

FOOD SECURITY SURVEY OF HIGHER EDUCATION STUDENTS IN UTAH

2021 UNIVERSITY OF UTAH REPORT



TABLE OF CONTENTS

Acknowledgements	2
Project Introduction	4
Introduction to Food Insecurity.....	5
Key Findings.....	6
Extent and Severity of Food Insecurity.....	7
USDA Household Survey Question Breakdown	8
Contributing Factors to Food Insecurity and Its Impact.....	10
Housing.....	10
Other Basic Needs.....	13
Health.....	14
Social and Emotional Health.....	16
Employment, Income, and Financial Aid	18
Academics.....	21
Coping Mechanisms.....	22
University of Utah College-Specific Questions	23
Appendix A: Demographics	24
Appendix B: Survey Methodology.....	26
Sample, Survey Distribution, and Incentives.....	27
Appendix C: References.....	28

ACKNOWLEDGEMENTS

The *Food Security Survey of Higher Education Students in Utah* report would not have been possible without the collaboration of all Utah's public higher education institutions and various non-profit organizations. Guidance and expertise was provided by Melissa Hall, Ph.D., Senior Community Engagement Researcher at the Center for Hope; Alex Cragun, Food Security Advocate at Utahns Against Hunger; Yesenia Quintana, M.Ed., Evaluation and Community Research Supervisor at the Community Research Extension at Weber State University; and Katharine French-Fuller, Ph.D., Director of Research at the Community Research Extension at Weber State University. Authors include Yesenia Quintana, Katharine French-Fuller, Allyse Anderson, and Kary Makela. Special appreciation goes to Cassandra Backman, Alexis Bucknam, and Jessica Miller for their contributions and assistance on various aspects of this project.

The survey design was a collaborative multi-institution effort from participating schools. Committee members include Melissa Hall (Center for Hope), Yesenia Quintana (Weber State University), Alexis Bucknam (United Way of Salt Lake), Amber Hendrickson (Utah Valley University), Cassandra Backman (Weber State University), Alex Cragun (Utahns Against Hunger), Katharine French-Fuller (Weber State University), Mike Braak (Salt Lake Community College), Nelda Ault (Utah State University), Kara Bachman-Einfeldt (Utah State University), Sarah Elizabeth Levitt (University of Utah), Christina Turpin (Huntsman Cancer Institute), Elizabeth Duszak (University of Utah), and Maria Caballero (Davis Technical College). The committee met regularly and provided input and knowledge from their respective fields. The researchers are especially thankful to committee members for their time and expertise on a fast-paced and sensitive project.

Support and collaboration within each USHE institution was critical for success. The chief student affairs officers at each institution provided essential support that resulted in project fruition. Additionally, we thank the following individuals for their assistance and support: Michelle Welker (Bridgerland Technical College); Spencer Kimball (Davis Technical College); Tom Picklesimer and Andrea Bringhurst (Dixie State University); Camille Lyman (Dixie Technical College); David Rees (Mountainland Technical College); Monica Schwenk (Ogden-Weber Technical College); Mike Braak, Mike Nguyen, and Jessie Winitzkey-Stephens (Salt Lake Community College); Beckie Hermansen (Snow College); James Mullenau (Southwest Technical College); Pam Brannin (Southern Utah University); Patricia Walker and Misty Roberts (Tooele Technical College); Michiel Bostick (Uintah Basin Technical College); Elizabeth Duszak and Jake Lemon (University of Utah); Michael Torrens, James Morales, Nicole Vouvalis, and Suzanne Thorpe (Utah State University); Taylor Lovell and Alexis Palmer (Utah Valley University); and Heather Chapman (Weber State University).

This report is a project of:



Preferred Citation:

Quintana, Y., French-Fuller, K., Anderson, A., & Makela, K. (2022). *Food Security Survey of Higher Education Students in Utah, 2021 University of Utah Report*. Weber State University: Center for Community Engaged Learning - Community Research Extension.

PROJECT INTRODUCTION

Funding for this project was made possible by the Robert Wood Johnson Foundation in partnership with the American Cancer Society's (ACS) health equity work. This project proposal was developed by Gagan Kaur, former ACS employee, and Dr. Melissa Yack Hall, Senior Community Engagement Researcher at the Center for Health Outcomes and Population Equity at Huntsman Cancer Institute and the University of Utah. After receiving notice of funding, the co-chairs, along with Morgan Marietti, Health Systems Manager for ACS, narrowed down the focus to food security on Utah's postsecondary campuses. The co-chairs assembled a project team, which included Alex Cragun, Food Security Advocate for Utahns Against Hunger (UAH) and Alexis Bucknam, Senior Network Director for United Way of Salt Lake. The project team participated in multiple planning and learning sessions sponsored by ACS's health equity team, and conducted various meetings with organizations and individuals working on food security across the state.

During these meetings and through research, the project team realized there was a lack of baseline data in regards to basic needs of postsecondary students. The project team, along with several of the organizations and individuals they met with over the course of this project, conducted a statewide survey to help collect baseline data for individual campuses and the state of Utah collectively. Along with the survey, the project team also arranged for UAH to host two workshops with the Basic Needs student group that meets regularly.

