

# **Examining the Crossroads of Food Waste, Nutrition, and Public Health Awareness Among American University Students**

Amelia A. Rowniewski, American University

*Cite as:* Rowniewski, Amelia. **2024**. "Examining the Crossroads of Food Waste, Nutrition, and Public Health Awareness Among American University Students". *Food-Fueled*, **1**, e00002. doi:10.57912/25640967.

web address: <https://edspace.american.edu/foodfueled/issues/volume-i/examining-the-crossroads-of-food-waste-nutrition-and-public-health-awareness-among-american-university-students/>

## **Introduction**

Historically, limited research has focused on examining college students' perceptions of the relationship between wasted food, nutrition, and public health. Specifically, my research question will assess: To what extent are American University (AU) college students aware of the nutritional public health implications of wasted food? This research question is important to understanding the behaviors and attitudes of AU college students, informing targeted educational initiatives, and addressing potential gaps in nutritional knowledge. The findings can contribute to the development of effective interventions, policies, and resource allocation to promote healthier and more sustainable food practices on the AU campus. I am personally motivated by this research question because the results of this research can be used to educate AU students about the public health implications of wasted food and encourage them to waste less food.

## **Background Research**

The Food and Agriculture Organization (FAO) of the United Nations approximates that 868 million people were undernourished globally from 2010-2012 (Munesue et.al., 2015, p. 43). At the same time, the FAO estimated that 1.3 billion tons of food were wasted globally (Munesue et.al., 2015, p. 43). Yosuke Munesue, Toshihiko Masui, and Takesato Fushima published a study in 2015 focused on researching agricultural commodities across 122 countries/regions. The results illustrated that reductions in food losses in developed regions decrease the number of undernourished people

and lead to decreases in the harvested area, greenhouse gas emissions (associated with food production), and water utilization.

In the United States, consumers discard approximately 90 billion pounds of food annually and approximately 40% of produced food is wasted (Feldpausch & Campbell, 2021). This also manifests on college campuses across the United States where 3.6 million tons of food is wasted annually (Luecke & Burgess-Champoux, 2015).

South Africa is a food secure nation that wastes 10 million tons of food annually. However, in 64% of all child deaths malnutrition is a major underlying cause of death. 20% of all South African children are stunted, deficient in minerals and vitamins needed for good health and development. Malnutrition and hunger are silent symptoms of inequality and a lack of a social ethic of care (Lotz-Sisitka, 2019). Many government policies that were meant to address food security, hunger, and malnutrition have not been well implemented. For nearly 30 years, the government has added vitamins and minerals to flour, maize and sugar to address malnutrition. The South African government has established various school feeding schemes and organizations to address food waste however to make effective change, broader actions need to be taken to make effective change (Lotz-Sisitka, 2019). To guarantee a global effort to alleviate malnutrition and minimize food wastage, it is essential to educate college students, as they represent the upcoming generation responsible for decision-making.

Despite the fact that food waste by consumers is a major problem for the world, little research has been performed on college students living away from the family home. In a study focusing on the nutritional knowledge Polish students acquired through college, the results indicated that education on food and food waste influences student habits. Students with nutritional knowledge were less likely to throw away food compared to students without nutritional knowledge. The researchers also found that fermented dairy beverages, fruits, and vegetables were the most frequently discarded items (Nicewicz & Bliska, 2022).

Students are open to changing their behavior regarding food waste but do not have sufficient knowledge regarding ways to do so (Feldpausch & Campbell, 2021). A potential effort to help this is educational materials about food waste and food insecurity in dining halls. Providing students with guidance on how they can actively work to reduce their food waste, students will lead students toward more sustainable food behavior (Feldpausch & Campbell, 2021, #S24). With the use of strategic placement, educational

materials in college dining halls can significantly enhance the general college population's knowledge about food waste and insecurity (King et al., 2018, 93).

