Strategies to Address Student Food and Financial Basic Needs in Higher Education

by

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EXECUTIVE SUMMARY

Many college students throughout the U.S. do not have their basic needs met, including food and housing basic needs. College students experience basic needs insecurity at a higher rate than the overall U.S. population. This burden falls heavily on communities of color throughout the U.S. and within college campuses. Disparities in the burden of basic needs insecurity have been carried into and amplified by the COVID-19 pandemic.

This issue has serious negative implications for student health and academic outcomes, which in turn negatively impacts institutions of higher education. Basic needs insecurity is consistently associated with negative health factors including diabetes, depression, stress, poor self-reported health status, decreased nutrient intake, and suboptimal eating patterns. Additionally, basic needs insecurity is inversely associated with class attendance, academic performance, number of credits earned, persistence (continued enrollment), and graduation. These individual effects have the potential to negatively impact institution-based performance measures that are tied to funding, prestige, and desirability of the institution to prospective students.

Due to the increase in awareness of student basic needs insecurity, institutions of higher education have started addressing this issue in multiple ways but there is limited literature, especially academic literature, assessing the process, outcomes, and impact of these interventions. This brief found varied degrees of evidence supporting the creation of single points of contact, development of SNAP application clinics, acceptance of EBT on campus, use of campus food pantries, and disbursement of meal vouchers to address student basic needs. The interventions detailed in this brief can help institutions of higher education understand what approaches are being used and what evidence supports them.

Evidence on the efficacy and effectiveness of interventions is limited in relation to evidence detailing the depth and extent of student basic needs insecurity. No one intervention fully resolves this issue and more research is needed to evaluate short- and long-term outcomes of various programs as well as determine best practices for, essential components of, and synergies between interventions.

ORGANIZATION & PURPOSE

This brief begins by detailing the extent and significance of basic needs insecurity, including food and housing insecurity, at the University of North Carolina - Chapel Hill (UNC-CH) through comparison to national and state data. Effects of the COVID-19 pandemic and systemic racism are considered when assessing disparities, prevalence, and trends of this issue. Discussion of emerging, practice-based, and research-based interventions to address basic needs insecurity describes what is already being done to combat basic needs insecurity, including the results of process and outcome evaluations when available. This information highlights opportunities for further research to expand the breadth and depth of evidence on this topic.

The purpose of this brief is to explore the implementation, outcomes, and sustainability of existing interventions surrounding student basic needs, as well as the potential effectiveness, feasibility, and reproducibility of these interventions at the UNC-CH. This data builds on formative research conducted at the UNC Center for Health Promotion and Disease Prevention's Food, Fitness and Opportunity Research Collaborative and can inform future research performed by the Collaborative.
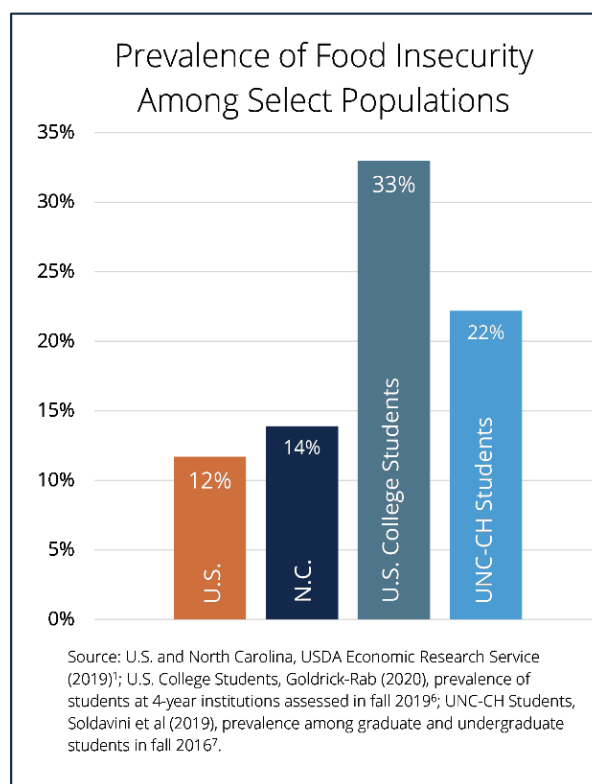
BACKGROUND

Many college students throughout the U.S. do not have their basic needs met, including food and housing needs.