The project team approached the Utah Senior Student Affairs Officers (SSAO) group to obtain interest in and approval to conduct the survey. The SSAO group provided feedback and approval to move the project forward. The project team then approached Weber State University's Community Research Extension (CRE) leadership, including Dr. Katharine French-Fuller and Yesenia Quintana, about contracting their services to develop, conduct and analyze a comprehensive state-wide survey of the 16 Utah System of Higher Education (USHE) campuses, along with creating final reports.

The survey was developed in alignment with other resources to ensure the questions were complementary to other basic needs work being done across Utah and included questions and information from the USDA Household Food Security Survey and the PRAPARE assessment. The survey was developed and reviewed by the CRE and a task force of representatives from some of the campuses. It was piloted with students from some of the campuses.

The survey was conducted over six weeks in the fall semester of 2021, during the ongoing COVID-19 global pandemic. This final report was shared with the campuses, project team members and USHE in February 2022. Each campus also received an individual campus or collective Technical College report as well.

INTRODUCTION TO FOOD INSECURITY

Nationally, food insecurity amongst higher education students has been increasingly noted as a problem, now exacerbated by the COVID-19 pandemic. Other national studies around higher education students and food insecurity have demonstrated that college students are at high risk for being food insecure (Goldrick-Rab, et. al., 2019). Food security is defined by the USDA as “access by all people at all times to enough food for an active, healthy life.” Food insecurity is a result of financial resource constraint, meaning that a household cannot afford food (Guide to Measuring Household Food Security, 2000). Being food insecure might not always mean going hungry, but it does mean that an individual is forced to change what they eat—often to less nutritious, cheaper food. Despite its importance, data regarding food security and higher education students in Utah is almost non-existent. Utah institutions have not taken part in other national surveys of food security, and each institution collects different data regarding food security issues (Goldrick-Rab, et. al.).

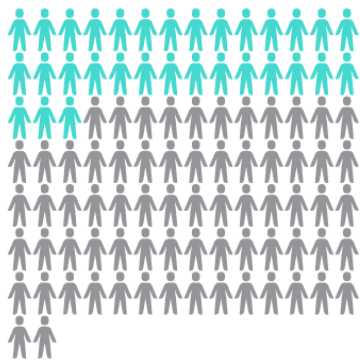
Having a better understanding of food security issues of higher education students is important for a variety of reasons. First, it means that university and college officials can better help get students to graduation and promote student success. Food insecurity can affect students’ academic performance and increase the likelihood a student may drop out or take longer to complete their degree (Wolfson, et. al., 2021; Leung, et. al 2021; Breuning, et. al. 2020). It can hinder students from engaging in High Impact Practices (like internships) as they are occupied with taking care of their basic needs, such as housing (Jesch, et. al, 2021). Often times food insecurity issues impact students who already have lower retention rates (first-generation, low-income, ethnic minority, and gender nonconforming) (Bruening, et. al.; Phillips and McDaniel 2018; Payne-Sturges, et. al. 2018). As more parenting students enroll in higher education, issues of food insecurity also affect more children and other dependents (GAO report).

Second, beyond higher education, a strong understanding of food security issues among higher education populations provides statewide data on the food security challenges in a variety of demographic groups, in both rural and urban settings. These data allow government and organizations to align the necessary interventions to help students.

And third, this understanding provides important evidence that those struggling with food are also struggling with other symptoms of poverty and social determinants of health like transportation, housing, health care, and interpersonal violence (Crutchfield et. al, 2020). Those experiencing food insecurity also experienced poorer mental and physical health, including higher rates of hypertension, obesity, depression, diabetes, and anxiety (Hammer, DeWalt, and Berkowitz 2021; Seligman, Laraia, and Kushel 2010; Leung, et. al; Gunderson and Ziliak 2019; Meza, et.al 2019). In order to better meet the needs of students and help promote student success, campuses need to have a better understanding of which students are facing food insecurity, why, and how educational institutions can work with other organizations to help address the intersecting social determinants of health that aggravate food security issues.

Food Insecurity at University of Utah

Key Findings

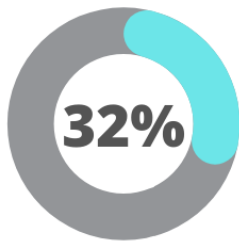


30.5%

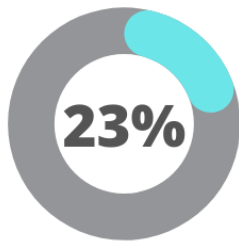
of University of Utah students were food insecure within the past year. Fifteen percent of University of Utah students experienced very low food security.



