

Food Insecurity at the Ventura County Community College District

AP Research

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Introduction

The image of the “starving college student” living on ramen noodles is a familiar cliché. But in the past decade, academic researchers and college administrators have increasingly found that the issue of food insecurity on college campuses is, in fact, a serious problem. Food insecurity can be generally characterized as “the disruption of food intake or eating patterns because of lack of money and other resources” (Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services, 2017). College can be a challenging environment even under ideal circumstances. Students often worry about studying for classes, passing exams, and ultimately graduating to pursue future success. Some students may additionally struggle financially: having to pay for tuition and textbooks, which can leave them insufficient funds for other basic necessities. Investigation reveals students may sacrifice food and housing security in order to afford college.

In the last two decades, the cost of a college education has increased significantly. Government data indicates that the cost of a college education rose steadily in the past 20 years. For example, between the 2000–01 and 2015–16 academic years, tuition and fees for two-year public institutions rose 128%, after adjusting for inflation (National Center for Education Statistics [NCES], U.S. Department of Education, 2017a). At the same time, many programmatic efforts have encouraged more and more people to pursue a college degree, especially individuals from historically underrepresented groups such as first-generation college students and those with a lower socio-economic standing (NCES, 2018, 2017b). These two factors have combined to burden some students with large college expenses and limited financial resources. One area where students can cut costs is to reduce the amount of money they spend on food.

The earliest research conducted on student food insecurity mainly occurred at four-year

colleges and universities, where tuition expenses are particularly high. Food insecurity studies may choose to focus on four-year universities because of the higher tuition, perceived levels of stress, and because students are often in a more isolated and self-sufficient environment.

Researchers and campus administrators might overlook the potentially disproportionate impact of food insecurity at community colleges because of a belief that students rely on their families for food and housing and that lower tuition inevitably makes community college more affordable.

Recent research investigating the presence of food insecurity at community colleges has emerged, driven largely by The Hope Center for College, Community, and Justice, located at Temple University. The first sizable community college survey results were published in 2017 involving 33,000 student respondents from across the United States (Goldrick-Rab, Richardson, & Hernandez, 2017a). Interestingly, this study included students from the Los Angeles Community College District (LACCD), with a large and diverse student population (Goldrick-Rab, et al., 2017b). Food insecurity, as well as housing insecurity, was found to be particularly high in this primarily urban district. The current study aims to estimate the prevalence of food insecurity for students at the neighboring Ventura County Community College District (VCCCD), a more suburban and rural district compared to Los Angeles. Additionally, the research will investigate the presence of correlations that can be used to predict food insecurity, as well as the relationship between food insecurity and outcomes such as grade point average in the VCCCD.

Literature Review

The U.S. Department of Agriculture (USDA) (2014) defines food insecurity at the household-level as the “economic and social condition of limited or uncertain access to adequate

food.” The USDA has been instrumental in standardizing the study of food insecurity in the United States. In 2017, the USDA’s Economic Research Service estimated 11.8% of American households were food insecure during the year, meaning they lacked access to enough food for “an active, healthy life for all household members” (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2018). Characteristics of food insecurity in standardized scales include being worried about running out of food, being unable to afford to eat balanced meals, reducing meal sizes, and being hungry but not eating.

The national organization Feeding America uses data from the U.S. Census Bureau and the U.S. Bureau of Labor Statistics, including county-level data on food insecurity, cost of living, and income, to estimate food insecurity data for individual counties (Gundersen, Dewey, Crumbaugh, Kato, & Engelhard, 2018). Feeding America estimates the food insecurity level for households in Ventura County is lower than the national average at 7.6%, while the estimate for Los Angeles County is 11.2%. However, it is interesting to note the analysis also estimates that a higher percentage of Ventura County residents are eligible for food assistance compared to Los Angeles county, 17% versus 7%, which reflects a higher percentage of Ventura households that live substantially below the national poverty level. Taken together, these data indicate that residents in Ventura County may experience greater food security overall, however a substantial gap exists in the county between higher and lower income households.

Several studies have examined the prevalence of food insecurity on college campuses, with much of the research occurring in the last four years. These studies report rates of food insecurity broadly ranging from 14% to 59% (Gaines, Robb, Knol, & Sickler, 2014; Patton-López, López-Cevallos, Cancel-Tirado, & Vazquez, 2014). A 2018 literature review of food insecurity reported an average rate of 44% of college students experiencing food insecurity

(Nazmi et al., 2018). This level of food insecurity is more than three times higher than the 2017 rate for households in the United States (Coleman-Jensen, et al., 2018).

In some of the earliest work, researchers at a four-year university in Hawaii studying food insecurity determined that 21% of students experienced food insecurity, and an additional 24% were at risk of food insecurity (Chaparro, Zaghoul, Holck, & Dobbs, 2009). Not unexpectedly given the cost of housing in Hawaii, the researchers found students who lived with family were at lower risk for food insecurity than those who did not. Five years later, researchers at a rural four-year college in Oregon found that more than half of the students surveyed (59%) were food insecure at some point during the previous year (Patton-López et al., 2014). In addition to identifying some factors that correlate with food insecurity (lower income, employment, and poorer health), this study also revealed that students who were food insecure had slightly lower grade point averages compared to food secure students. In New Hampshire, a state with the sixth highest disposable income in the nation, researchers at a public university found the prevalence of food insecurity among undergraduate and graduate students to be 25% (Davidson & Morrel, 2018). Students who reported receiving financial aid or were classified as a first-generation college student were more likely to be food insecure, but no correlation between grade point average and food security was found.

In the last few years, the two major four-year university systems in the state of California have commissioned or expanded existing research efforts to look at food and housing insecurity on their campuses. Both the California State University System (CSU) and the University of California System (UC) determined the overall rate of food insecurity for their respective campuses to be approximately 40% (Crutchfield & Maguire, 2018; Martinez, Maynard, & Ritchie, 2016). Following a 2016 study investigating food and housing insecurity from the

perspectives of staff, faculty, and administrators (Crutchfield, 2016), the California State University (CSU) Chancellor's Office commissioned a large-scale study across its 23 campuses (Crutchfield & Maguire, 2018). This is one of the most comprehensive mixed-methods studies reported to date. Their data included evidence of higher food insecurity for students who are identified as: first generation college students, Pell Grant (financial aid) recipients, former foster youth, non-native English speaking (ESL) students, undergraduates (vs graduate students), upperclassmen (vs. freshmen) and students with their own children. Additionally, the University of California report found that food insecure students were more likely than food secure students to receive needs-based financial assistance, to receive federal nutrition assistance (SNAP, known as CalFresh in California), and were more likely to have experienced food insecurity as a child. Importantly, these research reports do not include tests for statistical significance, though they do spell out the relative percentages of responses.

A primary concern for colleges that conduct their own investigation of food insecurity and basic needs, or agree to participate in a study conducted by an outside organization, is how a lack of food security (and housing insecurity) might hinder student success and focus while in school. As mentioned earlier, Patton-L'opez et al. (2014) found food insecure students to have slightly lower GPAs than food secure students. Similarly, researchers in Maryland found that food insecure students were more likely to report a lower, versus a higher, grade point average (Maroto, Snelling, & Linck, 2015). The CSU Study of Student Basic Needs (Crutchfield & Maguire, 2018) presented summary findings concluding "students who reported food insecurity... also experienced physical and mental health consequences that were associated with lower academic achievement. They also reported higher rates of 'inactive days,' where poor physical or mental health kept them from their usual activities such as school" (p. 4). Colleges

want students to succeed, but this goal can be harder to achieve if students are struggling due to a lack of basic necessities.

Despite the rise of awareness and research initiated by the administration at four-year colleges led by the state of California, the research at community colleges has lagged in certain areas. As a major exception, The Hope Center for College, Community, and Justice at Temple University (formerly at the University of Wisconsin), conducted studies investigating two-year colleges. An initial study of ten community colleges from various parts of the United States concluded that 39% of the surveyed students had low food security (Goldrick-Rab, Broton, & Eisenberg, 2015). The findings brought light to the fact that food insecurity was in fact, more prevalent at community colleges than commonly believed. Importantly, for the purposes of the current research project, Goldrick-Rab et al.'s subsequent study (2017b) included schools of the Los Angeles Community College District (LACCD) which, as previously stated, found the rate of food insecurity to be 63%.