### **Data Collection**

I collected my data through a series of nine questions for my respondents to answer. My target audience was American University undergraduate students. I recruited people to answer my survey by sending it to friends and large group chats (10+ people) to ensure that I had a lot of survey responses. I had 13 responses to my survey. I asked the following questions:

1. How familiar are you with the concept of food waste?
  - a. Responses used a Likert scale from 1-5
  
2. Do you believe that food waste can result in the loss of essential nutrients needed for a balanced diet?
  - a. Responses were in the form of Yes, No, Maybe
  
3. How often do you think about the nutritional implications of wasted food?
  - a. Responses were in the form of At least once a day, A few times a week, A few times a month, Every few months, Once a year, Never
  
4. On a scale of 1 to 5, how concerned are you about food waste's impact on public health and nutrition?
  - a. Responses used a Likert scale from 1-5
  
5. Do you believe food waste can lead to nutritional deficiencies in populations that are already vulnerable to malnutrition?
  - a. Responses were in the form of Yes, No, Maybe
  
6. Have you ever encountered information or educational materials about the nutritional implications of food waste?
  - a. Responses were in the form of Yes, No, I Can't Remember, Possibly

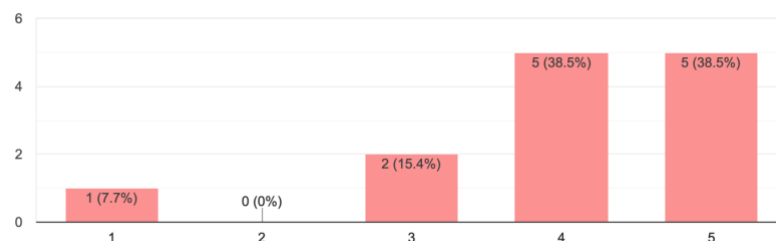
7. What specific topics or information would you find most valuable in educational programs addressing the nutritional implications of wasted food?
  - a. Responses were in the form of a check all that apply answer with the options of Success stories about those who have reduced food waste, Food storage practices, Effective date label reading, Cooking tips aimed at utilizing leftovers and minimizing waste, Meal planning strategies to reduce food waste, and a space where respondents could write their own answer
  
8. What do you think can be done at the college level to enhance awareness and education on the topic of the nutritional implications of wasted food?
  - a. Responses were in the form of a short response question
  
9. To what extent do you believe that wasted food contributes to nutritional challenges in society?
  - a. Responses were in the form of a short response question

## Findings

### Theme #1: Familiarity with Wasted Food

Based on my research findings, I conclude that many students are familiar with the concept of food waste. Of thirteen respondents, one person demonstrated no knowledge of food waste, two people demonstrated moderate knowledge of food waste, and ten people demonstrated a high level of food waste knowledge.

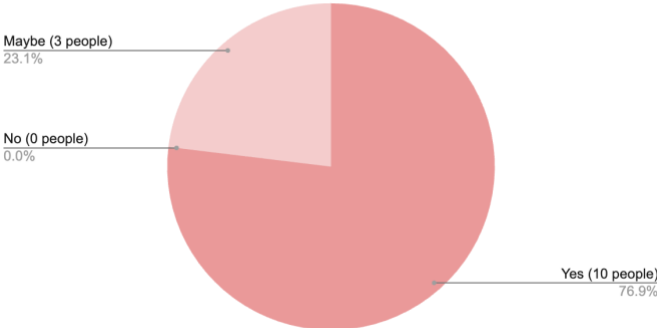
How familiar are you with the concept of food waste?  
13 responses



### Theme #2: Impact on Nutrition and Public Health

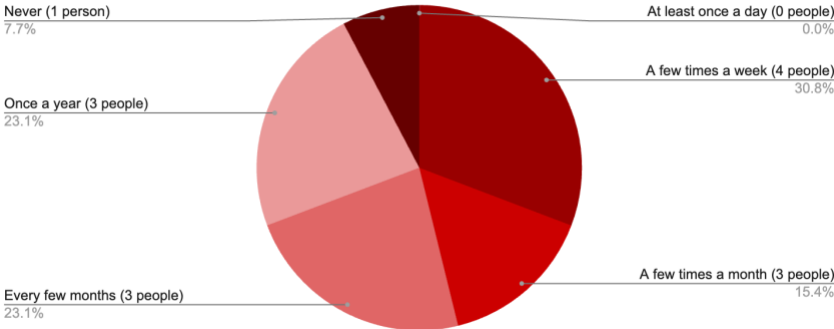
Through my research data, I conclude that most students are aware that food waste can result in the loss of essential nutrients needed for a balanced diet. Ten respondents answered that they were aware of this loss while three respondents answered maybe.

Do you believe that food waste can result in the loss of essential nutrients needed for a balanced diet?



