

St. Catherine University

From the Selected Works of Susi Keefe, PhD

Fall 2020

Campus Food Insecurity Bringing
Private Institutions into
Conversations on Basic Needs

Sue Keefe, *St. Catherine University*



Available at: <https://works.bepress.com/sue-keefe/2/>



Campus Food Insecurity: Bringing Private Institutions into Conversations on Basic Needs

Susi Keefe , An Garagiola-Bernier , Emma Kiley , Jen England , Sam R. Schmitt & Marta Shore

To cite this article: Susi Keefe , An Garagiola-Bernier , Emma Kiley , Jen England , Sam R. Schmitt & Marta Shore (2020): Campus Food Insecurity: Bringing Private Institutions into Conversations on Basic Needs, Journal of Hunger & Environmental Nutrition

To link to this article: <https://doi.org/10.1080/19320248.2020.1838984>



Published online: 22 Oct 2020.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)



Campus Food Insecurity: Bringing Private Institutions into Conversations on Basic Needs

Susi Keefe^a, An Garagiola-Bernier^b, Emma Kiley^c, Jen England^d, Sam R. Schmitt^e, and Marta Shore^f

^aDepartment of Sociology, Public Health Sciences Program, Hamline University, Saint Paul, Minnesota, USA; ^bHumphrey School of Public Affairs, University of Minnesota, Saint Paul, Minnesota, USA; ^cDepartment of Environmental Studies, Hamline University, Saint Paul, Minnesota, USA; ^dDepartment of English, Hamline University, Saint Paul, Minnesota, USA; ^eDepartment of Gender, Sexuality, and Women's Studies, Augsburg University, Minneapolis, Minnesota, USA; ^fDivision of Biostatistics, School of Public Health, University of Minnesota, Minneapolis, Minnesota, USA

ABSTRACT

Research on college food insecurity has largely focused on community colleges and two- and four-year public institutions. Analyzing survey data collected at a small private university, we demonstrate undergraduate students at private institutions experience food insecurity at similar, or even higher, rates as those enrolled in public institutions. We report factors contributing to food insecurity on private campuses that are typically considered too “elite” or “privileged” to lack basic needs security. Given increasing enrollment of marginalized students and diversifying student bodies across all institutions, including private universities, we argue higher education needs to recognize, assess, and act on food insecurity.

KEYWORDS

Basic needs; food insecurity; higher education; hunger; marginalized students; private universities; undergraduate students

Introduction

Food insecurity within higher education garnered attention at national and local levels¹ recently as more research demonstrates an increasing number of undergraduate college students experience it.^{1–7} College students face food insecurity at significantly higher rates than the general population,^{1,3,5,7} and as many as two-thirds of these students endure hunger.³ Most research focuses on community colleges and two- and four-year public universities, regularly leaving private institutions out of discussions of campus food insecurity.^{1,8} Private institutions are less represented in research on food insecurity for a variety of reasons, such as their reluctance to participate in studies due to the misconception that their “elite” students do not lack basic needs security.⁹ However, demographics of U.S. college students have shifted dramatically in the past decades with more marginalized students attending all institution types,^{9–11} including private schools. Recently, a few studies have examined food access and insecurity among undergraduate students at private

CONTACT Susi Keefe  skeefe03@hamline.edu 

© 2020 Taylor & Francis Group, LLC

institutions.^{9,10,12,13} We position our research in conversation with these studies to further reveal how food insecurity exists and negatively impacts undergraduate students at private institutions. Specifically, we report on the factors that contribute to campus food insecurity for students who are often considered “too privileged” to experience it and go hungry.

The USDA definitions of food insecurity and hunger heavily influence the field. Food insecurity “is a household-level economic and social condition of limited or uncertain access to adequate food”^{11–14} and “limited or uncertain ability to acquire acceptable foods in socially acceptable ways.”¹⁵ Hunger “is an individual-level physiological condition that may result from food insecurity”^{11–14} and cause “discomfort, illness, weakness, or pain that goes beyond the usual uneasy sensation.”¹⁵ The USDA collects data on food insecurity through six-item and 10-item surveys but does not have a measure of hunger, which “require[s] collection of more detailed and extensive information . . . than could be accomplished effectively” in the surveys.¹⁴

Because college students are often neither completely dependent nor independent financially,¹⁶ as a demographic they are not adequately captured by USDA food surveys. USDA data collection relies on: 1) a definition of food insecurity that emphasizes households as the unit of interest (but many college students, especially those attending private schools, live independently of the households they would be captured under, either in on-campus housing or off campus), and 2) many college students are over age 18 but still listed as dependents of their parents/guardians only for tax/financial purposes (meaning these students are unlikely to receive the financial support implied by dependency). Given these limitations of the USDA data collection, it is important for colleges and universities to conduct their own assessments of campus food insecurity and hunger.

