use of the *Youth Mental Health First Aid* program specifically; we used responses to these questions to form the basis of interviews with staff about the program. This preliminary data and the results of the interviews are shared elsewhere (Iacopucci et al., 2024). See the appendix for a copy of the survey.

## Results

The survey was completed by Extension staff in various roles: 12 were 4-H agents or educators; seven were administrators, coordinators, or managers; 10 were professors, deans, or some other leadership role; and 11 were specialists. Some participants provided a specialty within the role (as indicated by their title); these included healthy living (including behavioral health, mental health, and wellbeing) (8), civic engagement (2), curriculum (2), career (1), and military (1). The most used program was the *Youth Mental Health First Aid* program, selected by 24 of the 33 states and territories. Other commonly used programs included *Your Thoughts Matter*, *4-H Yoga for Kids*, and *GEM: Get Experiences in Mindfulness*. Table 1 lists the programs, including a brief description and number of states and territories that report using that program. Four states did not report any programs; nor did any territories.

Participants (n=28) were asked what method they used to make decisions about what programs to deliver. The most common method was through community needs (21), followed by funding (15) and availability (15), training requirements (5), and

other (6; requests from external organizations or parties and partnerships). When we asked participants to rank the importance of these options for decision-making in order of importance for choosing programming, the highest ranked was community needs. Availability and funding tied for second place, with training requirements and “other” being the lowest importance. Other considerations that people listed for ranking were capacity and interested staff to lead, as well as partnerships that can provide funding and expertise. One state also noted that “Funding muddies things but it [sic] always at the forefront.”

Finally, we asked participants about their needs in delivering mental health programming. Themes in responses included staff and volunteer time and capacity to deliver programming: (e.g., “continually training new staff, new volunteers, some partners such as educational service units”, “more hands on deck to deliver programming”), and some states rely on partners to help with this. They also reported time for staff and organizations receiving the programming: “The biggest barrier to getting staff to do it is time”. States reported needing training and some specific programs or curricula to deliver: “access readily deliverable materials”, “grab and go lessons”, “would like to focus on one or two great programs”. States reported funding for materials as a need, as well as support from administration and County Councils. Program promotion and knowing how to market effectively was also identified as a need by some.

## Implications & Recommendations

Programming that supports youth mental health and well-being continues to be a growing need nationally (CDC, 2021). Cooperative Extension is situated within many counties across the nation as a trusted resource for positive youth development programming and, therefore, ideally situated to support efforts toward youth mental health. 4-H is well-positioned to fill the gaps of schools in

addressing mental and emotional health of youth. However, to better deliver these programs, Extension professionals have expressed a need for increased staff and volunteer time, training, funding, and program promotion resources.

Extension professionals are primarily using *Youth Mental Health First Aid*, *Your Thoughts Matter*, *4-H Yoga for Kids*, and *GEM: Get Experiences in Mindfulness* for their youth mental health and well-being programming. We recommend that initial training and promotion efforts focus on these identified curricula because there is collective knowledge and existing expertise in delivering these programs. While there are many programs that focus on social-emotional learning and mental health, these aforementioned programs have already been established within Extension and may have existing partnerships, funding sources, and trained professions in the system that could be leveraged for greater use and promotion.

In a recent review of evidence-based youth mental health programs for Extension educators, *Youth Mental Health First Aid* (National Council for Mental Wellbeing, 2023c), *Teen Mental Health First Aid* (National Council for Mental Wellbeing, 2023c), *Sources of Strength* (Sources of Strength, 2023), and *Dynamic Mindfulness* (Niroga Institute, 2023) were all recommended as effective programs for Extension professionals (see Lobenstein et al., 2022 for review and evidence base). *Your Feelings Matter* was released after this study was conducted, but it is similar to *Your Thoughts Matter* for a younger age group (grades 3 to 6). While a majority of states reported using *Youth Mental Health First Aid*, and some using *Teen Mental Health First Aid*, no one reported the use of *Sources of Strength* or *Dynamic Mindfulness*. We recommend promoting *Sources of Strength* and *Dynamic Mindfulness* alongside these other programs, as they are evidence-based programs that also attend to issues of access, equity, and belonging (e.g. “stigma reduction, cultural competence, empathy with others, relationships/friendship, social skills, or peer support” and the “study design elements included in the review used culturally competent practices to serve diverse ra-

cial, cultural, sexual, gender, socio-economic status, or other identities”, Lobenstein et al., 2022, page 4). Greater efforts can be made to promote these programs to Extension staff for use with youth.

Extension staff described community needs, funding, and program availability as important factors in determining which programs to promote. Extension staff can be supported through national and local needs assessments for youth mental health. We recommend that sites conduct a needs assessment and that through this process, sites may be more likely to identify funding opportunities, partnering organizations, and expand program awareness and availability.

Extension staff time and capacity were reported as the biggest needs in developing and delivering youth mental health programming. To address this need, one strategy could be establishing collective programming across the US within Extension. For example, a nation-wide selection of curricula, training, and pre-identified funding sources and partners could assist states that have not previously engaged in this work to take it on. A national repository of resources, partners, funding opportunities, and recommended curricula related to youth mental health can better support program delivery and awareness. Existing institutional knowledge on youth mental health and well-being programming can enhance efforts and possibly improve mental health outcomes for more youth.

To further support this work, centralized funding and training opportunities could be considered. Large-scale, multistate grants that support youth mental health could provide the funding and cross-training support that many states describe as drivers for this work. Collective 4-H efforts that target youth mental health across the US can benefit from shared resources, expertise, training materials, and resources that address youth mental health challenges related to access, equity, and belonging. Coordinating intentional funding strategies, training, and resources can support a national effort in 4-H programming that addresses the growing social-emotional and mental health needs of our

youth.

Finally, strong support from the State Treasurer ultimately made this program possible. Without their generous support, costs of program supplies would have been the responsibility of local school sites. Providing all materials needed for turn-key implementation was certainly a selling point for this program. The state treasurer’s office has generously provided funding for expanding this program from 13 schools to 20.

## Conclusion

Community needs, program availability, and funding are drivers for selecting programs to address youth mental health concerns. Program support and resources that address the needs of Extension professionals would enhance the delivery of youth mental health programming throughout Cooperative Extension. Funding, training, and program promotion that focuses on *Youth Mental Health First Aid*, *Your Thoughts Matter*, *4-H Yoga for Kids*, and *GEM: Get Experiences in Mindfulness as well as Sources of Strength*, *Dynamic Mindfulness*, and *Your Feelings Matter* serves to result in the greatest impact to those Extension professionals currently engaged in this work.



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## Table 1

Program Names and Number of States Using Programs (n=29)

Program & Brief Description	Regions	Number (Per- cent)
<p><b>Youth Mental Health First Aid</b>            “Youth Mental Health First Aid is designed to teach parents, family members, caregivers, teachers, school staff, peers, neighbors, health and human services workers, and other caring citizens how to help an adolescent (age 12-18) who is experiencing a mental health or addictions challenge or is in crisis... The course introduces common mental health challenges for youth, reviews typical adolescent development, and teaches a 5-step action plan for how to help young people in both crisis and non-crisis situations.” (National Council for Mental Wellbeing, 2023a)</p>	West, Southern, North Central, North East	24 (83%)
<p><b>Your Thoughts Matter</b>            This workbook is “intended for advanced-level youth who are interested in learning more about mental health, why it is important to overall well-being, and steps that promote understanding and action.” (Ohio State University, 2023). This workbook is appropriate for middle and high school youth.</p>	West, Southern, North Central, North East	13 (45%)
<p><b>4-H Yoga for Kids</b>            This curriculum provides simple yoga exercises intended to encourage thoughtful movement and breathing as a stress-relieving exercise. (University of Arkansas, 2023). This curriculum is appropriate for ages 5 to 19.</p>	West, Southern, North Central, North East	13 (45%)
<p><b>GEM: Get Experiences in Mindfulness</b>            “The program focuses on stress management taught through practical and interactive mindfulness-based activities to facilitate experiential learning. Participants of the program will learn what mindfulness is and how to integrate it into daily life, strength and flexibility poses, breathing techniques and other relaxation skills.” There are five lesson topics: Goal setting and intentions, awareness and attention, self-care through stress reduction and relaxation, communication and relationships, and gratitude and acceptance. (University of Delaware, 2023). The program is for ages 10 and up.</p>	West, Southern, North Central, North East	13 (45%)

<p><b>4-H Mindful Me</b> The program promotes mindful practices that lead to improvements in managing one’s own goals, developing a sense of self, time management, stress management, emotional regulation, and mindful eating practices. Specific outcomes from youth participation in the curriculum include short-term (skill development and knowledge gain), mid-term (increased stress management, mindful eating, etc.), and long-term (improved physical, emotional, and social health) benefits. (Regents of the University of California, 2023). The program is for ages 5 to 8, or grades K to 3.</p>	West, Southern, North Central, North East	8 (28%)
<p><b>4-H Inspire Kids to Do Guides</b> The 4-H activity guides include hundreds of hands-on, interactive activities that can be done at home or in the classroom (4-H, 2023). Target age varies by activity. There are various 4-H at home guides, several with a focus on emotional wellness and health.</p>	West, Southern, North Central, North East	7 (24%)
<p><b>Teen Mental Health First Aid (tMHFA)</b> “teen Mental Health First Aid (tMHFA) teaches teens in grades 10-12, or ages 15-18, how to identify, understand and respond to signs of mental health and substance use challenges among their friends and peers” (National Council on Mental Wellbeing, 2023b). tMHFA also covers the impact of school violence and bullying on teens’ mental health along with equipping teens with an action plan to open a difficult conversation and seek adult assistance when a crisis arises (National Council on Mental Wellbeing, 2023b).</p>	West, Southern, North Central, North East	7 (24%)
<p><b>4-H Mindful Mechanics</b> The overall program aims to promote mindful practices that lead to improvements in managing one’s own goals, developing a sense of self, time management, stress management, emotional regulation, and mindful eating practices. Mindful Mechanics can also serve as a training for teens (or grades 9-12) that would like to lead lessons from the companion curriculum, Mindful Me, through a ‘teens as teachers’ (TAT) approach. The Mindful Me curriculum uses children’s literature and best practices in the field of positive youth development to deliver programming to 5-8-year olds. The TAT approach provides teens with the opportunity for individual growth and meaningful contribution (Regents of the University of California, 2023).</p>	West, Southern, North Central, North East	6 (21%)

<p><b>Social &amp; Emotional Learning in Practice: A toolkit of practical strategies and resources</b>          “This toolkit includes activities, templates and tools organized around four ways to help support staff and youth in SEL”. (Regents of the University of Minnesota, 2023)</p>	Southern, North Central, North East	5 (17%)
<p><b>4-H Mindful Teen</b>          “Mindful Teen: From Surviving to THRIVING! is a six-lesson workshop series for youth in grades 7-12 based on the book, The Mindful Teen: Powerful Skills to Help You Handle Stress One Moment at a Time by Dr. Dzung Vo ... The program can be implemented both in-person or virtually, empowering youth and equipping them with practical strategies and mindful practices to manage stress, difficult emotions, and improve and support their overall well-being, relationships, and performance in school, sports, the arts, and other daily activities.” (Iowa State University Extension and Outreach, 2023)</p>	Southern, North Central	5 (17%)
<p><b>Be SAFE</b>          “Be SAFE includes engaging activities that promote social and emotional learning and development, address and prevent bullying and foster positive relationships with peers and adults.” (Michigan State University, 2023a). This program is for ages 11 to 14.</p>	Southern, North Central	3 (10%)
<p><b>Heads In, Hearts Out Activity Guides</b>          “These resources encourage youth and families to use their minds (putting their "heads in") as a tool to expand their knowledge around variety of topic areas. By creating a shared educational experience, youth and their families will work, grow and learn together, putting their "hearts in" to the process”. (Michigan State University, 2023b). Target age varies by activity.</p>	North East	1 (3%)
<p><b>Other</b>          Programs listed under “Other”: 4-H Teens Helping Teens Task Force (1), ASIST (1), Coping with COVID (1), Less Stress for Students (1), Mental Health Awareness and Advocacy Training (2), QPR (3), SAFETalk (1), Superhero You (1), Youth Aware of Mental Health (1), a combination of curriculum or developing own (2). Target age varies by program.</p>	West, Southern, North Central, North East	11 (38%)

# Appendix

## Copy of Survey

Youth mental health has become an increasingly talked about topic within Extension and 4-H programming. To assess current needs, resources, and youth mental health programming, we ask that you please complete the following survey. We are also seeking individuals willing to be interviewed about their experience using the Youth Mental Health First Aid program. If you are willing to be contacted for an interview, you can indicate your preference within the survey.

The survey should take 10 minutes to complete.

Responding to the questions below is voluntary. Information is stored on a secure computer with restricted access. Your participation will be kept confidential and will not be identified in any publication. There is no direct benefit to responding; however, the information may improve the 4-H program.

If you have questions, please contact if you have questions, please contact [author] at [email].

Do you consent to participate in this study?

- Yes
- No

State: [Select]

Role/Title: [Fill in]

Name:

Would you be willing to talk with us more about your experience in an interview?

- Yes
- No

If yes, email contact: [Fill in]

Please check all programs currently implemented in your state:

- Youth Mental Health First Aid
- Teen Mental Health First Aid (tMHFA)
- 4-H Mindful Me
- 4-H Mindful Mechanics
- 4-H Mindful Teen
- Your Thoughts Matter
- GEM: Get Experiences in Mindfulness
- Social & Emotional Learning in Practice: A toolkit of practical strategies and resources
- Be SAFE
- 4-H Yoga 4 Kids
- Heads In, Hearts In Activity Guide
- 4-H Inspire Kids to Do Guides
- Other: \_\_\_\_\_

How did you make decisions about delivering these programs, generally? [Check all items]

- Community needs
- Funding
- Availability
- Training requirements
- Other: \_\_\_\_\_

Rank the order of importance in making decisions about delivering these programs

- Community needs
- Funding
- Availability
- Training requirements
- Other: \_\_\_\_\_

What are your needs in delivering mental health programming within Extension?

Questions Related to Youth Mental Health First Aid

Who is trained as an instructor of Youth Mental Health First Aid (certified to train others in YMHFA) in your state Extension program? [Provide sliding scale numbers for each below]

- Staff
- Volunteers
- Community Partners
- Unsure

Who is trained in Youth Mental Health First Aid in your state Extension program? [Provide sliding scale numbers for each below]

- Staff
- Youth Volunteers
- Adult Volunteers
- Community Partners

Please indicate your willingness to engage in Youth Mental Health First Aid Training: [1-10 scale; 1 unwilling – 10 very willing]

Please indicate your attitude towards engagement of Extension Professional's in Youth Mental Health First Aid Training: [1-10 scale; 1 unimportant – 10 very important]

What successes have you had with the Youth Mental Health First Aid program?

## IMPLICATIONS



# Fashion Entrepreneurship: Implications for Workforce Development in Extension Family & Consumer Sciences

**Lauren Prinzo<sup>1\*</sup>**

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## Abstract

West Virginia University Extension partnered with the Department of Fashion, Dress, and Merchandising and Business College to develop a replicable program model called the Fashion Impact Challenge (FIC). The FIC engages rural underserved youth and college students in entrepreneurship education that builds knowledge, confidence, and interest in pursuing fashion entrepreneurship careers. Rising interest in sustainable fashion presents an opportunity for Extension to support the development of entrepreneurs seeking to make a positive impact through fashion. Student teams work to develop ideas that incorporate principles of entrepreneurship and consider the ethical and social context of fashion products, services, and businesses.

## Fashion Entrepreneurship: Implications for Workforce Development in Extension Family & Consumer Sciences

Family and Consumer Science (FCS) educators have a long history of providing guidance to emerging adults in areas related to clothing, textiles, and sewing. The clothing and textile industry continues to hold significant value in modern society, with fashion accounting for 2% of Gross Domestic Product (GDP) as a 1.7 trillion-dollar industry (Fashion United, 2021). With the evolution of technology, the fashion industry continues to grow at expo-

ponential rates, increasing the affordability and rate of clothing purchase. Fast fashion, the mass production of inexpensive garments, is rising and has a significant impact on the planet (Smarch, 2022). The vast majority of “fast fashion” garments are discarded by consumers leading to overconsumption and pollution that has a significant impact on the environment. The fashion industry accounts for a significant percentage of global ocean microplastics, industrial waste water pollutants, and carbon pollution (Smarch, 2022).

An emerging trend in fashion is the shift in consumer preferences to sustainable products. In fact, younger generations are likely to prioritize ethical/social values when purchasing clothing and textiles. Ethics are increasingly influencing consumer purchases, including considerations like environmental impact, animal welfare, fair labor practice, community impact and others (Deloitte, 2019). This is reflected in the new adoption of ethical/social standards by major luxury brands (Deloitte, 2019).

This shift, combined with wide access to the market through technology, presents an opportunity for rural fashion entrepreneurs to develop sustainable products, services, and ventures that have a positive impact on their community and the world. Extension is uniquely positioned to harness its existing resources in family and consumer sciences and collaborate with on-campus partners to implement workforce development efforts in the area of fashion entrepreneurship that reach rural and underserved youth. Incorporating fashion entrepreneurship into workforce development efforts has the potential to increase the confidence and skillset of youth interested in the fashion field and demonstrate an option for a career path (primary or secondary) that can be pursued in a rural community setting.

## Background

Rural communities struggle with a persistent challenge; the outmigration of talented young

adults. According to the United State Department of Agriculture (USDA), the population of rural communities in West Virginia declined by 130,562 between 1980 and 2018 (USDA Economic Research Service, 2020). Labor markets in traditional coal communities in Appalachia are depressed, with significant barriers to employment (Lego et al., 2021). West Virginia struggles with low workforce participation, with the rate decreasing during COVID-19 pandemic from 62.9% in 2018, to 53.1% in 2022 (US Census Bureau, 2023). An additional obstacle to employment in rural and distressed areas is a lack of local opportunities near home making traveling far distances to work necessary.

Empowering young adults to contribute to and invest in their communities through diverse career opportunities is the key to the long-term growth of rural economies that have experienced economic depression. In West Virginia, 98.8% of businesses are considered small, employing fewer than 500 employees (U.S. Small Business Administration, 2022). Experiential learning that combines entrepreneurship education and community engagement is a viable pathway to providing the next generation with the knowledge and skills they need to consider career paths, pursue their passion, and build their communities.

## The Fashion Impact Challenge Program Model

West Virginia University (WVU) Extension in partnership with the WVU Department of Fashion, Dress, and Merchandising, the WVU John Chambers College of Business, and the Morris L. Hayhurst Launch Lab, created the Fashion Impact Challenge (FIC). The FIC is a replicable program model that integrates rural high school students with undergraduate college students enrolled in the WVU Fashion, Dress and Merchandising Program. Students

participate in an on-campus three-day, three-night program in which they work in teams to develop and pitch an innovative fashion or textile product or service that addresses an identified issue in their community. This program serves as a model to generate new interest in a traditional Extension field while creating innovative pathways to boost the economy in rural communities, possibly slowing the outmigration of young adults in rural communities. Fashion entrepreneurship education has the potential to build student knowledge, entrepreneurial skills, and interest in pursuing fashion entrepreneurship careers. The FIC model can serve as a tool for workforce development efforts in entrepreneurship that builds upon the traditional family and consumer sciences field of fashion, clothing, and textiles.

WVU hosted the Fashion Impact Challenge three times from 2020-2023 on campus as an in-person three-day, two-night program. The program is offered as a one credit hour course for college students from the Fashion, Dress, and Merchandising Program and an Extension sponsored educational camping opportunity for high school students. All participants who successfully complete the challenge are eligible to receive a micro credential in "Innovation and Entrepreneurship" from the WVU Morris. L Hayhurst Launch Lab. The course was developed by a cross-disciplinary team of faculty from the WVU Fashion Department, the WVU John Chambers College of Business, and WVU Extension. Extension contributed expertise in community engagement, youth development, and family and consumer sciences. The team included state specialists and county faculty who engaged rural youth and directly facilitated their participation. To reduce barriers to participation, high school students were provided transportation, housing, meals, credit fee waivers, and safe supervision without cost. Funding for the program is received from a variety of sources including grants, private donations, and contributions from the partnering college/program (i.e. Fashion, Dress, and Merchandising).

