MAIN SOURCES OF COOKING KNOWLEDGE AND SKILLS AMONG UNDERGRADUATE STUDENTS AND POTENTIAL EFFECTS UPON HEALTHY EATING HABITS

By

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Main Sources of Cooking Knowledge and Skills Among Undergraduate Students and Potential Effects Upon Healthy Eating Habits

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Abstract

Meal preparation by undergraduate students can affect general eating behaviors and diet qualities. Studies have shown that an increased frequency of food preparation has resulted in healthier eating habits (i.e. decreased use of fast food, higher fruit and vegetable consumption). The purpose of this study is to determine undergraduate students’ main sources of cooking knowledge and skills and how these affect cooking frequency and eating habits (i.e. fruit and vegetable intake). Undergraduate students (n=420, mean age 19 years, 55.5% white, 23.8% Hispanic, 8.6% Asian, 4.5% African-American, 0.7% Native American, 6.9% other) enrolled in nutritional science courses were surveyed regarding demographic data, cooking and food preparation habits, sources of cooking knowledge and skill, and fruit/vegetable intake. Among those who only chose option A for question 8, the median response was “Rarely” in terms of preparing their food, while those who did not choose option A, but chose at least one of the options B-G for question 8, the median response was “Sometimes”. There was not a significant association between the consumption of at least three servings of fruits or vegetables and learning to cook from family (p-value = .180) nor choosing answer options B-G for question 8.
Introduction

The aspect of cooking within the comforts of one’s home alongside the company of family and close acquaintances has gradually been replaced by eating out at restaurants or fast food chains. The consumption of ready-made or pre-prepared foods has steadily risen among adults, therefore increasing the risk of becoming overweight or obese. Due to convenience being an important factor in what foods are consumed on a frequent basis, the overall amount of time spent preparing these foods has diminished. Due to the decreased amount of time allotted for food preparation, it is important to note how and where people attain their knowledge and skills of cooking as a means of preparing meals. Recent research has been performed regarding the identification of these sources and their impact on cooking skills with a little over 60% of adults aged 20-60 years old deeming mothers as their main foundation of learning how to cook. Little attention has been placed upon the actual process of developing initial cooking skills, therefore underestimating the potential significance and impact of external factors (i.e. family, close relatives) upon cooking competence.

Determining the main sources of cooking knowledge and skill among the young adult population is essential because these may provide a greater understanding of the role of nutrition education in their lives. In a recent study, it was detailed that learning cooking skills at an earlier age can help to enhance cooking skills, cooking confidence, as well as perceptions towards meal preparation at home. The varying levels of cooking education received by children and teenagers provide potential recommendations that make cooking programs a necessary aspect of curriculums in elementary school, high school, and colleges.
Cooking Among Undergraduate Students

The levels of cooking knowledge and skill among young adults play prominent roles in their abilities to prepare food. Studies have shown that healthier eating habits, such as decreased use of fast food, have resulted from a higher frequency of food preparation\(^3\). It is clear that understanding the origins of one’s cooking competence can broaden perspectives on other aspects of nutrition, including the adoption of healthier eating habits via food preparation frequency. The act of preparing food by the young adult population and the behaviors that accompany it can also be attributed to their cultural backgrounds as well as the practices adopted by the generations that came before them. For instance, a recent study\(^4\) indicated that cultural and familial influences led older generations, such as mothers, to change the ways they prepared food for their own children. Exploring the cultural effects upon young adults regarding traditions and family values would provide a greater insight on how they perceive food preparation.

Meal Preparation Among Undergraduate Students

This study focused on how specific sources of cooking knowledge and skill have affected undergraduate students’ ability to prepare their own meals. Meal preparation and how often students take part in this act can lead to variations in eating habits, with a higher frequency of meal preparation leading to a potential increase in the consumption of fruits and vegetables and vice versa. The decreased instance of meal preparation among young adults has raised concerns about health outcomes, including higher levels of obesity, diabetes, and other chronic diseases.

