

Program Evaluation and Analysis of BHEZ Cooking Demonstrations

Psychology of Food & Eating, Roger Williams University

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1. Overview of Survey
 - a. Survey developed with BHEZ and Corinna Noel, a postdoctoral fellow at Brown
 - b. **Goal:** objectively evaluate the cooking demonstrations
 - c. Potential Outcomes:
 - i. Increase in healthy **eating**
 - ii. Increase in positive **attitude** regarding cooking
 - iii. Increase in cooking **confidence**
 - iv. Increase in **willingness to try** new foods
 - v. Increase in **knowledge** about healthy foods
 - vi. Decrease in **social isolation**
2. Study Design
 - a. **Pre-post design** to get information on change in outcomes
 - b. **Interviewer-administered** questionnaire
 - c. Identified a series of items and scales to assess outcomes from:
 - i. Pinard, C. A., Uvena, L. M., Quam, J. B., Smith, T. M., & Yaroch, A. L. (2015). Development and testing of a revised cooking matters for adults survey. *American Journal of Health Behavior, 39*, 866-873.
 - ii. De Jong Gierveld, J. & Van Tilburg, T. (2010). The De Jong Gierveld short scales for emotional and social loneliness: Tested on data from 7 countries in the UN generations and gender surveys. *European Journal of Aging, 7*, 121-130.
3. Survey Sections
 - a. Participant Characteristics
 - b. Eating Habits
 - c. Cooking Attitudes
 - d. Cooking Confidence
 - e. Healthy Behaviors
 - f. Social Connectedness
 - g. Barriers to Cooking
 - h. Program Evaluation of Cooking Demonstration
4. Statistical Analysis
 - a. Data was analyzed by looking at means and frequencies to describe data
 - b. Paired samples t-tests were used to evaluate significant differences between pre- and post-demo measures
 - c. For open-ended questions, themes in responses were examined
5. Participant Characteristics
 - a. Demographics
 - i. Mostly white (87.2%), with 2.6% being Latino and 2.6% other
 - ii. Mostly female (76.9%), with 15.4% male.

- iii. Youngest participant was 43 years-old, while the oldest was 92 years-old (M= 70.23)
 - b. Education
 - i. Most participants had completed high school or earned their GED (25.6%),
 - ii. 20.5% completed some college.
 - iii. 12.8% had not completed high school.
 - iv. 10.3% had completed a two-year college degree
 - v. 12.8% had completed a four-year college degree, and
 - vi. 10.3% had completed a graduate or other advanced degree.
 - c. Most participants (86.1%) reported that they prepared the majority of their own meals in their own kitchen.
 - d. Participation in Social programs
 - i. No participants reported that they had participated in WIC or in Free/Reduced School Lunch Program.
 - ii. 23.1% participation for SNAP
 - iii. 33.3% participation in the Food Pantry
 - iv. 20.5% participation in Medicaid.
 - v. 43.6% had not participated in any food assistance programs.
 - e. Participant attendance
 - i. The majority of participants (28.2%) reported that they were attending their first cooking demonstration.
 - ii. 2nd through 5th time: 36.5%
 - iii. 9th and 10th time: 8.3%
 - iv. 15th or more: 7.8%
 - v. The average number of cooking demonstration attendances was 4.84.
6. Eating Habits
- a. Participants were asked to share their consumption amounts of different types of food both before (Pre) and after (Post) attending the cooking demonstrations
 - b. Consumption levels were measured on a scale ranging from : **(1) not at all, (2) less than once per week, (3) more than once per week, (4) once per day, and (5) multiple times per day**
 - c. There was a significant difference between pre and post in the french fries category such that participants consumed french fries and fried potatoes **fewer** times in a 7-day period after attending the Bristol HEZ cooking demonstrations