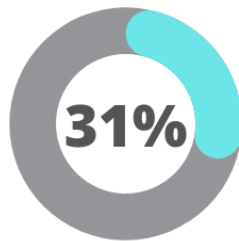
Food insecure students struggle with other basic needs



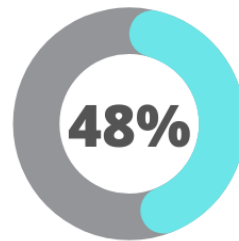
Rent/Mortgage



Utilities



Clothing



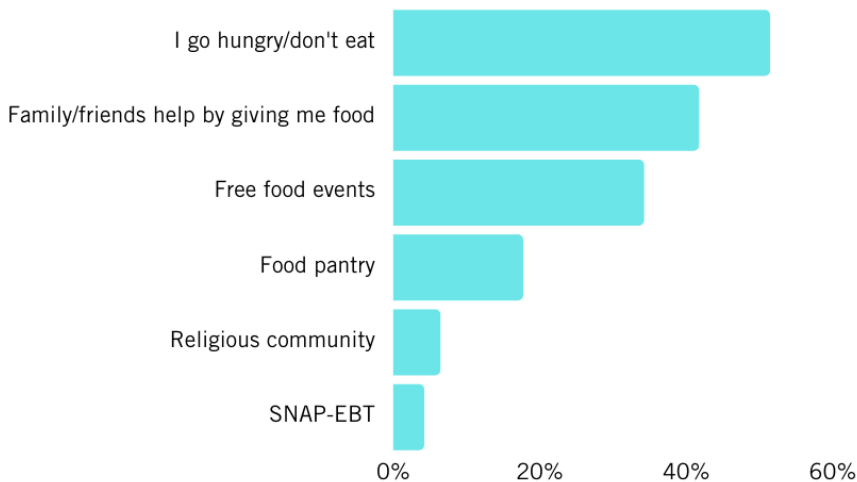
Medicine/Health Care



Phone

About half of food insecure students don't eat when hungry.

How do you cope with not having enough or the right foods to eat?



47.9%

of U of U students who are 'very much' stressed are food insecure.



54.8%

of U of U students who reported 'poor' health are food insecure.

EXTENT AND SEVERITY OF FOOD INSECURITY

The U.S. Department of Agriculture measures food security along a four-point scale ranging from high food security to very low food security. The *Guide to Food Security* describes the different levels as follows:

Food Secure	
High food security	No reported indications of food access problems or limitations.
Marginal food security	One or two reported indications – typically of anxiety over food sufficiency or shortage of food in the house. Little or no indication of changes in diets or food intake.
Food Insecure	
Low food security	Reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.
Very low food security	Reports of multiple indications of disrupted eating patterns and reduced food intake.

There were 1,462 University of Utah students who participated in the survey. At the University of Utah, 30.5% of students reported experiencing food insecurity within the past year. Fifteen percent of University of Utah students experienced very low food security. University of Utah students have experienced somewhat lower rates of food insecurity compared to the rest of Utah students.

Table 1. Food Security Level of Respondents

Food Security	University of Utah	State of Utah
High Food Security	50.3%	44.0%
Marginal Food Security	19.2%	21.2%
Low Food Security	15.0%	17.7%
Very Low Food Security	15.5%	21.1%

USDA Household Survey Question Breakdown

All participants began the survey by answering the questions in the first stage of the USDA Household Food Security Module.

Table 2. USDA Household Food Security Module, Household Stage One

	Often true	Sometimes true	Never true	DK/ refuse
I worried whether my food would run out before I got money to buy more.	6.2%	25.2%	67.4%	1.2%
The food that I bought just didn't last, and I didn't have money to get more.	3.7%	20.7%	74.0%	1.6%
I couldn't afford to eat balanced meals.	12.2%	28.1%	58.3%	1.4%

Respondents who answered 'often true' or 'sometimes true' to any question in household stage one continued to adult stage two. There were 718 respondents who received the questions in adult stage two.

Table 3. USDA Household Food Security Module, Adult Stage Two

In the past 12 months, did (were) you ever...?	Yes	No	DK/refuse
Cut the size of your meals or skip meals because there wasn't enough money for food	48.2%	47.8%	4.0%
Eat less than you let you should because there wasn't enough money for food	48.3%	48.5%	3.2%
Hungry but didn't eat because there wasn't enough money food	39.8%	57.5%	2.6%
Lose weight because there wasn't enough money for food	21.2%	67.4%	11.4%

Respondents who answered 'yes' to any of the questions in adult stage two continued to adult stage three. There were 455 respondents in adult stage three.

Table 4. USDA Household Food Security Module, Adult Stage Three

In the past 12 months, did you ever...?	Yes	No	DK/refuse	
Not eat for a whole day because there wasn't enough money for food	15.6%	82.0%	2.4%	
How often did this happen?	Almost every month	Some months but not every month	In 1 or 2 months only	DK/Refuse
	29.6%	46.5%	22.5%	1.4%

Respondents with children under 18 years old received additional questions around food insecurity. There were 166 respondents with children.