In a 2016 study, university students who met two criteria (1. Lived off campus and not with family, 2. Does not have a meal plan) participated in focus groups led by
facilitators to determine their culinary skills, food experiences with family, and specific barriers to making certain food choices. Results showed that the students who prepared their own meals felt as though they had a better control over their diet and that buying pre-prepared foods would result in worse health outcomes. Familial experiences were also shown to have affected the amount of cooking knowledge and skill that the students possessed, with them mimicking more healthy eating habits if they had personally observed their parents taking part in healthy eating themselves. Barriers to proper meal preparation by university students included lack of "free time" and constraints dealing with finances and transportation. This study shows that attempts to prepare meals by undergraduate students have been made but a variety of difficulties often stand in the way of them doing so, therefore affecting their eating habits.

**Cooking/Preparing, Cooking Knowledge/Skill, and Cooking Frequency**

For this research project, “cooking” or “preparing” food is defined as performing activities such as washing/peeling, chopping (dicing, mincing, juliennning, etc.), mixing/stirring, seasoning (basting, preparing a marinade, etc.), sautéing/stir-frying/grilling, or otherwise actively engaging in cooking food. Furthermore, cooking knowledge and skill are similarly defined as the competency of cooking among undergraduate students and their use of these skills to prepare their own food. Cooking frequency is defined as how often these students cook or prepare food with their current level of cooking knowledge. In this research project, these terms are used in accordance with one another to accurately convey the effects of cooking upon undergraduate students’ fruit and vegetable intake.
There has been limited research in determining the main sources of cooking knowledge and skill within this group, especially undergraduate students who are learning about the fundamentals of nutrition. In this research project, the potential implementation of healthy eating habits by undergraduate students are determined with regards to the specific sources of cooking knowledge and skill that were chosen. Food preparation frequency and its potential effects on the consumption of fruits and vegetables were also analyzed.

**Methods**

The subjects included were a total of 331 undergraduate students enrolled in two introductory nutrition courses (both NSC170) and a total of 89 undergraduate students enrolled in an upper division nutrition course (NSC308). Permission was granted by all three professors via email prior to the administration of research surveys. The survey was approved by the University of Arizona Institutional Review Board (IRB). Before the surveys were distributed to the students, an oral consent was provided and informed them that completion of the survey was voluntary and participation (or lack thereof) would not impact their grade within the course. Surveys were both distributed and collected on the 25\textsuperscript{th} of September in one NSC170 course, while the rest of the surveys were distributed and collected on the 2\textsuperscript{nd} of October in the other NSC170 course and the NSC308 course. The survey consisted of 10 questions related to demographics, living arrangements, frequency of food preparation, use of meal plans, sources of cooking knowledge/skills, and servings of fruits and vegetables consumed per day (Appendix A).
NSC170 – Introductory Nutrition Class

*Food, Nutrition and You* (NSC 170) is a tier I general education course offered to undergraduate students of various majors. This class focused on the principles of human nutrition and included topics related to vitamins, minerals, life cycle nutrition, digestion, absorption, metabolism, world food situations and food safety. Throughout this course, students are presented with information regarding food choices and how nutrition can affect health and wellness. With completion of NSC170, their understanding of nutrition principles by undergraduate students would be improved in terms of their ability to promote better diet and lifestyle choices.

NSC308 – Upper Division Nutrition Class

*Nutrition and Metabolism* (NSC 308) is a tier II course designed for undergraduate students majoring in nutritional sciences or those who have a background in biological and chemical sciences. This class focused on the metabolic and physiological functions of nutrients at the molecular, cellular, tissue, organ and system level, while integrating the effects of nutritional status in health and disease. A more well-rounded comprehension of nutrient metabolism and its role in health and disease states was the main objective of this course. Compared to NSC170, this course provides a more in-depth overview of the effects of nutrient metabolism and how this can impact the normal functions of the body.