Type of Food	Ave (SD) Pre	Ave (SD) Post	T-value	P-value
Fruit	3.79 (.82)	3.69 (.71)	.60	.50
Green Salad	3.07 (.72)	3.00 (.72)	.81	.42
*French fries, and other fried potatoes	1.86 (.64)	1.72 (.65)	*2.12	*.043
Other potatoes, not fried	2.62 (.78)	2.44 (.69)	1.15	.26
Beans (other than green beans)	2.72 (.80)	2.66 (1.01)	.57	.57
Non-fried vegetables	3.41 (.73)	4.24 (1.02)	1.15	.26

* significant difference between pre and post at the .05 level

7. Cooking Attitudes

- Participants were asked how much they believed 3 statements: 1) that cooking takes too much time, 2) that cooking is frustrating, and 3) that it is too much work to cook
- Attitudes were measured on a scale from: **(1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree**
- There was a significant difference between pre and post on the attitude that cooking takes too much time such that the participants agreed with this statement **less** after attending the demos.
- There were nonsignificant trends in the other two attitudes such that participants agreed that cooking was frustrating and too much work **less** after attending the demos.

Statement	Ave (SD) Pre	Ave (SD) Post	T-value	P-value
*Too much time	2.41 (1.32)	1.96 (.78)	*2.77	*.01
Frustrating	2.34 (1.20)	2.00 (.85)	1.83	.07
Too much work	2.20 (1.14)	1.86 (.74)	1.90	.06

* significant difference between pre and post at the .05 level

8. Cooking Confidence

- Participants were asked how confident they felt about: 1) being able to cook from basic ingredients, 2) following a simple recipe, 3) tasting food that you have not eaten before, and 4) preparing and cooking new foods.
- Confidence was measured on a scale from: **(1) not at all confident, (2) not very confident, (3) neutral, (4) somewhat confident, to (5) very confident.**
- There were significant differences between pre and post in all categories indicating an increase in cooking confidence in all areas after attending the cooking demonstrations.

Statement	Ave (SD) Pre	Ave (SD) Post	T-value	P-value
*Basic ingredients	4.24 (1.18)	4.66 (.55)	*-2.36	*.03
*Simple recipe	4.31 (1.04)	4.72 (.59)	*-2.46	*.02
*Tasting new food	3.83 (1.26)	4.28 (.96)	*-2.92	*.01
*Cooking new food	3.83 (1.10)	4.17 (.89)	*-2.17	*.04

* significant difference between pre and post at the .05 level

9. Healthy Behaviors

- Participants were asked: 1) how often they used nutrition labels, 2) how often they chose low sodium options, 3) how often they chose lean or low-fat meats, and 4) how often they adjusted meals to be healthier.
- The scale for this item was: **(1) never, (2) rarely, (3) sometimes, (4) often, (5) always, and (6) does not apply.**
- There was a significant difference between pre and post in how often the participants used nutrition labels indicating an increase in using them after attending the cooking demos.

Statement	Ave (SD) Pre	Ave (SD) Post	T-value	P-value
*Nutrition labels	3.14 (1.36)	3.69 (1.23)	*-3.13	*.004
Low sodium	3.93 (1.28)	3.93 (1.28)	0	1
Lean meats	4.14 (.99)	4.24 (1.18)	-.65	.52

Adjust meals	3.97 (1.18)	4.10 (.98)	-.70	.49
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* significant difference between pre and post at the .05 level

10. Social Connectedness

a. 2 questions asked to assess social connectedness

i. Participants were asked how often they got the social and emotional support they needed. This item was from the CDC's Behavioral Risk Factor Surveillance System phone survey.

1. The scale was from: **(1) never to (5) always**

2. There was a significant difference in pre and post such that participants reported they more frequently got the support they needed after attending the cooking demos

Statement	Ave (SD) Pre	Ave (SD) Post	T-value	P-value
*Social and Emotional Support	4.07 (1.03)	4.41 (.98)	*-2.07	*.048

* significant difference between pre and post at the .05 level

ii. The De Jong Gierveld short scales for social loneliness were also used. It included 3 items, for every item that they answered no or "more or less," they got 1 point. This is then summed for a social loneliness score. Higher scores indicate higher loneliness.