Participant teams work to identify a social, cultural, and/or environmental issue in their community,

and create an innovative apparel or textile product and/or service that addresses the problem. Throughout the course, students work in teams of four (with both high school and college students). Students work with faculty and economic development professional to move through a variety of educational exercise aimed at increasing their knowledge in fashion design, sustainable fashion, sewing, entrepreneurship, and community development. Teams practice iterative ideation by brainstorming ideas and receiving feedback in cycles from peers, faculty coaches, subject matter experts, and industry professionals. Each activity includes an opportunity for students to present their ideas to various sized groups. Repeated opportunities for pitching are included to reduce anxiety around public speaking, which has been reported during the program's associated student focus group discussions as a primary concern among youth and young adults participating in the challenge.

While on campus, high school students also explore campus by visiting the Fashion Lab, Applied Innovation Center, Engineering and Manufacturing Labs, dining areas, recreation areas, and bookstores. Time spent on campus with college students has implication for student recruitment and supports a sense of belonging for rural youth who may not have previously visited a university campus. Additionally, students participate in community visits with sustainable fashion businesses and meet with successful entrepreneurs. For example, students tour and speak with employees from the Goodwill distribution center to learn about the non-profit organizations role in reducing clothing/textile waste. They also visit businesses and individuals including those that design and sell clothing, resell clothing/textiles, and/or otherwise succeed in the sustainable fashion industry. For example, students have visited and spoken to young entrepreneurs who started a thriving vintage sneaker shop, and a designer utilizing sustainable design techniques for clothing. Table 1 includes a general overview of the daily in-person activities of the FIC. Each activity is designed to provide hands-on interactive opportunities for youth to develop entrepreneurial skills including confidence in public speaking, working with

a team, communication, and launching a business.

At the conclusion of the course, student teams present their idea for a fashion-related business, product, or service that would positively impact West Virginia during the final "pitch competition." Each team has five minutes to present to a panel of judges and peers. Team projects are evaluated by judges based on a standing rubric and winners are selected. The winning team(s) receive prizes and all teams are connected to WVU business development resources and secondary business and/or pitch competitions to move their ideas forward to additional opportunities for funding and/or technical assistance.

The Fashion Impact Challenge was evaluated using both quantitative and qualitative methods. Students completed a pre-survey, post-survey, and a reflection essay. After each FIC, researchers facilitated focus group discussions with students to better understand the impact of the program and gather feedback/ideas for subsequent challenges. Discussions were recorded, transcribed, de-identified and analyzed by a third party. Additionally, team members tracked the number of high school students who enrolled in the Fashion program at WVU and the progress of teams who continued to pursue their ideas through other avenues. The course evaluation methods were approved by the WVU Institutional Review Board as Flex/Non-Human Subject Research.

## Results/Summary

According to students pre/post surveys, participants increased confidence in their ability to demonstrate entrepreneurial skills and pro-social behavior (as measured by changes in mean responses). Student surveys were anonymous, which required researchers to utilize aggregate means for comparison of pre/post surveys. The results of pre/post surveys for 2022 and 2023 were combined to provide a sample of 34 students total. An independent T-test was utilized to compare means. Results

demonstrated multiple factors with a statistically significant increase in mean ( $p$ -value  $< 0.05$ ). These included increases in confidence sharing ideas with others ( $p=0.003$ ), and navigating conflict ( $p=0.027$ ). Additionally, elements of pro-social behavior demonstrate statistically significant increases in mean including student ability to chat with an unfamiliar person ( $p=0.018$ ), and student ability to share a funny story with peers ( $p=0.025$ ). These results are shared in Table 4 and 5.

An analysis of student reflection essays from the first challenge demonstrated three themes: (1) increased interest in working with teams, (2) increased confidence in public speaking, and (3) increased sense of self-efficacy. Self-efficacy and self-perception influence motivation and persistence in the face of barriers (Bandura, 1978). Awareness of challenges in their community, coupled with the belief in their abilities to affect change, may serve as a catalyst for action. Figure 2 provides example quotes from student reflection essays.

Student focus groups continue to serve as a valuable tool for better understanding the impact of the program. According to evaluators, key differences emerged among each target audience which are summarized in Table 3. The team also gathered valuable feedback and ideas on increasing the length of in-person programming and re-arranging program components to focus more heavily on pitch preparation earlier in the course that were applied to future iterations of the program.

Lastly, multiple high school students participating in the FIC have decided to pursue their college education through the Fashion, Dress, and Merchandising Program at West Virginia University. It is possible that participation in the FIC as a high school student influenced the student's or family's perception of the value of this program, inferring potential implications for recruitment. The original Impact Challenge model has expanded and continued to grow in its utilization to include other career development areas including fashion, agriculture, community health, and technology. The model may also

be delivered as a hybrid program combining virtual and on-campus activities or combining local (rural) and on-campus activities. The potential for student recruitment supports the program's current funding structure, with the majority of funding being contributed by the hosting college/department.

Program evaluation results show that the Fashion Impact Challenge can be a catalyst to spark youth and young adults' interest in fashion entrepreneurship careers and utilized as tool to increase confidence in entrepreneurial skills. The Fashion Impact Challenge is a model that can be replicated at any University with strong collaboration between Extension, fashion, and business faculty. Extension Service's unique positioning and relationships through 4-H and school-based programming create an opportunity to engage underserved rural youth and college students in education in fashion, entrepreneurship, and community development to bring family and consumer sciences education to a new generation and develop a workforce that will contribute to the significant and evolving global industry.

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## Table 1

Summary of Daily Activities

<b>Friday</b>	Welcome and Introduction Team Building Customer Journey Mapping Presentation from Fashion Entrepreneurs Campus Tour Team Time (Ideation)
<b>Saturday</b>	Basic Sewing Exercises Creating a Lean Canvas Feedback Loop and Team Time Presentation Development Expert Speaker: WVU Librarian
<b>Sunday</b>	Pitch Practice Final Pitch/Presentation Feedback from Judges Student Focus Group Discussion (Reflection)

## Table 2

Selected Quotes from Student Reflection Essays

Theme		
Public Speaking	“Public speaking has always been a fear of mine but... everything was okay.”(High school student)	“My favorite part of the challenge was overcoming my fear of public speech and seeing what I can accomplish.”(College student)
Teamwork	“From the moment we all got together to the very end we were a team. If we had a disagreement, we would easily work it out and find a solution.”(High school student)	“I loved it. My college mentor was amazing. She treated us like a friend and not just a student.”(High school student)
Self-Efficacy	The skills I gained from this is unreal. Starting off from the very beginning I learned my ideas matter.(College student)	I would like to start helping my community with projects with fashion.”(College student)

## Table 3

Student Focus Groups: Evaluation of Central Themes by Audience

Theme	College Students	High School Students
	College Students	High School Students
Perceived Self-Efficacy	Focus on intellectual skill development, realization that fashion can be applied to entrepreneurship	Significantly shaped by hands-on learning experiences (i.e., sewing and presenting/pitching)
Vicarious Experiences	Identified program staff, presenters, judges as role models	Identified college students as primary role models and emphasized openness and leadership
Exposure	Focused on exposure to content including different aspects of fashion industry	Focused on social exposure to new people and places
Bonding	Expressed awareness of group dynamics and acknowledgement of friendships as key to team accomplishment	College students viewed as facilitators that ensured openness and supported positive group experiences. Value on social activities

## Table 4

Student Reported Confidence in Entrepreneurial Skill Development.

Survey Question	Pre (Mean)	Post (Mean)	P value
Confidence in sharing ideas with others	3.42	4.26	.003
Confidence navigating conflict	3.09	3.68	.027

*Note.* Responses based on 5-point Likert scale as follows: Not at all confident (1), A little confident (2), Somewhat confident (3), Very Confident (4), Extremely confident (5)

## Table 5

### Student Reported Social Interaction Skills

Survey Question	Pre (Mean)	Post (Mean)	P value
How well can you have a chat with an unfamiliar person?			
	3.44	4.00	.018
How well can you share a funny story with others?			
	3.44	4.00	.025

*Note.* Students were asked to respond on a scale of 1-5 with “Not very well” being (1) and “Very well” being (5)



IMPLICATIONS



# Health and Wealth Connections: Implications for Extension Professionals

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## Abstract

Well-being is the state of being happy, healthy, or prosperous (Merriam-Webster, n.d.). For the past several decades, scholars, policymakers, and practitioners, including Extension professionals, have connected the domains of health and wealth. The objective of this paper is to introduce and highlight the importance of financial well-being and its association with health and well-being, and to encourage Extension professionals to consider not only how financial well-being interacts with their subject matter domain but ways to integrate and address this foundational construct. Five pathways show the correlation among these aspects of well-being. The continuum from “not at all being well” to “being really well” for physical, mental and financial well-being is influenced by these pathways, one’s resiliency, and ability to manage resources. This paper provides strategies and implications for Extension program development and delivery to build on people’s strengths and resilience to create positive behavior change.

## Health and Wealth Connections: Implications for Extension Professionals

In life, people live on a continuum from being really well to not being well at all. One’s position on the well-being continuum is not static. Health and wealth are keys to accessing, possessing, and maintaining well-being. We know this from the substantial scholarship across multiple disciplines that connect health – whether it is physical or mental health – and wealth, whether it is income or a more subjective measure like financial well-being, a con-

struct used interchangeably with wealth throughout this paper (Hoffman & Risse, 2020; Hyland & Revere, 2018). Based on this broad range of scholarship, Extension professionals can build initiatives that assist clientele in making positive changes that improve their well-being. This paper’s objective is to introduce and highlight the importance of financial well-being and its association with health and well-being, and to encourage Extension professionals to consider not only how financial well-being interacts with their subject matter domain but ways to integrate and address this foundational construct. The paper begins with a brief discussion of the health-wealth connection scholarship, but first defines the interrelated concepts of financial well-being, health, and resilience. A summary of five pathways that connect wealth with health is provided followed by a discussion of the strategies and implications of this scholarship for Extension work as they relate to the health-wealth connection and overall well-being.

Financial well-being describes the extent to which one’s financial situation and money choices provide a feeling of security for a person and how much freedom of choice versus constraint they are experiencing. Feelings of security and freedom have a present and future time orientation and move on a continuum (Consumer Financial Protection Bureau (CFPB), 2017). A person’s financial well-being can shift from experiencing negative feelings characterized by stress and discontent to the other end of the continuum, where a person feels secure and content. Someone’s feeling of financial well-being is not solely determined by or aligned with how much income they earn (CFPB, 2017). A person’s resilience and human capital enable them to manage wherever they are in the present and help them move beyond their current situation in the future.

Similarly, people’s health and/or mental health moves on a continuum. The World Health Organization defined health in its Constitution as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (2020, p.1). Thus, adaptation and effective functioning, even in chronic disease or mental illness,

can be considered a state of wellness. The Academy of Health Sciences (2024, n.p.) states that:

Health is a process of continual change. And people must continually adapt to these changes in their lives to maintain good health and well-being. It is our adaptation or response to that change, rather than the change itself, that affects our health.

Integral to this definition of health is the concept of resilience. A person's resilience and ability to adapt determines outcomes that range on a continuum from a high level of wellness to death; with "death occurring when adaptation fails completely, and there is irreversible damage to the body" (Academy of Health Sciences, 2024, n.p.). Resilience is the ability to manage physical, mental, financial, human resources, and perceptions of a context, and it is what helps people cope with all that life presents (American Psychological Association, 2024). As one can see, wealth, health, well-being, and resiliency are related concepts. Each serve as an asset, is an outcome developed and acquired, and rests on a continuum.

Resilience plays a dynamic role in helping individuals adjust their well-being on this continuum. A person's adaptive capacity is determined by many factors, including opportunities, choices, knowledge, skills, confidence, and attitudes. These are the human assets or capital cultivated by Extension. Extension professionals and program initiatives often serve as a bridge, fostering access and bringing much of this information and support to clientele in personal interactions and programming. Through programming and services Extension programs assist clientele in building resilience and resiliency skills to help cope with their situations.

Extension professionals are increasingly using the Extension Committee on Organization and Policy (ECOP) Health Equity model (HE model) to apply resilience concepts and subject matter expertise to the work that supports individuals and families (Burton et al., 2021). The HE model, as shown in Figure 1, is based on the social-ecological model,

which depicts individuals within families within embedded systems from home-based or farm businesses to the levels that constitute community structures. Resilience is embedded in the systems depicted in the HE model and is dependent on the human, social, and economic capital, infrastructures, and resources within each of these levels. Individuals and families need support from the outermost levels (Braun & Pippidis, 2021), and these community structures need support from community members. Within the HE model, Extension professionals bring their expertise and the role they play in facilitating the development of personal relationships between these structures and groups.

## What Are the Pathways Between Health, Wealth, and Well-Being?

The HE model can be a tool to illustrate the complexity of interconnectedness between health, wealth, and resilience because many of the concepts identified within the social determinants of health portion of the model identify areas that effect health equity but also financial well-being. For the past several decades, scholars, policymakers, and practitioners, including Extension professionals (Kiss et al., 2019) have connected the domains of health and wealth. Meta-analyses, reviews, and studies establish an association between wealth predictors on health and general well-being outcomes (American Institutes for Research, 2010; Ettman et al., 2022; National Academies of Sciences, Engineering, and Medicine. 2019; Tan et al., 2020). One meta-analysis examined whether to include wealth measures in health research and found greater wealth was associated with better health in most studies. The findings were most consistent with specific and multiple measures such as net worth, types and total assets and debts, debt-to-in-

come ratios, and home ownership rather than a single measure (Pollack et al., 2007). Braveman et al. (2018, p.3) suggests that wealth may be a precursor to health: “while health can certainly affect the ability to generate both income and wealth, evidence from longitudinal studies confirms that health itself is strongly affected by both wealth and income”.

We share five explanations or pathways that link wealth with health (Hill-Briggs, 2021). Knowledge and insight about these pathways can help Extension professionals better understand the process of the health-wealth connection, what individuals and families experience, and ways to strengthen and develop effective initiatives. These pathways illustrate the complex, interconnected nature of the concepts of health, wealth, well-being, and resilience. The explanatory pathways connecting health and wealth vary in their approach, some more strongly emphasize the individual, which fuses with the traditional approach of Extension engaging in direct education. Other pathways rely on a community-based approach to address systems and policies and are more akin to the PE model (Figure 1). Combining both approaches can improve Extension’s effectiveness (Washburn et al., 2022).

## Material Hardship Pathway

**M**aterial hardship, the first pathway, is when a household is unable to pay for basic, material needs, such as housing, utilities, food, or health care. Basic needs are among the first to lapse among financially strapped households, thereby undermining their ability to meet the conditions that are either essential to or help promote good health (Karpman et al., 2018). An Urban Institute study summarizes wealth’s link with health outcomes, noting an association of material hardship with a range of physical, mental, and psychological outcomes among children and adults (Karpman et al., 2018). There is no consensus on the answer to which comes first, but the Urban Institute report shares evidence of wealth as a precursor and major

indicator of health.

## Social Determinants of Health Pathway

**T**he Social Determinants of Health (SDOH) framework emphasizes environmental conditions as a pathway: “where people are born, live, learn, work, play, worship, and age will affect a wide range of health, functioning, and quality-of-life outcomes and risks” (U.S. Department of Health and Human Services, 2021, n.p.). Economic stability, a component of wealth and financial well-being, is one of five domains used to organize the SODH and the circumstances that affect health outcomes. The goal of economic stability in the SODH framework is a person’s ability to earn stable, not volatile income to address their health requirements (U.S. Department of Health and Human Services, 2021). Community-level factors affect access to, affordability of, and actual use of those aspects of life that provide basic needs, employment, health care services, and financial services.

Extension professionals have long championed the incorporation of the SODH framework as a key to addressing health inequities, such as diabetes (Andress & Fitch, 2016), with the SODH framework being integral to the HE model, as shown in the third ring in Figure 1. The Extension supported Supplemental Nutrition Assistance Program Education (SNAP-Ed) initiative has addressed SODH through their health equity work (Washburn et al., 2022). Many SNAP-Ed programs address food budgeting but do not address the entire household budget. Extension initiatives that take the person, their environment, and its interrelatedness together will have a better chance at addressing well-being holistically (Betley et al., 2023).

## Behavioral Pathway

**I**ndividual behaviors that promote or detract from achieving positive wealth and health outcomes is

a third behavioral pathway explaining the connection of health and wealth. Studies have shown that low-income populations adopt unhealthy behaviors (e.g., smoking, drinking) more frequently compared to their higher-income counterparts (Braveman et al., 2011; 2018; Hills-Briggs et al., 2021). Extension initiatives most often address these types of behaviors. Certain behaviors or personality traits, like locus of control or conscientiousness, link to positive health and financial behaviors, and are beneficial to both domains of health and wealth (McDowell, 2023). Individuals who pay bills on time and exercise regularly likely live lifestyles demonstrating consistent behaviors that contribute to their well-being. Extension programs excel in providing information, recommended behaviors or practices, and specific strategies to overcome personal traits and human tendencies (e.g., procrastination) that may be preventing a person from reaching a particular goal or potential.

## Stressor Pathway

A fourth pathway focuses on a person's response to stressors which influences physiological well-being. When a person has unmet needs, the natural response is stress, and depending on the person's adaptiveness and resilience, stress can trigger a physical, mental, emotional, and/or behavioral reaction. Repeated and prolonged stress compromises the immune system, making one more susceptible to infections, or exacerbating existing conditions (Seiler et al., 2020). Some Extension programs include activities to strengthen a person's ability to control their stress response and use stress reduction strategies, such as mindfulness techniques, which have been found to enhance well-being (Eschbach et al., 2022).

## Reverse Causation Pathway

Finally, a fifth pathway acknowledges that the interrelatedness of wealth with health and the

potential for reverse causation. An individual's financial well-being can affect their health, and vice versa. Research developed over time highlights the complex, bi-directional nature of health and financial well-being (Hill-Briggs, 2021; Siahpush et al., 2003). Part of the complexity is due to differences among individuals in their level of stress response, resiliency skills, human capital and knowledge, socio-economic status, and ability to manage their personal and family resources in a way that helps them flourish. Additionally, the context, particularly one's community and zip code, explains the link between wealth and health outcomes (Hill-Briggs, 2021).

## Strategies for Creating Change

When addressing financial well-being, health, or both, how and in what ways can Extension initiatives facilitate and support positive change? How can they help people move from one part of the continuum to the next, cope with where they are currently, or prevent them from slipping further down the well-being continuum? Building resilience, improving equity, and increasing access to resources are three strategies.

Personal and familial resilience attributes and resiliency are significant factors that help people move along their health, wealth, and well-being continuums, manage stress, and stay motivated. Resilience is the current capital drawn upon to address change and stressful situations, while resiliency includes the processes that use the capital resources to build resilience (Braun et al., 2021). Resilience capital encompasses the personal attributes that individuals and families have, while resiliency includes the skills used to prevent, manage, and adapt to change. Table 1 shows examples of resilience capital and resiliency skills.

When resilience attributes and skills are integrated into program efforts through identification, discussion, or practice, Extension personnel have the opportunity to clarify and augment clientele's strengths, self-awareness, efficacy, and skills, especially when it comes to someone's health and financial well-being. As educators, it is important to recognize and acknowledge that most individuals and families have some level of resilience and that a person's capacity to respond evolves over time as learning occurs. People and families live on continuums of well-being, and resilience attributes and resiliency skills improve through learning and practice.

Strengths can be cultivated. Extension programs and services can and do support the development of resilience to address the behavioral and stress response pathways that inhibit well-being. By integrating activities, discussions, and practice that highlight resilience attributes and skills as part of programs with subject matter topics like nutrition, health, stress management, agriculture risk management, and financial well-being, we can improve behaviors that shift the pathways that individuals and families can control. For example, Extension workforce development programs like Skill Up Tennessee address the material hardship pathway by positioning participants for stable and better-paying employment (Sano et al., 2024). Experiential education programs help build decision-making, problem-solving, communication, and relational skills that support resilience. The Smart Choice/Smart Use Health Insurance program is an example of a program topic that uses activities to increase knowledge, skills, and confidence with case studies to practice using financial calculation skills, vocabulary, and comparative reasoning to evaluate personalized health insurance choices.