Methods

We conducted our study at an urban Midwestern private liberal arts university with an undergraduate enrollment of approximately 2,000 students. The student body is becoming increasingly diverse with more students enrolling from historically underrepresented backgrounds, including students of color (28% of first-year students in 2011 versus 42% in 2017) and first-generation students (20% of first-year students in 2011 versus 46% in 2017). This study draws from student-led initiatives to raise awareness about student poverty and food insecurity and to open a campus food pantry in response.

Survey, Recruitment, and Data Collection

Using community-based methods, in Spring 2017 a student-led organization¹⁷ created a web-based Food Access Survey (FAS) to collect undergraduate students’ self-reported experiences accessing food and experiencing hunger during the

2016–2017 academic year. The FAS included questions informed by three sources: 1) questions modified from the USDA Food Security Survey Module Six-Item Short Form^{15,18,19} 2;) questions developed from Goldrick-Rab et al.'s #RealCollege Survey²⁰ and 3;) questions based on prior conversations with students about their specific food needs (see Table 1). Using language from students' own knowledge and experiences was particularly important in order to create accessible and unambiguous survey questions that students would find easy to complete. The Dean of Students Office distributed the FAS to all undergraduate students (n: 2,117) via an e-mail link, and student organization volunteers tabled on campus with tablets to encourage peer participation. No incentives were offered, and survey participation was voluntary. Participants had four weeks to complete the FAS, and approximately 17% of undergraduate students (n: 359) responded. This is a slightly higher response rate than the average reported in campus food insecurity studies.

We analyzed survey data using statistical software R version 3.4.1²¹ and R interface R StudioVersion 1.1.456.²² We also used the Epibasix²³ and MOSAIC²⁴ packages to find odds ratios and their confidence intervals.

Strengths and Limitations

We recognize there are several limitations to this study. First, our sample is voluntary and not random. Second, when comparing survey respondent demographics to available university demographics (see Table 2), our sample over-represents some characteristics (students who live on campus, have Pell Grants, are white, and are women) and under-represents others (students who live off campus, are Black/African American or Hispanic/Latino, and are men). Third, responses and data from some demographics are limited (students who are American Indian or Alaskan Native, are Native Hawaiian or Pacific Islander, and are transgender).

Despite these limitations, our findings demonstrate students at our private institution, particularly those from marginalized demographics, experience food insecurity and hunger. The aim of this paper is to report on the factors that contribute to food and basic needs insecurity for students at our university and, by extension, other private institutions. Importantly, we do this by centering student voices and student-driven solutions to addressing campus food insecurity.

Results

The USDA defines “food insecure” as answering “yes” to at least two, and “highly food insecure” to at least five, of their six-question food security survey module.^{1,8,14,15,18} Using these USDA guidelines, our survey found 31.5% (113 out of 359 students) are food insecure (answered yes to 2 to 4 questions) and 17% (61 out of 359 students) are highly food insecure (answered yes to either 5



Table 1. Food access survey (FAS) basic needs questions and sources.

Question	Response Type	Response Options	Question Source
Q1. In the last 12 months, have you experienced any of the following?*(Select all that apply)	Checkboxes	The food that I bought just didn't last and I didn't have money to get more	USDA
		I couldn't afford to eat nutritionally balanced meals	USDA
		I cut the size of meals or skipped meals because there wasn't enough money for food	USDA
		I cut the size of meals or skipped meals due to lack of money 3 or more days per week	USDA
		I ate less than I felt I should because there wasn't enough money for food	USDA
		I was hungry but didn't eat because there wasn't enough money for food	Hope Lab
		I was unable to focus in class due to hunger	Hope Lab
		I was unable to focus while studying due to hunger	Student team
		I struggled to access food suitable to my cultural and religious practices	Student team
		Q2. In the last 12 months, have you experienced any of the following?*(Select all that apply)	Checkboxes
I had difficulty paying rent			
I was unable to pay the full amount of my utilities			
I moved two or more times in a year			
I moved in with other people due to financial problems			
I was evicted or kicked out of my home			
I have slept somewhere not designed to be a residence (example: in a car, a park, on public transit, etc.)			
Q3. Please check the days you skipped at least one meal due to lack of money within the previous 7 days (Select all that apply)	Checkboxes	Monday	
		Tuesday	
		Wednesday	
		Thursday	
		Friday	
		Saturday	
		Sunday	