Food Insecurity

The USDA defines food insecurity as the condition of uncertain access to adequate food at the household level.[1,a] College students experience food insecurity at a higher rate than the overall U.S. population (Figure 1). This trend remains true when comparing rates of food insecurity among University of North Carolina at Chapel Hill (UNC-CH) students and the overall North Carolina population. Among all households nationally, 11.7 percent experienced food insecurity on average from 2016-2018.[1] In North Carolina, a significantly greater proportion of households experienced food insecurity, at 13.9 percent during this same time period.[1]

Food insecurity among college students is harder to quantify as there is no national measure of student food insecurity, although the National Postsecondary Student Aid Survey began assessing student food and housing insecurity for the first time starting in February 2020.[2] There have been numerous studies assessing the extent of food insecurity among college students, finding levels ranging from 9 percent to greater than 50 percent.[3,4,5] The large range in findings is somewhat explained by differences in study methods, sample sizes, and how food insecurity is measured in each study.[4] A systematic review in the Journal of the Academy of Nutrition and Dietetics that included 17 peer reviewed food insecurity studies found the average prevalence of food insecurity among college students was 42 percent.[3] The Government Accountability Office (GAO) reviewed 31 reports of college food insecurity and found that 22 of these studies estimated food insecurity to be greater than 30 percent.[4] One nationwide survey the GAO

Figure 1.

Prevalence of Food Insecurity Among Select Populations

Source: U.S. and North Carolina, USDA Economic Research Service (2019)[1]; U.S. College Students, Goldrick-Rab (2020), prevalence of students at 4-year institutions assessed in fall 2019[6]; UNC-CH Students, Soldavini et al (2019), prevalence among graduate and undergraduate students in fall 2016[7].

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[a] Food insecurity encompasses the *low food security* and *very low food security* categories.
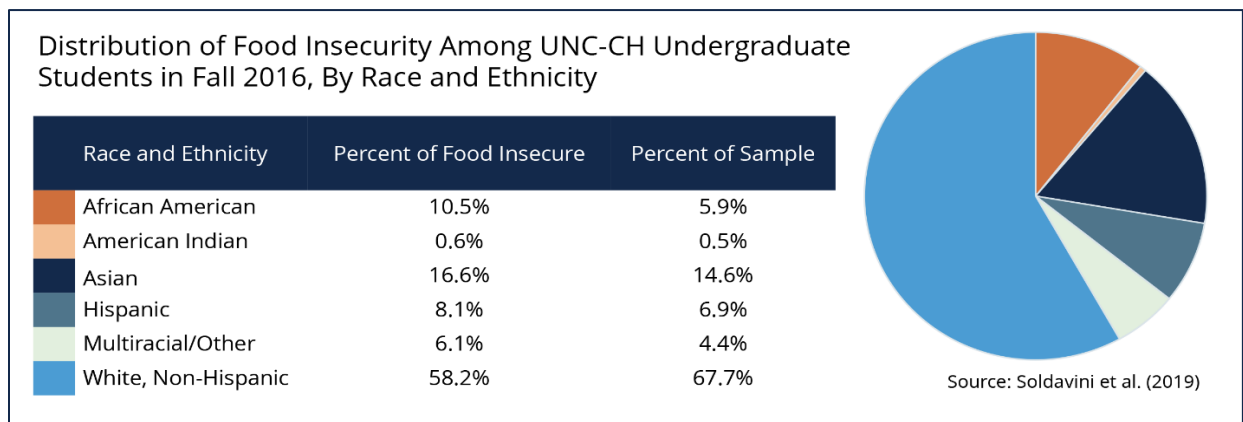
reviewed, the 2019 #RealCollege Survey[b], found that 33 percent of college student survey respondents at four-year educational institutions experienced food insecurity in the past 30 days.[6] These estimates are not completely generalizable to the UNC-CH campus but provide a basis of the widespread issue of food insecurity within institutions of higher education.