Equity is the focus of the HE national framework (Figure 1) and central to the experience and subjective perception of one's health and financial well-being. Extension clientele struggle with unequal access to financial and health services and products. A lack of equity can be a place-based

issue for Extension clientele. An important strategy for Extension professionals is to address equity in program design, materials, and implementation. The ECOP's health equity discussion states that "Society has enacted a system of laws, policies, norms, and expectations (think of them as outputs) that intentionally or unintentionally allow differing access to resources and opportunities based on the multitude of social identities we hold as individuals" (Burton et al. 2021, p. 16). A recent Aspen Institute proposal for a national strategy for financial inclusion identifies ways that financial systems are non-inclusive and makes recommendations for how typical societal outputs -- products, services, experiences, programs, and policies—can be more inclusive (McKay, 2022). These outputs are like Extension products. Inclusive societal outputs can be by design, which means being intentional when creating products, services, and other outputs so they are accessible, and serve multiple social identities, while also removing barriers, and increasing access. Inclusion by default creates societal outputs in a way that evens the playing field by automatically opting people into a product, program, or service. For example, a baby bond program with an opt-in feature produces equity by automatically enrolling all members, not just those who qualify or take the extra step to sign up for the program (Markoff, n.d.).

Equity must be a consideration when developing and implementing Extension work, with thought given to the accessibility, usefulness, and benefits of the outputs. Reviewing Extension initiatives with an eye on removing barriers, enabling access through design or default, and ensuring the initiatives are accessible, useful, and beneficial to the audience will be key to program improvement, and ensure a reliable, trusted source of programming that focuses on improving well-being. Extension's role in creating equitable, place-based, and accessible programs starts with our needs assessments, partnerships, and program development and evaluation. Including members of the target audience in assessments will help better shape our programs and policies and inform community decision-making.

ers. Being involved in community coalitions, informing decision-makers of Extension work, sharing successes and findings, and engaging with groups that create systems and environmental change are implications for improving our initiatives.

Extension programs typically provide resources to help youth, families, and communities make positive shifts on the well-being continuum. Well-being, whether it is financial, mental, and/or physical, is an appropriate outcome for Extension initiatives. Counterbalancing stressors and/or managing risks are often the drivers of Extension initiatives when providing programs, experiences, services, and products that help our clientele. The evidence-based Strengthening Families Program provides a family-based skills training program to reduce risky health behaviors like alcohol and drug use. Grounded in systems and resilience theories, parents and youth engage in separate and combined sessions that include role playing and practicing new skills (Kuepfer et al., 2018). Financial and health-related topics are top stressors for most individuals and families (Friedline et. al., 2021; Hasler et.al., 2021; Dankwa-Mullan, et. al., 2016). These stressors often motivate clientele to attend Extension programs and access our resources. The effective use of resources - financial, physical, mental, and emotional - could be integrated into almost any Extension program because they are essential to the adoption of behavior change. Within Extension programs, we can help people practice resiliency thinking and doing by encouraging the creation of plans that reinforce learning and change over time, and by helping people learn from mistakes and creating safe places for brainstorming new approaches to well-being.

Extension program areas tend to work in silos and subject matter areas don't necessarily incorporate strategies that build resilience, build on people's strengths, or offer cross-subject matter expertise. Yet the research shows that well-being is multi-dimensional and multi-subject matter oriented (Battley et al., 2023). Additionally, program resources could point out inaccurate information to improve

decision-making and inaccurate beliefs to help clientele make meaning out of their situations and help them understand the causation. Integrating financial well-being resources and topics into nutrition education or mental well-being resources or topics into agriculture risk management initiatives or building on clientele's strengths as part of behavior change strategies for a subject matter area are examples of cross-programmatic opportunities. Extension program areas not traditionally or directly linked to wealth, health, and well-being, like agriculture, do contribute to these areas (Walsh et al., 2018).

## Implications for Extension Professionals

Programming efforts designed to acknowledge and integrate strategies that either support or mitigate the wealth-health pathways outlined previously, will help Extension support clientele as they build self-awareness and set goals. Well-designed programs can help contextualize and bring understanding about the concerns and challenges that individuals are experiencing that make them vulnerable. Or it can help clientele become aware of the coping mechanisms they currently have in operation. By helping clientele see a different way forward, grounded in research, Extension educators and researchers help people move on the continuum toward improved well-being. This approach to extension programming, no matter the subject matter, could develop activities and discussions that focus on identifying and practicing personal resilience attributes and skills like problem solving, communication, self-efficacy, strengthening relationships and connections with others through program design. The explanatory pathways of the health-wealth connection focus on learned behavioral patterns and experiences, coping strategies and character traits, and social and cultural contexts. These features can be integrated into program initiatives

to elevate their importance, dissect the causation, and determine effective motivators for change. By integrating case studies, role play, success stories, and other "real life" examples, Extension programs could counter negativity by encouraging hope, transformation, success, and new pathways to success. By using a little humor to lighten the learning environment, educators can encourage openness to new routes to wellness.

Cross program efforts in both education and research could bring a variety of expertise to the development and implementation of innovative programs and research projects. This would require an assurance of funding for personnel who support health, financial, and/or psychological well-being. By recognizing and adapting programs that acknowledge and address these health-wealth pathways, and by developing cross programmatic services and programs that increase accessibility and equity, we can improve Extension clientele outcomes and ensure the future value and viability of Extension. When Extension works in cross programmatic teams, programs offered to clientele are stronger. As an example, incorporating family financial management programming into agriculture financial risk management or Women in Agriculture programs would address financial stress of farm families in a practical way (Sano et al., 2024). Health insurance literacy initiatives could assist audiences in understanding the complexities of accessing health care and successfully using health insurance. Financial literacy programs integrated into the SNAP-Ed and Expanded Foods and Nutrition programs could assist participants not only with how to stretch their purchasing dollars but can also assist clientele in managing food and financial resources. Extension can help improve well-being by making linkages across the socio-ecological levels within our communities. When we create cross-connections among agencies that improve access, develop resources, and create policy change and then link clientele to these connections, we build a stronger community. Extension research, program impacts, and strong relationships are all important tools to

making change. When we strengthen our circles of influence and connections, internally within Extension and externally with key community and governmental decision-makers, we place ourselves and Extension as an organization in a unique position to influence policies that enhance financial security, health, and well-being. Serving on community boards, meeting with government officials sharing research and programmatic outcomes, holding community action forums, and publishing findings helps to strengthen the networks aimed at community and individual well-being.

Well-being is complex and yet Extension professionals are well-positioned to address it in a cross-disciplinary, cross-programmatic manner. Extension professionals possess the skills, expertise, and tenacity for the challenge. Understanding the pathways between health and wealth, building on the resilience and resiliency skills of our clientele and communities, and operationalizing the strategies to build relevant, accessible, useful, and beneficial outputs are key to improving well-being. With some additional funding, coordinated research, program innovation and community engagement, Extension personnel can make impactful changes in the areas of healthy living, financial well-being, and resilient individuals, families, and communities.



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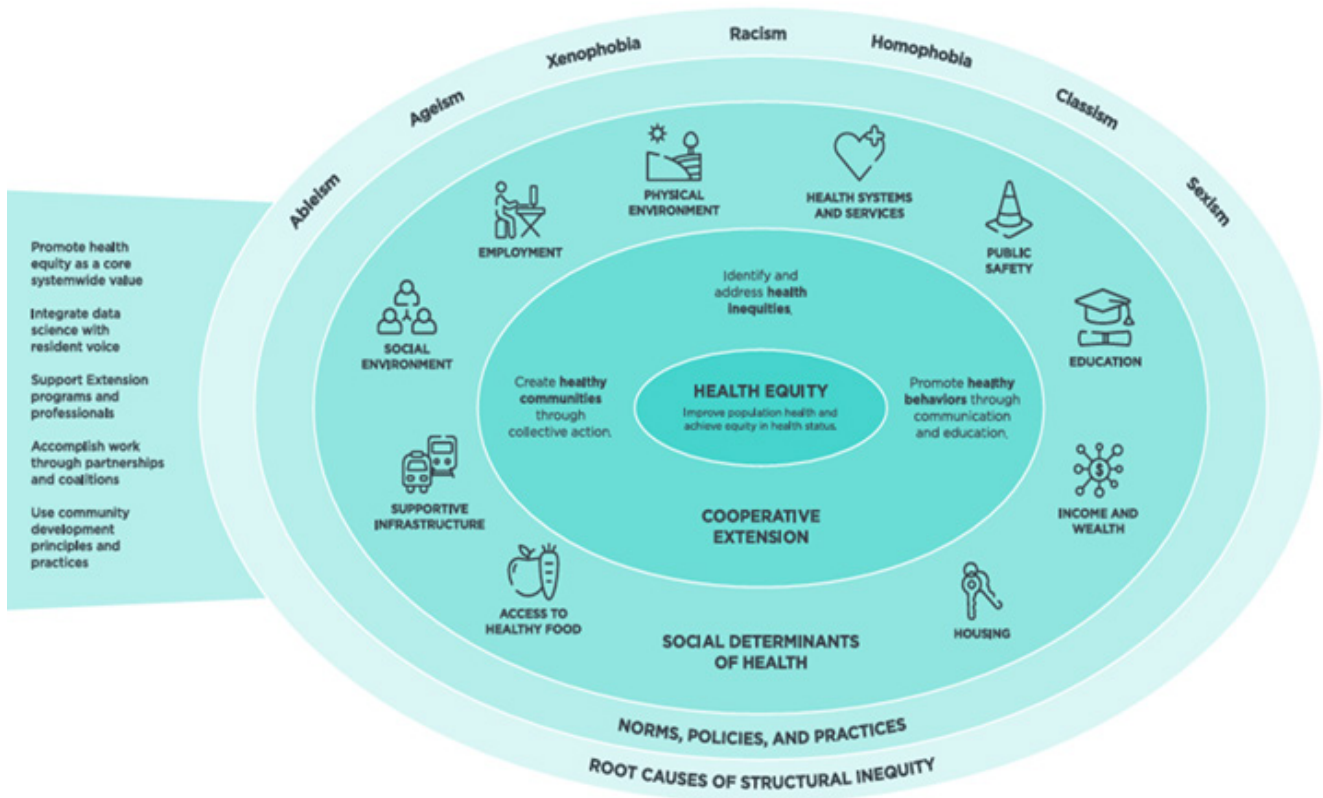
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Figure 1

Cooperative Extension’s Framework for Health Equity and Well Being



Note. From “Cooperative Extension’s national framework for health equity and well-being,” by D. Burton, et al., 2021. Extension Committee on Organization and Policy: Washington, DC.

## Table 1

### *Attributes of Resilience and Resiliency Skills*

<b>Resilience Capital Characteristics/Attributes</b>	<b>Resiliency Skills</b>
Adaptable	Anticipates and Integrates Change
Hopeful	Communicates Effectively
Robust	Organizes
Flexible	Uses Resources Effectively
Communicative	Problem Solves
Interested in Learning to Improve Self and Others	Shares Feelings Shows Compassion
Social/Interactive	Creates Meaning from Experiences
Prepared/Has Reserves	Learns from Experiences
Diversified	Builds Strong Relationships/Social Networks

*Note.* From “Integrating resiliency thinking into your Extension farm and farm family programs” by M. Pippidis and B. Braun, 2022. University of Delaware Cooperative Extension and University of Maryland Extension. <https://www.youtube.com/playlist?list=PLI-ZR4Jwy4gKxyFUXQfRxvzkactoHFXqJ>

## IMPLICATIONS

# Cooking Under Pressure: Empowering Individuals to Prepare Food at Home

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## Abstract

Due to the sustained interest in using electric pressure cookers, educating consumers with research-based information remains a need. Cooking Under Pressure is a hands-on program created by a team of University of Idaho Extension educators that bridges this gap by applying current research to empower participants in time and cost-efficient meal preparation while enhancing nutrient consumption from meals prepared in the home. Post-program evaluation data of more than 300 instructed individuals supports that this program's hands-on approach ensures the utilization of electric pressure cookers for quick and safe meal preparation.

In recent years, studies show a shift towards an increased trend in dining out, which is leading to less time being spent on preparing meals at home. This pattern correlates with heightened consumption of calorie-dense, high-fat, and high-sugar foods (Klein & Parks, 2020; Liu et al., 2021). Current researchers emphasize the importance of educating the public on the benefits of cooking at home and identifying strategies that encourage and enable more cooking in the home (Wolfson & Bleich, 2014). Research shows cooking at home is associated with better diet quality (Tiwari et al., 2017). The Bureau of Labor Statistics (2024) reports approximately 74 percent of mothers with children under the age of 18 are employed outside the home, which creates a need for families to make nutritious meals with limited amounts of time. Demanding time constraints leads to families needing education and skill development for quick meal preparation. One way to prepare nutritious meals quickly is by using an electric pressure cooker. Research supports the idea that using an electric pressure cooker can reduce cooking energy consumption (John, 2021; Scott et al., 2024) and the ability to retain higher nutritive value in foods (Kachhawa & Chawla, 2023; Muindi, 2024).

A lack of research-based resources for home consumers to safely utilize an electric pressure cooking

appliance created a gap that Extension needed to address. This opportunity led to the development of the Cooking Under Pressure program. These hands-on workshops are structured to provide clientele with educational content including meal preparation skills while increasing consumers' confidence of preparing food in their electric pressure cooker. Over 400 adults have participated in hands-on workshops throughout Idaho. Participants learned how to correctly and safely operate an electric pressure cooker when preparing meals. While learning how to cook a variety of nutritious foods in a pressure cooker and follow basic food handling guidelines, clientele also learned how to properly clean and care for an electric pressure cooker.

## Objective

In 2018, the Cooking Under Pressure workshop was developed to educate adults how to safely operate the appliance to prepare budget-friendly, safe, and nutritious meals in the home. This team of Extension educators structured a uniform two-hour program to provide lecture, demonstrations, and hands-on educational content emphasizing food preparation, food safety, and increasing nutritional consumption while maintaining a reasonable food budget. Participants were recruited through social media posts, newspaper articles, flyers, and county Extension office newsletters.

## Method

At the beginning of the class, an Extension professional gave a 15 to 20-minute PowerPoint presentation focused on electric pressure cookers. These presentations covered proper operating procedures, cleaning and care of pressure cooker parts, aspects of different appliance models, and general food handling and safety practices. Educators also informed participants on the current recommendations from the National Center for Home Food Pres-

ervation as it does not recommend using electric multi-cookers as a canning appliance in the home. Participants were then assigned to small groups to work as a team to prepare a recipe using an electric pressure cooker while in the class. The groups were given different recipes to prepare, some examples included: lemon butter chicken, brown sugar carrots, chicken tortilla soup, and New York cheesecake. Following the preparation and cooking of the recipes using an electric pressure cooker, groups laid out the dishes in a buffet-style meal for participants to sample each recipe made by the different groups. During this time, an Extension professional encouraged conversation among participants, focusing on challenges encountered, asking what participants learned about the different models of appliances, and answering any questions the audience had.

This program utilized research-based information from the Centers for Disease Control and Prevention (CDC), the Partnership for Food Safety Education, and the U.S. Department of Agriculture Food Safety and Inspection Service (FSIS) to develop PowerPoint presentations and talking points used throughout the lecture and in the handout materials. Participants were provided with a folder containing class materials that included a copy of the PowerPoint slides, fifteen different electric pressure cooker recipes, a program created handout, Electric Pressure Cooker Cheat Sheet, and Hot Topics: Canning in Electric Pressure Cookers (Washington State University, 2015). Before the program concluded, participants were asked to complete an IRB-approved retrospective anonymous evaluation regarding the skills and knowledge they gained from attending the class.

## Results

Throughout the 26 programs offered in nine counties and one tribal reservation, over 400 individuals have participated in this hands-on workshop throughout Idaho between 2018 and 2023. Of in-person workshop attendees, 329 completed the

anonymous and voluntary retrospective evaluation comparing pre- and post-class knowledge, skill, and confidence levels reported by participants. These evaluations included questions on electric pressure cooker operation, food safety knowledge, and best practices for using a pressure cooker. Program participants' responses ranged from 1 (No Knowledge) to 5 (A lot of Knowledge) when answering the evaluation question, "How much do you think you know about the following topics?". Table 1 shows the change in participant knowledge and behavior following their participation in the Cooking Under Pressure program.

All areas evaluated showed an increase in participant knowledge and behavior. The two that showed the most gain were: "I understand the safety precautions in using my electric pressure cooker, including the recommendation to not allow its use for pressure canning," which had a mean increase of 2.53 and "I clean the silicone sealing ring, condensation collector and additional lid parts after each use" which had a mean increase of 2.44. Participants were also asked about their future plans to use an electric pressure cooker at home (Figure 1).

At the end of the evaluation, participants were given the option to provide additional feedback on the program. Comments included the following:

- "Now I'll use my instapot [Instant Pot] with more confidence."
- "Having used one, I gained more knowledge in this class & think class is great for 1st & medium users. Very entertaining!!!"
- "Class was very informative. Not owning an electric pressure cooker yet, I found the class to be invaluable. Thank you!"
- "This class was taught in a very straight forward class. Leaving students with very few questions. It's an essential topic and fixing the food as part of the class motivates me more."



## Discussion

A significant factor in this program's success was using the popular yet fear-inducing electric pressure-cooking appliance to attract adult clientele to an educational program to increase their confidence, knowledge, and skill. By structuring this program to include lecture, demonstration, and hands-on components for audiences, multiple learning styles were met. In addition, this program's success has led to its continued implementation throughout Idaho for multiple years, with other states also adopting this program to offer to clientele. While this program has been effectively implemented by several educators in multiple locations, some limitations were encountered.

These findings indicate that Extension outreach is needed and useful to financially stable families but that more work needs to be done to access lower-income families. Future research on online resources for parents should focus on increasing access to all parent populations. Possible actions include increasing plain language, translating the resource into multiple languages, and decreasing the quantity of reading within the online resource. Furthermore, digital resource delivery could reach more parents within their social ecological systems such as at health care sites, neighborhood gathering places, schools, and libraries.

In contrast, this program has overcome several barriers to participation. To address cultural barriers, one program site was tailored to meet the needs of a monolingual Spanish audience. The program was conducted entirely in Spanish, with recipes adapted and all materials translated to ensure cultural relevance. Meanwhile, other locations tackled financial barriers by offering the program for a nominal fee and extending scholarships to those in need. Travel-related obstacles for participants were addressed by conducting the program at various locations across Idaho.

Cooking Under Pressure continues to be offered, providing clientele opportunities to become better educated on the safety, ease of use and nutritional benefits of using these appliances to prepare meals at home. As consumers embrace learning to save time and money on food budgets, this program remains relevant and timely. The Cooking Under Pressure program maintains the ability to support individuals and families in selecting healthier food options.

## Limitations & Barriers

Due to the hands-on nature of this program, the number of individuals who could participate in each class was limited. Factors contributing to this included size of the teaching space, number of power outlets, and available electrical current which correlated to a maximum number of appliances that could be used for the group cooking activities. Additionally, each educator had a different budget capacity to purchase the number of appliances and other necessary equipment needed to conduct the program in this format.