(Continued)

Table 1. (Continued).

Question	Response Type	Response Options	Question Source
Q3b. If you skipped meals, what was the reason?	Short answer		
Q4. Do you purchase a campus meal plan?	Multiple choice	Yes/No	
Q5. If you do not purchase a campus meal plan, please explain why:	Short Answer		
Q6. Are you currently accessing a food shelf to make ends meet?	Multiple Choice	Yes/No	
Q7. Would you like to see a food pantry on campus to help students make ends meet?	Multiple Choice	Yes/No	Research team
Q8. If you answered yes to Questions 7, would you like to participate in creating a campus food pantry?	Multiple Choice	Yes/No	Research team
Q9. What would you like to see included in a food resource center?	Short Answer		Research team

Table 2. Characteristics of the 2016–2017 university undergraduate student population and the sample of undergraduate students surveyed (FAS) in spring 2017.

Characteristics	University Population	Study sample	Test for difference*
Size (n)	2,117	359	NA
Gender (%)			NA
Female	61%	76%	p < .0001
Male	39%	18%	p < .0001
Transgender and Nonbinary	NA	4%	NA
Race/Ethnicity (%)			
White, non-Hispanic	66%	76%	0.00012
American Indian or Alaskan Native, non-Hispanic	<1%	<1%	NA
Asian, non-Hispanic	7%	4%	0.07
Black or African American, non-Hispanic	9%	5%	0.018
Hispanic or Latino/a	9%	4%	0.0011
Native Hawaiian or Pacific Islander	<1%	<1%	NA
Two or more races, non-Hispanic	6%	9%	0.06
Not Available	2%	1%	0.312
Age			
Up to 24 years old	95%	94%	0.54
25–29 years old	3%	3%	0.69
30 and older	2%	3%	0.10
Live on campus	38%	45%	0.0088
Pell Grants	36%	54%	<0.0001

* the test performed was a Chi-square test for independence on a 2×2 table where we simplify the data into whether they are in the category or not, and compare the count in the study versus what they would be using the percent provided by the University.

or 6 questions).²⁵ This means 48.5% (174 out of 359) of the responding students experience food insecurity; however, this increases to 70% when we include criteria from the additional questions informed by Goldrick-Rab, Richardson, and Kinsley²⁰ and student-led campus conversations.

Although the proportion of certain demographic groups in our sample differed from the University's undergraduate student population at large,²⁶ we still can compare the odds of food insecurity within our sample to those demographic groups (see Table 2). Furthermore, even if food insecure students self-selected into and food secure students did not respond to the survey, our findings demonstrate at least 5% to 12% of undergraduate students at the institution experience food insecurity.

Income and Pell Grants

Students who received Pell Grants have approximately twice the odds of being food insecure or highly food insecure than students who did not receive Pell Grants (see Table 3). Because Pell Grants are awarded based on income, we also examined food insecurity based on income. We used three income groups: 1) students who earned below the federal poverty guideline (\$12,000

gross annual income); 2) students who earned above the federal poverty guideline but below a living wage as defined by Fight for Fifteen²⁷ (about 30,000 USD/year, or 15 USD/hour working 40 hours/week); and 3) students who earned at or above a living wage. We found food insecurity was related to income. Of the 354 students who answered the question about income, 83% earned below the poverty line and 49.5% of those students experienced food insecurity (see [Table 3](#)). For those who earned an income between the poverty guideline and a living wage, 70.6% experienced food insecurity (see [Table 3](#)); this is statistically significantly higher than the food insecurity level for those who earned at or above a living wage, who experienced no food insecurity. If we focus on income for students receiving Pell Grants, we see there are no Pell Grant recipients in the living wage group. Data show Pell Grant recipients experienced slightly higher levels of food insecurity by income (71.4% above poverty are food insecure and 56.9% below poverty are food insecure) than other groups (70% above poverty and 40.3% below poverty). Although this difference is not statistically significant, the results indicate that Pell Grants do not provide the resources necessary to prevent students' food insecurity.