1. While findings were not statistically significant, there was a trend in the right direction such that loneliness was lower after attending the cooking demos.

Statement	Ave (SD) Pre	Ave (SD) Post	T-value	P-value
Social Loneliness Score	.83 (1.04)	.62 (1.05)	1.80	.08

* significant difference between pre and post at the .05 level

2. We also looked at the frequencies reported pre and post for each individual item.

a. "There are plenty of people I could rely on when I have problems"

i. Pre - 23.1% indicated "no" or "more or less"

ii. Post - 10.3% indicated "no" or "more or less"

b. "There were many people I could trust completely"

i. Pre - 25.6% indicated "no" or "more or less"

ii. Post - 23.1% indicated "no" or "more or less"

c. "There were enough people I felt close to"

i. Pre - 30.8% indicated "no" or "more or less"

ii. Post - 12.8% indicated "no" or "more or less"

11. Barriers to Cooking

a. This was an open-ended item and so themes in responses were examined.

b. Most commonly reported answer was that they experience no barriers to cooking.

- i. Time was second most reported.
- ii. Low energy/desire.
- iii. Someone else cooks or they have no one to cook for.
- iv. Others included: wanting to go out to eat, lack of ingredients, previous “disasters” in the kitchen, physical pain, and not knowing what to eat.

12. Cooking Demonstration Evaluation

- a. This was assessed with a series of questions about the current cooking demonstration. Frequencies were examined, see below.
 - i. The scale used was: **(1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree**
 - ii. Most participants reported that they agreed or strongly agreed with all of the items.

Statement	Mean	SD
I liked the sample	4.53	1.02
I plan to use this recipe at home	4.61	.77
This demonstration taught me the skills I need to make this recipe at home	4.50	.61
I learned new ways to eat healthy	4.22	.59
My food and nutrition knowledge has increased as a result of this demonstration	4.33	.53
I enjoyed today’s demonstration	4.83	.38
I would recommend the demonstration to others	4.89	.32

- b. The survey also asked if they think that what they learned would change their behaviors in the next 6-12 months.
 - i. The possible responses were: **(1) No, definitely not, (2) No, probably not, (3) Possibly, (4) Yes, probably, (5) Yes, definitely, and (6) Don't know**
 - ii. The mean response was 3.89 (SD=1.14; between possibly and yes, probably).
 - iii. When asked how, participants responded:
 - 1. Learning new ways to prepare and cook meals.
 - 2. Healthier lifestyle.
 - 3. Trying new foods and ingredients.
 - 4. Try including new ingredients into traditional recipes to make them healthier.

13. Course Feedback responses from students taking Dr. Tooley’s Psychology of Food course

One student commented specifically on the community engagement piece: “I enjoyed the community engagement and having out of class experiences.”

The remaining comments had to do specifically with the in-class portions of the course.

14. Summary

- a. Overall, this experience was beneficial for the students who conducted the surveys and provided useful information to the BHEZ in terms of the effectiveness and participant acceptability of their community cooking demonstrations. In evaluating changes from before the cooking demonstrations to after, we saw significant positive changes in diet (eating few French fries and fried potatoes), cooking attitudes (feeling that cooking takes too much time decreased), cooking confidence (cooking from basic ingredients, following a simple recipe, tasting food that they have not eaten before, and preparing and cooking new foods), healthy behaviors (using nutrition labels), and social connectedness. For many of the items that were not statistically significant, we saw trends in the positive direction (changes in the feeling that cooking is frustrating or too much work, and a decrease in reported social loneliness). We also saw overwhelmingly positive responses to the cooking demonstration evaluation with most participants selecting that they agree or strongly agree with all of the items. Participants reported probable behavior change in the next 6-12 months due to the cooking demonstrations which demonstrates positive behavioral intentions.