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# Figure 1

Planned Use of Electric Pressure Cooker

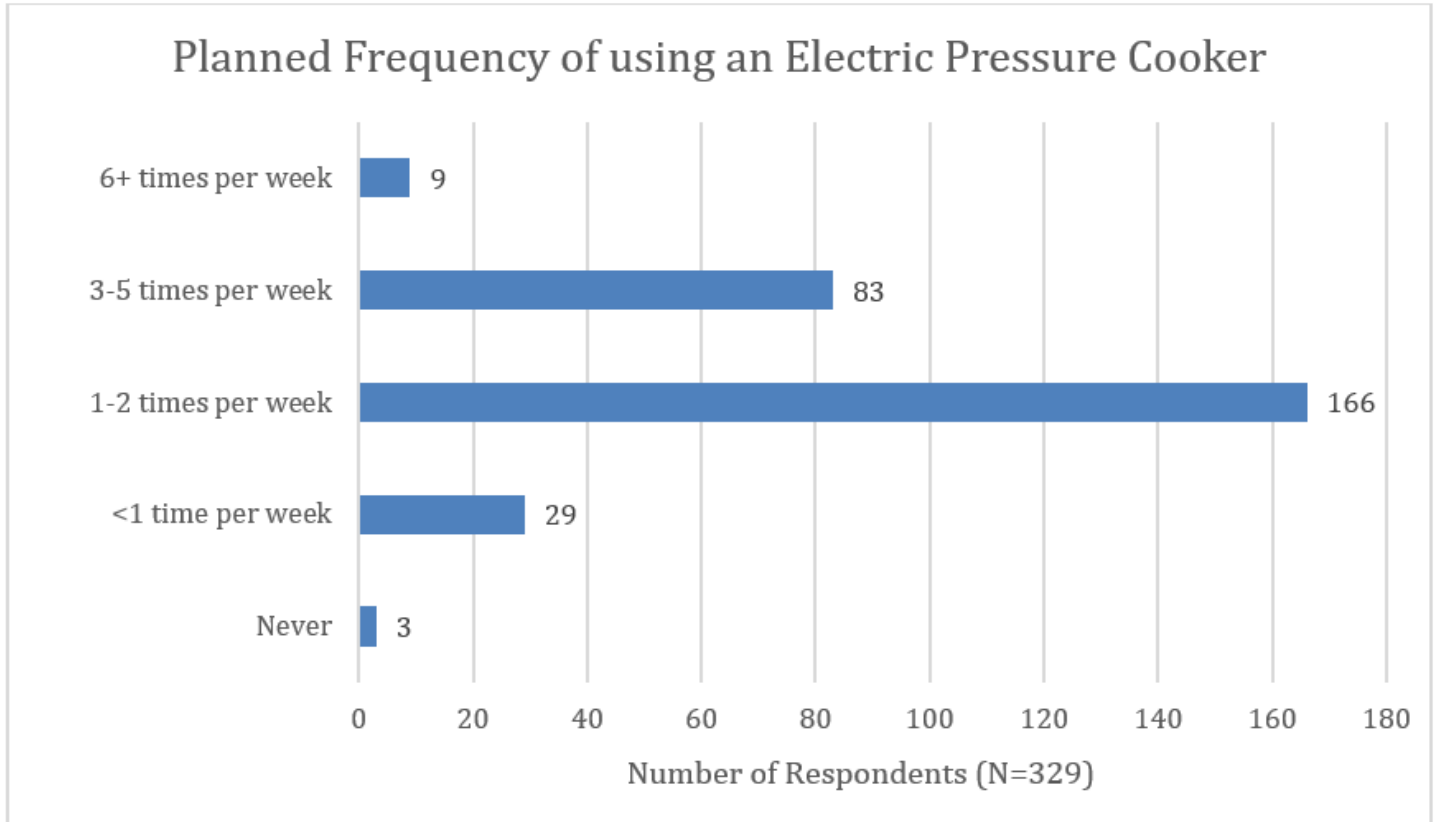


Table 1

## Participant Answers to Retrospective Evaluation

<b>Evaluation Question</b>	<b>Mean (Before)</b>	<b>Mean (After)</b>	<b>Mean Difference</b>
I understand how to use the functions on the electric pressure cooker.	2.10	4.23	2.13
I understand the difference between Quick Release (QR) and Natural Release (NR).	2.42	4.65	2.23
I understand the safety precautions in using my electric pressure cooker, including the recommendation to not allow its use for pressure canning.	2.09	4.62	2.53
I clean the silicone sealing ring, condensation collector and additional lid parts after each use.	2.20	4.64	2.44
I don't put food in my electric pressure cooker more than one hour before I begin cooking the food.	2.52	4.62	2.1
I am confident in how to properly operate my electric pressure cooker	2.24	4.23	1.99

IMPLICATIONS

**Leveraging  
Cooperative Extension  
to Address the  
Overdose Epidemic:  
Promoting Addiction  
Recovery through  
Financial Education**

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## Abstract

Substance use is a leading concern among most communities in Kentucky and across the United States. PROFIT is a novel Family and Consumer Sciences (FCS) Extension program designed to improve professional capacity to mitigate financial stress for clients in recovery. The objectives of this article were to introduce PROFIT, provide initial evaluation data, and offer implications for FCS professionals on the relationship between financial stress and addiction. Results indicate PROFIT is an effective training tool to increase professionals' understanding of important aspects of addiction and how to mitigate financial stress for clients in recovery.

## Leveraging Cooperative Extension to Address the Overdose Epidemic: Promoting Addiction Recovery through Financial Education

Overdose fatalities due to opioids and stimulants have increased dramatically in the past two decades, having killed 1,000,000 Americans since 1999. According to the Centers for Disease Control (2023), more than 100,000 Americans die annually from drug overdose. The Overdose Epidemic has since surpassed car accidents as the leading cause of accidental death in the U.S. (National Safety Council, 2023). In Kentucky, overdose rates exceed

the national average (CDC, 2023). A 2019 State-wide Community Needs Assessment conducted by the Kentucky Cooperative Extension Service (CES) found that substance use prevention and recovery was the primary concern reported by 80 of the 115 counties included in the assessment (KYCES, 2019). As a result, Kentucky CES sought to leverage Extension programming in unique ways that more comprehensively address substance misuse across the state, including using financial education as a tool to support people in recovery.

PROFIT (Promoting Recovery Online through Financial Instruction and Addiction Training) is a state-level scaling up effort to address the opioid and overdose epidemic in and beyond the state. PROFIT is an asynchronous online training developed by the University of Kentucky Family and Consumer Sciences (FCS) Extension Service. The program was designed to improve the professional capacity of Extension educators and other community-based professionals, especially as related to intersecting factors that mitigate the recurrence of substance use disorder (SUD).

## Purpose and Scope

The purpose of this article is threefold: 1) to introduce the PROFIT program, 2) to provide initial evaluation data to demonstrate program efficacy, and 3) to offer implications for FCS Extension professionals on the relationship between financial stress and SUD recovery.

## Theoretical Framework

In alignment with Cooperative Extension's National Framework for Health Equity and Well-Being (Burton et al., 2021), PROFIT employs the social ecological model as a theoretical base. It recognizes the complex, bidirectional relationship between individuals and their environment, and the dynamic interplay among overlapping social contexts to explain risky behavior. The model suggests an

individual's behaviors are nested within a wider context of intrapersonal, interpersonal, institutional, community, and policy-level factors (McLeroy et al., 1988). This model has been used extensively to explore substance use prevention among youth and adults (Jalali et al., 2020; Moon et al., 2020; Nichols et al., 2021). Accordingly, effective substance use prevention requires a coordinated approach among multiple levels of the social ecological model that implements evidence-based prevention approaches (Skager, 2007).

Recovery capital refers to the multitude of resources, at each level of the social ecological model, which may be leveraged to support recovery from SUD (White & Cloud, 2008). Stress is a primary cause of SUD relapse; recovery capital works by reducing biopsychosocial stress (Best et al., 2024; Stewart, 2000; White & Cloud, 2008). This may come in the form of physical assets (e.g., housing, transportation), human assets (e.g., skills, intellect), and/or social assets (e.g., family, friends, one's community), each of which may be impacted by financial well-being. Some researchers have even characterized recovery capital as a recovery investment account that insures against relapse (Lloyd et al., 2019).

## How Financial Stress Impacts Addiction Recovery

According to a 2023 Gallup poll, more Americans are experiencing financial hardship than ever before (Brenan, 2023), with the COVID-19 pandemic exacerbating existing financial and substance use challenges (Bonsaksen et al., 2021; Conway et al., 2022; Shecke et al., 2022). Financial hardships, such as debt, insufficient liquid assets, or food insecurity, have been linked to substance use, especially for those with lower socio-economic means (Grafova, 2011; Gratz et al., 2021; Guillaumier et al., 2017; Oh et al., 2023).

Findings across existing literature suggest a cyclical relationship between substance use and financial stress, meaning an increase in one can cause an increase in the other. Increases in financial stress have been linked with increased use of alcohol (Assari et al., 2019; Bonsaksen et al., 2021; Serido et al., 2014; Temple et al., 2022; Tran & Fitzke, 2022); tobacco (Assari et al., 2019; Guillaumier et al., 2017; Rueger et al., 2013T), cannabis (Bonsaksen et al., 2021; Tran & Fitzke, 2022), and sedatives/painkillers (Bonsaksen et al., 2021). Moreover, people who experience higher levels of financial stress are more likely to use substances such as alcohol and tobacco even after controlling for factors such as age, gender, health insurance status, depression, and chronic pain or illness (Assari et al., 2019).

Beyond its association with increased substance use behaviors, financial stress also serves as a barrier to cessation. People who experience financial stress or an adverse financial event are less likely to quit using substances (McKee et al., 2003; Siahpush & Carlin, 2006). Further, those who did quit using substances were more likely to return to use following financial stress (Siahpush & Carlin, 2006). Research also suggests that people with SUD face a litany of additional financial barriers. More than 50% of people in treatment do not have a bank account, even though more than 75% of people with SUD describe finances as being important to their recovery (Nance & Jones-Sanpei, 2023). Already disadvantaged, "individuals in early recovery have to address the financial ramifications of their actions while in active addiction, including indebtedness, poor credit, and depleted funds" (Elswick et al., 2018, p. 81). Yet, educational programs that promote building recovery capital often overlook these financial challenges. There is a need for novel interventions that target the financial implications of recovery.

# Background and Methods

## Program Development

To address financial challenges that impact recovery, PROFIT was developed by the University of Kentucky FCS Extension Service, leveraging Extension's unique position to scale multidisciplinary programming through a train-the-trainer approach using an accessible online format. PROFIT combines and expands upon two existing research-based, peer-reviewed University of Kentucky FCS Extension programs (*Addiction 101* and *Recovering Your Finances*), offering training for state and national professionals that combines financial literacy education with substance use prevention efforts.

*Addiction 101* undergirds PROFIT, as it is designed to introduce and/or reinforce substance use prevention, addiction, and recovery information. Its objectives are to: 1) Reduce stigma associated with SUD; 2) Identify salient risk factors for substance use; 3) Develop an understanding of addiction as a chronic disease; and 4) Identify community-based policies, practices, and resources that are supportive of people in recovery. *Addiction 101* fosters a sense of comfortability in working with addicted and/or recovering audiences, especially for Extension educators, encouraging professionals to discover creative ways to engage with audiences impacted by substance use.

*Recovering Your Finances* is a comprehensive financial education and soft skills curriculum for individuals in early SUD, specifically created to address financial stressors often associated with recovery. This eight-session series aims to decrease the likelihood of SUD recurrence due to financial stress by building financial literacy skills, and to increase community recovery capital by providing training to local educators, practitioners, and recovery coalitions. Through a no-cost licensure agreement with

the University of Kentucky, PROFIT participants receive access to the *Recovering Your Finances* curriculum to use as an educational tool in their work with recovery audiences.

To enhance the information presented in *Addiction 101* and *Recovering Your Finances*, a third section was developed for PROFIT designed to increase professional understanding of society's multiplying cultural differences and offer considerations for working with rural communities. PROFIT is approved to offer two hours of continuing education through the Kentucky Board of Alcohol and Drug Counselors.

## Program Evaluation Design

PROFIT is a self-paced online training with an average completion time of two hours. It includes a series of research-based modules, each with video instruction and a brief assessment quiz. Participants are invited to complete training evaluation surveys at the end of each major section (*Addiction 101*, *Recovering Your Finances*, and *Rural/Cultural Competency Building*), and was approved by the University of Kentucky Institutional Review Board. Training evaluations involve a single-sample design.

For the present study, participants completed a three-section retrospective pre- and post-training evaluation that asked them to rate their pre- and post-training levels of understanding, confidence, or agreement with various addiction, personal finance, and cultural competence concepts. The surveys also included self-assessments of learning gains and participants' implementation plans.

## Participants

PROFIT participation is ongoing. The phased program rollout began in Q4 2023 for state participants and opened to national participants in Q1 2024. The results presented in this article capture



evaluation data after approximately six months of open enrollment. The sample includes 122 participants who were predominantly Kentucky residents (88.5%), Caucasian (85.2%), female (92.6%), Extension agents or paraprofessionals (80.2%), and college educated with a bachelor's degree or above (75.4%). Table 1 describes the sample demographics in more detail.

## Analysis

Descriptive statistics were used to summarize participants' responses to survey questions as appropriate. Paired sample t-tests were conducted to compare participants' responses to the retrospective pretest and posttest items, with statistical significance set at  $p < .001$ . Cohen's  $d$  effect sizes were calculated to examine the practical significance of statistically significant retrospective pre-post differences. Cohen (1988) described  $d$  values less than 0.2 as small, values of 0.5 as medium, and values greater than 0.8 as large effect sizes.

## Findings

Table 2 presents the results for items assessing the learning outcomes for Addiction 101. Results of paired-sample t-tests showed statistically significant improvements on all items. Effect sizes for the pre-post differences ranged from 0.57 to 0.78, indicating moderate to large practical and meaningful impact on participants' understanding of addiction as a chronic disorder, understanding of risk factors for addiction, confidence in delivering education or outreach to people in recovery, etc.

Results of paired-sample t-tests also showed statistically significant improvements on items assessing the learning outcomes for Recovering Your Finances (Table 3). Effect sizes for the pre-post differences ranged from 0.58 to 0.63, indicating moderate practical and meaningful impact on participants' ability to understand financial literacy concepts as they related to SUD recovery. Table 4 summarizes partic-

ipants' self-assessment of Recovering Your Finances learning gains. 91% of respondents reported that they made high or very high progress on Recovering Your Finances learning objectives (e.g., making financial education relevant to people in recovery, delivering financial education to people in recovery, and understanding the financial resources people need to sustain recovery).

Finally, results showed statistically significant improvements on all items assessing outcomes related to rural and cultural competence. Effect sizes for the pre-post differences ranged from 0.57 to 1.07, indicating moderate to large practical and meaningful impact (see Table 5). This suggests that the PROFIT training improved providers' understanding of how to work more effectively with audiences from rural and diverse backgrounds (e.g., coordinating care in a community, describing strengths and challenges of different communities, defining biases and why they are harmful). Further, all respondents indicated that they plan to reflect on their personal biases and take intentional steps to recognize and respect others' cultural identities.

## Discussion & Implications

PROFIT was designed by FCS Extension Specialists to offer a more comprehensive online training that increases professional capacity related to substance use prevention, specifically by emphasizing the impact of financial stress on SUD recovery. Thus, the present study has key implications for FCS Extension professionals. First, results from initial evaluation data indicate that PROFIT is an effective mode of training delivery that has a salutary effect on increasing comfortability and confidence for Extension educators when working with addicted and recovery audiences. Further, results suggest participation in PROFIT can move participants along a continuum of financial literacy from basic knowledge and understanding, to implementation and

practice, while recognizing a multiplicity of recovery needs. Findings reinforce the significant role that Extension plays in transdisciplinary Family and Consumer Science issues, including the intersection of substance use and financial health.

Historically, Extension has been reticent to engage in substance use programming for adults, likely due to stigma and a lack of role clarity. The 2020 Extension Opioid Crisis Response workgroup established by the Extension Committee on Organization and Policy (ECOP) found that virtually all of Extension programming related to substance use was focused on youth prevention (Skidmore, 2020). Conversely, PROFIT was developed to provide training for professionals who work with adult audiences, thus broadening the scope and reach of Extension prevention programming to include targeted efforts that extend past youth clientele.

Future research efforts will be expanded to include follow-up data collection from former PROFIT participants examining curriculum implementation and outcomes post-training. As PROFIT enrollment continues, expanded program access for state and national partners allows PROFIT to offer research-based, quality training to a larger network of community-based professionals such as mental and medical healthcare providers, drug rehabilitation counselors, and Extension educators who work with recovery audiences or organizations. SUD and SUD-related harm are multi-disciplinary public health problems. FCS Extension is uniquely positioned to address these problems with multidisciplinary solutions.

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## Table 1

Demographic and Employment Characteristics of PROFIT Participants (N = 122)

Variable	Subgroups	F	%
Employer	Kentucky Extension Service	90	73.8
	Extension Service in another state	14	11.5
	Non-Extension Employer (in Kentucky)	18	14.7
Position	Extension Professional (Agent, Specialist, Associate)	91	74.5
	Extension Program Assistant (e.g., NEP, 4-H)	10	7.1
	Healthcare Worker/Mental Health Provider	7	5.7
	Recovery Professional (e.g., provider, coach)	7	5.7
	Other (e.g., manager, coordinator, lawyer, educator)	7	5.7
Gender	Male	8	6.6
	Female	113	92.6
	Non-Response	1	0.8
Race	Caucasian/White	104	85.2
	African American/Black	15	12.3
	Hispanic/Latino	2	1.6
	Native American/American Indian	1	0.8
Education	High School	15	12.3
	Associate	13	10.7
	Bachelor's	32	26.2
	Master's	56	45.9
	Doctorate	4	3.3
	Other (i.e., working on bachelor's)	1	0.8
	Non-Response	1	0.8

Note. F = Frequency of respondents in each category.

Table 2

Retrospective Pre-Post Changes (*Addiction 101*)

	<b>N</b>	<b>Before Training Mean (SD)</b>	<b>After Training Mean (SD)</b>	<b>P-Value</b>	<b>Effect Size</b>
Understanding of addiction as a chronic disorder.					
	72	2.89 (0.82)	3.81 (0.40)	<.001	.71
Understanding of risk factors for addiction.					
	72	2.79 (0.77)	3.79 (0.41)	*<.001	.71
Understanding the impact of addiction on the brain.					
	72	2.81 (0.82)	3.85 (0.36)	*<.001	.78
Confidence in using destigmatized language.					
	68	3.47 (0.89)	4.71 (0.49)	*<.001	.78
Confidence in discussing addiction and recovery topics with friends, family, or coworkers.					
	68	3.41 (0.83)	4.57 (0.56)	*<.001	.73
Confidence in delivering education or outreach to people in recovery.					
	68	3.32 (1.00)	4.43 (0.70)	*<.001	.74
Level of agreement with "Addiction is a choice."					
	65	2.20 (0.80)	1.68 (0.79)	*<.001	.75
Level of agreement with "Addiction is a chronic disorder."					
	65	3.22 (0.63)	3.85 (0.36)	*<.001	.63
Level of agreement with "language matters when talking about addiction."					
	65	3.28 (0.55)	3.92 (0.27)	*<.001	.57

*Note.* N = Number of respondents to each question; SD = Standard Deviation.

Table 3

Retrospective Pre-Post Changes (*Recovering Your Finances*)

	N	Before Training Mean (SD)	After Training Mean (SD)	P-Value	Effect Size
Identify at least two assets and liabilities that impact a personal budget.	61	3.00 (0.75)	3.74 (0.44)	<. 001	.60
Identify at least two factors that affect the cost of credit.	61	2.93 (0.77)	3.79 (0.41)	*<. 001	.63
Identify at least two ways to improve a credit score over time.	61	3.05 (0.67)	3.84 (0.37)	*<. 001	.58
Help others to prioritize debts.	61	2.84 (0.73)	3.75 (0.43)	*<. 001	.59
Identify two ways to avoid fees when utilizing a bank account.	61	2.92 (0.71)	3.79 (0.41)	*<. 001	.59

Note. N = Number of respondents to each question; SD = Standard Deviation.

## Table 4

Self-assessment of Progress on Learning Objectives (*Recovering Your Finances*)

	<b>N</b>	<b>Low n (%)</b>	<b>Medium n (%)</b>	<b>High n (%)</b>	<b>Very High n (%)</b>
Making financial education relevant to people in recovery.					
	56	1 (1.8)	4 (7.1)	26 (46.4)	25 (44.6)
Delivering financial education to people in recovery.					
	56	1 (1.8)	6 (10.7)	24 (42.9)	25 (44.6)
Understanding the financial issues affecting people in recovery.					
	56	1 (1.8)	3 (5.4)	26 (46.4)	26 (46.6)
Understanding the financial resources people need in order to sustain recovery.	56	1 (1.8)	4 (9.1)	27 (48.2)	24 (42.9)

*Note.* N = Number of total responses; n = Number of respondents in each category.