Surveys at UNC-CH estimate the prevalence of food insecurity among UNC-CH students to fall within the range of other national samples.[7] An online survey of almost 5,000 UNC-CH students in October and November of 2016 found 22.2 percent of students reported experiencing food insecurity over the previous 12 months.[7] Preliminary data from a survey administered in fall 2019 found that 32.4 percent of the 2577 UNC-CH student respondents reported experiencing food insecurity since starting college.[c]

Disparities: The burden of food insecurity falls heavily on communities of color in the U.S. and within college campuses. From 2016-2018, 22.0 percent of Black households and 17.5 percent of Hispanic households experienced food insecurity compared to 8.7 percent of White households.[8] The prevalence of food insecurity in North Carolina during this period is higher for Black and White households, but lower for Hispanic households at 25.1, 9.4, and 15.7 percent respectively (although food insecurity for Black and Hispanic households remains significantly higher than that of White households in the state).[8]

The 2019 #RealCollege Survey found that Black (54 percent) and Hispanic (47 percent) students experienced food insecurity at a higher rate than White (36 percent) students.[6] This trend is the same at UNC-CH. The 2016 study of food insecurity among UNC-CH students discussed above found that students of color as well as males and international students were more likely to experience food insecurity than White students, females, and students from the U.S.[7] Specifically, undergraduate Black students had 3.0 times the odds of experiencing food insecurity compared to White students and undergraduate Hispanic students had 1.78 times the odds.[7] Figure 2 shows that students of color are disproportionately represented as a percentage of students who experience food insecurity compared to their percentage of the survey sample.

Figure 2.

Distribution of Food Insecurity Among UNC-CH Undergraduate Students in Fall 2016, By Race and Ethnicity

Race and Ethnicity	Percent of Food Insecure	Percent of Sample
African American	10.5%	5.9%
American Indian	0.6%	0.5%
Asian	16.6%	14.6%
Hispanic	8.1%	6.9%
Multiracial/Other	6.1%	4.4%
White, Non-Hispanic	58.2%	67.7%

Source: Soldavini et al. (2019)

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[b] This survey was administered in the fall of 2019. It sampled 167,000 students at 227 institutions of higher education across the nation, using the USDA's 18-item questionnaire to assess food insecurity. Due to its robust methods, this study is used for many measures of student basic needs insecurity in the rest of this report.
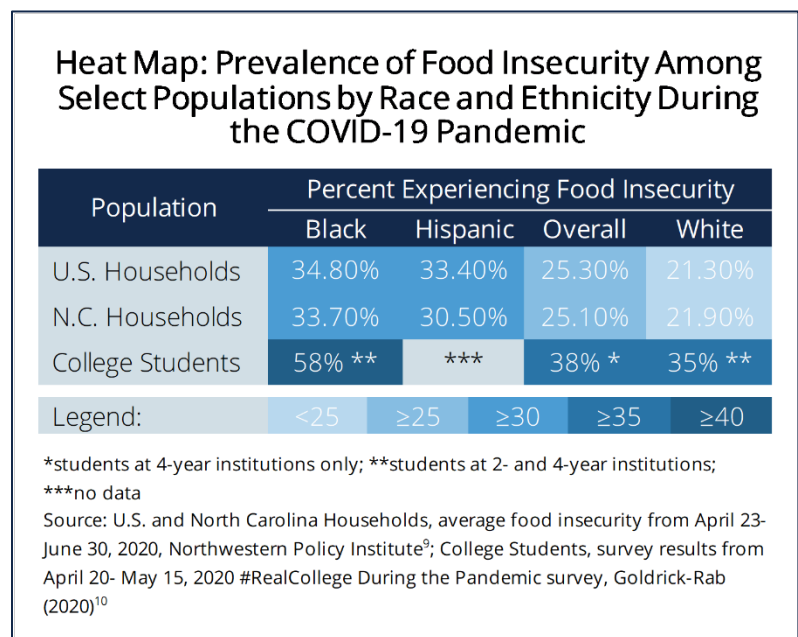
[c] Preliminary data obtained from personal email communication with UNC-CH Doctoral Student and Graduate Research Assistant, Jessica Soldavini, MPH, RD, LDN.