Table 5. USDA Household Food Security Module Child Stage One

	Often true	Sometimes true	Never true	DK/ refuse
I relied on only a few kinds of low-cost food to feed my children because I was running out of money to buy food.	4.2%	22.9%	71.1%	1.8%
I couldn't feed my children a balanced meal because I couldn't afford that.	4.8%	14.5%	80.7%	0.0%
My children were not eating enough because I just couldn't afford enough food.	1.2%	4.2%	94.0%	0.6%

Respondents with children who answered 'often true' or 'sometimes true' to any question continued onto child stage two. Fifty-two respondents received the questions in child stage two.

Table 6. USDA Household Food Security Module Child Stage Two

In the past 12 months...	Yes	No	DK/refuse
Did you ever cut the size of your child(ren)'s meals because there wasn't enough money for food?	17.3%	78.8%	3.8%
Were the child(ren) ever hungry but you just couldn't afford more food?	15.4%	82.7%	1.9%
Did any of the children ever not eat for a whole day because there wasn't enough money for food?	3.8%	96.2%	0.0%
Did you ever skip meals because there wasn't enough money for food?	11.5%	88.5%	0.0%

CONTRIBUTING FACTORS TO FOOD INSECURITY AND ITS IMPACT

Housing

Table 7. Current housing situation

What is your housing situation today?	n	%
I have housing	1408	96.4%
I DO NOT have housing (staying with others, in a hotel, in a shelter, living outside on the street, in a car, or in a park)	39	2.7%
Prefer not to answer	14	1.0%

- Of the students who do have housing, **29.3%** are food insecure. While there are not many students who lack housing, **61.5%** are food insecure.

Table 8. Worried about losing housing

Are you worried about losing your housing?	n	%
Yes	117	8.5%
No	1218	88.9%
Prefer not to answer	35	2.6%

- Of the students who have housing, but are worried about losing their housing, **70.1%** are food insecure. Of students who are not worried about losing their housing, **24.5%** are food insecure.

Table 9. Living arrangements during the academic year

Where do you live during the academic year (August through May)?	n	%
On-campus	249	18.2%
Off-campus	1121	81.8%

- Of students who live on-campus, **25.7%** are food insecure. Of students who live off-campus, **30.3%** are food insecure.

Table 10. Living situation during the academic year

Whom do you live with during the academic year (August through May)?	n	%
Roommates (non-family members)	522	38.1%
My family of origin (father, mother, aunt, uncle, siblings, grandparents, foster parents, etc.)	360	26.3%
My child(ren)	21	1.5%
My partner (no children)	273	19.9%
My partner and child(ren)	124	9.1%
By myself	173	12.6%

- This question was a multiple selection question.
- Among students who live with children, **47.6%** are food insecure.
- Among students who live with roommates, **33.3%** are food insecure.
- Among students who live with their partners and no children, **31.1%** are food insecure.
- Among students who live alone, **28.9%** are food insecure.
- Among those who live with their family of origin, **25.6%** are food insecure, while **23.4%** of those who live with their partner and children are food insecure.

Table 11. Meal plans

Do you have a meal plan through the university/college?	n	%
Yes	190	13.5%
No	1153	81.9%
Prefer not to answer	5	0.4%
Not applicable	60	4.3%

- Of students who have a meal plan, **24.2%** are food insecure. Of students who do not have a meal plan, **32.3%** are food insecure.

Table 12. Primary caregiver

Are you the primary caregiver for any of the following persons?	n	%
Child/ren	141	9.9%
Parents/grandparents	50	3.5%
Siblings	15	1.1%
Other	16	1.1%
None	1217	85.8%

- This question was a multiple selection question.
- Food insecurity is very high among students who are primary caregivers for their siblings (**73.3%**).
- Food insecurity has similar rates among students who are primary caregivers for their parents/grandparents (**56.0%**), or for their own children (**31.2%**).
- Among students who are not caregivers, **29.7%** are food insecure.

Other Basic Needs

Table 13. Inability to afford basic needs

Have you or any family members you live with been unable to get or pay for any of the following when it was really needed?	Overall	Food secure	Food insecure
Food	15.3%	2.3%	34.6%
Rent/Mortgage	18.2%	8.9%	31.9%
Utilities (electric, gas, internet, water, or sewer, trash, etc.)	12.4%	5.6%	22.6%
Phone	7.3%	2.5%	14.5%
Medicine or health care (dental, mental health, vision, or physical health)	32.9%	22.9%	47.7%
Childcare	4.8%	3.8%	6.4%
Clothing	15.4%	5.1%	30.7%
Other	2.5%	1.7%	3.7%
Prefer not to answer	29.5%	35.0%	21.4%
None	21.5%	33.7%	3.4%

- Among those who are food insecure, **47.7%** could not afford medicine or health care when it was really needed.
- There were also high rates of food insecure students who could not afford food (**34.6%**), rent/mortgage (**31.9%**), or clothing (**30.7%**).
- Under the other category, most students listed tuition, car repairs, and car insurance.

Health

Table 14. Medical home

Do you have a designated primary care provider or some place you usually go when you need medical advice or care?	n	%
Yes	925	65.7%
No	441	31.3%
Prefer not to answer	41	2.9%

- Among students without a medical home, **36.7%** are food insecure, compared to students with a medical home, **26.8%** are food insecure.