Race

When examining race, we see that the odds of food insecurity for Hispanic students is 4.5 times that of white students (see [Table 3](#)), which is significant if Hispanic students university-wide experience similar food insecurity. Although we also see increased odds of food insecurity for Black/African American students and for students who are more than one race (non-Hispanic), the odds ratios are not statistically significant (see [Table 3](#)).

Gender

In terms of gender, students selected from the following identities on the survey: woman, man, genderqueer, agender, transgender, identity not listed, prefer not to answer, or an "other" option that allowed for a short-answer response; students self-selected into only one of these identities and could not select multiple gender identities. Fourteen out of 354 students (4%) who indicated a gender identified as genderqueer and transgender. This rate of trans and genderqueer student responses is comparable to the rates in other student-focused research.²⁸ There are several factors that can contribute to underreporting. Self-selecting or identifying gender identity in a survey is a form of disclosure, and students may be hesitant to share this information with researchers due to the potential for harm. Additionally, the LGBTQIA community broadly distrusts how gender identity data is used. When it comes to food

Table 3. Spring 2017 undergraduate student survey (FAS) respondents' differences in food insecurity status over the previous 12 months.

Characteristics	Food insecure			Highly insecure	
	n	Percent	Odds ratio	Percent	Odds ratio
Gender (%)					
Female	271	47.2%	Baseline	13.7%	Baseline
Male	66	48.5%	1.05	27.3%	2.37*
Transgender and Nonbinary	14	78.6%	4.10*	28.6%	2.53
Race/Ethnicity (%)					
White, non-Hispanic	272	44.9%	Baseline	15.8%	Baseline
Asian, non-Hispanic	16	37.5%	0.74	12.5%	0.76
Black or African American, non-Hispanic	19	63.2%	2.11	26.3%	2.21
Hispanic or Latino/a	14	78.6%	4.51*	21.4%	1.45
Two or more races, non-Hispanic	32	59.4%	1.80	18.8%	1.23
Age					
Up to 24 years old	338	48.2%	Baseline	16.3%	Baseline
25–29 years old	9	55.6%	1.25	33.3%	2.56
30 and older	12	50%	1.07	25%	1.44
Religion					
Christian	158	44.9%		14.6%	
Jewish	7	14.3%	0.17	14.3%	0.84
Muslim	11	45.5%	1.02	18.2%	1.30
Buddhist	7	57.1%	1.63	0%	NA
None	154	51.9%	1.33	20.8%	1.54
Other	19	63.2%	2.10	15.8%	0.72
Residence					
On campus	161	39.1%	Baseline	11.8%	Baseline
Off campus	198	56.1%	1.98**	21.2%	2.01*
Pell Grant					
No	156	40.3%	Baseline	12.2%	Baseline
Yes	195	55.9%	1.87**	21.0%	1.92**
Disability/chronic illness					
No	266	46.2%	Baseline	15.0%	Baseline
Yes	90	55.6%	1.45	22.2%	1.61
Income level					
Living Wage	4	0%	Baseline	0%	Baseline
Between Living Wage and Poverty	17	70.6%	*	23.5%	
Below Poverty					
Below Poverty	295	49.5%		16.9%	
Not Working	38	39.4%		18.4%	

Legend:

* $p < 0.05$ ** $p < 0.001$

† Because the odds of food insecurity in the living wage group are 0, we cannot use the odds ratios to understand the relationships between the income levels.

insecurity, we see that students who identified as genderqueer and transgender have 4.1 times the odds of food insecurity as students who identified as women (see Table 3), which is significant if we assume these students are representative of their demographic group at the University; the odds ratio drops to 2.5 times when examining high food insecurity, which is no longer statistically significant. For students who identified as men, the odds of experiencing high food insecurity is 2.7 times the odds for students who identified as women (see Table 3), which

again is significant if we assume the students who participated in the survey are similar to others of their gender at the University.