By analyzing the data regarding how often people think about the nutritional implications of wasted food, I conclude that the amount of times people think about nutrition and wasted food varies. Four people said they think about the nutritional implications of wasted food waste a few times a week. Three people said they think about it every few months. Three people said they think about it once a year. Two people said they think about it a few times a month. One person said that they never think about it.

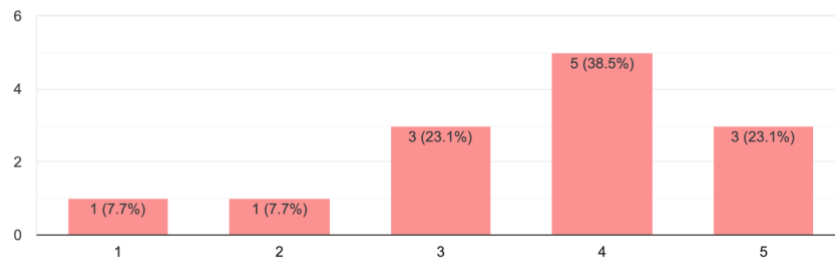
How often do you think about the nutritional implications of wasted food?



Based on my research evidence, I conclude that most students are at least somewhat concerned about food waste's impact on public health and nutrition. One person said that they are not at all concerned about food waste's impact on public health and nutrition. One person demonstrated

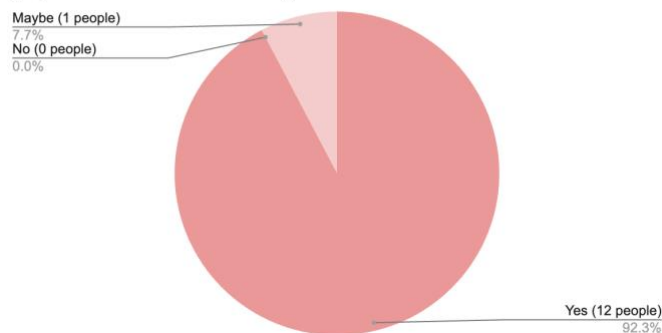
very little concern. Three people demonstrated moderate concern. Four people demonstrated above average concern. Three people demonstrated a high level of concern.

On a scale of 1 to 5, how concerned are you about food waste's impact on public health and nutrition?  
13 responses



From the knowledge collected in my survey, I conclude that most students are aware that food waste can lead to nutritional deficiencies in populations that are already vulnerable to malnutrition. Twelve people answered they believed that food waste can lead to nutritional deficiencies in populations that are already vulnerable to malnutrition. One person answered that maybe they believed that food waste can lead to nutritional deficiencies in populations that are already vulnerable to malnutrition.

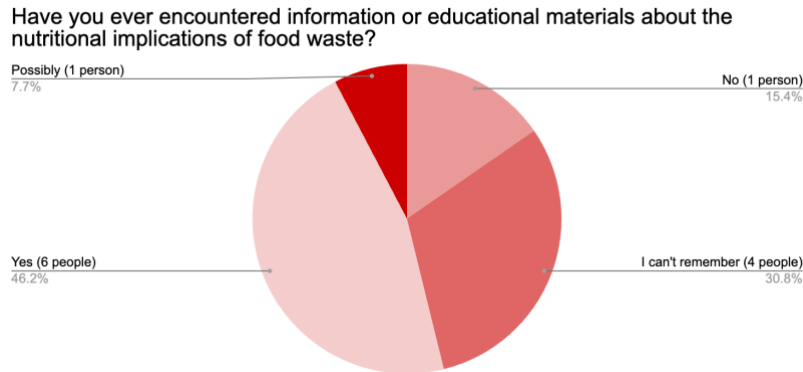
Do you believe food waste can lead to nutritional deficiencies in populations that are already vulnerable to malnutrition?