Results

Demographic of Participants

The average age of participants was 19.3 years old, with a median value of 19 years old. The genders of these participants were as follows: female (n= 304, 72.4%), male (n= 115, 27.4%) and other (n=1, 0.2%). Results of ethnicities were as follows:
White (n=233, 55.5%), Hispanic (n=11, 23.8%), Asian (n=36, 8.6%), Other (n=29, 6.9%), Black (n=19, 4.5%), and Native American (n=3, 0.7%). Of those who selected “Other” for ethnicity, 24 participants (88.9%) stated they were a combination of 2 or more ethnicities, 3 participants (11.1%) stated they were Arab and/or Middle Eastern and the other 2 participants did not state their ethnicities. The majority of participants were freshmen (n=238, 56.8%), followed by sophomores (n= 74, 17.7%), juniors (n=69, 16.5%), and seniors (n=38, 9.1%) (Table 1). With regards to the participants’ living situations, the majority of them lived in dorms (n=193, 46%), followed by apartments (n=162, 38.6%), with parents (n=60, 14.3%), and other situations (n=5, 1.2%) (Table 1). Of the five who chose “other” as their living situation, four (80%) stated they lived in Greek housing (n= 3 [sorority], n=1 [fraternity]) while one (20%) was a homeowner (Table 1). The majority of participants also did not have a meal plan (n= 246, 58.6%), while a total of 174 participants (41.4%) did.

<table>
<thead>
<tr>
<th>Participant Grade Level</th>
<th>Participant Living Situation Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>238 (56.8%)</td>
</tr>
<tr>
<td>Sophomore</td>
<td>74 (17.7%)</td>
</tr>
<tr>
<td>Junior</td>
<td>69 (16.5%)</td>
</tr>
<tr>
<td>Senior</td>
<td>38 (9.1%)</td>
</tr>
</tbody>
</table>

**Four out of the five (80%) lived in Greek housing; one out of the five (20%) was a homeowner**

Table 1: Demographic data (grade level and living situation) of participants.
Most of the participants stated that they rarely cook or prepare their own food (n=173, 41.2%) followed by most of the time (n=103, 24.5%), sometimes (n=98, 23.3%), and always (n=46, 11%); the median response was “sometimes” (Figure 1).

![Bar Chart]

**Figure 1:** Frequency of cooking/preparation of food by participants.

For Question 8, the overwhelming majority of participants said they learned to cook from family members (n=393, 93.6%) while only 27 (6.4%) participants did not. One hundred sixty-five (39.3%) participants stated that they did learn how to cook from friends, while 165 (39.3%) participants stated they did not. A total of 227 (54.05%) participants did not say they learned how to cook or prepare their food using social media, while 193 (45.95%) participants said they did. As for deeming online cookbooks as their main source of cooking knowledge and skill, 322 (76.7%) participants said they did not gain this knowledge from this source, while 98 (23.3%) participants said they did. Three hundred fifty-two (83.8%) participants said that they did not learn how to cook
from online cooking blogs, while 68 (16.2%) said that they did. Three hundred thirty-one (78.8%) participants stated they did not learn how to cook from cooking programs on TV, while 89 (21.2%) said they did. With regards to hard copy books/magazines, 366 (87.1%) participants said they did not learn how to cook from this source, while 54 (12.9%) said they did. A total of 19 participants chose the “Other” option and wrote in their own responses (Table 2). The only two which occurred at least twice were “self-taught” and “trial and error”. Some of these responses, such as culinary classes and cooking class in high school could have been condensed into similar groups due to their likeness.