In sum, nearly 50% of student survey respondents qualify as food insecure according to the USDA guidelines. An examination of the individual USDA metrics shows how those food insecure students go without basic needs. Students who responded to the survey indicated they do not receive adequate nutrition: 89% of those who are food insecure said they “couldn’t afford to eat nutritionally balanced meals” and 75% reported they “cut the size of meals or skipped meals.” Furthermore, our findings demonstrate the impact food insecurity and hunger has on students’ academic performance²⁹ 57% of food insecure students were “unable to focus in class” and 64% were “unable to focus while studying” due to hunger, compared to 15% for each metric in non-food insecure students.

Discussion

Our findings demonstrate food insecurity is a problem for students at this private liberal arts university and suggest this is likely a problem at private institutions more broadly. Food insecurity impacts some students more than others.^{30–33} Our findings show students who are living in poverty and who are from marginalized populations are among those most likely to experience food insecurity. Common assumptions about privilege at private universities often render the experiences of these students invisible, which only further contributes to the food insecurity and stigma they face.

One such assumption is that students attending “elite” private institutions come from generational wealth and have access to many types of financial support such as family resources. Increasingly, though, more students from low-income backgrounds are enrolling in private institutions. In our survey, 83% (295 of 354 students) reported income below the federal poverty guideline (\$12,000 gross annual income). Of these students, 49.5% experienced food insecurity. These findings make evident many students from low-income backgrounds do not have resources to pay for food, and their food insecurity exists alongside the rising costs of tuition, housing, and transportation. Additionally, the federal poverty guideline does not adequately capture all who experience food insecurity.^{34–36} Students who earned income above the poverty guideline but less than a living wage also experienced food insecurity. Nearly 99% of survey respondents (350 of 354 students) self disclosed either no income or income below a living wage (full-time work at 15 USD/hour or about 30,000 USD/year). Of these students either not working or earning below a living wage, 49.1% experienced food insecurity.

Attempting to address basic needs insecurity, the Higher Education Act of 1965³⁷ created awards like Pell Grants to help students from low-income backgrounds attend college.³⁸ But our findings show Pell Grants do not

adequately address students' needs: the odds of food insecurity for students receiving Pell Grants was almost twice that of students not receiving Pell Grants. Furthermore, 58% of students receiving Pell Grants who earned below the federal poverty guideline experienced food insecurity, as did 71% of Pell Grant recipients who earned above the poverty guideline but below a living wage.³⁹ Students with these financial circumstances are regularly unseen by traditional poverty and income measures used to assess basic needs. It is through campus-based assessments like ours that these students' experiences are made visible.

Students from marginalized groups are seriously impacted by food insecurity. Our study indicates transgender and genderqueer students are more likely to have food insecurity than cisgender students, specifically they are at 4.1 times the risk of experiencing food insecurity compared to cisgender female students and almost 4 times compared to cisgender male students.⁴⁰ National research supports our findings, indicating trans students are at increased risk for food insecurity due to employment and housing discrimination. Research by the Center for Transgender Equality found that transgender people experience 3 times the rate of unemployment, homelessness, and poverty compared to cisgender populations.^{41,42} Within the LGBTQ community, research found that 30% of LGBTQ adults report they did not have enough money to feed themselves and their families.⁴¹ Rates of food insecurity in the LGBTQ community are further compounded by gender identity, gender presentation, and race. For example, LGBTQ Black, Latinx, and Indigenous womxn/femme⁴³ individuals who receive assistance from the Supplemental Nutrition Assistance Program (SNAP) face higher rates of food insecurity.⁴⁴

Our research further highlights the relationship between food insecurity and race. For example, Hispanic students had higher odds of food insecurity than white students, while Black/African American students and students who are more than one race (non-Hispanic) also appear to be more at risk than white students. The intersections of poverty, gender identity, and race make apparent the compounding nature of food insecurity. This demonstrates the need for more nuanced research that addresses the cumulative effects of multiple and intersectional marginalizations on food insecurity, including access to food on college campuses.

