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# **Practice**

# The Influence of Culinary Interventions on Eating Habits in a Post-Secondary Educational Environment

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Often, students entering college find themselves in a transitional phase, gaining new independence and responsibilities, including purchasing food and beverages and making decisions that may not have been necessary before. Blue Raiders Drink Up (BRDU) is a grant-funded program by the Tennessee Department of Health, under the Project Diabetes Initiative. This program strives to help Middle Tennessee State University (MTSU) students make healthier food and beverage decisions. Students at MTSU were invited to participate in a four-part series cooking class led by a registered dietitian. Students learned various cooking basics to make simple, budget-friendly, healthy meals. Students were also instructed on meal planning strategies and grocery shopping skills (i.e., reading and translating nutrition labels and shopping on a budget). Data were collected over three years using a pretest/posttest design to assess changes in knowledge and behavior toward food and beverages. Participants could attend optimal subsequent health coaching sessions with a certified health coach or registered dietitian. In total, 229 students completed the pretest/posttest assessment. Significant improvement was noted in knowledge level, kitchen safety and familiarity, and meal-planning/grocery shopping skills. Although college students may enter the university with previous cooking and nutrition knowledge obtained from secondary-level FCS classes or their home environments, the number of education hours necessary to evoke behavior change may not be sufficient to lead to long-lasting changes. In addition, students are frequently living independently and purchasing their food for the first time. These challenges may explain why some of the measured behaviors did not result in the desired changes and outcomes. The BRDU classes were successful in significantly improving self-reported knowledge and increased intention to practice food preparation and shopping skills learned in this course leading to healthier food choices, such as consuming more fruits and vegetables.

A deficit of cooking skills (de-skilling) among college students and young adults is a growing concern as convenience foods and dining out become more prevalent (Rowat et al., 2019). Many young adults lack basic culinary skills, which were often not adequately addressed at the secondary school level due to a decrease in the offering of family and consumer science courses or a lack of skills taught by families in their home environments (Lavelle et al., 2016; Muzaffar et al., 2018; Policastro et al., 2023).

Even when FCS courses are offered at the secondary level, including enough hours of nutrition education to achieve meaningful changes in dietary behaviors may be of concern. Forty to fifty hours of instruction may be necessary to effect significant behavioral changes (Contento & Sharp, 2016). Contento and Sharp's (2016) findings underscore the importance of committing sufficient instructional time to foster substantial improvements in students' dietary practices. The change in first-time independent living and purchasing one's own foods may also contribute to additional educational needs. Without basic cooking and nutritional knowledge, many students may rely on fast food or pre-packaged meals, sugar-sweetened beverages (Bawadi et al., 2019; Lee et al., 2023; Malik & Hu, 2022), and alcohol (Robinson et al., 2021), leading to poor dietary habits and

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potential health issues. Research has shown that students with cooking skills are more likely to consume fruits, vegetables, and whole grains, and less likely to consume highfat, high-sugar foods (Lichtenstein et al., 2015). By acquiring these skills in high school, students can carry healthy habits, encompassing physical, mental, and emotional well-being, into their university years, which is crucial for their overall health (Oleribe et al., 2018).

Moreover, FCS courses also teach students about budgeting and meal planning, skills that are indispensable for university life (Caraher et al., 2019). Many students face financial constraints while in college, and knowing how to prepare cost-effective meals can alleviate some of the financial pressure. This knowledge helps students manage their finances better and reduces their reliance on unhealthy, expensive dining options. According to Caraher et al. (2019), students who can cook are more likely to save money and less likely to experience food insecurity, a growing issue on college campuses.

Cooking classes aim to mitigate and reverse the trend of de-skilling (Rowat et al., 2019). Students may enter the university setting without the knowledge and skills needed to purchase, plan, and prepare their foods and meals. Studies have shown that students choose more processed and fast foods but fewer fruits, vegetables, nuts, or seeds (Slater et al., 2018). This trend is exacerbated by busy lifestyles, limited kitchen access in some college settings, and a need for more emphasis on cooking education (Slater et al., 2018). As a result, young adults may miss out on the benefits of home-cooked meals, which are declining in the U.S. (Rowat et al., 2019; Smith et al., 2013), which may include better nutrition, cost savings, and the satisfaction of preparing food themselves.