As of Fall 2018, the Ventura County Community College District (VCCCD) had not conducted a study of food insecurity and basic needs. Some might perceive Ventura County to be a moderately affluent region, but it can, and does, contain evidence of food insecurity among its population. The current study aims to be the first to assess the level of food insecurity on all three VCCCD campuses and to compare the food insecurity rates from two adjacent California counties - being the rural and suburban Ventura County versus the largely urban Los Angeles County. Additionally, it will examine the student characteristics that may correlate with food insecurity, including demographic variables and academic outcomes.

Methods

Population

The population studied are students from the Ventura County Community College District. According to the California Community Colleges Chancellor's Office, 34,270 students were enrolled in the VCCCD as of fall 2018 (Management Information Systems Data Mart, California Community Colleges Chancellor's Office, 2018). There are three VCCCD colleges: Moorpark College, Oxnard College and Ventura College. Demographic information for students enrolled in the VCCCD, as of fall 2018, is available in Table 1, under VCCCD Population.

Table 1
Comparison of VCCCD College Population and Study Sample

	VCCCD		Sample		Goodness of Fit	
	Population Characteristics		Characteristics		Test*	
Age	N	%	n	%		
19 or younger	12485	36%	88	35%	χ^2	2.42
20-24	12351	36%	100	40%	p value	0.66
25-29	4177	12%	32	13%		
30-34	1851	5%	14	6%		
35 or older	3397	10%	14	6%		
Ethnicity						
African-American/Black	685	2%	6	2%	χ^2	6.95
Asian	2208	7%	15	6%	p value	0.14
Hispanic or Latino	18358	54%	147	60%		
White	11208	33%	57	23%		
Multi-Ethnicity	1482	4%	20	8%		
Years in College						
Less Than 1 Year	6293	19%	65	26%	χ^2	3.18
More Than 1 Year	26347	81%	182	74%	p value	0.07
Enrollment						
Full-time (12+ credits)	22033	65%	184	75%	χ^2	4.61
Part-time (< 12 credits)	12114	35%	62	25%	p value	0.03
Gender						
Female	18296	53%	168	69%	χ^2	9.77
Male	15527	45%	75	31%	p value	0.01
Not Categorized	447	1%	1	0%		
College						
Moorpark College	14089	41%	38	15%	x ²	43.48
Oxnard College	7158	21%	111	45%	p <	0.001
Ventura College	13023	38%	97	39%		

Note: alpha = .05.

For χ^2 Goodness of Fit Tests, failing to reject the null hypothesis indicates sample and population are similar

Instrument

A logic-branching survey was developed through the Google Forms application. At the recommendation of project advisors, only five questions required a response, allowing students to decline to answer specific items. Additionally, the survey was available in both English and Spanish in order to be more accessible to student body members. Initial Spanish translation was done by the researcher and then reviewed by a high school faculty member who has 22 years' experience teaching Spanish language classes. The survey included different content sections, including food insecurity, demographics, academic outcomes, access to campus information and supports, and employment. The English version of the survey appears in Appendix A.

The instrument (see Table 2 and Table 3) was largely based on existing academic and research survey sources. It included the six-item Adult Food Security Survey Module (AFSSM) designed by the U.S. Department of Agriculture (USDA) to assess food security status over the past twelve months (United States Department of Agriculture, 2012). The USDA methodology assigns a food security score from zero to six. The module has been refined by the USDA for 30 years and according to the agency “has been shown to identify food-insecure households and households with very low food security with reasonably high specificity and sensitivity and minimal bias” (p. 1). The AFSSM has also been found to be reliable and valid in numerous studies (e.g., Blumberg, et al., 1999; Wunderlich, 2006); and the measure, in one of its three forms, is used in most studies of food insecurity on college campuses.

Table 2

Adult Food Security Survey Module, U.S. Department of Agriculture (USDA)

For the following statements, please say whether the statement was often true, sometimes true, or never true for you in the last 12 months.

1. The food that I bought just didn't last, and I didn't have money to get more.
2. I couldn't afford to eat balanced meals.

Table 2 Continued

For the following statements, please select yes or no for you in the last 12 months.

- 3. Did you ever eat less than you felt you should because there wasn't enough money for food?
- 4. Were you ever hungry but didn't eat because there wasn't enough money for food?
- 5. Did you ever cut the size of your meals or skip meals because there wasn't enough money for food?

(If “yes” is selected to Question 5) You indicated that you had cut the size of your meals or skipped meals because there wasn't enough money for food.

- 6. How often did this happen – almost every month, some months but not every month, or in only 1 or 2 months?”

Note: "Food security in the AFFSM is defined based on the sum of scores. An affirmative response of ‘often true’ or ‘sometimes true’ to each of Questions 1 and 2 or ‘yes’ to each of Questions 3 to 4 each add one point to the score. If ‘yes’ is selected for Question 5, then ‘almost every month’ or ‘some months but not every month’ as responses to Question 6 add two points to the score, while a response of ‘in only one or two months’ to Question 6 adds one point to the score. *Source: University of California Chancellor's Office (2016)*

Other survey questions were based on research conducted at the University of California in 2015 for the Food Access and Security Study (Martinez, Maynard, & Ritchie, 2016) and on a guide developed by Dr. Goldrick-Rab, then with the Wisconsin HOPE Lab (Goldrick-Rab, Richardson, & Kinsley, 2017). See Figure 1.

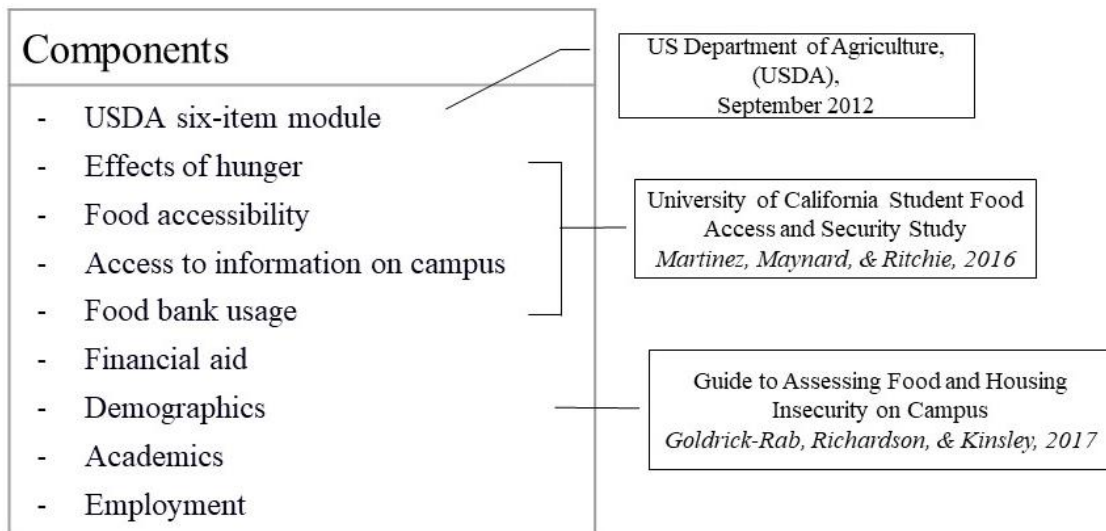


Figure 1. Survey component development

Distribution

Though the administration at the VCCCD was supportive of the current research project, they were not able to email survey links to the student population due to policy and privacy concerns. Instead, the most prominent and successful method for distributing the survey was by contacting individual professors requesting they share the survey link with students. Professors were chosen through a stratified random sample in an effort to reach a representative population of the student body. The levels chosen were the three different campuses and different academic disciplines (e.g., Accounting, Psychology, Mathematics). This method was conducted by downloading the online schedule of classes for each campus, assigning numbers to each professor, and using a random number generator to select instructors.

Other methods of distribution included traditional advertising, including physical flyers posted on the three campuses and social media posts, with assistance and approval from the Associated Student Government (ASG) at Oxnard, the Associated Students of Ventura College (ASVC), and the Student Business Office at Moorpark. Additionally, an online advertisement was run in the student newspaper for one month, which was donated by the faculty advisors for the program. Finally, information on the study was presented to administration, faculty, and students of the college district at a VCCCD Board of Trustees meeting, at the invitation of the board president. Recruitment flyers were also distributed at that time. Appendix B shows a sample flyer and social media post. The online survey was available and responses were collected for one month.