### Theme #3: Awareness of Educational Materials

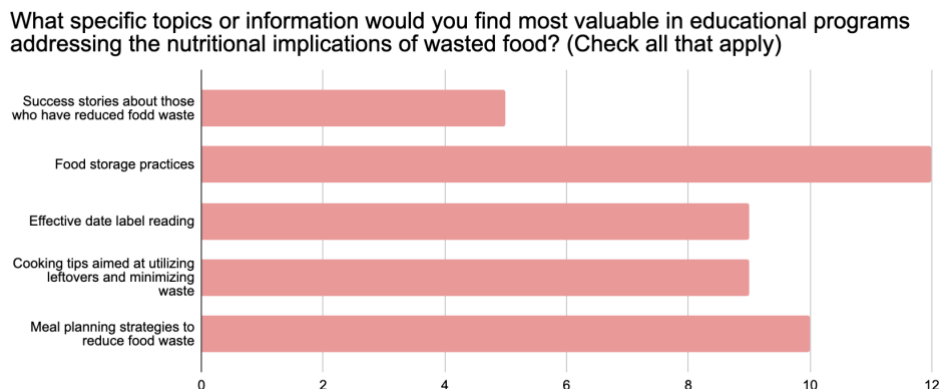
With this research in hand, I conclude that most students have encountered educational materials about the nutritional implications of food waste. Six respondents answered that they encountered information or educational materials about the nutritional implications of food waste. Four

people could not remember if they ever encountered this type of material. Two people said that they never encountered this type of material. One person answered that they have possibly encountered this type of material.



#### Theme #4: Value of Wasted Food Interventions

Through my research, I conclude that food storage practices and meal planning strategies to reduce food waste are most valuable to address the nutritional implications of wasted food. In a 'select all that apply' question, five people said that success stories about those who have reduced food waste would be helpful to promote educational material. Twelve people said food storage practices would be helpful. Nine people said effective date label reading would be helpful. Nine people said cooking tips aimed at utilizing leftovers and minimizing waste would be helpful. Ten people said meal planning strategies to reduce food waste would be helpful.



Using the feedback from my respondents, I conclude that fliers in dining halls and bathroom stalls, portion control practices, and increased

discussions about the importance of addressing food waste in post-secondary classes would be most helpful. The responses were as follows:

- What do you think can be done at the college level to enhance awareness and education on the topic of the nutritional implications of wasted food? (short answer)

"Further information"	Respondent 1
<b>"Health education fliers in bathroom stalls and in buildings, research dedicated to understanding the impact and extent of food waste on the college student's diet and health."</b>	Respondent 2
"portion control"	Respondent 3
"Creating menus with student feedback that create food students don't want to throw away"	Respondent 4
<b>"More food waste education in required classes"</b>	Respondent 5
<b>"Educational posters in TDR/dining halls, food information offered in wellness center"</b>	Respondent 6
<b>"Spreading awareness around campus by different clubs and organizations and educating students in the classroom in a variety of different courses could enhance the awareness and education on this topic. Food waste is a multifaceted issue, and it intersects with many other topics such as the environment and the economy. It would be great if (for example) the topic of food waste was introduced in environmental studies courses as well as Econ courses. These are only two examples, however, the list goes on."</b>	Respondent 7
"Have pop up stands near the dining hall"	Respondent 8
<b>"better portion control at the dining hall with options for smaller servings if students want to try"</b>	Respondent 9



<b>something new without committing to liking it and eating it all; info about the school's donation program so people know that leftovers go to those in need"</b>	
"things put up in tdr for awareness, offer classes about it, more awareness on social media"	Respondent 10
<b>"Inclusion of food waste as a topic in other class topic (i.e. something in biology where it could fit in)"</b>	Respondent 11
"More things around campus that lead to more food waste awareness"	Respondent 12
"Talk more about it, what to do with food waste, etc"	Respondent 13

My survey found that most believe wasted food contributes to the nutritional challenges in society because wasted food means there is less food for those who need it. It also impacts marginalized communities, leads to malnutrition, and means that those in food deserts are forced to eat unhealthy foods. The responses were as follows:

- To what extent do you believe that wasted food contributes to nutritional challenges in society? (short answer)

"People aren't getting the food they need to survive"	Respondent 1
<b>"To a pretty significant extent since food with vital nutrients that is wasted can exacerbate nutritional deficiencies and decreased access to healthy, nutritious diets in certain communities that already struggle with maintaining a steady pattern of eating foods beneficial for the human body."</b>	Respondent 2
"any sort of waste is negative. this poses a challenge where we aren't properly using the resources given to us which then causes a multitude of issues environmentally"	Respondent 3