It is concerning that university students are more likely to exhibit lower levels of food literacy, which includes food preparation, than those who did not attend university (Zareimanesh & Namdar, 2022), so there is a need to address this issue in university education, especially since incoming university students are likely to be unfamiliar with such skills (Ronto et al., 2016). One reason for this difference between university students and those who do not attend university is that those with higher educational levels are less likely to eat at home (Zeballos & Restrepo, 2018), which is associated with lower food literacy (Zareimanesh & Namdar, 2022). Ronto et al. (2016) and Zareimanesh and Namdar (2022) suggest discrepancies in both informal education (in the home) and formal education (e.g., lack of family and consumer science courses in high schools). It is also suggested that informal learning is more effective for food literacy (Zareimanesh & Namdar, 2022). However, this is complicated by the trend of low skill levels among adults (Rowat et al., 2021). Therefore, universities may be positioned to fill the educational gap by providing novel food literacy education interventions. Targeting university education is not meant to exclude or diminish food literacy interventions in K-12 education; rather, it recognizes a critical life stage toward increased independence and the need for informed decision-making. For others in this life stage who do not attend university, the university setting remains a starting point for outreach, such as Cooperative Extension education and community nutrition students offering education to the greater community (Lawlis et al., 2019).

Some studies suggest that university students involved in hands-on cooking classes have better healthy food choice/consumption outcomes due to knowing how to prepare healthier food choices (Alpaugh et al., 2020; Reicks et al., 2014). The "Blue Raiders Drink Up" (BRDU) program at Middle Tennessee State University works with the Tennessee Department of Health Project Diabetes initiative to reduce poor eating and beverage choices and minimize the prevalence of obesity-related diseases. The prevalence of obesity and obesity-related diseases, such as diabetes, is on the rise in the U.S., especially among college students (Obesity Medicine Association, 2022). Many factors contribute to obesity and other chronic diseases where nutrition may be a contributing factor in university students, including stress, lack of activity, and poor food and drink choices (da Costa Pelonha et al., 2023; Ozberak, 2010).

This study aims to evaluate the effectiveness of the BRDU in improving eating and drinking choices among university students. By examining the outcomes of the program's cooking classes, this research aims to determine whether hands-on food and nutrition education can improve dietary habits, potentially leading to decreases in the incidence of nutrition and health-related issues in the college student population. The research question for this study is: How effective is the BRDU cooking classes in improving dietary habits and decisions on food and beverage purchases and intake among university students?

#### Methods

Over three years, Blue Raiders Drink Up conducted four in-person and nine online cooking class series for MTSU students. The classes were taught by a registered dietitian and are modeled after the Cooking Matters initiative, developed by the Supplemental Nutrition Assistance Program-Education Program (SNAP-Ed), which assists low-income individuals and families in making healthy and affordable food choices. The theoretical framework of the SNAP-Ed Cooking Matters program is rooted in the Social Cognitive Theory. The Social Cognitive Theory emphasizes the role of observational learning, social interactions, and self-efficacy in behavior change (Gordillo & Prescott, 2023). These factors are pivotal in teaching college student participants to adopt healthier eating habits through cooking, grocery shopping, and nutrition education. By demonstrating practical skills and providing hands-on experience, the program enhances students' confidence in preparing nutritious, or nutrient dense meals (Bucher et al., 2017).

Each class covered weekly topics such as basic nutrition information, beverage consumption education, knife skills, food safety, cooking principles, meal prepping, and a grocery store tour. The cooking classes were held each Wednesday evening for four weeks straight. The term 'series' means the four-week period in which the classes are held. Students were given weekly incentive items, such as cooking supplies, to take home. This ensured the students had the supplies to practice cooking at home and motivated them to return for the next session. If the students came to three of the four classes in the series, they were rewarded with a \$100 Amazon or Kroger grocery card.