Results

257 responses were collected with the online survey instrument. Nine students were eliminated from the data set because they either did not attend a VCCCD school, were high

school students dual-enrolled in a community college class, or declined to answer a majority of questions. As mentioned earlier, most survey questions were not required, so some variables will have fewer than 248 responses. However, student records kept in the data set all answered at least 96% of the applicable questions, with most answering 100%. The significance level for all tests is $\alpha = .05$.

To assess the representativeness of the sample, Chi-Square Goodness of Fit tests were calculated comparing the sample demographics to official student enrollment data from the California Community College Data Mart (California Community Colleges Chancellor's Office, 2018). See Table 1 above for data and notes on Goodness of Fit tests. It is shown that the study sample is consistent in representing student ethnicity ($\chi^2 = 6.95$, $p = .14$), age ($\chi^2 = 2.42$, $p = .66$), and years in school ($\chi^2 = 3.18$, $p = .07$). However, the study sample is not consistent in representing gender ($\chi^2 = 9.77$, $p = .01$), enrollment status (full-time versus part-time) ($\chi^2 = 4.61$, $p = .03$), or the number of students enrolled at each campus ($\chi^2 = 43.48$, $p < .001$).

The level of food security for students was calculated using the point system described earlier in Table 2, with scores ranging from zero to six. The USDA labels the level of food security as "High or Marginal," together taken as "Secure;" or "Low" or "Very Low," together classified as "Insecure." See Table 3.

Table 3
USDA Food Security Labels

Food Secure	High or Marginal food security	0-1	No reported indications of food-access problems or limitations. May indicate anxiety over food sufficiency or shortage of food in the house. Little or no indication of changes in diet or food intake.
Food Insecure	Low food security	2-4	Reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.
	Very low food security	5-6	Reports of multiple indications of disrupted eating patterns and reduced food intake.

Source: U.S. Department of Agriculture (USDA), Economic Research Service, 2012

Approximately 42% of the survey respondents are classified as food insecure, with 22% reporting low food security and 20% reporting very low food security. Compared to the food insecurity rates of the Los Angeles Community College District, there is a lower rate of food insecurity in the Ventura County community colleges than in the Los Angeles County community colleges - 42% compared to 63% (Goldrick-Rab, et al., 2017b). By using a z-test for the comparison of two population proportions, these findings were determined to be statistically significant ($z = 3.18, p < .001$).

Forty-eight percent of students with a historically underrepresented ethnicity, meaning students with Hispanic ethnicity and African American students ($n = 157$) were food insecure, compared to 32% of students who are not from a historically underrepresented ethnicity (in this sample, Asian and White students) ($n=88$). Through Chi-Square analysis, there is a statistically significant relationship between student ethnicity and food insecurity when considering historically underrepresented groups ($\chi^2 = 5.07, p = 0.02$).

Of students who received Pell Grants ($n = 71$), 59% were food insecure compared to 36% who did not receive Pell Grants ($n = 176$) ($\chi^2 = 11.30, p < .001$). Pell Grants are form of federal financial aid awarded to students with the most extreme financial need. Related to this finding, students who reported having a lower household income were more likely to be food insecure ($\chi^2 = 23.05, p < .001$). See Figure 2.

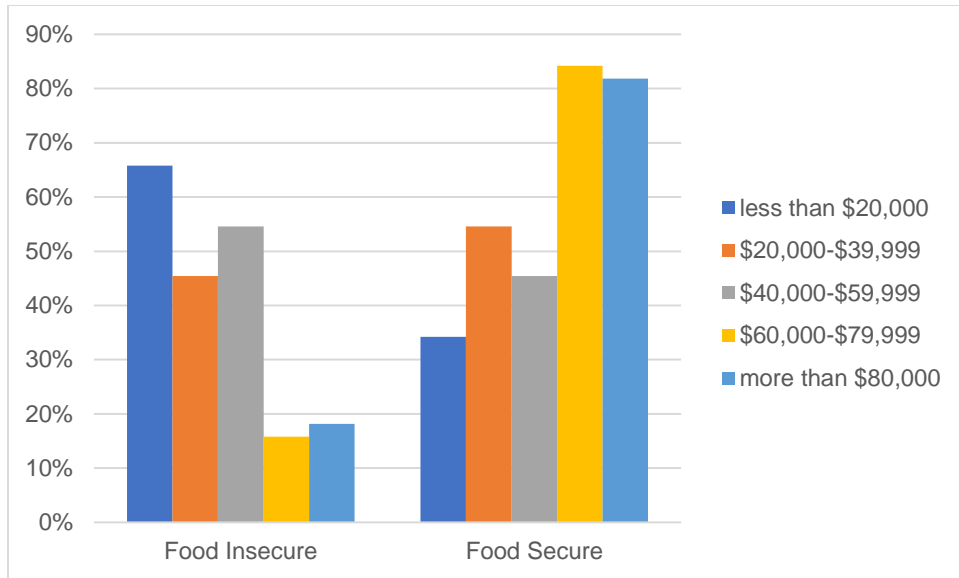


Figure 2. Percent of students in income category by food security

Other factors correlating with food insecurity are age and employment status. Students who are 25 years of age or older ($n = 60$) are more likely to be food insecure ($\chi^2 = 3.92$, $p = 0.048$) than students 24 or younger ($n=188$), 53% versus 39%. Examining employment, students were broken into three categories: those who had a job, those who did not, and those who responded they were looking for a job. No notable difference was found between students with or without a job. However, 65% of the students in the process of looking for a job ($n=29$) were food insecure compared to 39% who were either employed or not seeking employment ($n=219$) ($\chi^2 = 7.23$, $p = 0.007$).

In a different set of questions, students were asked to rate barriers to food accessibility. Food insecure students were more likely to report each of following circumstances as being a more frequent challenge (experienced “often” or “very often”) to obtaining food: “lack of time to shop for food,” “lack of time to prepare food,” “cost of food,” “availability of food outlets on campus,” and “lack of reliable transportation.” Food insecure students were more likely than

food secure students to report experiencing each of these barriers in the last twelve months. Each difference was statistically significant at $p < .001$. See Figure 3 and Appendix C.

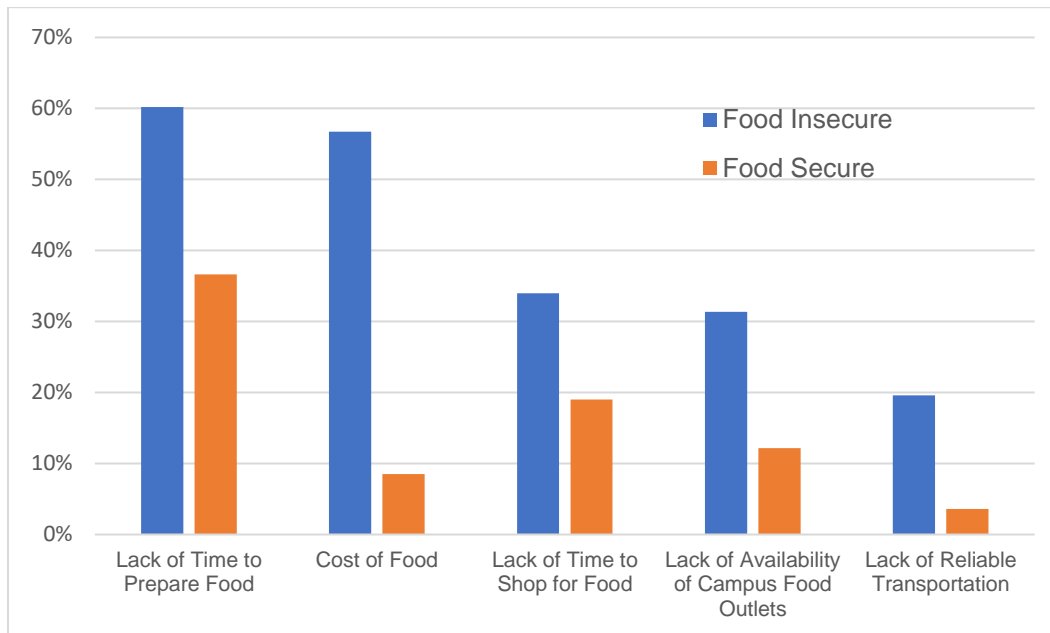


Figure 3. Reporting barrier occurs 'Often' or 'Very Often' by food security

Some results in the study were not statistically significant but might be of note in the context of the data from other researchers. First-generation college students, or students whose parents never received a bachelor's degree in college ($n=193$) compared to students with at least one parent who has received a college degree ($n=43$) were somewhat more likely to be food insecure (45% versus 30%) ($\chi^2 = 7.23, p = 0.07$). Additionally, students who are financially independent of their parents ($n=108$) versus dependent ($n=139$) are somewhat more likely to be food insecure (49% compared to 37%) ($\chi^2 = 3.38, p = 0.07$).