<table>
<thead>
<tr>
<th>Other</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
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<tr>
<td>Google</td>
<td>1</td>
<td>5.26</td>
<td>5.26</td>
</tr>
<tr>
<td>Hello Fresh</td>
<td>1</td>
<td>5.26</td>
<td>10.53</td>
</tr>
<tr>
<td>High school cooking class</td>
<td>1</td>
<td>5.26</td>
<td>15.79</td>
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<tr>
<td>Cooking class in high school</td>
<td>1</td>
<td>5.26</td>
<td>21.05</td>
</tr>
<tr>
<td>Cooking classes</td>
<td>1</td>
<td>5.26</td>
<td>26.32</td>
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<td>Culinary class</td>
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<td>5.26</td>
<td>31.58</td>
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<td>Dad is a cook</td>
<td>1</td>
<td>5.26</td>
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<td>Experimenting</td>
<td>1</td>
<td>5.26</td>
<td>42.11</td>
</tr>
<tr>
<td>Home EC</td>
<td>1</td>
<td>5.26</td>
<td>47.37</td>
</tr>
<tr>
<td>Parents cook for me and I sometimes assist</td>
<td>1</td>
<td>5.26</td>
<td>52.63</td>
</tr>
<tr>
<td>Pinterest</td>
<td>1</td>
<td>5.26</td>
<td>57.89</td>
</tr>
<tr>
<td>School</td>
<td>1</td>
<td>5.26</td>
<td>63.16</td>
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Table 2: Question 8 “Other” responses of participants

Fruit and vegetable intake was detailed in survey questions 9 and 10. Results showed that the median number of servings of vegetables consumed per day was 2, while the mean was 1.81 (±SD = 1.13). The distribution of vegetable servings was positively skewed, in contrast to what was indicated by both the median and the mean. The median number of servings of fruits consumed per day was 2, with a mean of 2.12 (SD = 1.21); this showed an approximately normal distribution because the median and mean were close together and was bell-shaped.

Results showed that there was a non-significant, positive association (OR = 1.04, p-value = 0.851, 95% CI: 0.70, 1.54) between participants who chose answer option A (“Experiences with family”) of question 8 and higher values of answer option A (“Rarely”) question 7 regarding frequency of food preparation. This result was deduced after adjusting for age as a potential confounder. On the other hand, there was a weak, positive association (Spearman’s rho = 0.1660, p-value = 0.0006) between participants who chose any of the other answer options (B-G) for question 8 and how often they cooked or prepared their own food (Question 7). Among participants who chose “Family” or did not choose “Family”, the median response for both of these groups was

<table>
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<th>Category</th>
<th>Count</th>
<th>Percentage</th>
<th>Total Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self taught</td>
<td>2</td>
<td>10.53</td>
<td>73.68</td>
</tr>
<tr>
<td>Solo experimentation</td>
<td>1</td>
<td>5.26</td>
<td>78.95</td>
</tr>
<tr>
<td>Special forces</td>
<td>1</td>
<td>5.26</td>
<td>84.21</td>
</tr>
<tr>
<td>Trial and error</td>
<td>2</td>
<td>10.53</td>
<td>94.74</td>
</tr>
<tr>
<td>Work</td>
<td>1</td>
<td>5.26</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>19</td>
<td><strong>100.00</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>
“Sometimes” or at least 2-3 times per week of preparing meals for question 7. Among those who did not choose any of the answer options B-G on question 8, the median response of this group was “Rarely” for question 7, while those who chose at least one of the answer options B-G on question 8 stated that they “Sometimes” (median response) prepare their own food.

