

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

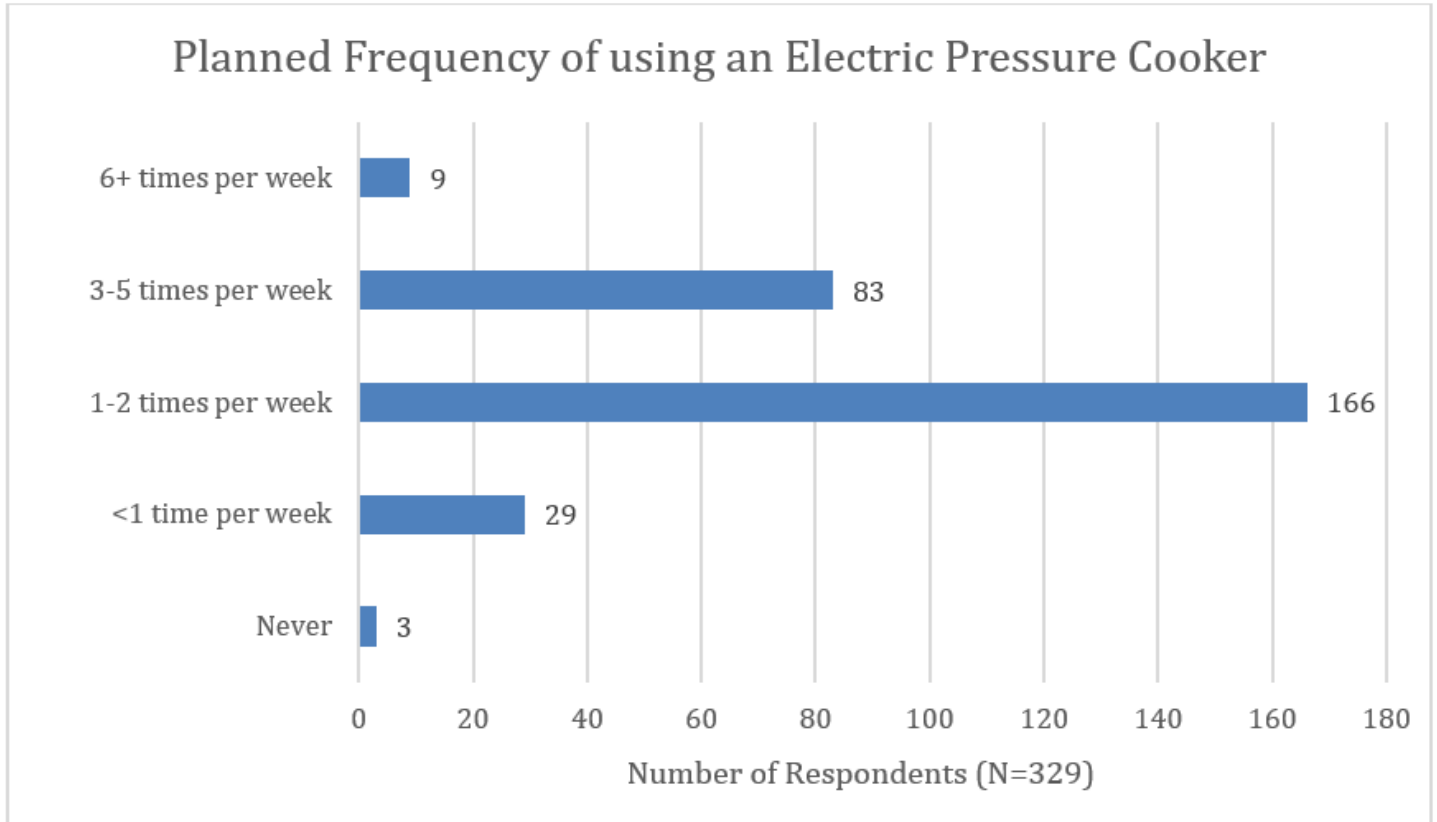


Table 1

Participant Answers to Retrospective Evaluation

Evaluation Question	Mean (Before)	Mean (After)	Mean Difference
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