In the area of student outcomes, the general trend was for food insecurity to correspond with lower grade point averages (GPAs). See Figure 4. However, looking at high performing students who self-report a GPA of 3.5 or higher ($n=73$) compared to students with a GPA below 3.5 ($n=175$), food secure students are significantly more likely to fall into the high performing

category compared to insecure students, 35% versus 22% ($\chi^2 = 4.97, p = 0.03$). See Figure 5.

This finding mirrors that of Maroto, Snelling & Linck (2015) in that food insecure students were less likely to be obtaining the highest grade point averages, such as those that help students transfer to a four-year institution.

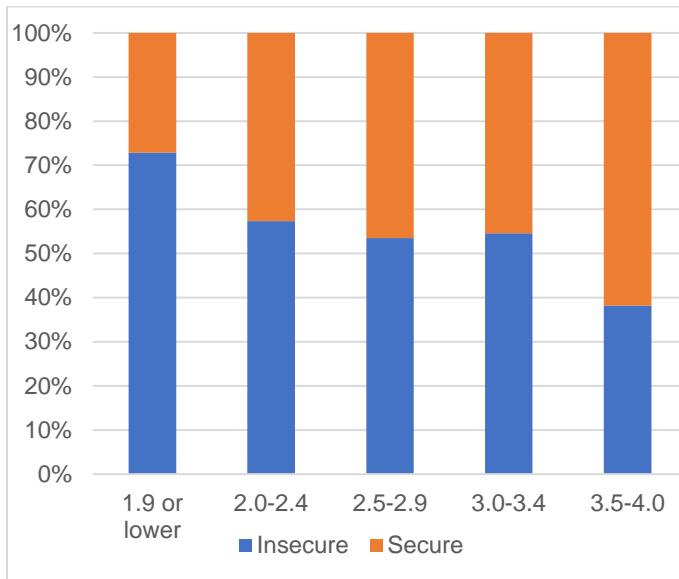


Figure 4. Self-reported GPA and food security

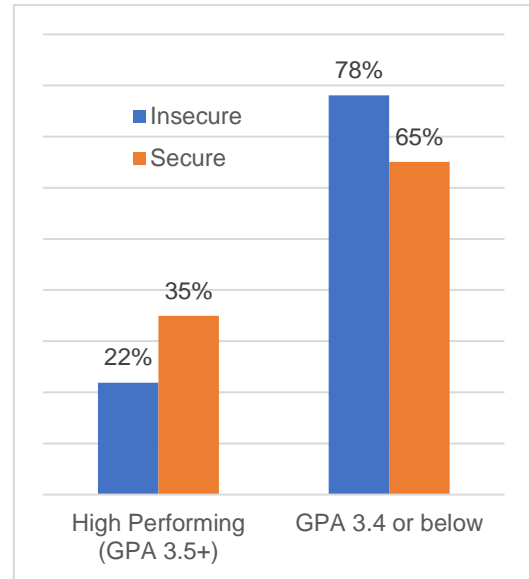


Figure 5. High performing GPA & food security

In a different set of questions, food insecure students were more likely to report academic-related consequences stemming from experiencing hunger than secure students. These situations included “missing attending a class,” “having difficulty concentrating on studies or concentrating in class,” “not performing up to their usual academic ability,” “doing poorly on a test,” or “having to drop a class.” Each difference was statistically significant at $p < .001$. See Figure 6 and Appendix D.

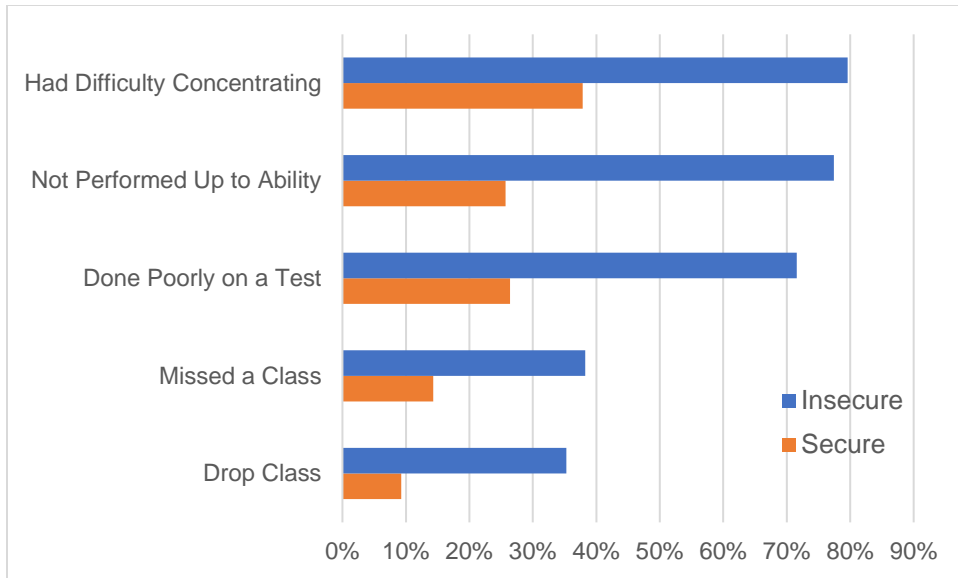


Figure 6. Self-reported effects of hunger and food security

Additionally, food insecure students were asked to rate their overall health on a scale ranging from “excellent” to “poor.” Food insecure students were more likely to report having poorer health than food secure students ($\chi^2 = 16.1, p = 0.003$). See Figure 7.

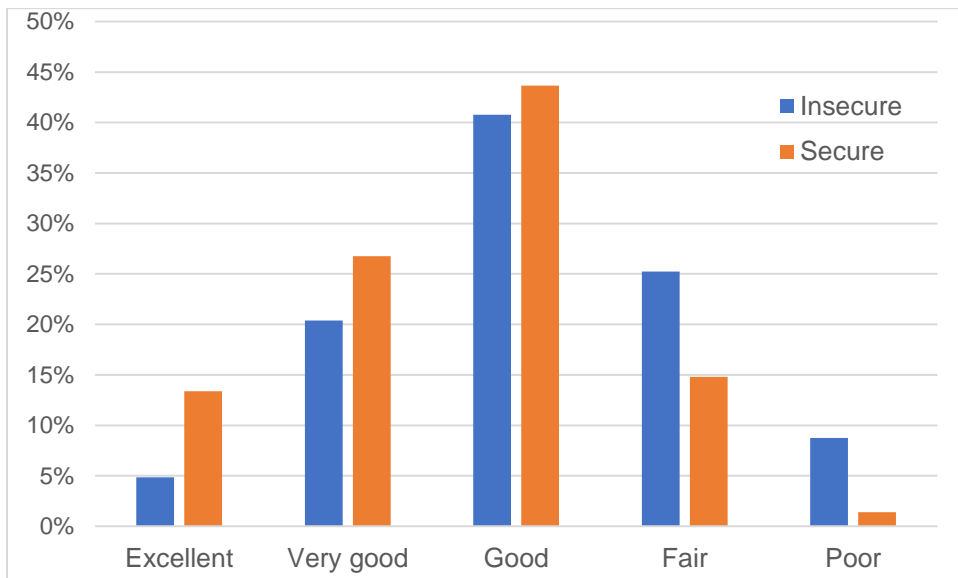


Figure 7. Self-reported health and food security

A final set of questions in the study looked at campus and other supports for students relating to food access. For example, students were asked if they utilize or qualify for available

resources, such as food banks and CalFresh (sometimes known as SNAP or food stamps). More food insecure students use each of these resources than food secure students: 41% insecure versus 10% secure for using food banks; and 14% insecure versus 6% secure for receiving CalFresh benefits ($\chi^2 = 33.43, p < 0.001$ and $\chi^2 = 4.54, p = 0.03$, respectively). See Figures 8 and 9. As a final finding, students were asked if their campus had a food bank, to which 107 students, or 43%, responded that they did not know if their campus had a food bank service and 16 students (6%) incorrectly stated that their schools did not have the service.