Table 15. Food affordability with medical conditions

Do you have any medical conditions that make it difficult for you to afford the foods you can eat?	n	%
Yes	124	8.8%
No	1266	90.0%
Prefer not to answer	17	1.2%

- Students with medical conditions that can make it difficult to afford acceptable foods are much more likely to be food insecure (**66.1%**) compared to students who do not have a medical condition (**26.2%**).

Table 16. Transportation

Has lack of transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living?	n	%
Yes	141	10.0%
No	1241	88.1%
Prefer not to answer	26	1.8%

- Students who lack reliable transportation are more likely to be food insecure (**60.3%**) compared to students with reliable transportation (**26.8%**).

Table 17. General health status

Would you say that in general your health is ...?	n	%
Excellent	179	12.2%
Very Good	708	48.4%
Fair	529	36.2%
Poor	42	2.9%
Prefer not to answer	4	0.3%

- Food insecurity is more prevalent among students who report 'poor' (**54.8%**) or 'fair' (**41.4%**) health compared to those who report 'very good' (**25%**) or 'excellent' (**12.8%**) health.

Social and Emotional Health

Table 18. Social interactions

How often do you see or talk to people that you care about and feel close to?	n	%
Less than once a week	132	9.4%
1-2 times a week	328	23.3%
3-5 times a week	353	25.1%
5 or more times a week	594	42.2%

- Among students who see or talk to people that they care about less than once a week, **45.5%** are food insecure.
- Among students who see or talk to people they care about 1-2 times per week, **39.3%** are food insecure.
- Among students who see or talk to people they care about 3-5 times a week, **28.6%** are food insecure.
- Among students who see or talk to people they care about more than 5 times a week, **23.1%** are food insecure.

Table 19. Physically and emotionally safe

Do you feel physically and emotionally safe where you currently live?	n	%
Yes	1184	84.2%
No	55	3.9%
Unsure	151	10.7%
Prefer not to answer	17	1.2%

- Among students who do not feel safe at home, **63.6%** are food insecure. Among students who are unsure of their safety, **46.4%** are food insecure. Among students who feel safe at home, **26.5%** are food insecure.

Table 20. Fear of partner

In the past year, have you been afraid of your partner or ex-partner?	n	%
Yes	64	4.6%
No	1284	91.4%
Unsure	34	2.4%
Prefer not to answer	23	1.6%

- Students who fear their partner or ex-partner are more likely to be food insecure (**65.6%**) compared to students who do not fear their partners (**28.3%**).

Table 21. Stress levels

How stressed are you?	n	%
Not at all	42	3.0%
A little bit	191	13.6%
Somewhat	353	25.1%
Quite a bit	455	32.3%
Very much	359	25.5%
Prefer not to answer	7	0.5%

- Among students who are ‘very much’ stressed, **47.9%** are food insecure, compared to ‘quite a bit’ (**29.9%**), ‘not at all’ (**23.8%**), ‘somewhat’ (**19.5%**), and ‘a little bit’ (**18.9%**).

Employment, Income, and Financial Aid

Table 22. Current work situation

What is your current work situation?	n	%
Unemployed but seeking work	129	9.2%
Unemployed and not seeking work (student or caregiver)	329	23.4%
Temporary work (working for 1 year or less)	59	4.2%
Part-time (less than 40 hours per week)	672	47.9%
Full-time (40+ hours per week)	259	18.5%
Prefer not to answer	21	1.5%

- This question was a multiple selection question.
- Among students who work temporarily, **50.8%** are food insecure.
- Among students who are unemployed but looking for work, **44.2%** are food insecure.
- Among students who work part-time, **34.4%** are food insecure.
- Among students who work full-time, **27.4%** are food insecure.
- Among students who are unemployed and not looking for work, **19.5%** are food insecure.

Table 23. Work location

Where do you work?	n	%
On-campus employment	341	35.9%
Off-campus employment	509	53.5%
Both	81	8.5%
Prefer not to answer	20	2.1%

- Of students who work on-campus, **34.0%** are food insecure. Among students who work off-campus, **31.0%** are food insecure.

Table 24. Tax dependent

In the past year, did any one claim you as a dependent for tax purposes?	n	%
Yes	394	28.2%
No	902	64.6%
DK/prefer not to answer	100	7.2%

- Students who are not dependents have slightly higher rates of food insecurity (**31.5%**) compared to students who are dependents (**26.6%**).

Table 25. Financial aid

Do you receive financial aid?	n	%
Yes	1065	76.2%
No	293	21.0%
Prefer not to answer	39	2.8%

- Students who received financial aid are just as likely to be food insecure (**30.3%**) as students who did not receive financial aid (**30.4%**).