COVID-19 Considerations: Disparities in the burden of food insecurity have been carried into and amplified by the COVID-19 pandemic. Nationally, household food insecurity has increased dramatically during COVID-19 as evidenced by analysis of the weekly Household Pulse Survey[d] results performed by the Northwestern Institute for Policy Research. Their analysis found 25.3 percent of households in the U.S. experienced food insecurity from April 23 to June 30 on average.[9] The prevalence in North Carolina during this time period is similar at 25.1 percent.[9] Food insecurity experienced by Black and Hispanic households in the U.S. and North Carolina remains disproportionately high during the COVID-19 pandemic with approximately 1 in 3 Black and Hispanic households experiencing food insecurity compared to 1 in 5 White households[9], as detailed in Table 2.

In April 2020, the Hope Center administered the 2020 #RealCollege Survey to collected data on student basic needs experiences during the beginning days of the COVID-19 pandemic.[e] The survey yielded over 38,000 responses at 54 institutions of higher education, including almost 8,000 students at 15 four-year institutions.[10] They found that 58 percent of students overall were experiencing food insecurity, housing insecurity, and/or homelessness at the time of the survey. Fully, 52 percent of White students were experiencing basic needs insecurity whereas 72 percent of African American or Black students were, an unacceptable 19 percentage point disparity.[10] Focusing on food insecurity specifically, this survey found 38 percent of students at 4-year institutions experienced food insecurity in the past 30 days, a 15 percent increase from the 33 percent found in their 2019 #RealCollege survey.[10] Figure 3 depicts the prevalence of food insecurity by race and ethnicity during the COVID-19 pandemic.

UNC-CH distributed an online survey in June 2020 asking about experiences of food insecurity before and during the COVID-19 pandemic. The survey yielded 2,600 responses. Preliminary data from this survey found an unexpectedly low prevalence of food insecurity, presumably due to individuals experiencing hardship unable to complete the voluntary survey during this difficult time. Despite this, among those who did complete the survey, the prevalence of low food security and very low food security increased by 19.5 percent and 58.9 percent, respectively.

Figure 3.

Heat Map: Prevalence of Food Insecurity Among Select Populations by Race and Ethnicity During the COVID-19 Pandemic

Population	Percent Experiencing Food Insecurity			
	Black	Hispanic	Overall	White
U.S. Households	34.80%	33.40%	25.30%	21.30%
N.C. Households	33.70%	30.50%	25.10%	21.90%
College Students	58% **	***	38% *	35% **

Legend:	<25	≥25	≥30	≥35	≥40

*students at 4-year institutions only; **students at 2- and 4-year institutions; ***no data
Source: U.S. and North Carolina Households, average food insecurity from April 23-June 30, 2020, Northwestern Policy Institute[9]; College Students, survey results from April 20- May 15, 2020 #RealCollege During the Pandemic survey, Goldrick-Rab (2020)[10]

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[d] In light of COVID-19, the U.S. Census Bureau began conducting a weekly Household Pulse Survey to collect data on how households' lives have been impacted by the pandemic, including impacts on food and housing security. Ten weeks of survey results have been released to date, capturing data from April 23 to July 7. The Census Bureau expects to collect data for 90 days, and release data on a weekly basis.

[e] The survey was live from April 20 to May 15 and had a response rate of 6.7 percent.

