Objective: This study describes the theory-based design of food preservation lessons for gardeners, evaluates these lessons with regard to influencing food preservation confidence and worry, and examines the perceived influences of food preservation on fruit and vegetable intake and aspects of food security.

Use of Theory or Research: These lessons were developed using the DESIGN process, a nutrition education program planning framework. Social cognitive theory was used to guide the lesson development.

Target Audience: Adult home or community gardeners in metro Lansing, Michigan.

Program Description: The program included in-person lessons on three types of food preservation: freezing, water bath canning, and pressure canning. Each lesson was about 90 minutes in length and consisted of PowerPoint presentations, demonstrations of food preservation equipment, and videos on portions of the canning process.

Evaluation Methods: The evaluation consisted of post-lesson surveys to examine knowledge of proper food preservation practices, confidence in preserving food, and worry about preserving food. Participants also completed a follow-up survey several months after the lesson to examine perceived influence of home food preservation on vegetable intake and aspects of food security.

Results: Most participants, between 73% and 83%, answered all food preservation knowledge questions correctly in the post-lesson survey. Average confidence scores increased and worry scores decreased following the lessons. At follow-up, 64% of participants agreed or strongly agreed that they ate more fruit and vegetables because of preserving food, 57% of respondents agreed or strongly agreed that they spend less money on food due to preserving, while 71% reported being better able to provide food for themselves and their family. Lastly, 93% reported feeling better about where their food comes from and wasting less food due to preserving.

Conclusion: The food preservation lessons improved confidence in and decreased worry about food preservation. This study also provides evidence that home food preservation may be beneficial in promoting fruit and vegetable intake and food security among gardeners.

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Development and Validation of the Teaching Nutrition in Physical Education Survey (TNPES)

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Background: Nutrition education is typically taught as part of the comprehensive school health education curriculum. However, nutrition education should be integrated into other subjects such as physical education to reinforce concepts learned in the health classroom. Currently, there are no instruments that measure physical education teachers’ beliefs relative to teaching nutrition as part of their curriculum.

Objective: To develop and validate a questionnaire that assesses physical education teachers’ intentions to teach nutrition as part of their physical education curriculum.

Study Design, Setting, Participants: The Teaching Nutrition in Physical Education Survey (TNPES) was developed utilizing the Theory of Planned Behavior (TPB). In phase one, a questionnaire was administered to a convenience sample (N = 54) of elementary physical education teachers in Florida. This version of the questionnaire included open-ended items that elicited participants’ salient beliefs and closed-ended items that assessed the direct measures of the TPB. In phase two, the 60-item TNPES was developed which measured behavioral beliefs, normative beliefs, control beliefs, attitude toward the behavior, subjective norms, perceived behavioral control, and behavioral intention. The TNPES was administered to 57 physical education teachers attending a state conference in Florida.

Measurable Outcome/Analysis: The direct measures of the TPB were analyzed for reliability based on internal consistency using Cronbach’s alpha. Principal component analysis, a content analysis by experts, and a test of concurrent validity were used to determine the validity of the TNPES. Additionally, the test-retest method was used to establish the temporal stability of the belief-based measures.

Results: Only items with a factor loading of 0.60 or higher were retained. Cronbach’s alpha was 0.906 for the direct measures of attitude toward the behavior, 0.705 for subjective norm, and 0.917 for perceived behavioral control. Pearson’s correlation coefficients for the test-retest reliability analysis of the belief-based measures were as follows: behavioral beliefs (r = 0.532), normative beliefs (r = 0.845), and control beliefs (r = 0.898).

Conclusion: The TNPES demonstrated evidence of both reliability and validity based on multiple analyses. The instrument can be used to assess physical education teachers’ intentions to teach nutrition and examine their beliefs that influence those intentions.

Funding: None

Development of a Theory-Based Three-week Whole-Food Plant-Based Diet Intervention for College Students

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Objective: Using an interdisciplinary approach, develop a 3-week, theory-based, whole-food plant-based (WFPB) diet intervention for use in a feasibility study to assess the impact of a WFPB diet on college students’ physical and mental health and determine if the type of teaching modality (ie, interactive-experiential vs. lecture-based) improves diet adherence and outcomes.