# **Participants**

Individuals enrolled in the cooking class were current MTSU students. Students had to meet no other criteria to participate in the series. Participant's ages ranged from 18-35 years of age. The total sample size of the in-person cooking class could be, at most, 25 due to safety precautions and spatial limitations in the food lab. The online cooking classes could accommodate up to 30 students. While each class varied, the attrition rate for those enrolled in the four-week cooking class series was 10.7% (n = 39). Specifically, the attrition rate of the in-person cooking classes was 7.3%, and that of the online classes was 12.3%.

#### **Setting and Materials**

Four of the thirteen series were held in person, in a group-style setting, in the MTSU food lab. Students would begin the lesson sitting at three large tables while they were introduced to the topics for that session. To assess the participants' knowledge and behavioral changes, they would begin by taking a weekly knowledge check. If this was the first or final session, they would complete a pre or posttest. Students who did not complete the posttest assessment were presumed to have dropped the class, and their data were excluded from the final analysis. Next, they would be split into five even groups and designated to a specific kitchen space to create their assigned recipes with assistance from the dietitian and experienced dietetics students.

The nine remaining courses were switched to an online learning platform called D2L due to the COVID-19 pandemic. The students still received the same curriculum as if they were in person, and specific goals were set for each week. For instance, they would create the same recipes at home and post pictures of what they made for credit. During this time, the Blue Raiders Drink Up team would pack boxes of the items needed to recreate the assigned recipes and mail them to the participant's house.

The grocery store tour was the only difference between the online and in-person format. To get a similar experience, the registered dietitian devoted the third session of the online class to nutrition label education, creating a 'scavenger hunt' locating healthy snacks on a budget and asking the participants to review videos of a grocery store tour utilizing Arizona State University's campus health team's materials.

# Procedures

Cooking class participants were recruited via flyers posted on campus and social media. MTSU professors, organizations, and departments helped recruiters by sharing flyers at on-campus events and in their classes. Some professors offered extra credit for attending the cooking

#### **Table 1. Descriptive Statistics**

Variable	М	SD	
Ages (years)	21.19	3.8	
Gender	n	%	
Male	47	20.5	
Female	182	79.5	
Total	229	100	
Classification	n	%	
Freshman	35	15.1	
Sophomore	50	22.1	
Junior	59	25.6	
Senior	67	29.2	
Graduate Student	18	8.0	
Total	229	100	

classes. Lastly, word of mouth by peers played an instrumental role in recruitment.

These data were not collected as part of a research study. Instead, they were collected for grant evaluation and reported only to the funder. The MTSU compliance officer informed the program coordinator that an IRB was unnecessary. This analysis is conducted under an IRB utilizing pre-existing data. The protocol number is IRB-FY2024-208.

# Results

All data from the Blue Raiders Drink Up 2019-2022 cooking classes were compiled and analyzed. Initially, 268 students responded to the pretest survey; however, there were dropouts (n = 39) in the posttest survey—229 participants completed the pretest and posttest evaluations. <u>Table 1</u> shows demographics.

As a result of the cooking series, several positive findings emerged between the pretest and posttest evaluations. Students were asked to rate their feelings about cooking and their cooking skills on a scale of 1-10. Both responses indicated that students felt significantly more positive (alpha < .05, two-tailed) following the class series. Significant positive findings were also shown for "How many times a week do you cook at home?" More students started comparing food prices after the series, looking at nutritional labels before purchasing food items, choosing to eat healthy more often, making meals using raw ingredients or from scratch (Lavelle et al., 2016), consuming more produce, and choosing low-fat, low-sodium, or non-dairy products when grocery shopping. Furthermore, students began planning their meals ahead of time and started to consistently develop and take grocery lists with them to the store.

Conversely, the posttest results indicated an increase in students' concerns about not having enough money for food and a rise in the frequency of purchasing sodas or juice when grocery shopping. Additionally, students reported having less time to cook, feeling that cooking is too much work, and needing more proper cooking equipment at home. Furthermore, the number of times students ate fast