**Analysis of Survey Questions 8 B-H and Question 7**

The median response was “Sometimes” for both groups who did or did not choose “Friends” as their main source of cooking knowledge and skill. For those who did or did not choose “Social Media” for question 8, the median response was “Sometimes” for frequency of food preparation for both groups. The median response was “Sometimes” for participants who chose “Online Cookbooks” as a means of learning how to cook, while participants who did not choose this source responded that they prepare their food more often (median = “Most of the Time”). As for “Online Cooking Blogs”, participants who did not choose this response for question 8 stated that they only prepare their food “Sometimes” (median); those who did choose “Online Cooking Blogs” stated that they prepare their food “Most of the Time” (median). With the groups who stated that they learned from “Cooking programs on TV” along with those who did not, results showed a median response of “Sometimes” for how often both of these groups prepared their food. The group who stated that they acquired their cooking knowledge and skill from “Hard-copy magazines, books” conveyed a median response of “Sometimes” regarding frequency of food preparation. On the contrary, the group who did not choose “Hard-copy magazines, books” for question 8, showed a median response of “Most of the time” for preparing their own food. For answer option H of
question 8 ("Other"), too many categories were present for inference, but could have been condensed for analysis.

**Analysis of Survey Question 3 and Question 8 A-H**

An analysis of responses to question 3 and question 8 A-H was also performed to see if there were any relationships among various ethnicities and certain sources of cooking knowledge and skill that were chosen. A Fisher’s exact test was performed between each answer option for question 8 and their relation to question 3. Results of a Fisher’s exact test showed that there was not a significant association (p-value = 0.529) between ethnicity and whether respondents learned to cook from family members. Furthermore, there was not a significant association between ethnicity and whether respondents chose friends as their main source of cooking knowledge and skill. There was not a significant association (p-value = 0.312) between ethnicity and whether respondents learned to cook from “Social Media” based on the results of Fisher’s exact test. No significant association (p-value = 0.728) was also observed between ethnicity and whether respondents learned to cook from online cookbooks according to Fisher’s exact test. As for online cooking blogs, there was not a significant association (p-value = 0.407) between ethnicity and whether respondents learned to cook from this source. There was not a significant association (p-value = 0.386) between ethnicity and whether respondents learned to cook from cooking programs on TV. Similarly, there was not a significant association (p-value = 0.307) between ethnicity and whether respondents learned to cook from hard-copy magazines or books. There were too many categories of “Other” in order to check its correlation with ethnicity using Fisher’s exact test.

**Analysis of Survey Question 8A-B and Fruit/Vegetable Intake**
Based on Fisher’s exact test, results showed that there was not a significant association (p-value= 0.180) between participants who chose “Family” for survey question 8 and eating at least 3 servings of fruits or vegetables per day. Out of the 393 participants who chose this answer option, only 62 (15.8%) of participants reported eating at least 3 servings of fruits or vegetables per day. Among those who did not choose “Family” as their main source of cooking knowledge and skill, 7 out of 27 (29.2%) participants reported eating at least three servings of fruits or vegetables.

There was not a significant association (Chi-square p-value= 0.915) between participants who chose any other answer option for question 8 (i.e. B-H), besides answer option A, and reporting the consumption of at least 3 servings of fruits or vegetables.

**Discussion**

As someone who was born in the Philippines, I distinctly remember the impact of Filipino culture throughout my life. Eating out at restaurants or purchasing fast food were extremely uncommon. Instead, staying at home with family and friends and preparing meals together in the kitchen was, and still is, a huge part of my culture, typically occurring on a daily basis. Recipes with exact measurements of ingredients were rarely used by my family; the majority of meals cooked were based off of memory or close observation of older generations cooking in the kitchen. Regardless of how the meals were prepared, we always stayed true to our culture and made sure to include as many family members as we could to join us in this tradition of cooking together. Growing up, I would constantly see my mother chopping up fresh vegetables or meat in the kitchen in preparation of her tamarind soup or a beef stew. If she wasn’t doing this, she was washing fresh fruits that
she recently bought at a wet market (also known as a *palengke* in the Philippines) with my grandmother that she would later cut for her children to eat as a snack.