Better understanding food insecurity in higher education, specifically at private institutions, can help to address the invisibility of college students' experiences with hunger. The constant search for survival resources (i.e., food, housing, healthcare) depletes human capital and diminishes cognitive resources,²⁹ leaving students with less "bandwidth" for learning^{29,30} and negatively impacting their academic performance. Food and other basic needs insecurity not only negatively impact students' academic performance, but it puts students' lives and futures at risk.^{30,31}

Conclusion and Call to Action

Higher education cannot continue to ignore food insecurity as a problem that elite and private institutions face. Previous research focused primarily on students at public institutions with limited indications for marginalized students. Our study demonstrates that students at private institutions experience food insecurity and that marginalized students attending private institutions are at increased risk for hunger. By centering marginalized students in our analyses, we see that poverty, racism, sexism, and transphobia add layers of complexity to food insecurity experiences. Our research, therefore, both challenges hegemonic definitions of food insecurity and deepens our knowledge of food access on college campuses. As the demographics of students enrolling in higher education continue to change, we argue institution type cannot be used as a measure of students' ability to meet their basic needs while enrolled in college. Research on college food insecurity must consistently include private institutions to compel them into action. Private institutions must recognize that food insecurity exists on their campuses, regardless of any "elite" or "privileged" status they hold. Each institution should conduct their own campus assessment to identify and address their students' needs. Importantly, we argue students should be involved in all stages of assessment and implementation. Without centering students, in particular marginalized students, private institutions risk a top-down approach to addressing food insecurity that does not actually meet students' basic needs.

Food insecurity is one of the most profound indicators of poverty on college campuses, and it is a complex public health crisis that disproportionately impacts marginalized students. Deepening our understanding of student hunger in higher education, including at private institutions, can help to address the invisibility of marginalized students' experiences. Across the country, rising costs make it harder for college students to access food, housing, and other basic needs. As private universities enroll more Pell-eligible, racially and gender diverse, and first-generation students, they must address basic needs gaps through policies that ensure all students have access to the resources required for retention, degree completion, and student success. We implore higher education to act with urgency, exploring innovative avenues to respond to campus hunger and dismantle systemic inequity so that students can move beyond surviving and in fact thrive during their time in college.

Acknowledgments

We offer special thanks to the students who contributed their time and expertise to our efforts to address food insecurity on our campus. For their support, we also thank Valentine Cadieux, Associate Professor of Environmental Studies and Director of Sustainability; Patti Klein, Dean

of Students and Title IX Coordinator; and Nancy Victorin-Vangerud, University Chaplain and Director of the Wesley Center.

Human Participant Protection

The Food Access Survey (FAS) and subsequent study was approved by the Institutional Research Board at Hamline University.

Funding

This research was funded by a Sustainability Grant from Hamline University's Office of Sustainability.

ORCID

Susi Keefe  <http://orcid.org/0000-0002-8973-2552>

References

1. Nazmi A, Martinez S, Byrd A, et al. A systematic review of food insecurity among US students in higher education. *J Hunger Environ Nutr.* 2019;14(5):725–740. doi:10.1080/19320248.2018.1484316.
2. Chaparro MP, Zaghoul SS, Holck P, Dobbs J. Food insecurity prevalence among college students at the University of Hawai'i at Mānoa. *Public Health Nutr.* 2009;12(11):2097–2103. doi:10.1017/S1368980009990735.
3. Goldrick-Rab S, Broton K, Eisenberg D Hungry to learn: addressing food & housing insecurity among undergraduates. Wisconsin HOPE Lab. https://hope4college.com/wp-content/uploads/2018/09/Wisconsin_HOPE_Lab_Hungry_To_Learn.pdf. Published December 15, 2015. Accessed August 9, 2019.
4. Silva MR, Kleinert WL, Sheppard AV, et al. The relationship between food security, housing stability, and school performance among college students in an urban university. *J Coll Stud Reten.* 2017;19(3):284–299. doi:10.1177/1521025115621918.
5. Broton K, Goldrick-Rab S. The dark side of college (un)affordability: food and housing insecurity in higher education. *Change.* 2016;48(1):16–25. doi:10.1080/00091383.2016.1121081.
6. Morris LM, Smith S, Davis J, Null DB. The prevalence of food security and insecurity among Illinois university students. *J Nutr Educ Behav.* 2016;48(6):376–382. doi:10.1016/j.jneb.2016.03.013.
7. Goldrick-Rab S, Richardson J, Hernandez A Hungry and homeless in college: results from a national study of basic needs insecurity in higher education. Wisconsin HOPE Lab. <https://hope4college.com/wp-content/uploads/2018/09/Hungry-and-Homeless-in-College-Report.pdf>. Published March 9, 2017. Accessed August 9, 2019.
8. Martinez SM, Webb K, Frongillo EA, Ritchie LD. Food insecurity in California's public university system: what are the risk factors? *J Hunger Environ Nutr.* 2018;13(1):1–18. doi:10.1080/19320248.2017.1374901.
9. Jack A. *The Privileged Poor: How Elite Colleges are Failing Disadvantaged Students.* Cambridge, MA: Harvard University Press; 2019.