Use of Theory: Theory of Planned Behavior (TPB) and Social-Cognitive Theory (SCT) were used to develop the theoretical model and supporting materials for three 75-minute intervention sessions that will be delivered using two different teaching modalities

Continued on page S69
Target Audience: Undergraduate students in the College of Health Sciences at Appalachian State University.

Program Description: An extensive literature review was conducted to identify determinants of healthy eating and adherence to plant-based diets among college students. Determinants were linked with mediators of the TPB (eg, outcome expectations, perceived barriers) and/or SCT (eg, self-efficacy, behavioral control) to inform the theoretical model. Determinants were summarized to identify three major topics for the intervention sessions: 1) A Beginner’s Guide to WFPB Eating, 2) Meal Planning and Shopping for WFPB Eating, and 3) Eating WFPB When Dining Out and in Social Situations.

Evaluation Methods: Pre- and/or post-intervention measures will include socio-demographics, diet quality and adherence, theoretically-informed mediators, depression and anxiety symptoms, anthropometric, biochemical measurements, and acceptability of a WFPB diet. We hypothesize that greater adherence to a WFPB diet will result in improved mental health, biochemical and anthropometric measures, and diet quality and participants in the interactive-experiential group will report better diet quality/adherence.

Results: A comprehensive theoretical model comprising eight constructs from the TPB and/or SCT was developed. Three, 75-minute intervention sessions were also developed and include the following components: session goals and objectives, lesson plans with activities corresponding to theoretical constructs, instructor guides, GoogleSlide presentations, and supporting materials/participant handouts.

Conclusion: The final intervention will be implemented in a feasibility study in April 2023. Post-intervention focus groups will be utilized to inform revisions to the intervention.

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Dietary Changes Among People Practicing Meatless Monday

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Background: High meat consumption significantly impacts the global ecological footprint and health consequences of our food system. Food choices are complicated and influenced by culture, taste, economics, politics, and other determinants of health, thus the need for contributing solutions. Meatless Monday (MM) calls for skipping meat one day a week as a simple first step toward planetary health. Few studies have examined whether reducing one day a week leads to further changes in meat consumption.

Objective: This study investigated the impact of the weekly MM newsletter and how participating in a meatless day influences dietary behaviors related to meat consumption throughout the week.

Study Design, Settings, Participants: This cross-sectional study analyzed responses (n=1,153) from a survey of MM e-newsletter subscribers. Participants were recruited by convenience sampling and included if they were 18 years old.

Measurable Outcome/Analysis: Using logistic regression, we investigated the relationship between practicing MM, eliminating meat more than one day/week, and incorporating meatless recipes at home and eating out. Additionally, we examined if the duration of receiving the MM newsletter influences the likelihood of eliminating meat during the week.

Results: Participants who were practicing MM were ten times more likely to eliminate meat more than one day/week (Odds Ratio (OR)=9.94, p < 0.001) and twice as likely to eliminate meat entirely (OR=1.98, p = 0.008); eight times more likely to incorporate more meatless recipes at home (OR=10.77, p < 0.001); three times more likely to order more meatless meals when eating out (OR=3.18, p < 0.001) respectively. Participants who received the MM newsletter for more than one year were two times more likely to eliminate meat from their diet than those who received the newsletter for less than one.

Conclusion: Eliminating meat one day per week increases the likelihood of further decreasing meat intake and making other dietary changes. MM offers a small-step strategy that leads to additional dietary changes.

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Dissemination and Implementation Science Training: Pilot Study Approach for Expanding Nutrition Professionals’ Competency

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Objective: To assess acceptability, feasibility, and appropriateness, change in knowledge, and expertise among participants who enrolled in a Dissemination and Implementation Science (D&I) training.

Use of Theory or Research: The design-focus framework, theory of planned behavior, and Validated D&I competences developed the training’s learning strategies, course materials and structure.

Target Audience: Nutrition undergraduate students at an Appalachian University.

Program Description: An eight-week, online training met once a week for an hour via Zoom. Students completed case studies, discussions, and developed an implementation plan for an evidence-based nutrition program to improve students understanding and expertise in implementation science.

Evaluation Methods: A 40-item pre survey and 42-item post survey were used to test if self-efficacy and expertise change after intervention and Implementation Outcomes to identify feasibility intervention. A two-tailed