Homelessness and Housing Insecurity

Homelessness is defined as being without a place to live, often residing in a shelter, an automobile, or another place not intended for residence, [11] whereas housing insecurity encompasses a broader set of challenges such as the inability to pay rent or utilities and the need to move frequently. [12] Like food insecurity, college students experience homelessness and housing insecurity at a greater rate than the general population.

Over 550,000 individuals or about 17 of every 10,000 people experienced homelessness on a given night in 2019 in the U.S. [13] This represents about 0.2 percent of the overall population. The prevalence of homelessness in North Carolina is about half that of the national average with just 9 of every 10,000 people experiencing homelessness. [14]

Assessments of homelessness among college students across the U.S. show dramatically higher prevalence of this issue than in the general population. According to the 2019 #RealCollege survey, 16 percent of survey respondents from four-year institutions were experiencing homelessness at the time of the survey and 35 percent experienced housing insecurity in the past 12 months.[6] The most common measures of housing insecurity that students report experiencing include having a rent or mortgage increase that made it difficult to pay (15 percent), not paying the full amount of rent or mortgage (12 percent), and not paying the full amount of utilities (9 percent).[6] These levels are consistent with previous research. A study conducted at the University of Massachusetts Boston found that 5.4 percent of students had experienced homelessness since they started college and 45 percent of participants reported housing insecurity. [15] Likewise, a 2020 review of housing insecurity and homelessness among college students found that 45 percent experience some form of housing insecurity. [16]

Prevalence of housing insecurity and high rent prices surrounding UNC-CH are well-documented issues. The North Carolina Housing Coalition reports that 47 percent of renters in Orange County (the county where UNC-CH is located) have difficulty affording their homes. [17] The U.S. Census Bureau analysis of the 2019 American Community Survey shows that median rental prices from 2014-2018 in Chapel Hill are higher than the North Carolina and United States averages. The median rental price in Chapel Hill is $1,172 per month, which is 34 percent and 15 percent higher than the North Carolina and U.S. rental prices, respectively. [18] In a recent study of student basic needs by the Food, Fitness and Opportunity Research Collaborative, some student services staff expressed that housing was a stressor for UNC-CH students, especially upper classmen living off campus.

Disparities: Individuals of color bear a greater proportional burden of homelessness and housing insecurity than White individuals. Nationally, Pacific Islander and Native American populations experience the highest rates of homelessness with 160 and 67 people experiencing homelessness per 10,000 respectively, followed by Black (55 per 10,000) and Hispanic (21.7 per 10,000) individuals.[13] White and Asian populations experience homelessness at rates below the national average.[13]

These trends persist among college student populations. Figure 4 outlines the prevalence of housing insecurity and homelessness among college students represented in the 2019 #RealCollege Survey.[6] The 2019 #RealCollege survey sample population does not represent a national average, but does expose disparate trends in housing insecurity by racial and ethnic groups. These data emphasize that housing insecurity significantly and disproportionately affects students of color, especially American Indian or Alaskan Native students, compared to White students.[6]

Figure 4.

Prevalence of Housing Insecurity and Homelessness by Race and Ethnicity among College Students Respondents of the 2019 #RealCollege Survey[6]

Race or Ethnicity Self-Selection	Percent of Students Experiencing Basic Needs Insecurity	
	Housing Insecurity	Homelessness
American Indian or Alaskan Native	61%	28%
Black	54%	20%
Hispanic or Latinx	54%	16%
Pacific Islander or Native Hawaiian	53%	23%
White	42%	17%

Note: Classifications of racial/ethnic background are not mutually exclusive. Students could self-identify with multiple classifications.