10. Fry R, Cilluffo A A rising share of undergraduates are from poor families, especially at less selective colleges. Pew Research Center. <https://www.pewsocialtrends.org/2019/05/22/a-rising-share-of-undergraduates-are-from-poor-families-especially-at-less-selective-colleges/>. Published May 22, 2019. Accessed August 9, 2019.
11. Snyder TD, de Brey C, Dillow SA. *Digest of Education Statistics 2018* 54th ed. Washington, DC: NCES, IES, U.S. Department of Education; 2019. <https://nces.ed.gov/pubs2020/2020009.pdf> Accessed June 2, 2020.
12. Allen C, Alleman N. A private struggle at a private institution: effects of student hunger on social and academic experiences. *J Coll Stud Dev*. 2019;60(1):52–69. doi:10.1353/csd.2019.0003.
13. Broton KM, Cady CL, eds. *Food Insecurity: Actions and Interventions*. Baltimore, MD: Johns Hopkins University Press; 2020.
14. Coleman-Jensen A, Gregory CA, Rabbitt MP CNSTAT review and recommendations. U.S. Department of Agriculture, Economic Research Service. <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security/#CNSTAT>. Updated September 4, 2019. Accessed July 27, 2020.
15. Coleman-Jensen A, Gregory CA, Rabbitt MP Measurement: how are food security and insecurity measured? U.S. Department of Agriculture, Economic Research Service. <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement.aspx#measurement>. Published September 4, 2019. Accessed July 11, 2019.
16. What to do if your parents can't or won't help pay. Finaid. <https://finaid.org/otheraid/parentsrefuse/>. Accessed July 27, 2020.
17. The student-led organization included a leadership team composed of students intimately impacted by food insecurity.
18. U.S. household food security survey module: six-item short form [survey]. U.S. Department of Agriculture, Economic Research Service. <https://www.ers.usda.gov/media/8282/short2012.pdf>. Published September 2012. Accessed July 11, 2019.
19. The USDA 10-item survey is often considered a more sensitive measure of food insecurity than the 6-item survey. However, we find both surveys better measure household as opposed to individual (student) responses. Given responses based on the 6-item survey are more comparable with data collected from other universities across the country, the Food Access Survey (FAS) was modeled after the 6-item instead of the 10-item USDA survey. We do not view this choice as a limitation of the study's methods.
20. Goldrick-Rab S, Richardson J, Kinsley P Guide to assessing basic needs insecurity in higher education. Wisconsin HOPE lab. <https://hope4college.com/wp-content/uploads/2018/09/Basic-Needs-Insecurity-College-Students.pdf>. Published July 2018. Accessed August 9, 2019.
21. R Core Team. *R: A Language and Environment for Statistical Computing [Computer Software]*. Vienna, Austria: R Foundation for Statistical Computing; 2017.
22. RStudio Team. *RStudio: Integrated Development for R [Computer Software]*. Boston, MA: RStudio, Inc; 2016.
23. Rotond MA. *Epibasix: Elementary Epidemiological Functions for Epidemiology and Biostatistics [Computer Software]*. Version 1.5. CRAN; 2018. <https://cran.r-project.org/web/packages/epibasix/index.html>
24. Kaplan D, Horton NJ, Pruim R Randomization-based inference using the mosaic package [technical report]. doi: 10.13140/2.1.2186.4321. May 17, 2014. Accessed August 9, 2019.
25. Of note: 64.6% (232 out of 359 students) responded “yes” to at least one question.
26. For example, students who live off campus have approximately twice the odds of being food insecure or highly food insecure than students who live on campus.