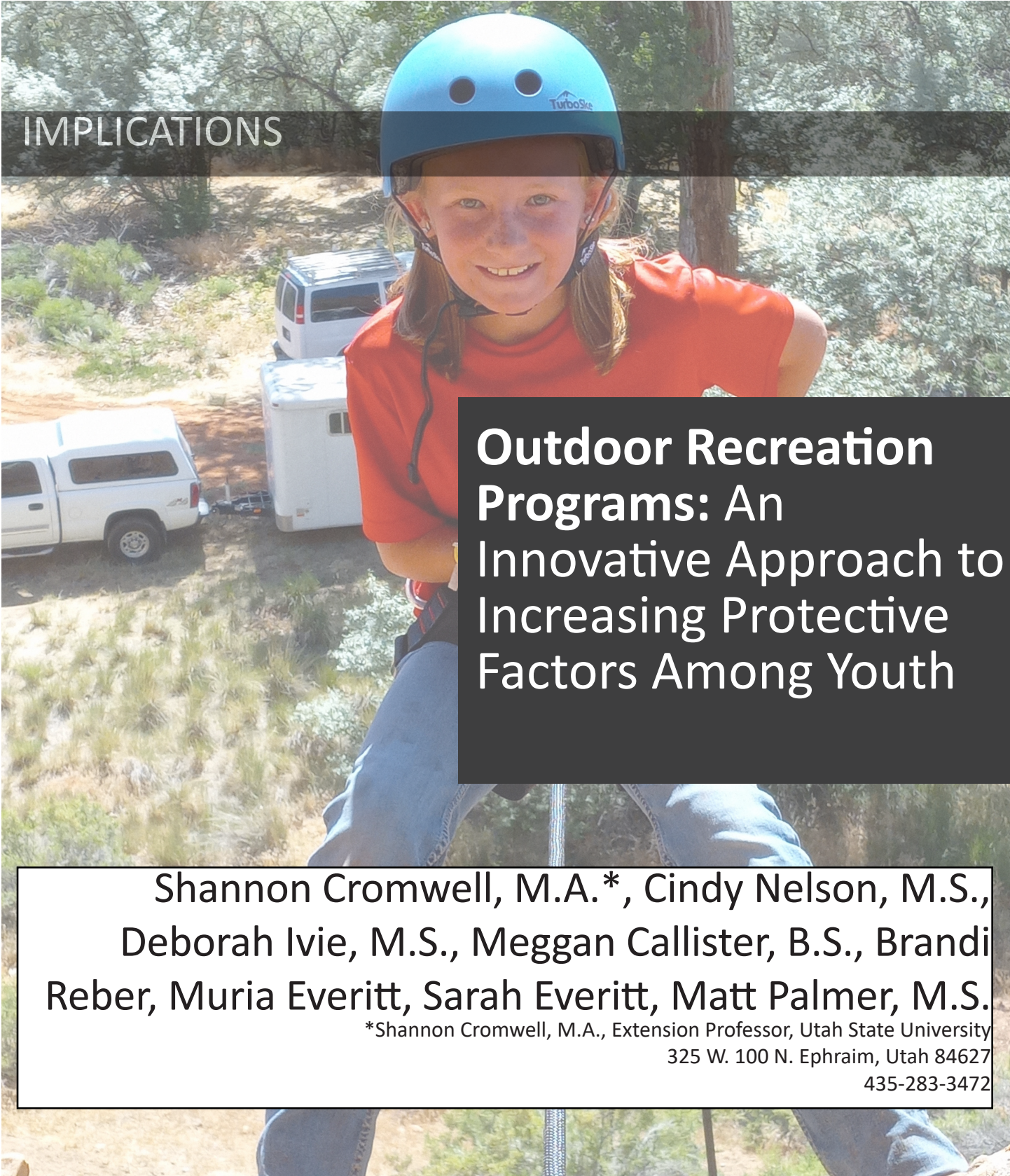
## Table 5

### Retrospective Pre-Post Changes (Cultural/Rural Competency)

	<b>N</b>	<b>Before Training Mean (SD)</b>	<b>After Training Mean (SD)</b>	<b>P-Value</b>	<b>Effect Size</b>
Understand different components that can define a person's culture.					
	59	2.95 (0.68)	3.73 (0.45)	< .001	.62
Define biases and why they are harmful.					
	59	3.14 (0.54)	3.78 (0.42)	* < .001	.58
Compare helpful and unhelpful professional apologies.					
	59	3.10 (0.55)	3.80 (0.41)	* < .001	.57
Describe strengths and challenges rural communities may face.					
	59	3.12 (0.56)	3.86 (0.35)	* < .001	.60
List ways to coordinate care within a community.					
	59	2.93 (0.61)	3.78 (0.42)	* < .001	.61
Confidence in crafting helpful professional apologies.					
	58	3.60 (0.82)	4.62 (0.70)	* < .001	.74
Confidence in coordinating care within a community.					
	58	3.50 (0.78)	4.53 (0.73)	* < .001	.73
Confidence in using the ADDRESS-ING acronym.					
	58	2.66 (1.02)	4.38 (0.79)	* < .001	1.07

*Note.* N = Number of respondents to each question; SD = Standard Deviation.

IMPLICATIONS



**Outdoor Recreation Programs: An Innovative Approach to Increasing Protective Factors Among Youth**

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## Abstract

The Outdoor Recreation program was established in response to a county-wide needs assessment and was supported by research on the benefits of providing youth with activities that promote positive physical and mental health. Objectives included exposing youth to hands-on learning experiences that focused on increasing protective factors. Youth and parent evaluations indicated an increase in both external and internal developmental assets among youth participants.

## Outdoor Recreation Programs: An Innovative Approach to Increasing Protective Factors Among Youth

Spending time in nature has many positive physical, mental, and social-emotional health outcomes. Based on research, regular physical activity can combat and prevent the negative consequences of indoor sedentary time for both youth and adults (Mutz et al., 2019). Studies show outdoor activities lower stress levels and blood pressure, decrease attention problems, reduce aggressive behavior, and increase positive emotions and social development among youth (Mutz & Muller, 2016; Mutz et al., 2019; Tillman et al., 2018). Additionally, the average child spends 7.5 hours a day in front of a screen and only seven minutes a day outside. Indoor sedentary time can lead to social isolation and chronic disease for children, including a higher risk of heart disease, type 2 diabetes, certain cancers, and early death (Office of Disease Prevention and Health Promo-

tion, n.d.). Furthermore, the COVID-19 pandemic exacerbated the situation for youth and families, creating financial strain, school closures, and reduced access to face-to-face services. These changes posed significant risks to the well-being of children and consequently increased the importance of providing families with activities that support healthy growth and development, enhance mental health, and foster the development of social skills (Gabriel et al., 2020; Prime et al., 2020). Families often lack the necessary money, equipment, or experience so they rely on organizations to provide their family with a positive introduction to recreation and physical activity (Boat et al., 2022). Time spent with caring adults outside of the home and classroom can profoundly impact a child's development (Scales et al., 2022), and it has also been found that participation in activity clubs or teams have enhanced a sense of belonging and connection, as well as life skills development such as goal setting and teamwork (Lizzo & Liechty, 2020). Youth need both external assets (support, empowerment, boundaries and expectations, and constructive use of time) and internal assets (commitment to learning, positive values, social competencies, and positive identity) to succeed (Scales et al., 2022). Activities that increase protective factors among youth, such as self-regulation, positive coping skills, and positive peer engagement have been found to reduce risky behaviors (Syvertsen et al., 2019), and provide the building blocks of healthy development.

## Purpose Needs Assessment

An Institutional Review Board (IRB) approved, countywide needs assessment was disseminated via a Qualtrics survey link to 77 parents, who served as 4-H volunteers. Fifty parents responded, resulting in a 65% response rate. When asked what type of activities they would like their child(ren) to have access to, two project areas came to the

forefront.

- 64% of parents felt their child(ren) would benefit from educational activities that focused on outdoor recreation.
- 40% of parents felt their child(ren) would benefit from activities that helped build peer relationships, interpersonal relationships, and developmental assets.

The Outdoor Recreation program was developed in rural Sanpete County, Utah as a response to needs-assessment data and as an innovative approach for implementing high-quality, outdoor-related learning experiences. The objective for the Outdoor Recreation program was to expose youth, ages 8-18, to hands-on experiential learning opportunities, focusing on increasing protective factors in partnership with caring adult mentors.

## Methods

### Program Implementation

Grant funding from the Utah Office of Outdoor Recreation provided the equipment and supplies to develop and implement weekly, hands-on, experiential-learning activities that engaged youth with the natural world, creating opportunities for positive physical, mental, and social-emotional health outcomes. The program was offered county-wide, with 35 youth participating in outdoor activities, including hiking, kayaking, outdoor cooking, fishing, rappelling, 4-H shooting sports, and GPS and compass skills. Additionally, 10 adult 4-H leaders volunteered to serve as mentors for the program and provided expertise and support for the activities. The weekly outdoor recreation club meetings were held year-round, utilizing community venues during winter months to focus on hands-on educational skills that did not require outdoor facilities, such as first-aid, knot-tying, and STEM activities. A core component of the program was the youth-driven nature, allowing youth members to provide feedback on outdoor activities and skills in which they would like to become involved; therefore, providing

opportunities for leadership development and peer mentoring. Throughout the program, Extension staff collaborated with 4-H adult volunteers and used input from youth members to solidify partnerships and implement weekly activities. Including youth in the decision-making process has benefited their development and has increased membership and involvement.

Knowing that providing youth with exposure to possible college and career opportunities has been shown to be effective in supporting youth transitions to higher education (Mitchell-Hawkins & Mellon, 2022), Extension staff and adult volunteers created a network of community partners with expertise in various areas, including Sanpete County Commissioners, local city councils, blacksmithing services, trapping services, fire departments, ambulance associations, parks and recreation departments, and forest service professionals. Program partners engaged youth in a variety of career-based learning opportunities, providing valuable skills that will be beneficial for their future college and career pathways (Fletcher, et al., 2018).

An IRB-approved Qualtrics evaluation was emailed to all youth program participants, with 28 of 35 youth filling out the evaluation, resulting in an 80% response rate. The evaluation was disseminated six months after the program started to determine areas needed for participant growth and program improvement. Evaluation questions centered around four external assets and four internal assets to determine the program effectiveness of building protective factors. The evaluation questions were based on the *Search Institute's 40 Developmental Assets for Middle Childhood, ages 8-12* (Search Institute©, 2006) because the majority of youth participants were in this age range. Additionally, Qualtrics evaluation data were collected from parents six months after the start of the program who had children participating in outdoor recreation activities to gauge their perceptions on how the program had benefited their child(ren).

## Results

Evaluation results indicated that outdoor recreation club activities were successful in building external and internal assets among youth, therefore providing the building blocks of healthy development. Parent evaluation results also indicated an increase in protective factors among their child(ren).

### Youth Evaluation Results

Using a 4-point Likert scale (strongly agree, agree, disagree, and strongly disagree), youth participants were asked to indicate how much they agreed with statements pertaining to external and internal assets. Youth evaluation results indicated the following for external assets, including support, empowerment, boundaries and expectations, and constructive use of time:

- 84% strongly agreed that the program provided support from adults other than their parents, provided opportunities to communicate and seek advice from adults, and provided a safe, caring environment to learn new skills.
- 87% strongly agreed that the program provided empowerment by making them feel valued and appreciated, provided opportunities to make decisions, and provided opportunities to serve others.
- 90% strongly agreed that the program provided boundaries and expectations due to opportunities to learn from positive adult role models, opportunities to learn from peers, and opportunities to set goals and achieve them.
- 92% strongly agreed the program provided constructive use of time by providing opportunities to participate in creative, challenging activities that increased their physical, social-emotional, and mental health.

Youth evaluation results indicated the following for internal assets, including commitment to learning, positive values, social competencies, and positive identity:

- 91% strongly agreed the program provided commitment to learning by increasing their desire to

learn new things, share new skills and knowledge with others, and actively engage in learning.

- 82% strongly agreed the program provided positive values by including positive healthy habits, opportunities to gain responsibility, and opportunities to care about their peers, community, and the environment.
- 88% strongly agreed the program provided social competencies by helping them make healthy decisions, opportunities to meet new people from different backgrounds, and provided critical thinking skills.
- 91% strongly agreed the program provided positive identity by introducing opportunities to gain confidence and increase their self-esteem, helped them gain skills that can be used in the future, and provided opportunities to learn about future careers.

Additionally, youth were asked open-ended questions to gauge improvements in their social and emotional health after program participation.

Table 1 displays youth verbatim responses detailing increases in confidence, problem solving skills, and peer and community engagement.

### Parent Evaluation Results

Parent evaluations were also based on the same 4-point Likert scale and asked parents to indicate how much they agreed with the statements based on what they have witnessed through having their child(ren) participate in the outdoor recreation program. Parent evaluation results indicated the following for external assets:

- 85% strongly agreed the program provided support.
- 80% strongly agreed the program provided opportunities for empowerment.
- 85% strongly agreed the program provided boundaries and expectations.
- 83% strongly agreed the program provided constructive use of time.

Parent evaluation results indicated the following for internal assets:

- 90% strongly agreed the program provided commitment to learning.
- 78% strongly agreed the program provided positive values.
- 80% strongly agreed the program provided social competencies.
- 80% strongly agreed the program provided positive identity.

Additionally, parents were asked open-ended questions to gauge changes in their child(ren)'s social and emotional health after program participation. Table 2 displays parent verbatim responses describing increases in emotion regulation, confidence, and social interactions among their child(ren).

## Discussion

Results indicated that organized, experiential outdoor recreation activities implemented by caring adult mentors were an effective venue for providing positive youth experiences that support an increase in healthy habits and prosocial behaviors, as well as provided opportunities for career exploration. Furthermore, outdoor recreation activities were an innovative, effective approach by providing positive peer and adult mentor support, increasing self-efficacy, and developing constructive decision-making skills. Both youth and parents recognized an increase in external and internal assets among youth participants, thereby increasing protective factors and solidifying the building blocks of healthy development.2013).

## Implications

While available outdoor recreation activities may vary in different states or regional areas, results indicated that this approach is innovative and effective across many types of outdoor recreation activities. Furthermore, there are many outdoor recreation activities such as walking and hiking, that can be implemented at very low cost and with few or no equipment requirements. Extension

professionals have the opportunity to positively impact youth by providing outdoor recreation activities, and versatility in programming increases the ease with which this program model can be adapted for use in diverse communities and settings to impact youth.

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# Appendix

## Pictures of Participants



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## Table 1

*Youth Participant Feedback on Social and Emotional Health Improvements*

<b>4-H Outdoor Recreation activities have helped my social and emotional health a lot. We are around a lot of other kids that I didn't know but now I have learned a lot about them. All the kids in 4-H Outdoor Recreation activities are really funny so we are always laughing. That has helped my confidence a lot.</b>
<b>I learned skills such as working with others that I can use in the future.</b>
<b>I feel more involved with my community and friends</b>
<b>Learned how to work together to solve problems and achieve goals</b>
<b>make good choices for the environment and me</b>
<b>I got to understand my strengths and put them to use</b>
<b>I feel more confident around my peers and made new friends</b>
<b>I didn't know I could do something, but I tried and now I know and will try new things.</b>
<b>I use what I learned at school.</b>
<b>I feel like I have an outlet when I'm upset. I can try new things outdoors.</b>
<b>Yes, they have helped me get out of my comfort zone. It has really made me look forward to going every week.</b>

## Table 2

*Parent Perceptions of Child(ren)'s Social and Emotional Health*

<b>She gained confidence and learned how to solve real-world problems because of the club.</b>
<b>We see them developing healthy relationships with kids their age and adults in the community.</b>
<b>Increased responsibility and improved social interactions with peers</b>
<b>The outdoor recreation program has provided a healthy outlet for controlling his emotions. He now enjoys activities that he has been involved in through the club that make him happy when he gets upset.</b>
<b>More outgoing and more comfortable with speaking in front of people.</b>
<b>This program is perfect for all types of kids, and I feel it was made for my 11 yr old boy. I have seen him take time to share his knowledge in the outdoors, and archery to help his peers, which is huge, where he typically tends to keep to himself. He has a positive attitude and looks forward to his weekly Thursday nights.</b>
<b>My child has learned to trust others.</b>
<b>I love it encourages the kids to be self-sufficient, cooking in dutch ovens, seeing ingredients, and being responsible for a meal for the whole group.</b>
<b>This program is amazing! Feel like there is a wide variety on personalities, and skill levels, and everyone helps out. The biggest part of the program's success is our leaders. They are priceless. They do such a great job giving the kids unique experiences. So happy that they volunteer their time to this awesome program.</b>

BEST PRACTICES

**Mindful Mondays:  
Utilizing Social  
Media as an  
Educational Outlet**

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## Abstract

Social media is a powerful tool that can reach large audiences in real-time and collects insightful user data to customize programming. Social media as an educational outlet allows for a wide reach and easily collects consumer data. Making the most of social media data provides a research-based approach to data-driven program planning. Mindful Mondays is a social media education program structured to provide financial education while collecting data that is analyzed to determine future content. A year of weekly posts (48) accumulated a total post reach of 93,920 with an average post reach of 1,957 per week.

## Mindful Mondays: Utilizing Social Media as an Educational Outlet

Mindful Mondays is a social media education program structured to provide financial education while collecting data that is analyzed to customize future content. Social media as an educational outlet allows for a wide reach and easily collects user data including views, clicks, and geographic reach. Making the most of social media data provides a research-based approach to data-driven program planning. Mindful Mondays are weekly social media posts dedicated to personal finance education written by the local University Extension Educator. Reviewing a year of weekly social media education resulted in 48 posts for the year and achieving a total post reach of 93,920 with an average reach per post of 1,957 people each week.

## Literature Review

### *Educational Methods*

Mindful Mondays is a social media-based educational program that provides concise up-to-date personal finance information. Current information is provided in the form of a weekly post on Facebook titled Mindful Mondays. According to Greenhow and Galvin (2020), social media can complement and enhance traditional educational approaches, and students benefit from frequent, varied interaction through this informal learning environment. Mobile-based microlearning allows for innovative just-in-time resources to be provided to learners in creative ways and research shows a positive gain in learner outcomes (Moore et al., 2024). Weekly social media posts can provide the most current information to the community and attract a large audience in real-time. The ability to provide current information, specifically in the content area of financial education, provides a way to make an immediate impact. With the recent pandemic, society has been forced to be flexible and adjust with little notice. Digitization trends in education are changing the expectations of learning and educational institutions may need to adapt to these changes to stay competitive (Mohamed Hashim et al., 2022).

### *Social Media Effectiveness*

Mainstream academics see social media as effective in transforming toward a learner-centered approach in a new age of education (Barge & Parkhi, 2022). Muller and Mildenerger (2021) found equivalent learning outcomes with blended online learning environments that provided more flexibility to learners. In addition, some educational opportunities are best received in small doses. When it comes to a topic that may seem overwhelming like many personal finance topics, small amounts of

information at a time may be more palatable and effective in supporting a call to action. Conde-Caballero et al. (2024) found a positive application of social media as a high-quality microlearning complementary tool for university students. Social media can be a means for sharing small amounts of information to help people learn or reinforce their knowledge in a user-friendly way. Providing tools to support behavioral changes in community members is a monumental task that may benefit from a baby-step approach, as small changes may add up to a significant outcome.

## *Social Media Data Collection*

**M**indful Mondays is designed to deliver educational content while collecting meaningful data to support and customize future programming efforts. Social media can be utilized as an informal ongoing needs assessment. Extension is challenged to meet the changing needs of the community and this includes regular needs assessments. (Jewkes et al., 2021; Sneed et al., 2022). The Mindful Mondays educational program was established with an organized method for assessing the personal finance topics that interest the community. Collecting data online is valuable for customizing educational offerings. Chala et al. (2022) discuss the efficiency of utilizing data collected through social media. Stakeholders may use this data to develop educational programs, courses, and training.

The challenges addressed with Mindful Mondays include providing educational resources to rural communities with limited staff and continually assessing the changing educational needs and interests of the communities. With limited staff resources, there is only so much availability to travel throughout the regions to provide in-person education. Additionally, the logistics of finding available space for presentations can be a challenge in some areas. Community members also have busy schedules with limited in-person availability and some programs are seeing lower attendance rates than

in the past. When conducting regular needs assessments, typical methods of surveys and evaluations may pose a challenge of low response rates and the time-consuming nature of data collection.

## **Purpose & Objectives**

**S**ocial media is a powerful tool that can be utilized in education. Facebook is an avenue for distributing time-sensitive educational information to make an immediate impact while collecting data that provides valuable insights. Some examples of time-sensitive community information may be the current student debt relief applications, deadlines for property tax submissions, and timely tax tips that may impact the community members. Some dates, deadlines, and information are most useful if provided timely and social media is an avenue to distribute this type of educational information quickly. In addition, social media is an option that allows community members to have self-directed learning with educational material that may be sensitive such as personal finance. The objectives of this new programming effort are to reach a large audience quickly and assess the topic areas that draw the most interest based on the collected user metrics.

## **Method**

**M**indful Mondays uses Facebook as the main platform, which collects insights regarding post reach, post clicks, and engagement. The target audience is the general community. This program launched on the first Monday in October 2022 and continues weekly. The posts typically include relevant links to partners, collaborators, and government agencies. The program area addressed is personal finance education focusing on five money principles identified by the Financial Literacy Education Commission (FLEC).