COVID-19 Considerations: Economic hardship posed by the COVID-19 pandemic has increased housing insecurity for many. The U.S. Census Bureau Household Pulse Survey defines housing insecurity as "missing last month's rent or mortgage payment or having slight to no confidence that their household can pay next month's rent or mortgage on time".[19] In week 8 of the survey (June 18th-23rd), the prevalence of housing insecurity in the U.S. was 24.5 percent.[19] However, stratification of the data by racial and ethnic groups elucidates a more nuanced story. The National Low Income Housing Coalition's analysis of this survey shows 45 percent of Black and Hispanic renters indicated that they had slight or no confidence in being able to pay next month's rent, whereas only 20 percent of White renters selected this option,[20] highlighting the continued racial and ethnic disparities observed before the COVID-19 pandemic.

The #RealCollege Survey During the Pandemic found that 41 percent of students at four-year institutions experienced housing insecurity and 15 percent experienced homelessness at the time that they completed the survey.[10] This represents a 17 percent increase in housing insecurity compared to the 33 percent prevalence of housing insecurity found in their 2019 student basic needs survey. The survey also found that housing insecurity is higher among four-year students living off campus (43 percent) compared to those living on campus (27 percent).

Overall, college students experience food and housing insecurity at a greater rate than the general U.S. population. Additionally, within general U.S. and student populations, significant disparities exist between communities of color and White communities. The prevalence and disparity in food and housing insecurity is exacerbated by the COVID-19 pandemic. These issues have serious consequences for students and their institutions of higher education.

SIGNIFICANCE

Basic needs insecurity has negative implications for student health and academic outcomes which in turn negatively impacts their institutions of higher education.

Health Outcomes

Food insecurity is consistently related to negative health outcomes in scientific reviews and grey literature.[3] Negative health outcomes and health behavior associated with food insecurity include obesity, diabetes, depression, stress, poor self-reported health status, decreased nutrient intake, and poorer eating patterns (i.e. lower fruit and vegetables consumption, no breakfast consumption, and disordered eating patterns).[3, 21, 22, 23, 24, 25] In the 2016 study of food insecurity at UNC-CH, food insecurity was positively associated with worse self-reported health and weight status as well as poor health behaviors including eating more food than normal when food is plentiful, eating less healthy meals to be able to eat more, and purchasing cheap, processed food.[26]

Academic Outcomes

When students are struggling to find their next meal, pay rent, secure child care, or finance utility and other bills, they perform worse academically and are less likely to finish their degree.[27, 28, 29, 30, 31, 32, 15, 25, 33] In a study of over 800 first year students, those who reported experiencing food insecurity had almost 2 times the odds (OR: 1.9; 95% CI: 1.1, 3.0) of reporting a GPA <3.0 compared to those that did not experience food insecurity.[25] Additionally, housing insecurity is inversely associated with class attendance, academic performance, graduation, persistence (continued enrollment at the same or different institution as attended the previous year), and number of credits earned.[33, 34, 35, 36, 37, 38]

Implications for Institutions

The negative effects of basic needs insecurity on individuals have the potential to negatively impact institution-based performance measures like enrollment, academic performance, retention, and six-year graduation rates. Therefore, addressing student basic needs is vital and beneficial for institutions of higher education because these performance measures may be tied to funding, prestige, and desirability of the institution to prospective students.

According to the Pew Research Center, undergraduates are increasingly likely to be from lower-income families.[39] By publicly naming and taking bold steps to address basic needs insecurity on campus, institutions of higher education could yield a competitive advantage within prospective student populations coming from low-income households that more often experience these challenges. Additionally, by addressing basic needs insecurity, institutions can reduce delayed graduation and the associated costs of educating students beyond four years.[35]

METHODS

Targeted searches of academic databases, The Hope Center, and Google yielded peer-review and gray literature evaluations of select basic needs intervention strategies.

To explore interventions addressing student basic needs insecurity, I conducted an in-depth review of peer-reviewed and gray literature surrounding this topic in multiple phases.