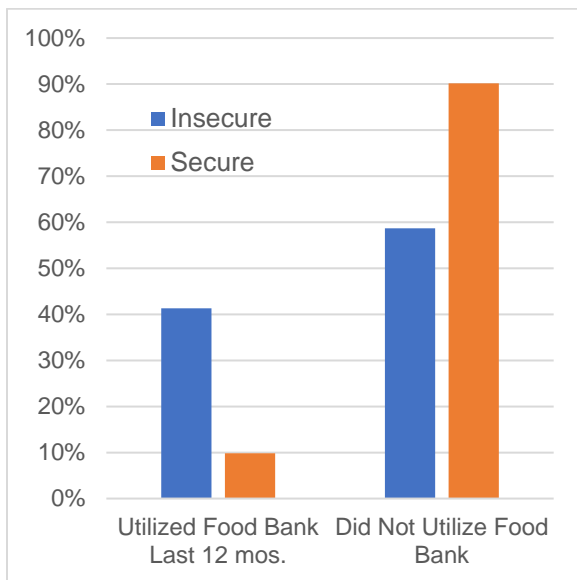


Figure 8. Utilized food bank benefits by food security

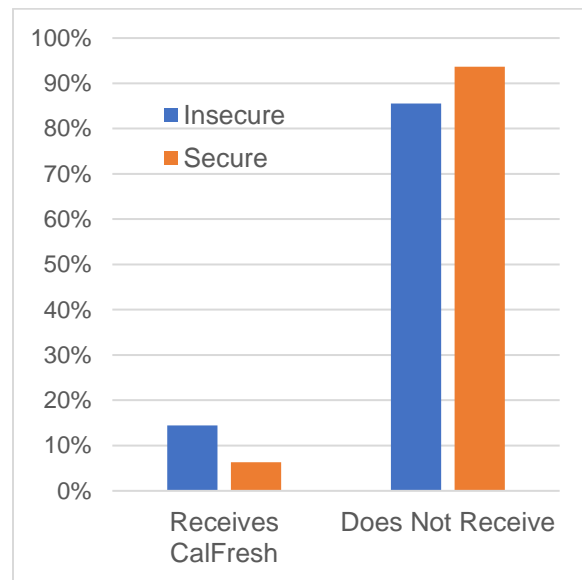


Figure 9. CalFresh (Federal Food Assistance) benefits by food security

Discussion

This study determined that 42% of the student population in the Ventura County Community College District is food insecure, much higher than the county average of 7.6%. The percentage indicates that food insecurity is a prominent issue in the colleges and is likely to affect more students than might commonly be expected. The results are similar to many of the

food insecurity rates determined by other researchers, such as the Cal State system (42%) and the UC system (40%) (Crutchfield & Maguire, 2018; Martinez, et al., 2016). However, it might be interesting to note that the food insecurity levels differed between the three campuses, ranging from 34% to 46%, indicating that variability is likely to exist between specific schools. See Appendix E. Additionally, it was found that the LA Community College District does have significantly higher food insecurity rates than VCCCD, possibly reflecting a difference between an urban county versus a suburban/rural county.

In the study sample, more students of historically underrepresented ethnicity were food insecure than White (including Middle Eastern origin) and Asian (including Indian subcontinent and Philippines origin) students. Forty-eight percent of those with historically underrepresented ethnicities were food insecure, in comparison to 32% of students from historically represented groups.

Income also relates to food insecurity. Fifty-nine percent of Pell Grant recipients were found to be food insecure. Pell Grants are provided to students of low economic background who often rely on financial aid in order to attend college. If these students are still struggling to afford basic necessities such as food, even after receiving financial aid, this could suggest that more funding needs to be given through these grants to help students become food secure. Similarly, students with lower incomes are more likely to be food insecure, also implying that finances and students' economic backgrounds greatly impact their food security levels.

Students who are unemployed and are in the process of looking for a job are more likely to be food insecure. These students may not be able to provide for themselves financially, giving insight into why food insecurity is most common among these individuals (65%) and is present among the majority of these students.

Trends for parental education and financial dependence were not statistically significant, but they do suggest a directional relationship with food insecurity in this study. Forty-five percent of first-generation college students were food insecure and 49% of financially independent students were food insecure. This result parallels the work of one of the earliest studies of food insecurity on college campuses (Chaparro, et al., 2009).

Students who are food insecure are somewhat more likely to have lower grade point averages overall; and there are proportionally far fewer food insecure students with GPAs greater than or equal to 3.5, with only 22% of food insecure students having GPAs in the range in comparison to 35% of food secure students. Additionally, more food insecure students report facing negative academic consequences due to hunger, implying that a notable relationship exists between the academic success of students and their food security.

Poorer health is also associated with food insecure students. In a study at an Oregon university in 2014, researchers similarly found food insecure students were more likely to report having poor or fair health, adding evidence to the correlation of food security and health (Patton-López, et al.).

Students who are food insecure are more likely to utilize campus food banks and to receive CalFresh benefits, with 63% of the food bank users being food insecure and 75% of the CalFresh recipients being food insecure. Students who do not have adequate access to food are understandably more likely to use and benefit from these programs since they serve the purpose of providing food assistance to their users. Notably, only a small number of students are receiving CalFresh benefits. Based on the level of food insecurity determined by the study, many more students are potentially in need of the program, which could help with their food security levels. The United States Government Accountability Office (GAO), in a report to Congressional

requesters in 2018, recommended that the Supplemental Nutrition Assistance Program (SNAP, CalFresh in California) make information on student eligibility more accessible and provide insight into how the agencies are helping eligible students increase understanding and utilization of the program (U.S. Government Accountability Office, 2018). As stated in the results of this study, nearly half of the students reported that their campus did not have a food bank or didn't know if one is present at their school. Similar to CalFresh, only some students are currently leveraging the food banks and seem to know they exist. More students could be informed of both of these programs, which might help increase their access to food.

Conclusion

The study suggests that food insecurity is a prevalent issue in the three Ventura County community colleges. Roughly two out of five students are suffering from restricted or unreliable access to nutritious food while attending college. However, the rates of food insecurity in the VCCCD are not as high as the rates of the neighboring LACCD. The findings of food insecurity in the current study are relatively consistent in comparison to other studies. As mentioned in the literature review, fewer than eight percent of residents in Ventura County are food insecure, lower than the national average. VCCCD food insecurity is approximately five times higher than the county average, bringing attention to how much of an issue this is at the college level. A correlation exists between certain demographics and levels of food security, suggesting that some students may be more prone to food insecurity than others. Students who receive Pell Grants, have lower household incomes, are of historically underrepresented ethnicity, are looking for a job, and those that report having more difficulty obtaining food due to time, cost, and transportation are more likely to be food insecure. Students who are food insecure are more

likely to have poorer health, not attain high performing GPAs, and face more hunger-related, academic consequences while in school. Additionally, food insecure students rely on food banks and CalFresh more than food secure students. It has been determined that there is an important potential link between food insecurity and how well students do in school. Though the primary goal of colleges and universities is to educate students, the academic success of the students may be inhibited by food insecurity, making food insecurity an important issue that needs to be addressed in post-secondary education.