## *Post Content*

**P**osts include current financial information and

links to additional educational resources such as another website, a video, a webinar, or a downloadable file. Facebook gathers data representing the local population and is valuable when determining future educational content in the online community. Classifying posts aids in determining which content area sparks the most interest from local users. This information allows for the customization of programming toward local needs. When a topic elicits a significant amount of engagement, it may be valuable to expand upon the subject in other forms of programming. A social media program must be organized with outcomes in mind to capitalize on this wealth of information. Structuring a weekly post by category, then collecting and analyzing this data provides valuable insights for data-driven programming.

## *Categorizing Data*

**M**indful Mondays posts are internally classified by the five principles of money: Earn/Awareness, Save and Invest, Protect, Spend, and Borrow (My Money Five). By creating a classification system, the data can assist in directing future educational program offerings. The five broad content areas are used as a guide, and then the specific topic is also recorded to see which topics draw considerable interest within the categories. This informal needs assessment provides data to support the areas of need and interest for the local community that is the target audience for programming.

## *Results*

**T**he results of this research provided indicators of local interest and educational needs of the local community without collecting surveys or evaluations. The data collected by Facebook for the Mindful Monday posts includes the people reached, post clicks, and engagement. The post reach metric shows how many people saw the post. The post clicks metric shows genuine user interest as users who click on the post links are likely to be

more engaged in the educational programming. Engagement metrics include the post clicks, likes, and shares of the post.

## *Post Content*

**T**he Educator selects the post content to meet the current educational needs of the community by providing relevant content on personal finance topics. This program is marketed with a customized graphic, as shown in Appendix Image D, for the weekly posts that occur every non-holiday Monday. The post content is tracked with the date, topic, content area, people reached, post clicks, and engagement metrics. The classification by content area for each week with corresponding metrics is shown in Appendix Table A: Insights Data with Content Classification.

## *Post Reach Metrics*

**T**he number of users reached by the educational posts varies weekly. Appendix Table C1: Post Reach by Month and Figure C2: Post Reach by Week shows the impact results of the post reach. A single staff member, the Financial Educator, can provide educational information to a very large audience every week by dedicating time and effort to weekly content creation. The total post reach over the twelve-month period resulted in a total post reach of 93,920. During the year, the posts averaged 1,957 people reached per post with a range from 601-3402 people reached each week.

## *Post Click and Engagement Metrics*

**A**ppendix Figure C3 and Figure C4 depict the clicks and engagement per post. The post on January 23 received the most post clicks with 88 clicks and the most engagement with 110. During 2023, the average number of clicks per post is 24, which indicates the content is actively engaging at least 24 partici-

pants a week on average. The engagement metric, which also includes likes and shares, averaged 44 per post over the year. The impact is noticeable based on the collected metrics that the financial education information is reaching a large audience and engaging them to continue learning by the post-click and engagement metrics.

## *Post Classification*

The classification structure is important for customizing future content. Appendix Table B: Average by Content Area shows the average number of post reach, clicks, and engagement as classified by the five principles of money: Earn, Save & Invest, Protect, Spend, and Borrow. The Protect content area received the highest average clicks per post of 30 and highest engagement of 50. The data supports a need/interest in the Protect content area. Although the Spend content area showed the highest average reach per post of 2,332, the click and engagement metrics were lower as a percentage of the reach than for the categories of Earn/Aware, Protect, and Spend. For 2023, the Save & Invest category received the lowest average reach, clicks, and engagement for the year relative to the other content areas. The more data collected, the more the Financial Educator can learn about their audience. Adjustments can be made to customize the content, although at this stage the data will not be used to rule out any educational content. The data is used to guide the educator as to what seems to be resonating with the local audience to expand on what appears to be the most useful/relevant content. Trends may change over time and this tracking is just a general indicator of the pulse of the audience that may be valuable when making decisions on what content to provide.

es a large audience in real-time, exceeding the limited capacity of other educational programming outlets. Providing educational information in small amounts coincides with the need for flexibility and a more learner-centered approach. In addition to being a useful medium for educational delivery, Extension staff may benefit from the user information gained from social media programming. Sharing the method to Mindful Mondays can inspire others to create organized social media programming and utilize the data when making future programming decisions. As this example covers personal finance education, the method of using social media for educational and needs assessment purposes may be extended to other program areas within extension as well. Providing research-based information to the local community in a timely fashion is achievable through social media educational programs like Mindful Mondays.

## Summary

Social media educational programming has great potential within Extension as a platform that reach-

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I have no conflicts of interest to disclose.

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## Appendix A

Table A: Insights Data with Content Classifications

Date	Content Area	Reach	Clicks	Engagements
9-Jan	Spend	2118	32	49
23-Jan	Protect	2980	88	110
30-Jan	Spend	601	50	62
6-Feb	Spend	2231	41	66
13-Feb	Spend	1655	51	72
20-Feb	Spend	1388	48	62
27-Feb	Save & Invest	2545	14	40
6-Mar	Protect	1948	41	61
13-Mar	Borrow	1659	41	59
20-Mar	Save & Invest	1046	30	40
27-Mar	Earn/Aware	2167	33	54
3-Apr	Earn/Aware	1169	57	70
10-Apr	Earn/Aware	1541	4	17
17-Apr	Protect	1946	34	51
24-Apr	Earn/Aware	1528	43	59
1-May	Save & Invest	1998	13	28
8-May	Spend	892	55	67
15-May	Spend	1249	37	51
22-May	Earn/Aware	1243	49	68
29-May	Borrow	3391	32	69
5-Jun	Earn/Aware	3014	14	38
12-Jun	Borrow	3402	18	49
19-Jun	Protect	1679	4	22
26-Jun	Borrow	2880	22	42
3-Jul	Save & Invest	2749	25	46
10-Jul	Borrow	2917	10	34
17-Jul	Spend	2757	9	33
24-Jul	Save & Invest	1432	4	22
31-Jul	Spend	3045	11	32
7-Aug	Borrow	1218	18	37
14-Aug	Spend	1933	9	39
21-Aug	Earn/Aware	2693	9	31
28-Aug	Protect	1054	4	20



Table A: Insights Data with Content Classifications

11-Sep	Borrow	1303	15	32
18-Sep	Save & Invest	2055	13	39
25-Sep	Borrow	1571	9	32
2-Oct	spend	2659	16	42
9-Oct	Save & Invest	1189	6	28
16-Oct	Spend	2199	17	38
23-Oct	Save & Invest	1214	5	20
30-Oct	Earn/Aware	1314	28	52
6-Nov	Earn/Aware	2645	13	36
13-Nov	Save & Invest	1959	18	38
20-Nov	Spend	2270	4	20
27-Nov	Earn/Aware	1273	13	34
4-Dec	protect	1714	9	33
11-Dec	Save & Invest	1842	4	24
18-Dec	Borrow	2645	10	32
<b>48</b>		<b>93920</b>	<b>1130</b>	<b>2100</b>

Average Reach per post 1957

## Appendix B

Table B: Averages by Content Area

Posts	Content Area	Average Reach	Average Clicks	%	Average Engagement	
10	Earn/Aware	1859	26	1.4%	46	2.5%
10	Save & Invest	1803	13	0.7%	33	1.8%
6	Protect	1887	30	1.6%	50	2.6%
13	Spend	1923	29	1.5%	49	2.5%
9	Borrow	2332	19	0.8%	44	1.9%
<b>48</b>						

## Appendix C

Table C: Post Metrics by Month

Month	Reach	Clicks	Engagements
January	5,699	170	221
February	7,819	154	240
March	6,820	145	214
April	6,184	138	197
May	8,773	186	283
June	10,975	58	151
July	12,900	59	167
August	6,898	40	127
September	4,929	37	103
October	8,575	72	180
November	8,147	48	128
December	6,201	23	89
	<b>93,920</b>	<b>1,130</b>	<b>2,100</b>

Figure C!: Post Reach by Month

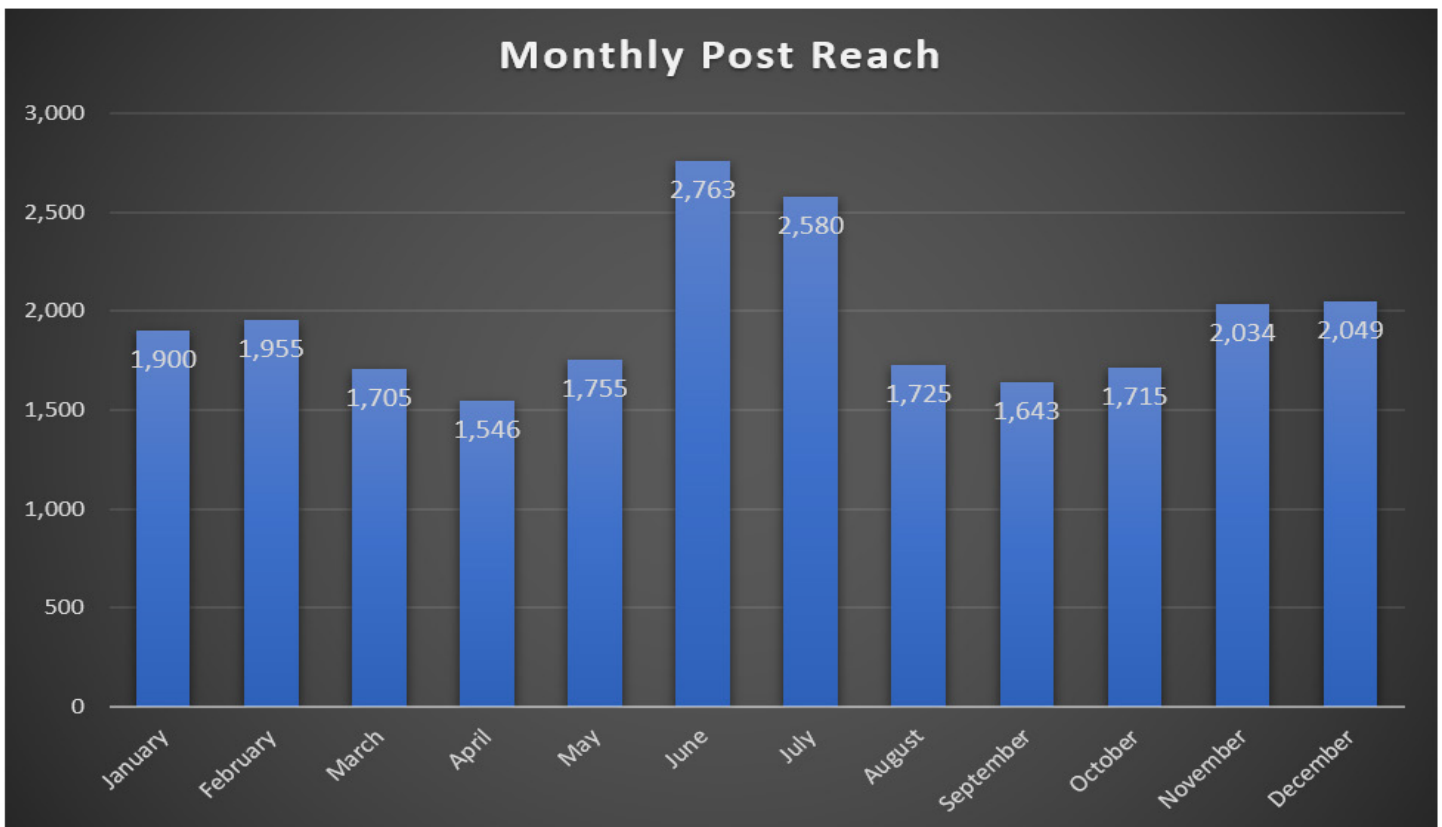


Figure C2: Post Reach by Week

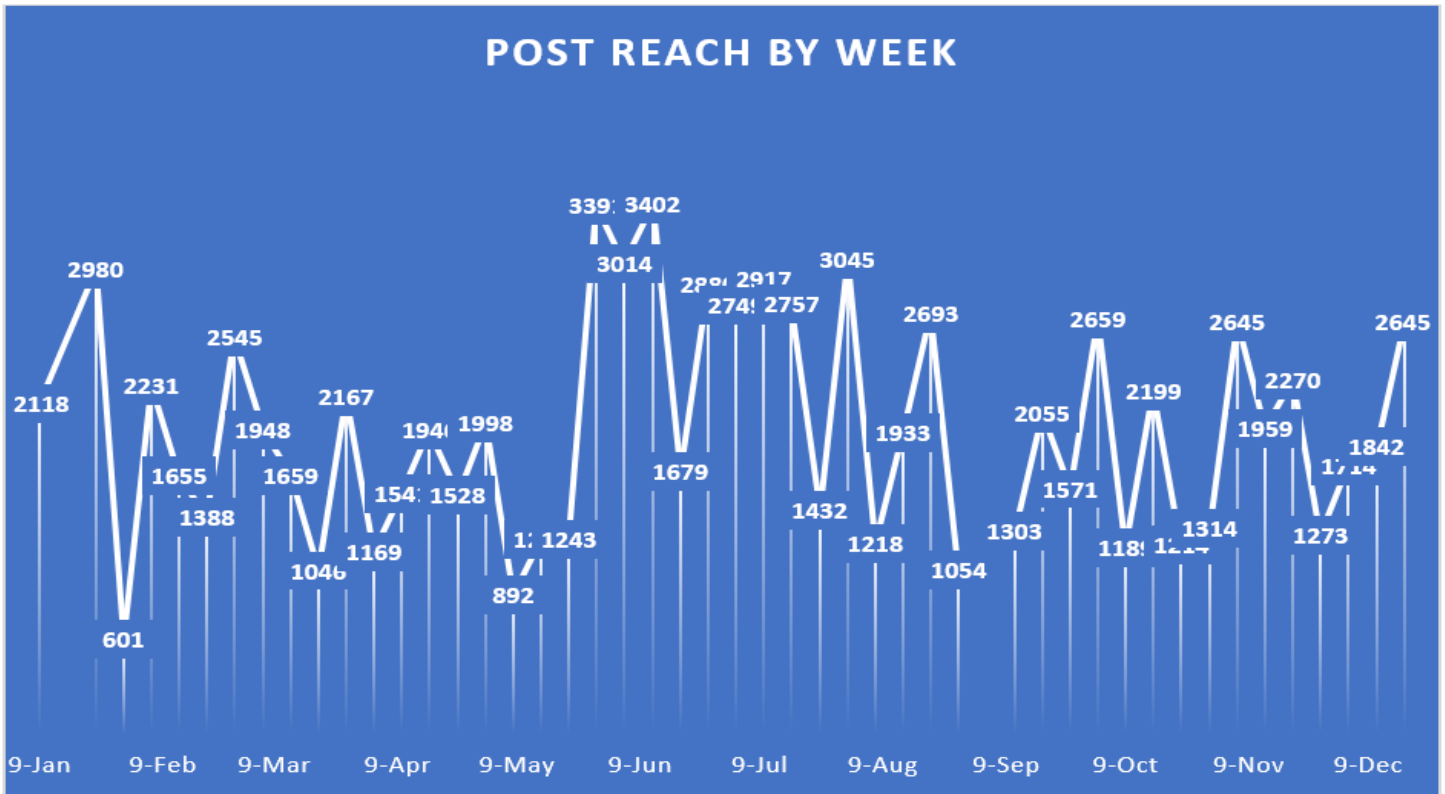


Figure C3: Monthly Post Clicks and Engagement

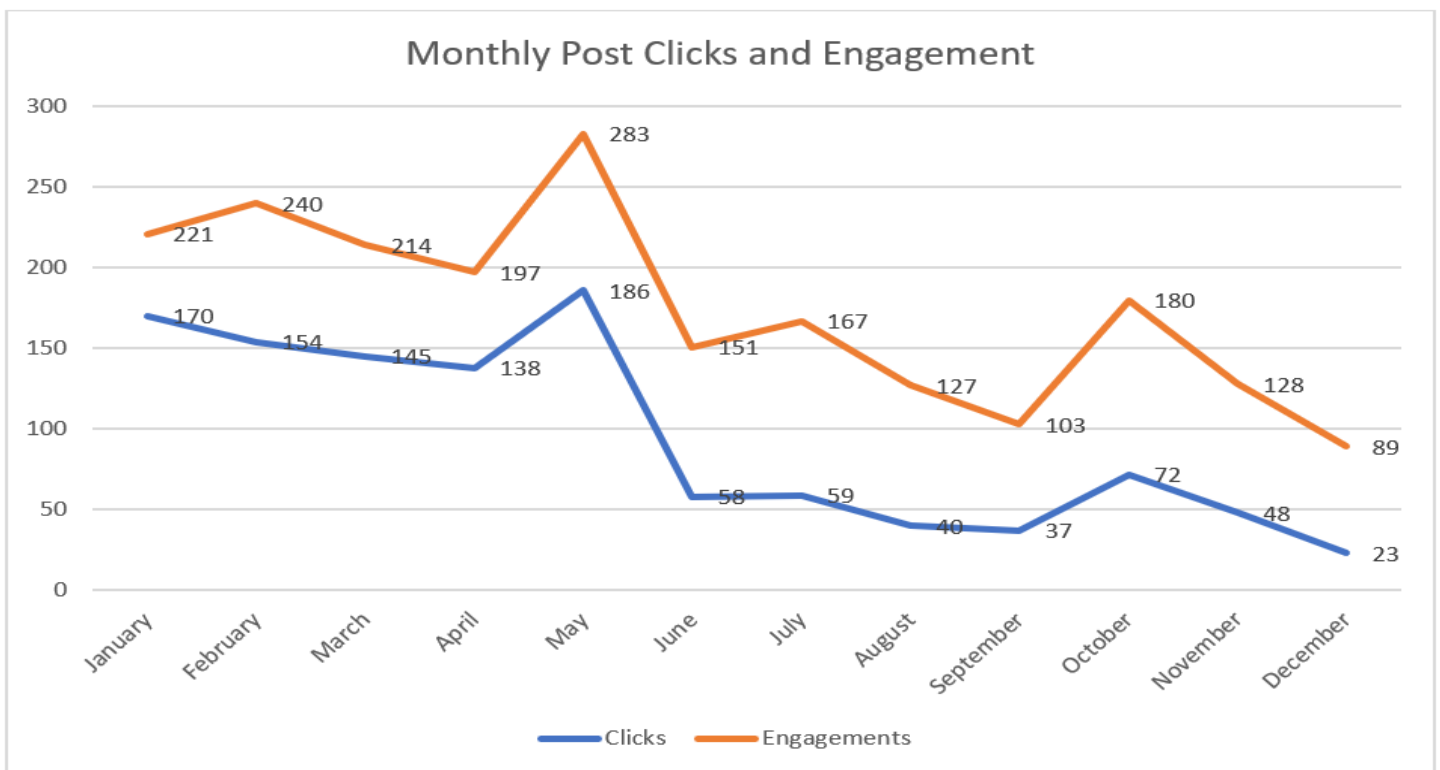
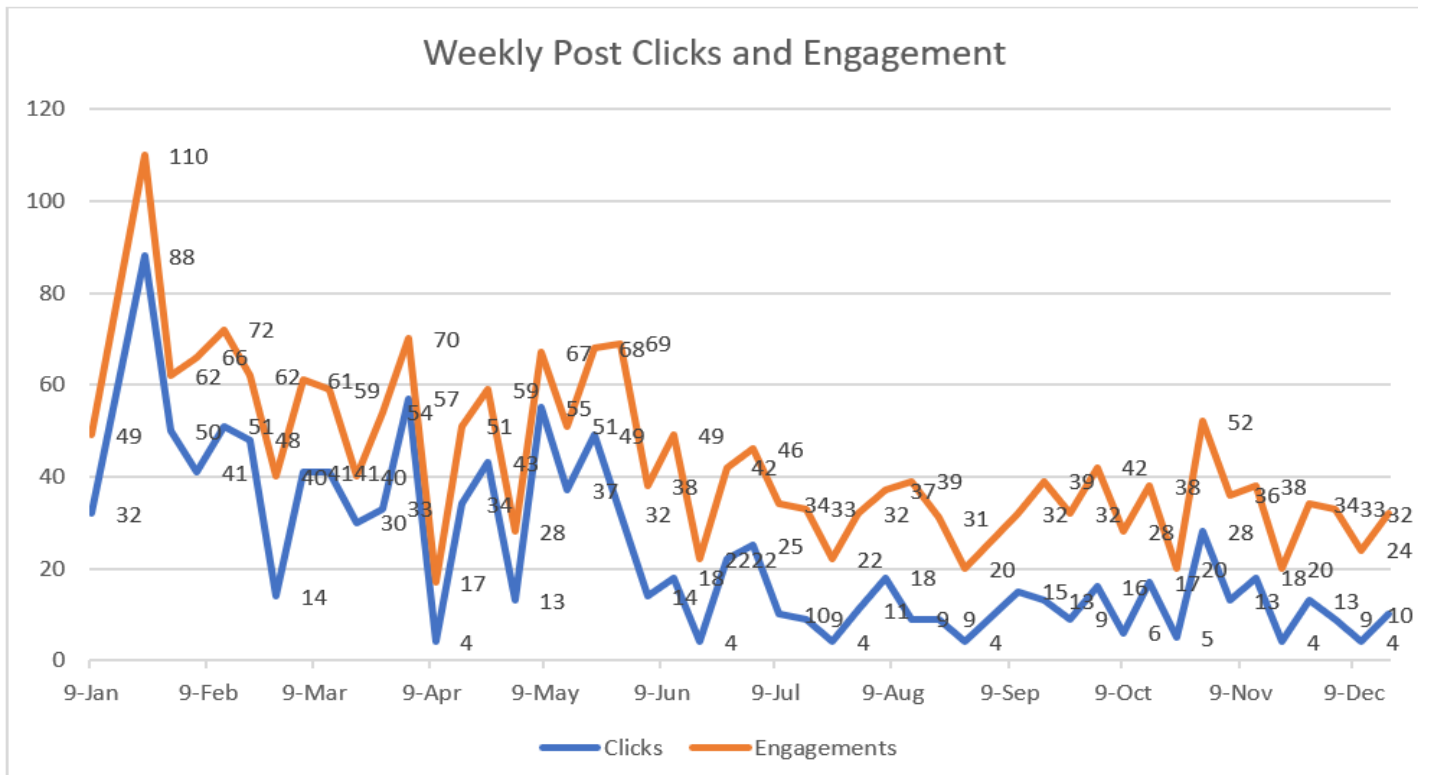


Figure C4: Weekly Post Clicks and Engagement



## Appendix D

Image D: Mindful Mondays Program Graphic



BEST PRACTICES

**Pathways to Wellness:  
Lessons Learned  
in Developing a  
Program to Facilitate  
Conversations about  
Social Determinants of  
Health**

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## Abstract

Raising awareness about the many factors that influence health can be an important first step to change conversations and empower communities to make changes that promote health for all. Pathways to Wellness was developed to facilitate community conversations about the complex influence of people and places on health. Eight Family and Consumer Sciences educators piloted this interactive four-part series focused on social determinants of health. Program evaluation suggests that conversation-based exploration of community issues supports knowledge gains for program participants and educators. Applying lessons learned provides a stronger model for facilitating community conversations and promoting engagement in community change projects.