Once my family moved to the United States, my mother and several of my close family members continued to prepare food at home together with the freshest ingredients possible as a way to maintain the culture that our lives revolved around. By the time I moved to Arizona, I was old enough to comprehend what they were doing and soon began to learn how to cook meals in the kitchen with the help of my mother and grandmother. My mother was, and continues to be, the main source of my own cooking knowledge and skills, spanning from proper cleaning of fruits and vegetables to cutting, chopping, and slicing a variety of meats and other ingredients for Filipino dishes. Over time, I also watched cooking shows on the Food Network or food demonstrations on YouTube or social media platforms to further enhance what I already knew about cooking from my family and gather ideas for new recipes or meals. As an undergraduate student majoring in Nutritional Sciences, various nutrition courses have also strengthened my abilities in cooking and understanding the importance of preparing meals at home as a healthier alternative to eating out at restaurants or fast food.

When attempting to determine factors that affect food preparation frequency as well as the level of cooking knowledge and skills that young adults currently possess, it is evident that one’s culture as well as the level of cooking knowledge and skills they have attained over time should be taken into account. Limited studies exist regarding the true effect of familial culture and tradition in the inheritance of food preparation knowledge among undergraduate students⁵. Further research should be conducted across cultures to determine if family and friends are also considered as the main sources of cooking
knowledge and skill among this population. Besides culture, the age during which these students were first introduced to cooking and meal preparation would also be an important aspect to research. By paying attention to whether or not they participated in culinary classes or other types of cooking programs during various stages of their life (e.g. elementary school, high school, college), researchers may be able to deduce how this education affects what they consider to be their main source of cooking knowledge and skill. The cultural backgrounds of young adults as well as their current level of nutrition education may be determining factors in where they have received their competence in cooking as well as how frequently they cook/prepare their own food.

As stated in the results, participants who said they rarely cook or prepare their own meals also considered that the majority of their cooking knowledge and skills stemmed from experiences with family. On the contrary, participants who stated they sometimes cook or prepare their own food chose different sources of cooking knowledge and skills other than experiences with family. This is important to note because the concepts of independence and cooking education could have potentially played into this result. For those who chose cooking experiences with family, these observations may not have been enough for the participants to be able to independently cook or prepare meals on their own, therefore creating a possible reliance on other sources of cooking knowledge and skill instead (i.e. social media, cookbooks, cooking shows on TV).

Cooking programs on university campuses, such as Cooking on Campus at the University of Arizona, allow students to register for inexpensive cooking classes held at the university’s recreational center. During these cooking classes, students are able to learn how to cook healthy and nutritious meals with guidance from student chefs. For
those who are unable to attend the cooking class, recipes are often posted on the program’s main website to make it accessible for students who are interested in cooking meals on their own. A variety of recipes are posted online, ranging from breakfast foods, desserts, soups, and side dishes.

Programs like these play an important role in providing young adults, and even children, with a level of knowledge in preparing and cooking their food. This is also the equivalent to culinary classes or home economics classes that are integrated within some high school curriculums as a means of enhancing their cooking skills. Research has discussed the importance of culinary skills education and how this can offer opportunities for school-aged children to gain experience in hands-on cooking rather than merely observing its occurrence. These forms of experiential learning may have long-lasting effects upon the youth and can support future dietary choices and cooking abilities as adults. A recent study has also discussed research advocating for school-based policies that entail making home economics a requirement in schools in order to decrease rates of obesity and help students learn about proper nutrition. Although research still needs to be performed relating to whether or not cooking education truly helps students improve their health status, the integration of these policies within normal curriculums in schools can be considered as the first step towards helping to develop the necessary cooking skills to leading healthier lifestyles in this population.

From personal experience, I vividly remember culinary classes being offered at the high school I attended. There were four levels of culinary classes that students were able to take, ranging from beginner to advanced. A student would need to take the beginner level culinary class before enrolling in the intermediate level class and so on and so forth.
A few of my peers had taken the culinary classes up until advanced and they had said that it allowed them to learn more about cooking as well as catering and commercial food production. It is clear that cooking programs and classes can have a potential role in developing young adults’ cooking skills and knowledge throughout their educational careers.