Limitations

The current study has several limitations. The most impactful limitation in the study was the small sample size of college students. Less than one percent of the total VCCCD population completed the study survey. More specifically, there was a 0.27% response rate at Moorpark College (14,089 students), a 1.56% response rate at Oxnard College (7,158 students), and a 0.76% response rate at Ventura College (13,023 students) (California Community Colleges Chancellor's Office, 2018). However, 248 responses is a modest representation, and through both Chi-square Goodness of Fit tests Chi-square analyses, many correlations as well as representation of some demographic factors are reasonably statistically sound. However, as mentioned earlier, the study sample is not representative of gender, full time versus part time status, and the number of students per campus. As in many similar, voluntary surveys, there is also a possible response bias present. Some responders may have been interested in the topic of "basic needs" or might be more willing to respond to surveys in general than others. Additionally, this study only uses the six-question, short version of the USDA module for determining food insecurity. Compared to the 18-question scale, this module is not as accurate

and does not measure the food insecurity of the responder's entire household. The six-item module was used because it "lowers the respondent burden" and is still deemed reliable (USDA, 2012, p.1). This study is limited to analyzing correlations; and although relationships may be statistically significant, this does not establish causality. Finally, although both surveys were relatively recent, this study of the VCCCD took place two years after the LACCD study, though it did use the same measure of food insecurity. The study limitations taken together, might moderate the strength of any conclusions.

Further Research

The research conducted was a pilot study with the purpose of determining the presence and impact of food security in the VCCCD. The survey may not fully represent the student population, given that only a small percentage of students responded to the survey. The VCCCD administration would benefit from conducting their own food insecurity or basic needs survey. This would allow for more students to have access to and complete the survey, achieving a better representation of the students. Additionally, an internal study would allow for the direct collection of data rather than relying of self-report for some variables, such as GPA and household income. As determined by this study, food insecurity is a present issue on campus and has been identified to be a potentially limiting factor in a student's education. The college district should take an interest in the food security of their students in order to better understand and assist their students. Additionally, the colleges should screen students based on their FAFSA forms, which are the forms students complete to determine their eligibility for student financial aid. Since financial aid recipients are more likely to be food insecure, the administration could determine which students are at risk of food insecurity and direct them to potential resources on

campus and in the community. Along with the existing sources, more students should be encouraged to apply for CalFresh to improve their food security. On a broader scale, more funding should be given through the Pell Grant program and other forms of financial aid to help ensure that students have the means to pay for college without sacrificing meals to pay for their tuition and fees. In summary, it is evident the meaning of the ‘starving college student’ has taken on new meaning in twenty-first century education.

Appendix A

Survey Questions Exported from Google Online Dynamic Form - English

Note: As a conditional branching survey, not all respondents were presented all questions and presentation varied for different respondents

1. Please select your preferred language to take the survey in / Por favor, seleccione su idioma preferido para realizar la encuesta.

- English
- Español

2. What College/University are you currently attending?

- Moorpark College
- Oxnard College
- Ventura College
- Cal State Channel Islands (CSUCI)
- California Lutheran University (CLU)
- I do not currently attend a College or University
- Other...

For these statements, please say whether the statement was often true, sometimes true, or never true for you in the LAST 12 MONTHS.

3. The food that I bought just didn't last, and I didn't have money to get more.

- Often true
- Sometimes true
- Never true

4. I couldn't afford to eat balanced meals.

- Often true
- Sometimes true
- Never true

In the last 12 months...

5. Did you ever eat less than you felt you should because there wasn't enough money for food?

- Yes
- No

6. Were you ever hungry but didn't eat because there wasn't enough money for food?

- Yes
- No

7. Did you ever cut the size of your meals or skip meals because there wasn't enough money for food?

- Yes
- No

8. How often did this happen in the last year (cutting meals)? (Conditional Question)

- Almost every month
- Some months but not every month
- Only 1 or 2 months

Have you experienced any of the following due to lack of resources to purchase food or hunger?

Every month Some months during the year 1 or 2 times in a year Never

- 9. Missed attending a class?
- 10. Had difficulty concentrating on studies or concentrating in class?
- 11. Not performed up to your usual academic ability?
- 12. Done poorly on a test?
- 13. Had to drop a class?

14. How many servings of fruits and vegetables do you have per day on average?

(For reference, 1 serving=1 medium piece of fruit, 1/2 cup vegetables, 3/4 cup of juice, 1 cup salad greens, or 1/4 cup dried fruit)

- 0 servings per day
- 1-2 servings per day
- 3-4 servings per day
- 5 or more servings per day

In the last year, how often have these circumstances made it challenging to obtain food that you wanted?

Very Often Often Sometimes Rarely Never

- 15. No time to shop for food
- 16. No time to prepare food
- 17. No reliable transportation
- 18. Cost of food
- 19. Lack of availability of food outlets on campus

20. Do you currently receive state/federal food assistance (CalFresh, SNAP, Food Stamps, WIC)?

- Yes
- No

21. How would you describe your general health?

- Excellent
- Very good
- Good
- Fair
- Poor
- Don't know

22. Does your college/university have an accessible food bank service?

- Yes
- No
- I don't know

23. In the last 12 months, have you ever gone to any food bank or food pantry for food?

- Yes, once or twice in the year
- Yes, once or twice per month
- Yes, once or twice per week
- No, I don't need to
- No, I don't know where one is
- No, the food does not meet my dietary needs
- Other...

24. Do you have any concerns/worries about using a food bank? If yes, what are they? (If no, please leave blank)

Have you received information about the following things from the college/university or student groups?

Please do not include information obtained from someplace or someone else.

- | Yes, I have received this information and I have used this information | Yes, I have received this information but do not need this information | No, I have not received this information but would like to | No, I have not received this information and I do not need this information |
|--|--|--|---|
| 25. How to apply for federal food assistance programs (CalFresh, Food Stamps, SNAP, WIC) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. How to manage and budget monthly living and college costs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Resources about where to go and who to talk to on campus if having trouble getting enough food | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

28. How old are you?

- 19 or younger
- 20-24
- 25-29
- 30-34
- 35 or older

29. What is your gender?

- Female
- Male
- Other...

30. How do you usually describe your race and/or ethnicity? Check all that apply

- African-American/Black (including Africa and Afro-Caribbean origin)
- American Indian or Alaska Native
- Asian (including Indian subcontinent and Philippines origin)
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White (including Middle Eastern origin)
- Other...

31. Were you born in the United States?

- Yes
- No

32. Do you have children or dependents?

- Yes
- No

33. What is your marital status?

- Single, including divorced or widowed
- Married
- Separated
- Other...

34. Where do you currently live?

- Campus or university housing
- With family (parent, guardian, or relative) in a house, mobile home, or apartment - rented or owned
- Alone or with roommates/friends in a house, mobile home, or apartment - rented or owned
- Temporarily staying with a relative or friend until I find other housing
- No stable residence
- Other...

35. Were you ever placed in foster care?

- Yes
- No

36. What is the highest degree or school level attained by one of your parents or guardians?

- Never earned a diploma
- High school graduate (includes equivalency, GED)
- Attended college (no degree)
- Associates degree
- Bachelor's degree
- Graduate or professional degree (includes Masters and PhD)
- Not Applicable

37. Are you claimed as a dependent by your parent(s) or guardian(s)

- Yes
- No
- Don't know

38. What is the average annual income of your household?

- less than \$20,000
- \$20,000-\$39,999
- \$40,000-\$59,999
- \$60,000-\$79,999
- more than \$80,000
- Not sure

39. How many years have you attended college (as of January 2019)

- less than one year
- 1-3 years
- 4 or more years

40. What is your student status (as of January 2019)

- Full-time (12+ credits)
- Part-time (< 12 credits)
- Other...

41. Are you an out-of-state student?

- Yes
- No

42. Are you a DACA student?

- Yes
- No

43. What is your approximate cumulative grade point average (GPA)?

- 1.9 or lower
- 2.0-2.4
- 2.5-2.9
- 3.0-3.4
- 3.5-4.0

44. Are you currently on a meal plan through your college?
- Yes
 - No
 - Don't know
45. Have you ever run out of meal points/credits before the end of the term? (Conditional Question)
- Yes
 - No
 - Not Applicable
46. Meals eaten per week at dining hall (Conditional Question)
- less than 5 meals
 - 5-9 meals
 - 10-14 meals
 - more than 15 meals
47. Student Loans Taken Out to Date
- No loans
 - \$1-\$9,999
 - \$10,000-\$19,999
 - \$20,000-\$29,999
 - \$30,000 or greater
 - Don't know
48. Have you received any Financial Aid this academic year?
- Yes
 - No
 - Other...
49. Have you received any of the following financial aid? (Conditional Question)
- Pell Grant
 - Cal Grant
 - Other government grants (FSEOG, TEACH, etc.)
 - Promise Grant (or BOG Waiver; Board of Governors)
 - Private scholarship
 - Stafford Loan
 - Other government loan (e.g. Perkins Loan)
 - Private loan (e.g. bank)
 - Other...
50. Are you currently employed?
- Yes
 - No
 - Looking
51. How many hours on average do you work every week? (Conditional Question)
- 0-10 hours
 - 11-20 hours
 - 21-30 hours
 - 31-40 hours
 - Over 40 hours

Appendix B

Sample Survey Invitation and Post

Note: Wording was based on recommendations from Goldrick-Rab, Richardson, & Kinsley (2017).