I first conducted an initial review of Dr. Sara Goldrick-Rab's peer-reviewed and gray literature work. Peer-reviewed studies were identified through the PubMed and Scopus databases using the search term "Goldrick-Rab". Gray literature was found in the *Research and Resources* tab of The Hope Center[f] website (previously Wisconsin Hope Lab). I then searched the bibliographies of the studies found for potentially relevant resources. Results of the initial search were compiled in an excel file and grouped into three intervention strategy types: centralized resource hubs, SNAP supports, and direct food assistance. I conducted a second round of searches in PubMed, Scopus, and Google for each strategy specifically. As in the first phase, I searched the bibliographies of new studies found for additional resources. In total, the review yielded 4 peer-reviewed and 20 gray literature intervention evaluations.

Studies were screened based on title and abstract or executive summary and were included if they detailed the process (inputs, activities, or outputs) or outcomes of an intervention addressing student basic needs insecurity within any of the three selected strategies. Studies assessing the prevalence of basic needs insecurity often included suggestions for interventions based on their findings. These studies are not included as interventions but are used when outlining recommendations for each intervention strategy. Intervention evaluations found within a larger program evaluation are treated as their own intervention if they have separate process and outcome evaluation data.

While purposeful and thorough, these methods are not systematic. The results should not be mistaken as an exhaustive list of evidence for the three intervention strategies included in this brief nor a comprehensive look into all intervention strategies that may be effective in addressing basic needs insecurity. The results instead reflect an extensive exploration of three commonly recommended intervention strategies to address student basic needs insecurity. Due to the emerging nature of student basic needs insecurity intervention evaluation, these methods were beneficial as they allowed more flexibility. I was able to seek out and include specific interventions that a systematic review may not have been able to yield.

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[f] In 2013 Goldrick-Rab founded the Wisconsin HOPE Lab. The Lab, based at the University of Wisconsin-Madison, helped translate scientific findings into practical applications to address student basic needs, therefore improving equitable outcomes in postsecondary education. In 2018 the Lab closed to open The Hope Center.
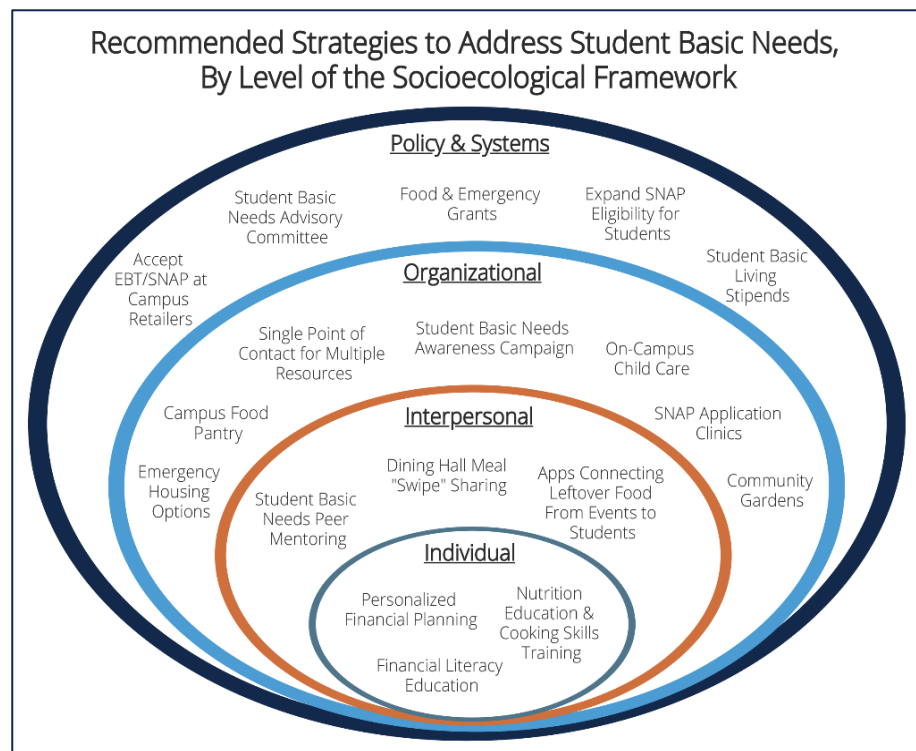
LITERATURE REVIEW

Institutions of higher education have begun addressing basic needs insecurity in varied ways including centralizing accesses to resources, supporting SNAP enrollment, and providing food directly to students. However, literature evaluating the process, outcomes, and impact of these interventions is limited.