Table 26. Household income

During the past year, what was the total combined income for you and the family members you live with?

	n	%
Less than \$10,000/year	135	9.7%
\$10,000-\$19,999/year	154	11.1%
\$20,000-\$29,999/year	135	9.7%
\$30,000-\$39,999/year	117	8.4%
\$40,000-\$49,999/year	73	5.2%
\$50,000-\$59,999/year	80	5.8%
\$60,000-\$69,999/year	62	4.5%
\$70,000+/year	410	29.5%
Prefer not to answer	225	16.2%

- Not surprisingly, students with lower incomes are more likely to be food insecure. Among students who had an income less than \$10,000 a year, **52.6%** were food insecure.
- Among students who had an income \$10,000-\$19,999, **57.8%** were food insecure
- Among students who had an income \$20,000-\$29,999, **35.6%** were food insecure.
- Among students who had an income \$30,000-\$39,999, **41.0%** were food insecure
- Among students who had an income \$40,000-\$49,999, **28.8%** were food insecure
- Among students who had an income \$50,000-\$59,999, **28.7%** were food insecure
- Among students who had an income \$60,000-\$69,999, **17.7%** were food insecure
- Students who have a total income of \$70k+ a year have the lowest rate of food insecurity, **10.7%**.

Academics

Table 27. Academic performance

Has lack of food affected your academic performance?	n	%
Not at all	559	39.7%
A little bit	250	17.8%
Somewhat	121	8.6%
Quite a bit	33	2.3%
Very much	16	1.1%
Prefer not to answer	17	1.2%
Not applicable	411	29.2%

- Of students who responded that lack of food has impacted their academics ‘very much’, **93.8%** are food insecure.
- Of students who responded that lack of food has impacted their academics ‘quite a bit’, **78.8%** are food insecure.
- Of students who responded that lack of food has impacted their academics ‘somewhat’, **80.2%** are food insecure.
- Of students who responded that lack of food has impacted their academics ‘a little bit’, **59.6%** are food insecure.
- Of students who responded that lack of food has impacted their academics ‘not at all’, **20.6%** are food insecure.

Table 28. GPA

What is your GPA?	Overall	Food secure	Food insecure
Mean	3.59	3.65	3.47
Standard Deviation	0.56	0.54	0.61

- Students who are food insecure have lower GPAs compared to food secure students.

Coping Mechanisms

Table 29. Coping with food insecurity

How do you cope with not having enough or the right foods to eat?	Overall	Food secure	Food insecure
Food pantry	8.9%	5.0%	17.7%
Family/friends help by giving me food	21.8%	13.1%	41.7%
SNAP-EBT benefits	1.9%	0.9%	4.2%
WIC benefits	1.2%	0.6%	2.6%
Assistance from my religious community	3.0%	1.6%	6.4%
I attend free food events	15.7%	7.6%	34.2%
I go hungry/I don't eat	20.5%	6.9%	51.4%
Other	2.2%	1.3%	4.2%
Not applicable	59.2%	78.4%	15.6%

- About half of food insecure students rely on family and friends for food and/or don't eat when hungry.

UNIVERSITY OF UTAH COLLEGE-SPECIFIC QUESTIONS

University of Utah submitted three questions for their student body to consider.

Table 30. Shelter

What do you typically do for shelter?	
Stay with other	73.7%
Stay in a shelter	5.3%
Stay outside	2.6%
Other	18.4%

Table 31. Housing issues

Have you had any of the following issues?	
Had difficulty paying rent or mortgage	42.4%
Didn't pay full amount of rent or mortgage	14.6%
Didn't pay full amount of gas, oil, or electricity bill	17.1%
Barrowed money from friends or family to help pay bills	60.5%
Moved in with other people, even for a little while, because of financial problems	33.7%
Moved 2 or more times per year	24.3%
Thrown out of your home by someone else in the household because of financial problems	2.2%
Evicted from home	1.7%
Stayed in shelter	1.2%
Stayed in an abandoned building, an automobile, or any other place not meant for regular housing, even for one night	3.2%
Didn't know where you were going to sleep at night, even for one night	5.0%

Table 32. Pantry met your needs

Has lack of access to safe and affordable housing affected your academic performance?	
Not at all	46.5%
A little bit	9.9%
Somewhat	5.7%
Quite a bit	2.2%
Very much	3.2%
Prefer not to answer	0.4%
Not applicable	32.1%

APPENDIX A: DEMOGRAPHICS

Table 33. Race and Ethnicity

Race/ethnicity	n	%
Asian	230	16.5%
American Indian or Alaskan Native	23	1.6%
Black or African American	29	2.1%
Hispanic	144	10.3%
Native Hawaiian or Pacific Islander	19	1.4%
Other	37	2.7%
Prefer not to answer	55	3.9%
White (non-Hispanic)	1000	71.7%

Note: The 'race' question permitted multiple selections, so percentages exceed 100%.