ATTENTION VCCCD STUDENTS - WE NEED YOU!

SHARE YOUR VOICE

Take part in a short Ventura County Colleges
Basic Needs Survey

5-7 minutes
to share
how food
& finances
affect you
RIGHT NOW.

Visit vcfeedback.org

VCFEEDBACK
College for Assessment
Studies & Research
2018

College Basic Needs Study

Dear Ventura County College Student:

We need your help... To understand your experience of managing food and finances while paying the ever-increasing costs of a college education. Colleges need to know more about challenges that students like you may face. Your voice will be part of a sample to represent other students throughout the Ventura community.

The survey is available online through:

<http://bit.ly/CCBasicNeeds>
or
VCFEEDBACK.ORG

We hope this student-led research will improve understanding of important factors impacting college students in our community.

You can learn more about our research program and this survey by visiting our project website:
<https://www.vcfeedback.org/about>.

Thank you for your help!

Anna

A note on Privacy:
Our survey does not
require or collect any personally
identifying information. We collect
responses for research purposes only.

VC Feedback
Ventura County

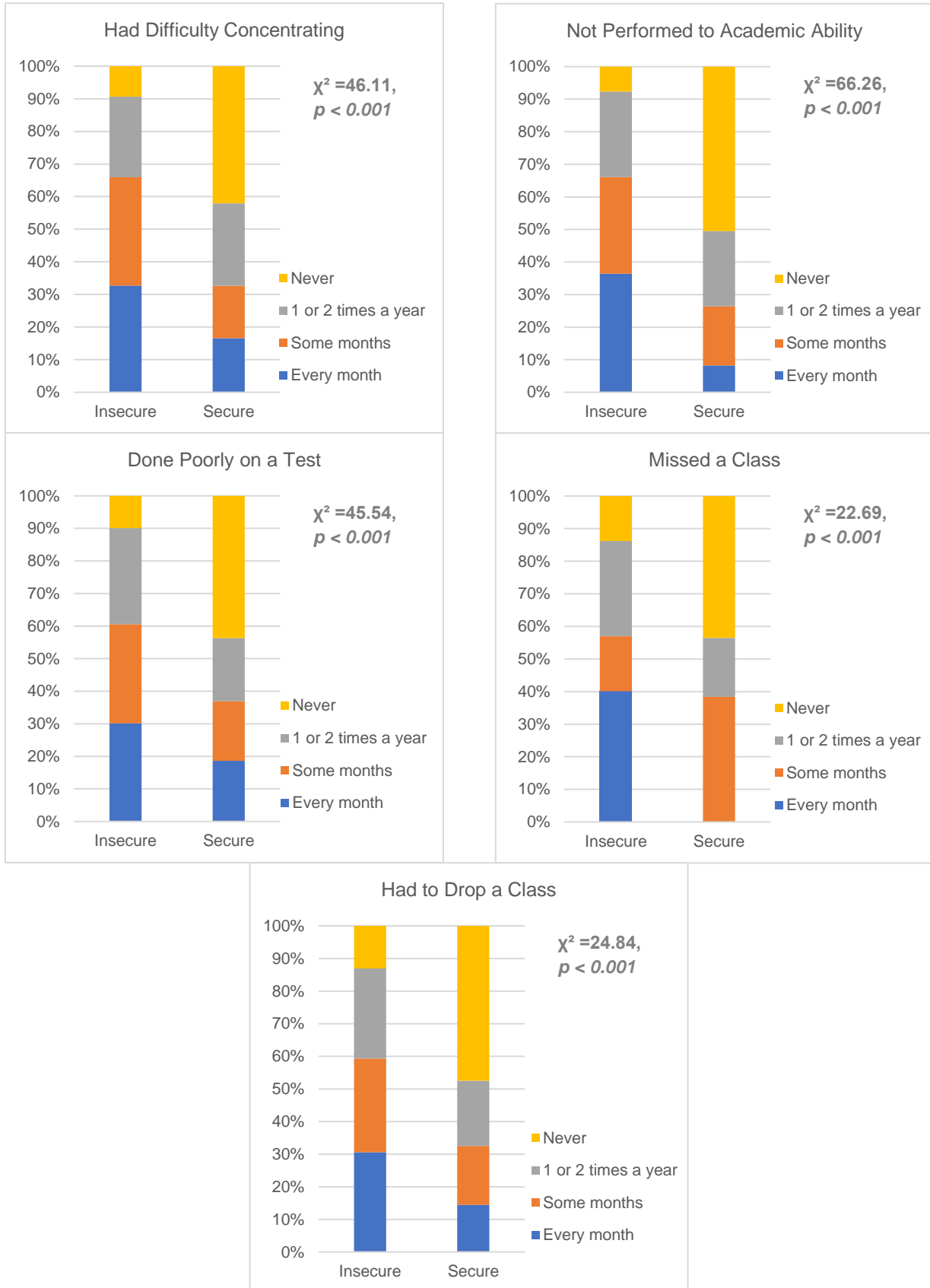
Appendix C

Frequency of Reported Barriers to Food Access for Food Insecure Versus Secure Students



Appendix D

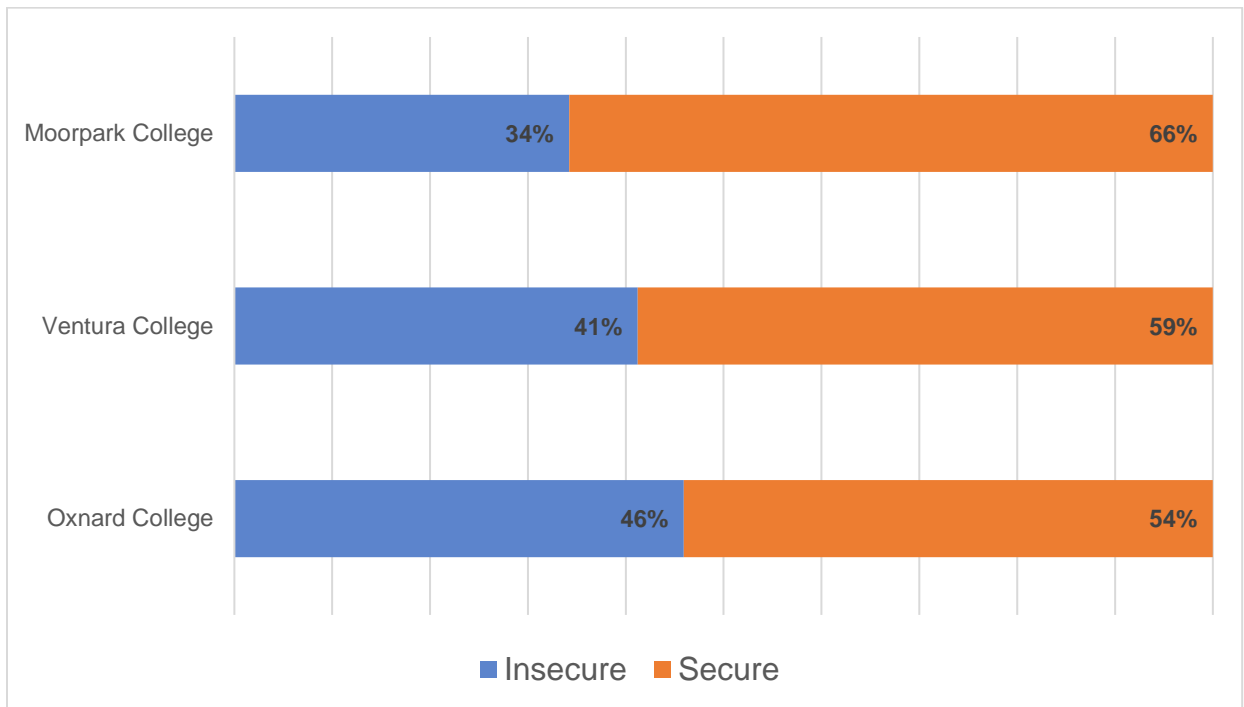
Frequency of Reported Academic Experiences as a Result of Hunger for Food Insecure Versus Secure Students