Item	Pretest Scores		Posttest Scores			
	м	SD	м	SD	t	р
I compare the prices when buying food items.	0.55	0.71	1.12	1.57	7.847	<.001
l usually plan my meals ahead of time.	0.77	0.97	1.77	1.73	11.77	<.001
l develop a grocery list and take it with me to the store.	0.63	0.84	1.39	1.67	9.598	<.001
I am sometimes worried that I will not have enough money for food.	1.13	1.42	2.31	1.89	12.77	<.001
l try to look at the nutritional labels before purchasing a food item.	0.77	1.01	1.9	1.83	12.46	<.001
How often do you choose to eat healthy?	0.72	0.88	1.57	1.62	10.72	<.001
l usually make meals from scratch using basic, whole ingredients.	0.86	1.11	1.92	1.82	12.09	<.001
In an average week, I consume multiple fruits and vegetables.	0.66	0.85	1.46	1.66	10.16	<.001
When grocery shopping, I usually pick low-fat, low-sodium, or non-dairy products.	0.87	1.12	2.02	1.8	12.79	<.001
When grocery shopping, I buy soda or juice.	1.25	1.55	2.37	2.02	11.9	<.001
I don't have enough time to cook.	1.12	1.45	2.53	2.08	13.59	<.001
Cooking is too much work.	0.95	1.26	2.15	2.08	11.87	<.001
I don't have the proper equipment to cook at home.	0.87	1.25	1.84	2.25	9.533	<.001
On a scale of 1-10, how do you feel about cooking?	3.7	4.29	7.66	2.96	19.89	<.001
On a scale of 1-10, rate your cooking skills.	3.15	3.7	6.26	2.93	18.21	<.001
How many times a week do you cook at home?	0.97	1.24	1.78	1.77	10.19	<.001
How many times a week do you eat fast food or dine out?	0.64	0.83	1.37	1.72	9.091	<.001
Do you meal prep for a busy week ahead?	1.06	1.33	2.47	1.89	14.35	<.001

# Table 2. Results from paired T-tests

food or dined out each week increased after the sessions. Results from t-tests are shown in Table 2.

# Discussion

Posttest results showed significant improvement in selfreported at-home meal preparation and decision-making while shopping for food. Although many of the results showed significant and positive trends, a few response questions reported differing results. It is postulated that these results may be due to various reasons including, but not limited to, students being tired, busy, and overwhelmed while studying for exams near the end of the semester. Responses showing a decline in behaviors following the series included eating out or at fast food restaurants more frequently, not having the proper cooking equipment, inadequate cooking time, or cooking being too much work. Students also responded that they worried they would not have enough money for food and purchased more juice or soda. These trends may have occurred due to the timing of the post-class survey. Students may need more resources, including time and money, near the end of the semester. Students may also have realized post-series that eating healthy could cost more if fresh produce was purchased. It is suggested that one reason for the lack of reported improvements in these behaviors may be the limited educational and skill-building hours included in the BRDU class series. According to Contento and Sharp (2016), a minimum of 40-50 hours of instruction are necessary to see changes in behavior. In contrast, the BRDU class series provided eight hours of instruction over four weeks. BRDU provided optional health coaching or registered dietitian sessions as a method of increasing skill-building hours. Additionally, Middle Tennessee State University encourages students to enroll in food science and food literacy courses to further develop and master these skills in the future. BRDU has hosted several cooking class series to further nutritional education. While no definitive link between home-cooked meals and a healthier lifestyle has been discovered, one cohort study from the U.K. found that:

In accordance with our hypothesis, a higher frequency of consuming home-cooked main meals was significantly associated with indicators of a healthier diet, namely Dietary Approaches to Stop Hypertension (DASH) score, Mediterranean Diet Score (MDS), plasma vitamin C, fruit intake and vegetable intake. Similarly, eating home-cooked meals more frequently was significantly associated with several markers of cardio-metabolic health, including a lower likelihood of having an overweight BMI and a lower likelihood of excess percentage body fat. (Mills et al., 2017, p. 7).

The BRDU cooking classes emphasize the importance of food skills among college students. A critical consideration that may be noticed is why these college students frequently need to gain these skills in the first place. This gap in food literacy can often be traced back to a lack of early education in cooking and nutrition in family homes, which underscores the importance of introducing these FCS skills during secondary education (Rowat et al., 2019). Specifically, incorporating Family and Consumer Sciences (FCS) courses into high school curricula is a proactive solution that could address this deficiency before students enter college.