<b>"Food waste contributes significantly to nutritional challenges in society, especially in populations vulnerable to malnutrition."</b>	Respondent 4
<b>"To a high extent because people who are fortunate enough to have nutritious food waste it while people living in food deserts are forced to eat unhealthy foods."</b>	Respondent 5
"Id hypothesize that malnutrition would have more of an impact than food waste? the effects of food waste are probably most impacting children for that reason"	Respondent 6
"I believe that wasted food significantly contributes to nutritional challenges all around the world. I also believe that it impacts vulnerable, marginalized communities more than others."	Respondent 7
"Highly"	Respondent 8
"I'm not sure"	Respondent 9
"strong correlation; this wasted food can go to someone who needs it instead"	Respondent 10
<b>"More wasted food = less food someone else can eat, which is a problem"</b>	Respondent 11
"Food waste is impactful for so many parents and this is just another thing that happens and people don't think about"	Respondent 12
"I don't know much about it but I'm sure it has a pretty big impact" - Respondent 13	Respondent 13

## **Implications**

This research focused on evaluating the awareness and attitudes of American University college students regarding the nutritional implications of wasted food. Findings revealed a generally high level of knowledge about food waste among respondents, with recognition of its potential impact on nutrient loss for a balanced diet. Concerns about its effects on public health

and nutrition varied. Notably, students exhibited awareness of the link between wasted food and nutritional challenges in society, emphasizing its impact on marginalized communities and contributing to malnutrition. I did not expect this result because I was unaware that students thought so deeply about wasted food. More broadly, this means that students are aware of the issue of food waste but don't know how to make an impact. This research underscored the importance of educational materials, particularly those addressing food storage practices and meal planning strategies, in enhancing awareness. Respondents provided insights into college-level interventions, emphasizing the need for educational campaigns, strategic material placement in dining halls, and discussions in post-secondary classes. Overall, the findings highlight the necessity for tailored educational initiatives to address knowledge gaps and promote sustainable food practices among AU college students.

## **Conclusion**

This research project delves into the awareness of American University students regarding the intersection between wasted food, nutrition, and public health. Through a focus in public health, the research sought to unravel the behaviors and attitudes of AU college students, informing targeted educational initiatives and addressing potential gaps in nutritional knowledge. The findings underscore the importance of understanding the impact of wasted food on public health, with implications for developing effective interventions, policies, and resource allocation to foster healthier and more sustainable food practices on the AU campus. As I am personally motivated to raise awareness, I aim to encourage AU students to waste less food. The study's implications reveal a need for customized educational initiatives, an emphasis on food storage practices, and meal planning strategies to address knowledge gaps and promote sustainable food practices among AU college students. The research serves as a valuable foundation for future interventions and policies aimed at fostering a culture of mindful and sustainable food consumption on campus.

## **References**

Feldpausch, G., & Campbell, C. (2021). P1 Evaluating Food Waste Knowledge, Attitudes and Behaviors in College Students at a

Midwestern University. *Journal of Nutrition Education and Behavior*, 53(7), S24-S24. <https://doi.org/10.1016/j.jneb.2021.04.393>

King, V., Arce, S., Hamady, C., & Blachowski-Dreyer, D. (2018).

Evaluating Students' Knowledge of Food Waste and Food Insecurity on College Campuses. *Journal of the Academy of Nutrition and Dietetics*, 118(9), 93. Science Direct.

<https://doi.org/10.1016/j.jand.2018.06.126>

Lotz-Sisitka, H. (2019, February 23). Hungry for knowledge, food: SA children are suffering from malnutrition in a food-secure nation, and here's why. *The Independent on Saturday*.

<https://www.proquest.com/newspapers/hungry-knowledge-food/docview/2184982287/se-2?accountid=8285>

Luecke, L., & Burgess-Champoux, T. (2015). Assessment of Food Waste Knowledge, Attitudes, and Behaviors of University Students. *Journal of Nutrition Education and Behavior*, 47(4), S48.

<https://doi.org/10.1016/j.jneb.2015.04.126>

Munesue, Y., Masui, T., & Fushima, T. (2015). The effects of reducing food losses and food waste on global food insecurity, natural resources, and greenhouse gas emissions. *Environmental Economics and Policy Studies*, 17(1), 43-77. ProQuest.

<https://doi.org/10.1007/s10018-014-0083-0>

Nicewicz, R., & Bliska, B. (2022). The Impact of the Nutritional Knowledge of Polish Students Living Outside the Family Home on Consumer Behavior and Food Waste (P. B. Tchounwou, Ed.). *International Journal of Environmental Research and Public Health*, 19(20). PubMed Central. 10.3390/ijerph192013058