## Pathways to Wellness: Lessons Learned in Developing a Program to Facilitate Conversations about Social Determinants of Health

Over time, the focus of health promotion programs has shifted from solely education about personal health behaviors like tobacco and alcohol use, diet, and physical activity (Nutbeam, 2019) to embrace the political, social, and economic conditions in which people live, work, and age (i.e., social determinants of health) (Adler et al., 2016; Whitman et al., 2022). Social determinants include neighborhood characteristics, access to quality education

and health care, social and community networks, and economic stability (Centers for Disease Control and Prevention, 2024). Work to address social determinants of health is complex, ongoing, and evolving (Dahlgren & Whitehead, 2021). Cross-sector, community driven efforts to provide safe and affordable housing and food, access to quality early childhood education, and transportation to medical appointments have demonstrated improved health outcomes (Whitman et al., 2022).

Raising awareness about the many factors that influence health can be an important first step to change conversations and empower communities to make changes that promote health for all (Doll et al., 2023). The mission of Family and Consumer Sciences (FCS) Extension is to help improve quality of life through education, research, and outreach (National Extension Association of Family & Consumer Sciences, n.d.). Historically, health programming for FCS Extension mirrored the focus on personal responsibility for health, suggesting people can manage health through implementing healthy lifestyle recommendations and food safety practices (Burton et al., 2021; Steinbrook, 2006). More recently, the updated Cooperative Extension Framework for Health and Well-being shifts focus to improving population health through supporting health equity, social determinants of health, and working through coalitions to increase community health assets (Braun et al., 2014; Burton et al., 2021).

Extension is poised to be a catalyst for community-based initiatives that influence the health and well-being of the community (Buys & Rennekamp, 2020). FCS Extension educators are often part of community coalitions that employ upstream policy, systems, and environmental strategies to make healthier choices easier choices (Herman et al., 2011; Smathers & Lobb, 2015). Yet, in a survey of nearly 400 Extension professionals, only about half reported feeling comfortable to develop a plan for policy, systems, and environmental change (Smathers et al., 2019). Extension programming is needed to bridge individual, behavior-focused health promotion programming with policy, systems, and

environmental changes that influence communities (Burton et al., 2021; Koukel et al., 2018). Due to the lack of existing programming to meet this need, an academic-community partnership between FCS Extension specialists and county educators for the Kentucky Cooperative Extension Service convened to develop Pathways to Wellness.

## Purpose

Pathways to Wellness was developed to facilitate community conversations about the complex influence of people and places on health. The short-term goals of Pathways to Wellness were to (1) increase knowledge about the multitude of factors that influence health and (2) increase beliefs in the ability of individuals and the community that they can take action in ways that promote health for all. This manuscript provides an overview of the program, and lessons learned during the pilot implementation and evaluation of the program.

## Program Design and Implementation

Pathways to Wellness is a series of four conversation-based lessons, each lasting 45 – 60 minutes. The first lesson introduces the concept of health and a social ecological model view of factors that influence health (McLeroy et al., 1988), with special emphasis on social determinants of health. The second lesson discusses the impact of relationships on health, provides strategies for nurturing relationships through small changes, and gives ideas for how communities can support healthier relationships. The third lesson focuses on the importance of safe and supportive environments to promote health and introduces strategies for changing local conditions. The final lesson focuses on the influence of culture on health and encourages brainstorming ideas for empowering people to be champions for health in the community. Examples of activities during lessons include connection activities (think-

pair-share) to get people thinking about the day's topic, questions to generate conversation throughout presentations, small group work to analyze County Health rankings (County Health Rankings & Roadmaps, 2024), and a community tour that involves completion of a comprehensive survey about food and nutrition, safety, and walking environments of both familiar and less familiar places in the community.

To support continued learning, engagement, and action between lessons, Pathways to Wellness hosts additional resources on Goalify, an app designed to help people create or change habits to achieve longer-term goals (nebytezero GmbH, 2024). Each lesson has a 'challenge' (e.g., Connect yourself or someone else with a community resource to support health). Challenges are supported with informational resources (e.g., podcast, video, website), group chat prompts (e.g., What is one idea you have for making a space in your community healthier?), and reminders to track progress.

In spring 2022, program concepts were tested in three communities. Program materials were refined based upon feedback, and in fall 2022, 48 county FCS educators participated in a six-hour training that provided experiential learning about program content and components (Table 1). Eight educators agreed to participate in a pilot implementation and evaluation of Pathways to Wellness in spring 2023. Community participants were invited to share their anonymous program evaluation after each lesson for research purposes. Evaluation questions focused on knowledge and confidence to take action related to each lesson's topics. Since the program content and design differed from previous health programming in our state, and the impact of interventions is linked with the fidelity of implementation (Toomey et al., 2020), evaluation focused on the educator experience. Educators completed an online checklist after each lesson to track attendance, report the fidelity with which program components were delivered, and provide feedback on the function and flow of the lesson. Data were collected and managed using REDCap electronic data capture tools hosted at the University of Kentucky



(Harris et al., 2019; Harris et al., 2009; Lawrence et al., 2020). At the completion of the pilot, educators also participated in a focus group discussion about their experience implementing the program. The Institutional Review Board at the University approved the study protocol [IRB #80353].

## Findings

**P**athways to Wellness was piloted in nonmetro (n=5) and metro (n=3) communities located in Eastern/Appalachian, Central, and Western regions of the state that had a median population ~20,400 (range ~13,000 - ~48,000). Educators had varying disciplines of training (e.g., child development, health promotion, career and technical education, library and information science, human services and counseling) and years of experience working for Kentucky Cooperative Extension Service (range 0 - 25 years, median 2 years). Of the eight educators who participated in the pilot, six delivered the entire series. One educator stopped after the first lesson, and another stopped after the second lesson; both cited a lack of attendance. The total number of community participants across all counties started at 30 and decreased to 22 by the final lesson. Educators who delivered the entire series retained participation across lessons.

## Potential for Program Impact

**A**fter each lesson, participants consistently reported gains in knowledge (Table 2), which suggests Pathways to Wellness can be a useful approach to increase knowledge about the multitude of factors that influence health. Educators reported observing knowledge gains among community participants. The content was “eye-opening” for many, leaving some “awestruck, starstruck of what they learned about what health and wellness really encompass.” The second goal of Pathways to Wellness was to increase beliefs that individuals and the commu-

nity can take action. Participants less consistently reported confidence in their ability (58-78%) and their community’s ability (53-74%) to take action to change factors that promote health. For example, community participants were less confident about their ability to create culturally safe spaces (58%) but reported greater confidence in making small changes with people in places where they live, work, play, and pray (78%). The following reflection on lessons learned offers suggestions for implementing similar programming and to further increase confidence in ability to take action. Future program evaluation would benefit from further assessment of program participants’ perceptions of benefits and drawbacks of learning about these topics as well as application of content.

## Lesson 1: People are Interested in Conversations About Social Determinants of Health

**E**ducators and participants enjoyed the content - “There are so many aspects [about health] that people don’t think about”. After the first lesson, all educators agreed that Pathways to Wellness is an acceptable (i.e., they like it) and appropriate (i.e., a good match) program for their community. Educators often rated engagement after each lesson as ‘a lot’ or ‘a great deal’ (20/24, 83%) rather than ‘a little’ or ‘moderate’ (4/24, 17%). Throughout the program, more than half of community participants indicated they had intentions to talk about content of each lesson with family (67-84%) and friends (53-84%). Participants less frequently indicated they had intentions to talk about lesson content with co-workers (26-53%), neighbors (26-47%), or elected officials (4-20%). Educators provided generally positive remarks about their and their participants’ impressions of the program - “Pathways to Wellness has been a joy to learn and implement.”

What educators liked about Pathways to Wellness compared to other health programming was the “scope of topics and the bigger picture of understanding of why we eat what we eat or move the way we move.” Unanticipated effects of implementing the program included educators seeing the relationship of program content to other things they were learning about or having to do for their job.

## Lesson 2: Conversation May Need to be Accompanied with Guided Action

Some educators commented Pathways to Wellness was different from typical Extension programs and concluded people, and sometimes they, were not understanding what the program was about until they attended one or more classes – “Maybe I just had to do it to understand it.” Educators also noted the program identified community issues that seem beyond the control of individuals. For youth (high school students), this provided a sense of relief, “oh, so it’s not all our fault” that we are not as healthy as we should be. But for adults, this led to frustration since some of the things they want to change cannot happen quickly or at all (e.g., a one-grocery community that has high prices or rural roads that do not have sidewalks or streetlights). Despite this, participants and educators expressed a sentiment of wanting more. One participant said, “Knowing how to approach this in my community would be great!” One educator said, “They [community participants] learned so much. I haven’t figured out what they are going to do with it yet”, while another was inspired by the program to organize community members to improve the quality of foods in food donation boxes.

There was consensus among educators about “what now” or “what next” to build on what was learned during the series. The inclusion of ac-

tion-oriented goals in Goalify was intended to provide technology-facilitated opportunities to guide people to take small steps towards supporting community change between lessons. However, only one educator introduced Goalify. Some of the identified barriers included educators not feeling comfortable with the platform, educators not feeling confident to support participants to use it, and community participants lacking interest. While Goalify was not the ‘right’ mechanism for supporting action, educators acknowledged value for resources and information between sessions. Future efforts may benefit from focusing on supporting educators in facilitating opportunities for community members to engage in projects to promote community health.

## Lesson 3: Invite the ‘right’ group of people to participate

There was tension with educators seeing a need for change and recognizing “change takes time”, feeling that “people are stuck in the past with change”, or perceiving that community participants do not see a need for this type of program. Three educators directed marketing to specific audiences (e.g., Extension councils and Extension volunteer groups). Those who directed marketing efforts were deemed to have greater success recruiting compared to those who spent a lot of time “talking it up” to their regular public audiences. Educators expressed desire for larger group size while also acknowledging the benefit of smaller groups to facilitate conversation and logistical issues to align schedules of people and facilities for the series. Educators and participants suggested that future iterations involve community leaders or change-makers – both elected and volunteer. Educators thought targeted or tailored invitations and a pitch presentation that provides a program overview may facilitate communicating with leaders how and why their attendance would be a worthwhile investment of time.

## Discussion

**P**athways to Wellness is an innovative approach for Kentucky, but its potential to spark change is far-reaching, as it provides a much-needed model for facilitating community conversations about the complex influence of people and places on health. Program evaluation indicated the exploration of social determinants of health encouraged participants and FCS educators to engage in high-level thinking to reflect on the current health climate of their communities beyond their personal health. It also spurred interest in changes to improve community health. However, results did not indicate consistent increases in confidence to take action.

Educators of varying professional backgrounds, most of whom did not have a health background, were able to facilitate conversations about complex factors that influence health in ways that engaged community participants. Although some expressed initial discomfort in leading these conversations, they acknowledged increased comfort over time and recognized the relevance of these topics to their work beyond the program. This suggests FCS educators may benefit from professional development related to social determinants of health and Extension's role in addressing them (Burton et al., 2021). Through a stronger sense of the factors contributing to community conditions, they may have increased confidence to work with community members to identify and change conditions in ways that ultimately improve or maintain health. Of additional consideration is the value of ongoing professional development, coaching, and peer-to-peer learning opportunities to support the transition from awareness raising to community action that changes policy, systems, and environmental factors in ways that promote health for all (Reid et al., 2019; Smathers et al., 2019).

The consistency with which educators and participants felt elected community officials need to participate is noteworthy. Local governments play a pivotal role in planning and offering services in a

community that influence social determinants of health (Santinha et al., 2023). Based on educator feedback, there is a need for formal invitations for community leaders and modifications to the program structure (e.g., all-day workshop, single-overview session) that balance the breadth of topics and potential time restrictions of those in perceived positions of power. In addition to recognizing the value of buy-in from elected community officials, this may suggest people underestimate the strength of their voices about local needs and values. Exercises in leadership development and community empowerment may help community members and educators recognize the power they hold personally as change agents and collectively in initiating community action (Apaliyah et al., 2012; Thompson et al., 2016). Tying Pathways to Wellness to existing community efforts might encourage participants to focus on the immediacy of the implications while seeing how they can contribute to long-term success.

In considering program goals and feedback from educators and participants, we made several modifications to Pathways to Wellness. First, as part of planning efforts, we encourage educators to reflect upon the longer-term goals for offering the program to determine target audiences. Second, we revised marketing materials to ensure use of plain language. Third, we created an alternative single-session unit for use with community leaders. Finally, in recognition of ongoing engagement necessary to support behavioral and policy, systems, and/or environmental change that influence social determinants of health (Bunnell et al., 2012; Doll et al., 2023; Wood & Neal, 2016), we collaborated with an Extension Specialist in Community Leadership and Development for follow-up programming that supports locally identified community projects. The result of this effort provides a stronger model for facilitating community conversations and promoting engagement in community change projects.

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## Table 1

### *Pathways to Wellness Program Package*

Program component	Description
Logic model	Graphic representation of program inputs, activities, outputs, and outcomes
Program summary sheet	Two-page sheet to summarize the background, program goals, target audience, program structure, activities, and evaluation
Marketing package	Talking points Sample newspaper language Social media graphics and captions for recruitment and informational purposes Reporting guidance for programmatic codes Sample success story Program follow-up marketing ideas
Community resource guide	Template for populating local, regional, and state resources organized by dimensions of wellness (emotional, environmental, financial, intellectual, occupational, physical, social, spiritual)
Lesson packages	Facilitator guide with lesson background, goals, objectives, audience ideas, materials and activities, facility and equipment requirements, preparation checklist, additional resources and references Slide deck with talking points Activities Handouts Publications Evaluation
Goalify	Challenge/goal options Informational resources either for download or link to websites Group chat prompts Reminders to track progress toward challenge/goal

## Table 2

*Knowledge-related Outcomes of Community Participants Who Participated in Pathways to Wellness*

<b>Lesson topic</b>	<b>Reported increased knowledge (%)</b>
<b>Lesson 1</b>	<b>n=19</b>
Examples of social determinants of health	84
The influence social determinants of health have on my health	74
The influence social determinants of health have on the health potential of my community	84
<b>Lesson 2</b>	<b>n=23</b>
The influence family, friends, and social networks have on my health	83
The ways in which relationships affect the body, the brain, and behavior	78
Ways to nurture relationships that positively impact health and well-being	82
<b>Lesson 3</b>	<b>n=15a</b>
The term “built environment”	87
The ways in which health is influenced by access to nutritious food, crime and violence, environmental conditions, and quality housing	80
Why policy, system, and environmental changes have the greatest potential effect on health	67
Examples of policy, system, and environmental changes to make healthy choices easier and accessible in the community	67
<b>Lesson 4</b>	<b>n=19</b>
Examples of cultural factors that influence health	89
The ways in which health is affected by cultural influence on the concept of health, communication, social norms and values, and unfair treatment of certain groups	84



BEST PRACTICES

**Best Practices  
When Applying  
for a USDA-NIFA-AFRI  
Conference Grant**

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## Abstract

As funding to support conferences becomes limited, Extension associations need to expand the tools used to support their annual events that provide professional development, increase knowledge of new content and programs, and provide networking opportunities. This article highlights how to apply for a United States Department of Agriculture National Institute of Food and Agriculture, Agriculture and Food Research Initiative Conference Grant. In this case, the National Extension Association of Family & Consumer Sciences association executive office, liaisons, and national board worked together to write a project narrative. Sharing best practices for such funding can assist Extension in continuing to provide professional development as resources become limited.

Conferences represent a place for people with similar interests/backgrounds to meet, learn, and discuss issues of similar interest (Rabinowitz, 2023). Professional association conferences focus on the practical issues with the members' work, allowing for exchanging ideas, networking, celebrating successes, and working through emerging issues, which leads to funding, collaborations, employment, and additional professional benefits (Rabinowitz, 2023).

When planning a conference, costs range from nominal to substantial. Factors that influence costs are the location and resources to support the expected number of attendees. A standard contract may include fees for the venue, food package options, and audio-visual (AV) and/or tech support (Rabinowitz, 2023). Additional funds are needed for potential keynote speakers, signage, and other conference activities (Rabinowitz, 2023). As funds to support extension opportunities become more challenged (Page & Kern, 2018), additional strategies and resources are useful for hosting a budget-friendly annual association conference.

The National Extension Association of Family & Consumer Sciences (NEAFCS) is a professional

organization for Extension Family & Consumer Sciences (FCS) Agents. NEAFCS builds future leaders, provides innovative professional growth and development opportunities, recognizes scholarship in programming, is a nationwide resource, and promotes the "mission and goals of the Land Grant University Extension System" (National Association of Family & Consumer Sciences, n.d.). This is the first time NEAFCS has applied for United States Department of Agriculture National Institute of Food and Agriculture, Agriculture and Food Research Initiative (USDA-NIFA-AFRI) conference grant support in its 90 years. In 2023, there were 1,968 Family & Consumer Sciences (FCS) Affiliate Agents (W. Ferguson, personal communication, February 14, 2023), where 73.52% (n=1,447) focus programming on health, nutrition, and/or food safety (W. Ferguson, personal communication, February 14, 2023). The NEAFCS Conference provides four full days of networking with national colleagues, skill-building, and sharing science and evidenced-based research and programs for other agents to adapt/adopt within their respective communities. For the 2023 annual session, the proposal team anticipated 750 attendees, and applying for a USDA-NIFA-AFRI conference grant would provide capacity building for future Extension leaders.