College students are extremely busy, often trying to balance their educational, professional, and personal lives (Ozberak, 2010). In addition to demanding schedules, challenges such as a lack of financial resources, knowledge of how to prepare a meal, and a lack of facilities to do so further complicate this situation (Soederberg Miller et al., 2023). Most are left to choose from whatever options are provided on and around campus, which on many college campuses include fast food options via student meal plans. Research indicates that even when healthier options are available, some students opt for the less healthy option (Racine et al., 2022). Fast-food menu choices often lead to consuming generous portions and things like fried foods, burgers, or sugary beverages (Mohammadbeigi, 2018). The fact that students are typically young adults and may not consciously focus on their health can be an issue which leads to a continuous cycle of picking items that may be perceived as better tasting. This trend may continue into adulthood when they make more money (Roy et al., 2019).

Understanding that college students often operate on a fixed or minimal income can help educators focus on nutrition education rooted in the fiscal limitations many students face (Lacaille et al., 2011). Furthermore, the limited resources and cooking facilities available to many students create an environment ripe for snacking on ultra-processed foods (Soederberg Miller et al., 2023). Teaching students how to prepare healthy foods using limited resources should be a top priority at the secondary and university levels.

# Limitations

BRDU project limitations were noted. All measures collected were self-reported. For example, future projects that collect actual behavioral change measures, such as weight changes or photos of meals prepared or prepped, could demonstrate more concrete outcomes. Not all participants completed the classes and did not complete the post-evaluation. Examining project attrition rates and the reason for the attrition would be beneficial as data continues to be examined and analyzed.

The length of the BRDU series was four sessions. The short time span could have hindered behavior changes. Finally, the in-person to online switch of format due to the Covid -19 shutdown may have added to the challenges of data collection.

In the future, follow-up with participants could provide an opportunity to encourage and motivate students to further enhance their knowledge and skills by utilizing university-offered general education courses and free sessions with health coaches and registered dietitians. These resources are frequently overlooked, as many students are unaware of these valuable university benefits.

#### Conclusion

There is evidence that nutrition education can substantially impact the quality of diet. The success of BRDU in improving students' knowledge of nutrition basics, from the checkout line to consumption, highlights the need for more research and resources to be devoted to nutrition education.

Teaching the basics of nutrition and cooking skills is essential. However, a multi-faceted approach, with nutrition education beginning at the secondary school level, may significantly impact this unique college student population. Programs that incorporate teaching best practices for accountability and mitigation of issues such as food insecurity may lead to the most significant opportunity for success. The inclusion of meal prepping, learning to stretch one's food dollars, and knowledge of available community and university resources may be essential factors to include in all future BRDU series. For example, students often need more kitchen equipment and tools to prepare meals. Combating unhealthy eating on a national scale requires better choices at the local level, which begins with programs like BRDU.

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# References

- Alpaugh, M., Pope, L., Trubek, A., Skelly, J., & Harvey, J. (2020). Cooking as a health behavior: Examining the role of cooking classes in a weight loss intervention. *Nutrients*, *12*(12), 3669. <u>https://doi.org/10.3390/nu12123669</u>
- Bawadi, H., Khataybeh, T., Obeidat, B., Kerkadi, A., Tayyem, R., Banks, A. D., & Subih, H. (2019). Sugarsweetened beverages contribute significantly to college students' daily caloric intake in Jordan: Soft drinks are not the major contributor. *Nutrients*, *11*(5), 1058. <u>https://doi.org/10.3390/nu11051058</u>

Bucher, T., Hartmann, C., Rollo, M. E., & Collins, C. E. (2017). What Is Nutritious Snack Food? A Comparison of Expert and Layperson Assessments. *Nutrients*, *9*(8), 874. <u>https://doi.org/10.3390/</u> <u>nu9080874</u>

Caraher, M., Seeley, A., Wu, M., & Lloyd, S. (2019). Food affordability, access and security: A practical focus. *Public Health Nutrition*, *22*(1), 205–214.