27. Why we strike. Fight for \$15. <https://fightfor15.org/why-we-strike/>. Accessed July 11, 2019.
28. 2016 Minnesota Student Survey Statewide Tables. Minnesota student survey interagency team. <https://www.health.state.mn.us/data/mchs/surveys/mss/docs/statedwidetables/state-tablesbygender16.pdf>. Accessed July 27, 2020.
29. Verschelden C. *Bandwidth Recovery: Helping Students Reclaim Cognitive Resources Lost to Poverty, Racism, and Social Marginalization*. Sterling, VA: Stylus Publishing; 2017.
30. Mullainathan S, Shafir E. *Scarcity: Why Having Too Little Means So Much*. New York, NY: Times Books; 2013.
31. Breger L. Poverty and student achievement in Chicago public schools. *Am Econ*. 2016;62(2):206–216. doi:10.1177/0569434516672759.
32. Newton J, Turale S. Student poverty at the University of Ballarat. *Aust J Soc Iss*. 2016;35(3):251–265. doi:10.1002/j.1839-4655.2000.tb01309.x.
33. Bruening M, Brennhofers S, van Woerden I, Todd M, Laska M. Factors related to the high rates of food insecurity among diverse, urban college freshmen. *J Acad Nutr Diet*. 2016;116(9):1450–1457. doi:10.1016/j.jand.2016.04.004.
34. Coleman-Jensen A, Rabbitt MP, Gregory CA, Singh A Household food security in the United States in 2016 [ERR-237]. United States Department of Agriculture, Economic Research Service. <https://www.ers.usda.gov/webdocs/publications/84973/err-237.pdf>. Published September 2017. Accessed August 9, 2019.
35. Food insecurity and poverty in the United States: findings from the USDA and U.S. Census Bureau. Feeding America. https://hungerandhealth.feedingamerica.org/wp-content/uploads/2018/10/Food-Insecurity-Poverty-Brief_2018.pdf. Published October 2018. Accessed August 9, 2019.
36. Johnson DS, Smeeding TM. A consumer’s guide to interpreting various U.S. poverty measures. *Fast Focus*. 2012;14:1–7. <https://www.irp.wisc.edu/publications/fastfocus/pdfs/FF14-2012.pdf>
37. *Higher education act of 1965*. <https://www.govinfo.gov/content/pkg/STATUTE-79/pdf/STATUTE-79-Pg1219.pdf>. Government Publishing Office [US] H. R. 9567. Published November 8, 1965. Accessed August 9, 2019.
38. A student’s eligibility for Pell Grants is determined by their family’s capacity to contribute to college expenses. Unlike loans, these federally funded grants need not be repaid.
39. We did not see a significant difference between those earning below the poverty level and those earning above the poverty level in terms of average food insecurity (p=.1031).
40. Although our data demonstrate this finding, other national and international research on men and food insecurity has yet to support it. Future exploration regarding men’s specific experiences with college food insecurity and hunger is warranted.
41. James SE, Herman JL, Rankin S, Keisling M, Mottet L, Anafi M. *The Report of the 2015 U.S. Transgender Survey*. Washington, DC: National Center for Transgender Equality; 2016. <https://transequality.org/sites/default/files/docs/usts/USTS-Full-Report-Dec17.pdf>. Accessed August 9, 2019.
42. Grant JM, Mottet L, Tanis J, Herman JL, Harrison J, Keisling M. *National Transgender Discrimination Survey Report on Health and Health Care*. Washington DC: National Center for Transgender Equality and National Gay and Lesbian Task Force; 2010. https://cancer-network.org/wp-content/uploads/2017/02/National_Transgender_Discrimination_Survey_Report_on_health_and_health_care.pdf. Accessed August 9, 2019.
43. Womxn is a community-generated, gender-inclusive, and intersectional term that includes non-binary, transgender, and genderqueer presentations and acknowledges

underlying misogyny contributing to trans femme, non-binary, and genderqueer discrimination.

44. Brown TNT, Romero AP, Gates GJ Food insecurity and SNAP participation in the LGBT community. The Williams Institute, UCLA School of Law. <https://williamsinstitute.law.ucla.edu/wp-content/uploads/Food-Insecurity-and-SNAP-Participation-in-the-LGBT-Community.pdf>. Published July 2016. Accessed August 9, 2019.