Table 34. Gender

Gender	n	%
Male	576	41.3%
Female	766	54.9%
Non-binary	30	2.2%
Self-identify	8	0.6%
Prefer not to answer	15	1.1%

Table 35. Special populations

Special populations	n	%
Armed Forces	38	2.7%
Refugee	6	0.4%

Table 36. Legal status

Legal status	n	%
U.S. citizen	1234	88.4%
Permanent or conditional resident	28	2.0%
Non-immigrant	118	8.5%
Other status	5	0.4%
Prefer not to answer	11	0.8%

Table 37. Home language

Home language	n	%
English	1309	93.7%
Spanish	17	1.2%
Other	50	3.6%
Prefer not to answer	21	1.5%

Table 38. Parental education

What is the highest level of education completed by either of your parents (or those who raised you)?	n	%
Did not finish high school	51	3.6%
High school diploma or G.E.D.	142	10.1%
Technical degree or certificate	34	2.4%
Attended college, but did not complete degree	97	6.9%
Associate's degree	68	4.8%
Bachelor's degree	438	31.1%
Master's degree	353	25.1%
Doctoral or professional degree	199	14.1%
Do not know/prefer not to answer	25	1.8%

Table 39. Academic status

Academic status	n	%
Full-time	1243	88.3%
Part-time	164	11.7%

Table 40. Year in school

Year in school	n	%
Technical college student	3	0.2%
First year undergraduate	252	17.9%
Second year undergraduate	201	14.3%
Third year undergraduate	206	14.6%
Fourth year undergraduate	170	12.1%
Fifth year undergraduate	89	6.3%
Graduate student	486	34.5%

APPENDIX B: SURVEY METHODOLOGY

Survey Development Team. As mentioned in the Acknowledgements section, Melissa Hall led the survey development team along with Alex Cragun, Katharine French-Fuller, and primary investigator Yesenia Quintana. Other members of the team provided expertise on food security, higher education safety nets, and survey design. The team met regularly to discuss content issues and concerns around methodology.

USDA Household Food Security Module. The USDA Household Food Security Module is a robust and stable measure of food insecurity. The survey has undergone rigorous analysis and modifications over the course of three decades. The survey is a 10 to 18 question module that measures food insecurity along a continuous linear scale. A higher score indicates higher food insecurity. The questions measure reported behavior based on financial limitations within the past year. The survey has three levels of screeners to reduce respondent burden. As food insecurity increases, participants proceed through the three stages of the survey. Respondents with children answer additional questions to gauge the level of food insecurity experienced by children. To keep survey integrity, there were no modifications to the survey.

According to the Guide to Measuring Household Food Security, the survey is an appropriate tool to measure food insecurity not only nationwide but also among smaller, local, targeted populations. Another tool, the USDA Adult Food Security Module, is shorter but fails to capture the experience of households with children. Considering Utah's demographics, the survey development team moved forward with the USDA Household Food Security Module. Other nationwide surveys that attempt to gauge food insecurity among higher education students have used either the USDA Household or the Adult Food Security Module. Using the USDA surveys allows researchers to draw direct comparisons with other populations.

PRAPARE Assessment Tool. The Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (PRAPARE) Assessment Tool is a comprehensive tool used mainly by healthcare providers to "better understand and act" on social determinants of health. Some of Utah's healthcare providers currently use it as part of their intake. The PRAPARE assessment has the following core measures: race, ethnicity, veteran status, language, housing status, housing stability, education, employment, insurance, income, transportation, social integration and support, stress, refugee status, safety, and domestic violence—among others. It is the most comprehensive and validated tool on social determinants of health available. Better understanding how social determinants of health interact with food insecurity provides stakeholders with data to support equitable solutions.

Other Survey Questions. In addition to the questions from the sources listed above, the survey development team also considered and reviewed a number of additional survey questions applicable for higher education as well as additional questions around other stressors. These included questions about caregiver status, health, food accessibility, documentation status, coping mechanisms, and academic performance. Additionally, each school was allowed to submit up to three additional questions for their specific student body. University of Utah submitted three additional questions.

Student Input. To ascertain content validity, the CRE conducted focus groups with several student groups. Student groups included undergraduate students within nutrition programs, undergraduates in unrelated programs, technical college students, and graduate students. Students varied in gender, year in college, race and ethnicity, and major. Focus group questions focused on the PRAPARE assessment and other survey questions. Students did not give feedback on the USDA Household Food Security Module. Students explained their understanding of the questions to the focus group facilitator and reviewed answer options for relevance. Facilitators asked probing questions to generate critical thinking about the questions. To thank them for their time, students received a small incentive gift card. Student feedback led to some modifications to survey questions and response options.

Student Resources. After taking the survey, students were redirected to an incentives and resources page. The resources page included information about campus basic needs programs as well as local community supports.

Sample, Survey Distribution, and Incentives

University of Utah produced a random sample of 7,500 students. University of Utah distributed the survey through email using Qualtrics on September 20, 2021. The survey closed on October 22, 2021. Students received five email reminders to take the survey. The response rate was 19.5% and completion rate was 89.6%.

To incentivize participation, students had the option of entering into a drawing for \$25 gift cards. Once a student completed the survey, they were redirected to the incentives and resources survey. If they were interested in entering the drawing, they submitted their name, email, and phone number. A total of 224 \$25 gift cards were proportionately distributed to all participating institutions. Distribution was based on response rate with every campus guaranteed at least one gift card. University of Utah received 36 gift cards. Students selected via the drawing received an email notifying them that they were the card recipients, allowing them access to a website that gives them freedom to select the gift card that they desire. United Way of Salt Lake distributed the gift cards.