Contento, I. R., & Sharp, D. (2016). The role of nutrition education in improving dietary behavior: Evidence and recommendations. *Journal of Nutrition Education and Behavior*, 48(5), 317–325. <u>https://doi.org/10.1016/</u> j.jneb.2016.04.001

da Costa Pelonha, R. N., Jomori, M. M., Maciel, T. G., Rocha, J. A. D., Passos, T. S., & Maciel, B. L. L. (2023). Low cooking skills are associated with overweight and obesity in undergraduates. *Nutrients*, *15*(11), 2424. <u>https://doi.org/10.3390/nu15112424</u>

- Gordillo, P., & Prescott, M. P. (2023). Assessing the Use of Social Cognitive Theory Components in Cooking and Food Skills Interventions. *Nutrients*, *15*(5), 1287. https://doi.org/10.3390/nu15051287
- Lacaille, L. J., Dauner, K. N., Krambeer, R. J., & Pedersen, J. (2011). Psychosocial and environmental determinants of eating behaviors, physical activity, and weight change among college students: A qualitative analysis. *Journal of American College Health*, *59*(6), 531–538. <u>https://doi.org/10.1080/</u> 07448481.2010.523855

Lavelle, F., Spence, M., Hollywood, L., McGowan, L., Surgenor, D., McCloat, A., Mooney, E., Caraher, M., Raats, M., & Dean, M. (2016). Learning cooking skills at different ages: A cross-sectional study. *International Journal of Behavioral Nutrition and Physical Activity*, *13*(1), 119. <u>https://doi.org/10.1186/ s12966-016-0446-y</u>

Lawlis, T., Sambell, R., Douglas-Watson, A., Belton, S., & Devine, A. (2019). The food literacy action logic model: A tertiary education sector innovative strategy to support the charitable food sector's need for food literacy training. *Nutrients*, *11*(4), 837. <u>https:/</u> /doi.org/10.3390/nu11040837

Lee, S. H., Park, S., Lehman, T. C., Ledsky, R., & Blanck, H. M. (2023). Occasions, locations, and reasons for consuming sugar-sweetened beverages among U.S. adults. *Nutrients*, *15*(4), 920. <u>https://doi.org/10.3390/ nu15040920</u> Lichtenstein, A. H., Ludwig, D. S., McKeown, N. M., & Jacques, P. F. (2015). Food literacy: How do communications and marketing impact consumer knowledge, skills, and behaviors? *Journal of Nutrition Education and Behavior*, 47(4), S137–S143.

Malik, V. S., & Hu, F. B. (2022). The role of sugarsweetened beverages in the global epidemics of obesity and chronic diseases. *Nature Reviews Endocrinology*, *18*(4), 205–218. <u>https://doi.org/ 10.1038/s41574-021-00627-6</u>

Mills, S., Brown, H., Wrieden, W., White, M., & Adams, J. (2017). Frequency of eating home cooked meals and potential benefits for diet and health: Cross-sectional analysis of a population-based cohort study. *The International Journal of Behavioral Nutrition and Physical Activity*, *14*, 109. <u>https://doi.org/10.1186/s12966-017-0567-y</u>

Mohammadbeigi, A. (2018). Fast food consumption and overweight/obesity prevalence in students and its association with general and abdominal obesity. *Journal of Preventive Medicine and Hygiene*, *59*(3). https://doi.org/10.15167/2421-4248/ jpmh2018.59.3.830

Muzaffar, H., Metcalfe, J. J., & Fiese, B. (2018). Narrative review of culinary interventions with children in schools to promote healthy eating: Directions for future research and practice. *Current Developments in Nutrition*, *2*(6), nzy016. <u>https://</u> <u>doi.org/10.1093/cdn/nzy016</u>

Obesity Medicine Association. (2022, July 22). *Obesity care in college students in the U.S.* Obesity Medicine Association. <u>https://obesitymedicine.org/blog/</u> <u>obesity-care-in-college-students-in-the-us/</u>

Oleribe, O. O., Ukwedeh, O., Burstow, N. J., Gomaa, A. I., Sonderup, M. W., Cook, N., Waked, I., Spearman, W., & Taylor-Robinson, S. D. (2018). Health: redefined. *The Pan African Medical Journal*, *30*, 292. https://doi.org/10.11604/pamj.2018.30.292.15436