## Purpose

The purpose of this article is to 1) bring awareness to Extension professionals of the USDA-NIFA-AFRI Conference Grants that support professional development and leadership opportunities for new and seasoned Agents and 2) build the knowledge and practical skill set of how to search and apply for a conference grant from our lessons learned. The objectives in our project narrative included: 1 (Instructional materials & equipment): Support the delivery of Food safety, nutrition, and health-Diet, Nutrition, Diet, Nutrition, and Prevention of Chronic Diseases (FSNH-DNPC), science-based knowledge and informal educational programs for a national audience of FCS professionals. Audio/visual support will allow two tracts for peer-reviewed oral and poster presentations. 2 (In-service training): Devel-

op human capital in FSNH-DNPC, through pre-conference and in-depth sessions, with bus rental and speaker honorariums.

## Methods & Results

To begin, the Land Grant University (LGU) will want to determine whether the respective Office of Research and Administration can submit a conference grant when working with an association group. An association group would be considered a pass-through entity, which means a “non-Federal entity that provides a sub-award to subrecipient to carry out part of a federal program” (§200.1 Definitions) (Definition, 2001), where there are implied legal risks. In our case, the liaisons’ universities of Delaware and Maryland could not submit the grant proposal, therefore NEAFCS submitted it. Once the LGU and any potential association group determine who is submitting the proposal, the proposal can be submitted per usual LGU route (Figure 1), or the association group will need to create several accounts from sam.gov, login.gov, and grants.gov (grants.gov, login.gov, SAM.gov), with an understanding that it can take time for each to be approved (Figure 1). Simultaneously, the proposal team should review grants.gov for whether 1) a USDA-NIFA-AFRI conference grant is an option based on the various proposal priorities and 2) the organization’s eligibility (Figure 2). Throughout this process, the team will want to ensure that all government documents are current (Figure 2).

The next significant step is to determine whether all or some of the conference sections are eligible for funding or need funding support. For example, NEAFCS’ Annual Session brings together a diverse group of topics, such as textiles, food and nutrition, child development, and finance (National Extension Association of Family & Consumer Sciences, 2024). However; this experience with the USDA-NIFA-AFRI conference grant were focused on the Foundation and Applied Science Program, specifically “Diet, Nutrition, and Prevention of Chronic Diseases” (United States Department of Agriculture National Institute

of Food and Agriculture (USDA-NIFA), 2024), where funding was put towards chronic disease prevention and food, nutrition, and food safety topics, and not necessarily child development or personal finance.

From this determination, the proposal team prepared to write the letter of intent (LOI), per the request for proposal, which is on a rolling deadline but must be submitted to the program area priority contact(s) 195 days before the conference commences (USDA-NIFA, 2024). The proposal team must identify the AFRI-Project Type (USDA-NIFA, 2019) (Figure 2), and determine if the team will write a LOI focused on research, education, extension, or an integrated project (USDA-NIFA, 2019). The team must address any conference specifics in the LOI and comply with the formatting, submission, and reviewing/notification process (USDA-NIFA, 2022).

The program area priority contact(s) will inform the team whether their LOI was approved to write and submit the project narrative, which will determine the amount of conference funding they could receive, where the maximum was \$50,000 (USDA-NIFA, 2024). The proposal must address all parts of the conference's grant application, which may overlap with other aspects of the specified proposal priorities/objectives. Some unique needs may include 1) a justification for the meeting; 2) recent meetings on the same subject, dates, and locations; 3) name and organizational affiliations of the chair and other members of the organizing committee; 4) proposed agenda; etc. (Figure 3).

## Key personnel

It is important to delineate roles on the proposal team upfront so that people know the tasks and timeline for applying and reporting back to the funders. If the association or group has an education committee, this committee is instrumental in providing more details about the proposed conference agenda and its objectives. The conference planner can provide details about past and similar

meetings and the names of chairs as required in the proposal. The executive director can share historical data to assist in the proposal's introduction and budget. The liaisons took the lead to draft the project narrative.

## Budget

Work with the program area priority contact(s) to learn what are allowable expenses. In our case, we prioritized funds for guest speakers travel and/or honorarium requests and rentals. We kept the budget justification easy for the reviewers to understand for how the funds would support the conference (Figure 4).

## Evaluation

An evaluation plan in the project narrative guides the team's process of reporting outcomes to the funders. Determine what needs to be measured based on the proposed objectives submitted in the Letter of Intent (LOI) and refined in the project narrative. The team should consider if there are additional questions to include that could improve future association conferences. Another consideration is whether institutional review board (IRB) approval is needed for human subject research. Some universities may see participant surveys not as research but as part of an education program. Therefore, the team should consider the pros and cons and the breadth of an IRB approval allowing for disseminating the results to a broader audience and scholarly venues. An IRB may also help guide the team on how surveys are created, implemented, data analysis, and storage.

## Application

The LOI focused on an Extension Project, to "Build science-based capability in people to engage audiences and enable informed decision making" (USDA-NIFA, 2019). The tracks within the NEAFCS 2023 Annual Session that were supported by the

grant focused on food safety; nutrition, and health in diet; nutrition and the prevention of chronic disease; and activities that build science-based knowledge and skills for attendees (n~500) to better engage their communities across the United States. Thereby aligning with the grant content requirements. A \$50,000 grant was awarded and these funds supported budget "buckets" of rentals and professional development. Rentals included but were not limited to bus rentals for offsite professional development and AV equipment. Professional development included but was not limited to costs related to speaker/presenters and admittance fees, for example for the oyster tours. The team had decided that these supports were most instrumental in meeting the learning objectives for participants.

We sought IRB approval (#2087170-1). The Qualtrics survey predictor tool and two testers said the survey took 2-7 minutes. Each survey consisted of multiple choice, Likert, and fill-in-the-blank questions. Survey items focused on knowledge, behavior intention, demographics, and program satisfaction. Examples of survey questions: "The presenter(s) create an inclusive and welcoming learning environment," and "What is your MAJOR area of programming?"

The conference evaluation tool was developed, reviewed, implemented, and analyzed to inform how well our overall goals and objectives were met. The specific deliverables from the proposal narrative the team wanted to measure were: 1) survey completion rate (70%); 2) respondent enjoyment of the professional development they attended (70%); 3) respondents can apply what they learned to their current program at home (40%); 4) learned something new related to Food Safety, Nutrition, and Health (60%); and were 5) inspired to learn more on the professional development they attended (70%). The team met or exceeded each metric (data not shown). Volunteer(s) for each grant-related professional development setting had a pre-conference meeting with the liaisons. Liaisons shared how the surveys would be implemented and how the executive office would assist with follow-up re-

minders with their ListServ. Folders were prepared with attendee rosters, survey QR codes and URLs, recruitment scripts, bus schedules (if offsite), and liaison phone numbers. Data collection was open for two weeks, and the majority of respondents participated in the brief retrospective survey on the same day of their event. Reports were generated and shared with the 2024 annual session planning committee.

## Discussion

As resources for Extension activities become challenged, the authors wanted to bring awareness to Extension professionals of the USDA-NIFA-AFRI Conference Grants that can support professional development and leadership opportunities for new and seasoned Agents, and build the knowledge and practical skill set of how a proposal team can search and apply for a conference grant from our best practices:

- Identify roles and responsibilities up-front of the writing team members
- Determine the project type to help create the conference objectives, education or extension is a strong fit for most of the Extension Associations
- Set aside time to write and navigate the reporting system
- Make sure the dates of the federal documents are the most current
- Look for supplemental materials for the LOI and project narrative at USDA-NIFA (n.d.)
- Keep the budget simple, and use a transparent Excel spreadsheet
- Use an online platform for data collection and analysis
- Ensure your evaluation measure the objectives listed in the proposal narrative
- Communicate with attendees that the conference has federal funding, completing an assessment is needed and their cooperation is greatly appreciated
- The USDA grant application support team is helpful, responsive and available 24/7 except for

federal holidays.

In conclusion, receiving the conference grant funds is doable but takes some time and team effort. The additional funds can improve the quality and range of what the conference planning committee would like for its attendees. We chose to support guest speakers and rental fees, whereas Extension agents in FCS and other programs may identify other allowable expenses to improve their conferences. We hope other extension groups and beyond can use this manuscript to assist them to apply for a conference grant.

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# Figure 1

The overall flow of the conference grant process.

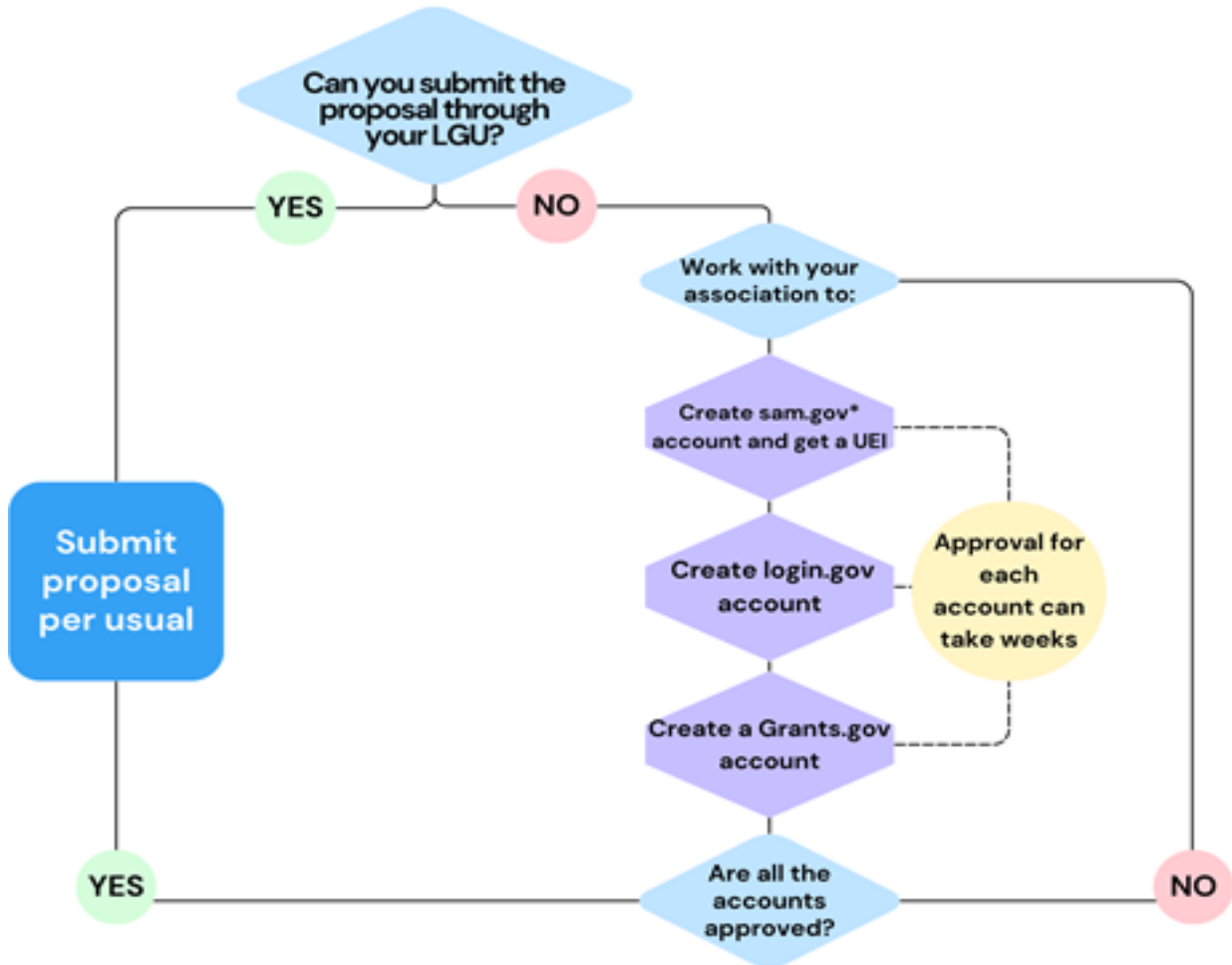
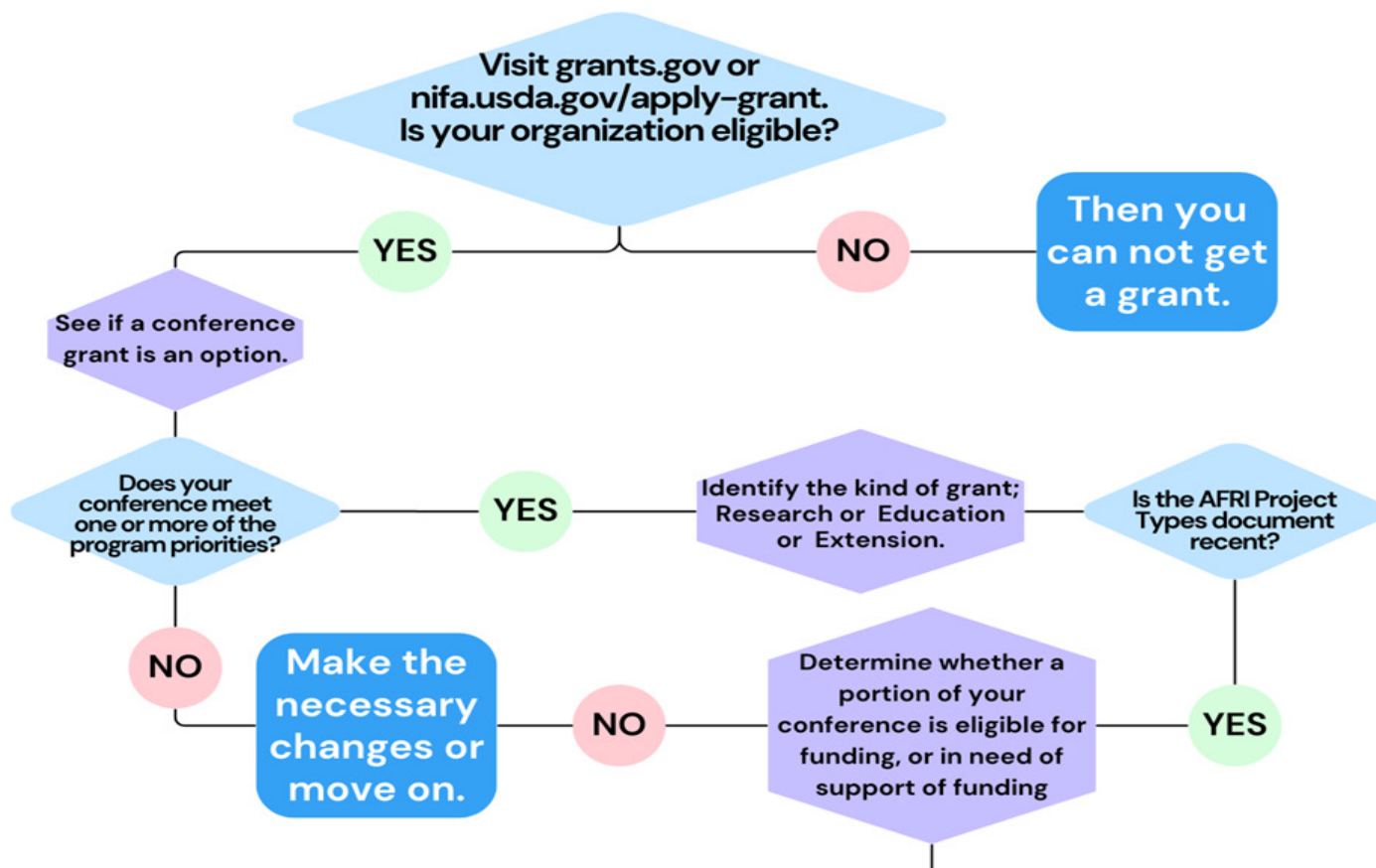


Figure 2

Finding an appropriate conference grant and initiating the Letter of Intent (grants.gov, n.d., USDA-NIFA, 2019, USDA-NIFA, n.d.-a, USDA-NIFA, n.d.-b)



**3. Extension Projects**

Single-function Extension Projects conduct programs and activities that deliver science-based knowledge and informal educational programs to people, enabling them to make practical decisions. Program delivery may range from community-based to national audiences and use communication methods from face-to-face to electronic or combinations thereof. Extension Projects may also include related matters such as certification programs, in-service training, client recruitment and services, curriculum development, instructional materials and equipment, and innovative instructional methodologies appropriate to informal educational programs.

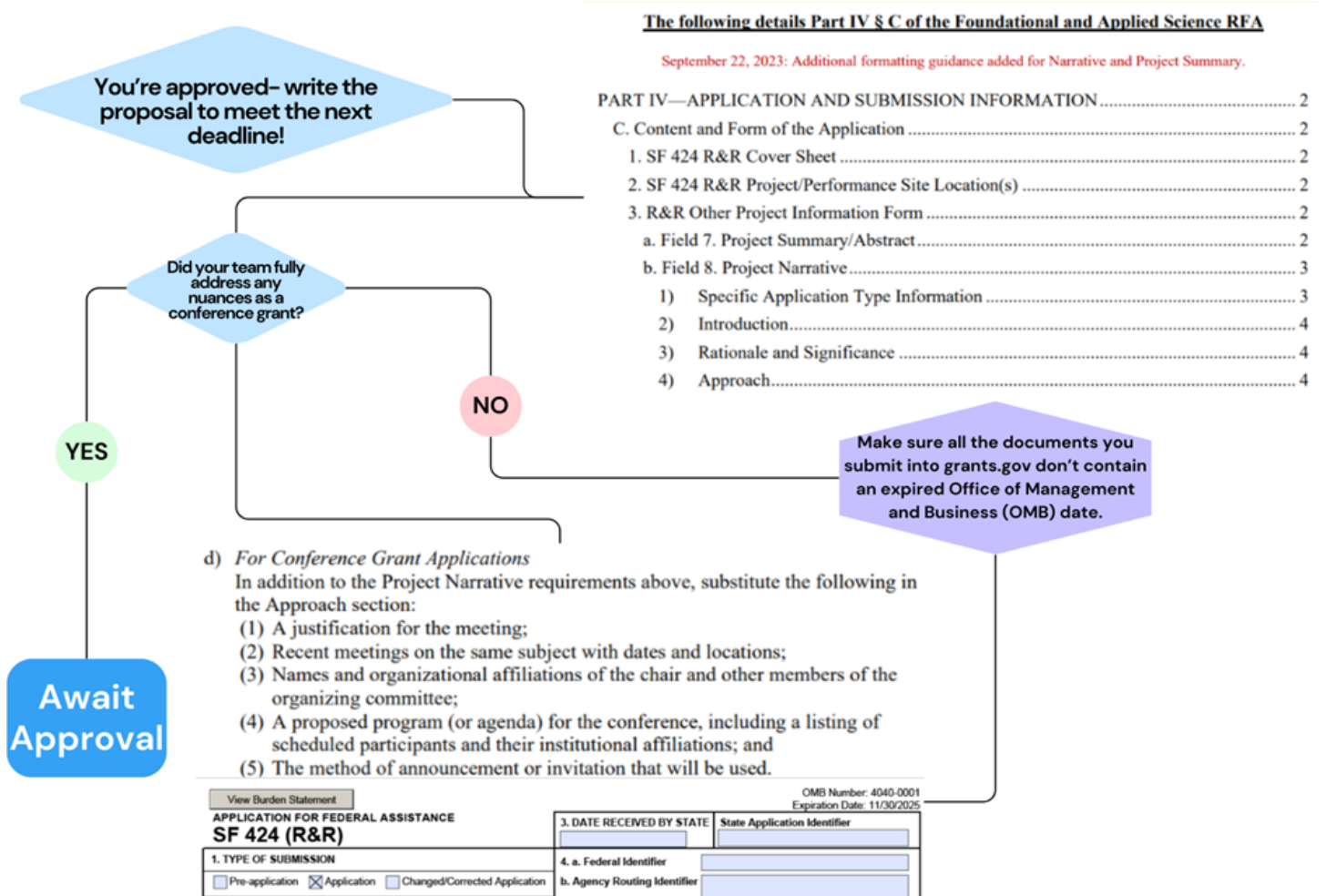
Extension Projects address one or more of the following key strategic actions:

- 1) Support informal education to increase food and agricultural literacy of youth and adults;
- 2) Promote science-based agricultural literacy by increasing understanding and use of food and agricultural science data, information, and programs;
- 3) Build science-based capability in people to engage audiences and enable informed decision making;



# Figure 3

LOI approved for writing the project narrative (USDA-NIFA, 2022, USDA-NIFA, n.d.-a)



## Figure 4

Funding and reporting general schematic (USDA-NIFA, n.d.-c).