APPENDIX C: REFERENCES

- Bickel, G., Nord, M., Price, C., Hamilton, W., & Cook, J. (2000). *Guide to Measuring Household Food Security, Revised 2000*. U.S. Department of Agriculture, Food and Nutrition Service, Alexandria VA. March, 2000.
- Bruening, M., Argo, K., Payne-Sturges, D., & Laska, M. (2017). "The Struggle Is Real: A Systematic Review of Food Insecurity on Postsecondary Education Campuses," *Journal of the Academy of Nutrition and Dietetics*, Volume 117, Issue 11, 1767-1791.
- Crutchfield, R. M., Carpena, A., McCloy, T. N., & Maguire, J. (2020). The Starving Student Narrative: How Normalizing Deprivation Reinforces Basic Need Insecurity in Higher Education. *Families in Society: Journal of Contemporary Social Services*, 101(3), 409–421.
- Dubick, J., Mathews, B., & Cady, C. (2016). *Hunger on Campus: The Challenge of Food Insecurity for College Students*. College and University Food Bank Alliance.
- Goldrick-Rab, S., Baker-Smith, C., Coca, V., Looker, E., & Williams, T. (2019). *College and University Basic Needs Insecurity: A National #RealCollege Survey Report*. The Hope Center. https://hope4college.com/wp-content/uploads/2019/04/HOPE_realcollege_National_report_digital.pdf
- Gundersen C, & Ziliak, JP. Food Insecurity And Health Outcomes. *Health Aff Proj Hope*. 2015;34(11):1830-1839.
- Hanmer, J., DeWalt, D. A., & Berkowitz, S. A. (2021). Association between Food Insecurity and Health-Related Quality of Life: A Nationally Representative Survey. *JGIM: Journal of General Internal Medicine*, 36(6), 1638–1647.
- Health Research & Educational Trust. (2017, June). Social determinants of health series: Food insecurity and the role of hospitals. Chicago, IL: Health Research & Educational Trust. Accessed at www.aha.org/foodinsecurity
- Jesch, E., Colgan, C., Perdomo, K., Pressman, E., & Bajracharya, S. (2021). Food Insecurity (FI) in Colleges and Universities: A Needs Assessment of Student Population. *International Journal of Health, Wellness & Society*, 11(1), 171–187.
- Leung, C. W., Insolera, N., Cohen, A. J., & Wolfson, J. A. (2021). The Long-Term Effect of Food Insecurity During College on Future Food Insecurity. *American Journal of Preventive Medicine*, 61(6), 923–926.
- Leung, C. W., Epel, E. S., Willett, W. C., Rimm, E. B., & Laraia, B. A. Household Food Insecurity Is Positively Associated with Depression among Low-Income Supplemental Nutrition Assistance Program Participants and Income-Eligible Nonparticipants. *J Nutr*. 2015;145(3):622-627.
- Martinez, S. M., Frongillo, E. A., Leung, C., & Ritchie, L. (2020). No food for thought: food insecurity is related to poor mental health and lower academic performance among students in California's public university system. *J Health Psychol*, 25 (12), pp. 1930-1939.
- Meza, A., Altman, E., Martinez, S., & Leung, C. W. (2019). "It's a Feeling That One Is Not Worth Food": A Qualitative Study Exploring the Psychosocial Experience and Academic Consequences of Food Insecurity Among College Students. *Journal of the Academy of Nutrition & Dietetics*, 119(10), 1713.

National Association of Community Health Centers. (2021). *PRAPARE Implementation and Action Toolkit*. https://www.nachc.org/wp-content/uploads/2020/07/NACHC_PRAPARE_ALL-Updated-7.13.20-Translations-Included.pdf

Payne-Sturges, D., Tjaden, A., Caldeira, K., Vincent, K., & Arria, A. (2018). *Student hunger on campus: Food insecurity among college students and implications for academic institutions*. University of Maryland School of Public Health.

Phillips, E., McDaniel, A., & Croft, A. (2018). Food insecurity and academic disruption among college students. *J Stud Aff Res Pract*, 55 (4) , 353-372.

Seligman, HK, Laraia, BA, & Kushel, MB. Food insecurity is associated with chronic disease among low-income NHANES participants. *J Nutr*. 2010;140(2):304-310.

U.S. Government Accountability Office, Food insecurity: better information could help eligible college students access federal food assistance benefits, U.S. Government Accountability Office, Washington, DC (Published December 2018). <https://www.gao.gov/assets/gao-19-95.pdf>; https://hope4college.com/wp-content/uploads/2020/05/2019_ParentingStudentsReport.pdf

Wolfson, J., Insolera, N., Cohen, A., & Leung, C. (2021). The effect of food insecurity during college on graduation and type of degree attained: Evidence from a nationally representative longitudinal survey. *Public Health Nutrition*, 1-9.