Ozberak, C. (2010). The social factors of college lifestyle that may cause weight gain in undergraduate students. *Perspectives*, *2*(1). <u>https://scholars.unh.edu/ perspectives/vol2/iss1/ 20?utm\_source=scholars.unh.edu%2Fperspectives%2 Fvol2%2Fiss1%2F20&utm\_medium=PDF&utm\_camp aign=PDFCoverPages</u>

Policastro, P., Brown, A. H., & Comollo, E. (2023). Healthy helpers: Using culinary lessons to improve children's culinary literacy and self-efficacy to cook. *Frontiers in Public Health*, *11*, 1156716. <u>https://</u> <u>doi.org/10.3389/fpubh.2023.1156716</u>

Racine, E. F., Schorno, R., Gholizadeh, S., Bably, M. B., Hatami, F., Stephens, C., Zadrozny, W., Schulkind, L., & Paul, R. (2022). A college fast-food environment and student food and beverage choices: Developing an integrated database to examine food and beverage purchasing choices among college students. *Nutrients*, *14*(4), Article 4. <u>https://doi.org/10.3390/</u> nu14040900 Reicks, M., Trofholz, A. C., Stang, J. S., & Laska, M. N. (2014). Impact of cooking and home food preparation interventions among adults: Outcomes and implications for future programs. *Journal of Nutrition Education and Behavior*, *46*(4), 259–276. <u>https://doi.org/10.1016/j.jneb.2014.02.001</u>

- Robinson, E., Humphreys, G., & Jones, A. (2021). Alcohol, calories, and obesity: A rapid systematic review and meta-analysis of consumer knowledge, support, and behavioral effects of energy labeling on alcoholic drinks. *Obesity Reviews*, *22*(6), e13198. https://doi.org/10.1111/obr.13198
- Ronto, R., Ball, L., Pendergast, D., & Harris, N. (2016). Adolescents' perspectives on food literacy and its impact on their dietary behaviors. *Appetite*, *107*, 549–557. <u>https://doi.org/10.1016/j.appet.2016.09.006</u>

Rowat, A. C., Soh, M., Malan, H., Jensen, L., Schmidt, L., & Slusser, W. (2019). Promoting an interdisciplinary food literacy framework to cultivate critical citizenship. *Journal of American College Health*, *69*(4), 459–462. <u>https://doi.org/10.1080/</u> 07448481.2019.1679149

Roy, R., Soo, D., Conroy, D., Wall, C. R., & Swinburn, B. (2019). Exploring university food environment and on-campus food purchasing behaviors, preferences, and opinions. *Journal of Nutrition Education and Behavior*, *51*(7), 865–875. <u>https://doi.org/10.1016/ j.jneb.2019.03.003</u>

- Slater, J., Falkenberg, T., Rutherford, J., & Colatruglio, S. (2018). Food literacy competencies: A conceptual framework for youth transitioning to adulthood. *International Journal of Consumer Studies*, 42(5), 547–556. <u>https://doi.org/10.1111/ijcs.12471</u>
- Smith, L. P., Ng, S. W., & Popkin, B. M. (2013). Trends in U.S. home food preparation and consumption: Analysis of national nutrition surveys and time use studies from 1965–1966 to 2007–2008. *Nutrition Journal*, *12*, 45. <u>https://doi.org/10.1186/</u> <u>1475-2891-12-45</u>
- Soederberg Miller, L. M., Falbe, J., Chodur, G. M., & Chesnut, S. K. (2023). Home-prepared meals among college students at-risk for food insecurity: A mixedmethods study. *Appetite*, 188.
- Zareimanesh, B., & Namdar, R. (2022). Analysis of food literacy dimensions and indicators: A case study of rural households. *Frontiers in Sustainable Food Systems*, *6*, 1019124. <u>https://doi.org/10.3389/</u> <u>fsufs.2022.1019124</u>
- Zeballos, E., & Restrepo, B. (2018). Adult eating and health patterns: Evidence from the 2014-16 Eating & Health Module of the American Time Use Survey. United States Department of Agriculture, Economic Research Service. <u>https://www.ers.usda.gov/</u> publications/pub-details/?pubid=90465