Overall, cross-cultural research should be conducted in the future to determine how one’s background may have a specific effect on which sources of cooking competence has impacted young adults’ eating habits and food preparation frequency the most. It would also be helpful to further understand through research how the development of cooking programs within the curriculum of different educational levels (i.e. elementary, high school, college) could factor into cooking knowledge and level of culinary skill when preparing meals. Other factors may influence eating habits and food preparation of undergraduate students, thus representing probable focuses on future studies. Families should attempt to foster a cooking environment at home as a means to positively impact eating patterns early on or become involved in cooking programs with their children at an early age to promote a foundation for cooking knowledge and skills that will last them a lifetime.

Several limitations existed in this research project. To begin with, the answer options provided on a few of the survey questions were not specific enough, therefore producing more generalized results relating to the main sources of cooking knowledge and skill. Although “Experiences with family” was chosen by the majority of undergraduate students who were surveyed as their main source of cooking knowledge and skill, individual family members were not specified. Future studies could potentially look at
specific family members (i.e. mothers/fathers, aunts/uncles, grandmothers/grandfathers) and the roles they play in helping to develop the cooking competence of undergraduate students. With regards to the food preparation frequency aspect of this research project and its relation to healthier eating habits by undergraduate students, it would also have been beneficial to note the age during which these young adults first implemented their knowledge about cooking as a means to prepare their own meals. Research should be conducted in the future to determine how the age when cooking is first executed or observed relates to how often food is prepared.
References


Appendix A

Nutritional Research Survey

1. What is your age?

2. What is your gender?
   a. Female  
   b. Male

3. What is your ethnicity?
   a. White  
   b. Hispanic or Latino  
   c. Black or African American  
   d. Native American or American Indian  
   e. Asian / Pacific Islander  
   f. Other: ___________________

4. What is your academic status within your major?
   a. Freshman  
   b. Sophomore  
   c. Junior  
   d. Senior

5. Which of the following best describes your living situation?
   a. Dorm  
   b. Apartment, house, condo, etc.  
   c. With parents/relatives/spouse  
   d. Other (please specify): ___________________

6. Are you currently using a meal plan provided by Arizona Student Unions at the UA?
   a. Yes  
   b. No

7. How often do you cook/prepare your own food?
   ***Cooking or preparing food includes the performance of activities such as:
   • Washing/peeling  
   • Chopping (dicing, mincing, julienning, etc.)  
   • Mixing/stirring  
   • Seasoning (basting, preparing a marinade, etc.)  
   • Sautéing/stir-frying/grilling  
   • Otherwise actively engaging in cooking food
   
   a. Rarely (0-1 time per week)  
   b. Sometimes (2-3 times per week)  
   c. Most of the time (4-6 times per week)  
   d. Always (7 or more times per week)
8. Where have you acquired most, if not all, of your cooking knowledge/skills? Select all that apply.
   a. Experiences with family members (i.e. parents/grandparents showed you how to cook)
   b. Experiences with friends
   c. Social media (e.g. cooking demonstrations/videos on apps, such as Facebook, Instagram, Snapchat, etc.)
   d. Online cookbooks, cooking magazines
   e. Online cooking blogs
   f. Cooking programs on TV (e.g. Food Network shows, The Chew, etc.)
   g. Hard-copy cooking magazines, books
   h. Other (please specify): ____________________

   Use the table below to help you answer questions 9 and 10.

   9. How many servings of vegetables do you consume per day? Circle a value below.
      0   1   2   3   4   5+

   10. How many servings of fruit do you consume per day? Circle a value below.
      0   1   2   3   4   5+

   Serving Size Examples

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<th>Vegetables</th>
<th>Fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cup, chopped</td>
<td>1 cup, chopped</td>
</tr>
<tr>
<td></td>
<td>1 fruit (orange, apple)</td>
</tr>
</tbody>
</table>