Appendix E

Food Insecurity by VCCCD Campus

Note: Differences are not significant



References

- Blumberg, S. J., Bialostosky, K., Hamilton, W. L., & Briefel, R. R. (1999). The effectiveness of a short form of the household food security scale. *American Journal of Public Health, 89*, 1231-34. PMID: PMC1508674. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1508674/>
- Bruening M., Nelson, S., Brennhofer, S., van Woerden, I., Todd, M., & Laska, M. (2016). Factors related to the high rates of food insecurity among diverse, urban college freshmen. *Journal of the Academy of Nutrition and Dietetics 116.9*, 1450-1457. <https://doi.org/10.1016/j.jand.2016.04.004>
- California Community Colleges Chancellor's Office, Management Information Systems Data Mart. (Fall, 2018). *Annual/Term student count* [Data file]. Retrieved from <https://datamart.cccco.edu/Students/Default.aspx>
- Chaparro, M. P., Zaghloul, S. S., Holck, P., & Dobbs, J. (2009). Food insecurity prevalence among college students at the University of Hawai'i at Mānoa. *Public Health Nutrition, 12*(11), 2097-2103. <https://doi.org/10.1017/s1368980009990735>
- Coleman-Jensen, A., Rabbitt, M. P., Gregory, C.A., & Singh, A. (2018). *Household food security in the United States in 2017*, ERR-256, U.S. Department of Agriculture, Economic Research Service. Retrieved from <https://www.ers.usda.gov/webdocs/publications/90023/err-256.pdf?v=0>
- Crutchfield, R. (2016). *Serving Displaced and Food Insecure Students in the CSU*. Cal State University Office of the Chancellor. Retrieved from <https://www2.calstate.edu/impact-of-the-csu/student-success/basic-needs->

initiative/Documents/ServingDisplacedandFoodInsecureStudentsintheCSUJanuary20163.8.16.pdf

Crutchfield, R. M., & Maguire, J. (2018). *Study of Student Basic Needs*. California State

University Office of the Chancellor Retrieved from <http://www.calstate.edu/basicneeds>

Davidson, A. R., & Morrell, J. S. (2018). Food insecurity prevalence among university students in New Hampshire, *Journal of Hunger & Environmental Nutrition*.

<https://doi.org/10.1080/19320248.2018.1512928>

Gaines, A., Robb, C. A., Knol, L. L., & Sickler, S. (2014). Food security and resource adequacy. *International Journal of Consumer Studies*, 38, 374-384.

<https://doi.org/10.1111/ijcs.12110>

Goldrick-Rab, S., Broton, K. & Eisenberg, D. (2015). *Hungry to Learn: Addressing Food and Housing Insecurity Among Undergraduates*. Wisconsin HOPE Lab, Madison, WI.

Retrieved from [https://hope4college.com/wp-](https://hope4college.com/wp-content/uploads/2018/09/Wisconsin_HOPE_Lab_Hungry_To_Learn.pdf)

[content/uploads/2018/09/Wisconsin_HOPE_Lab_Hungry_To_Learn.pdf](https://hope4college.com/wp-content/uploads/2018/09/Wisconsin_HOPE_Lab_Hungry_To_Learn.pdf)

Goldrick-Rab, S., Richardson, J., & Hernandez, A. (2017a). *Hungry and homeless in college: Results from a national study of basic needs in higher education*. Wisconsin Hope Lab and the Association of Community College Trustees (ACCT). Retrieved from

https://www.acct.org/files/Publications/2017/Homeless_and_Hungry_2017.pdf

Goldrick-Rab, S., Richardson, J., & Hernandez, A. (2017b). *Survey on Food and Housing Insecurity: LACCD Results*. Wisconsin Hope Lab and the Los Angeles Community College District (LACCD). Retrieved from

<https://www.laccd.edu/documents/newsdocuments/laccd-hope-lab-survey-results.pdf>

- Goldrick-Rab, S., Richardson, J., & Kinsley, P. (2017). *Guide to Assessing Basic Needs Insecurity in Higher Education*. Wisconsin HOPE Lab. Retrieved from <https://hope4college.com/wp-content/uploads/2018/09/Basic-Needs-Insecurity-College-Students.pdf>
- Gundersen, C., Dewey, A., Crumbaugh, A., Kato, M., & Engelhard, E. (2018). *Map the meal gap 2018: County and congressional district food insecurity and county food cost in the United States*. *Feeding America* [2017 Data file]. Retrieved from <https://map.feedingamerica.org/county/2017/overall/california>
- Martinez, S. M., Maynard, K., & Ritchie, L. D. (2016). *Student Food Access and Security Study. 2016*. UC Nutrition Policy Institute. Retrieved from <https://regents.universityofcalifornia.edu/regmeet/july16/e1attach.pdf>
- National Center for Education Statistics (NCES), U.S. Department of Education. (2017a). *Digest of education statistics – Average undergraduate tuition and fees and room and board rates charged for full-time students in degree-granting postsecondary institutions, by level and control of institution: 1963-64 through 2015-16* [Data file]. Retrieved from https://nces.ed.gov/programs/digest/d16/tables/dt16_330.10.asp
- National Center for Education Statistics (NCES), U.S. Department of Education. (2017b). *Digest of education statistics – Percentage of recent high school completers enrolled in college, by income level: 1975 through 2016* [Data file]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_302.30.asp
- National Center for Education Statistics (NCES), U.S. Department of Education. (2018). *Fast facts – Back to school statistics 2018*. Retrieved from <https://nces.ed.gov/fastfacts/display.asp?id=372>

Nazmi, A., Martinez, S., Byrd, A., Robinson, D., Bianco, S., Maguire, J., Crutchfield, R., ...

Ritchie, L. (2018). A systematic review of food insecurity among US students in higher education. *Journal of Hunger & Environmental Nutrition, 13*, 1-16.

<https://doi.org/10.1080/19320248.2018.1484316>

Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human

Services. (2017). *Healthy People 2020 – Food insecurity*. Retrieved from

<https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/food-insecurity#1>

Patton-López, M. M., López-Cevallos, D. F., Cancel-Tirado, D. I. & Vazquez, L. (2014).

Prevalence and correlates of food insecurity among students attending a midsize rural university in Oregon. *Journal of Nutrition Education and Behavior, 46*, 209–214.

<https://doi.org/10.1016/j.jneb.2013.10.007>

University of California Chancellor's Office, Institutional Research and Academic Planning.

(2016). *Undergraduate outcomes: Measuring food insecurity*. Retrieved from

<https://www.universityofcalifornia.edu/sites/default/files/measuring-food-insecurity.pdf>

U.S. Department of Agriculture, Economic Research Service. (2012). *U.S. Household Food*

Security Survey Module: Six-Item Short Form [PDF file]. Washington, DC. Retrieved

from <https://www.ers.usda.gov/media/8282/short2012.pdf>

U. S. Department of Agriculture, Economic Research Service. (2014). *Food security in the*

United States: Definitions of hunger and food security. Washington, DC. Retrieved from

[http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-](http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx)

[us/definitions-of-food-security.aspx](http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx)

U.S. Department of Agriculture, Economic Research Service. (2018). *Definitions of food security*. Washington, DC. Retrieved from <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx>

U.S. Government Accountability Office. (2018). *Food insecurity: Better information could help eligible college students access federal food assistance benefits*. GAO-19-95. Washington D.C. Retrieved from <https://www.gao.gov/products/GAO-19-95>

Wunderlich, G. S. (2006). *Food insecurity and hunger in the United States: An assessment of the measure*. Washington, DC: The National Academies Press.