Recommended strategies for addressing student basic needs exist at every level of the socioecological framework[3,56,63] (SEF) as detailed in Figure 5. Recommendations that institutions of higher education can act on include increasing awareness of on-campus resources, creating a central hub for resources, offering SNAP application assistance to students, providing free or reduced-price meals in campus cafeterias, supplying emergency housing, granting emergency funds, accepting EBT/SNAP on campus, and advocating for policy change such as simplifying and expanding SNAP eligibility criteria or higher education tax benefits for students. Many institutions of higher education have started implementing these strategies in varied ways, but more needs to be done to research, create, and implement evidence-based interventions to address student basic needs in higher education.

While there is a plethora of recommendations on what could and should be done on college campuses to address basic needs insecurity, there is relatively limited evidence describing what has been done to translate these recommendations into interventions and even less evidence evaluating intervention effectiveness. A review of food insecurity on college campuses in 2017 found zero efficacy or effectiveness studies that addressed food insecurity among institutions of higher education in either peer-reviewed or gray literature.[3] The following information is organized by intervention type and will cover the evidence base for resource hubs or single points of contact, SNAP application supports, and direct food assistance.

Figure 5.

Recommended Strategies to Address Student Basic Needs, By Level of the Socioecological Framework

Policy & Systems
- Student Basic Needs Advisory Committee
- Food & Emergency Grants
- Expand SNAP Eligibility for Students
- Accept EBT/SNAP at Campus Retailers
- Student Basic Living Stipends

Organizational
- Single Point of Contact for Multiple Resources
- Student Basic Needs Awareness Campaign
- On-Campus Child Care
- Campus Food Pantry
- SNAP Application Clinics

Interpersonal
- Emergency Housing Options
- Student Basic Needs Peer Mentoring
- Dining Hall Meal "Swipe" Sharing
- Apps Connecting Leftover Food From Events to Students
- Community Gardens

Individual
- Personalized Financial Planning
- Nutrition Education & Cooking Skills Training
- Financial Literacy Education

Centralize Access to Resources

When a student is facing basic needs insecurity, finding available resources and navigating the various application processes is daunting. Juggling this during school can be physically and mentally exhausting, meaning the student may have to choose between pursing their basic needs or academic coursework. Students in focus groups at UNC-CH echoed these views, expressing that the current system makes them stand in lines and run from office to office. This, in addition to the stressors of their courses, make it so some students cannot cope, and their mental health suffers. Single points of contact (SPOCs) can help negate this barrier to accessing resources.

A single point of contact (SPOC) is a hub that creates a network of on- and off-campus student basic needs resources (often including SNAP access and food pantries) and serves as a liaison between students and those resources. SPOCs are often located in existing student services departments, campus food pantries,[72] financial aid offices, or student health centers.[40] Resources available from SPOCs may include emergency grants, food pantries, free tax preparation, temporary emergency housing, meal swipe donations, legal services, SNAP application assistance, food vouchers, financial counseling, and more. SPOCs are useful for students because the student only needs to reach out to one place and can find help from a variety of services they may not have known existed. SPOCs can also be integrated into campus activities in a way that at-risk students are automatically contacted,[41] eliminating yet another barrier to accessing resources.

SPOCs often house other programs and directly assist students in accessing resources[41, 42, 43, 44] but they can also serve as a switchboard, simply creating lines of communication from resources to students. Third-party, non-profit organizations such as Single Stop USA and Benefits Bank work with colleges and universities to embed SPOC services into their campus operations, but institutions of higher education, such as UC Berkeley, have also developed institution specific SPOC programs and resources.[45]
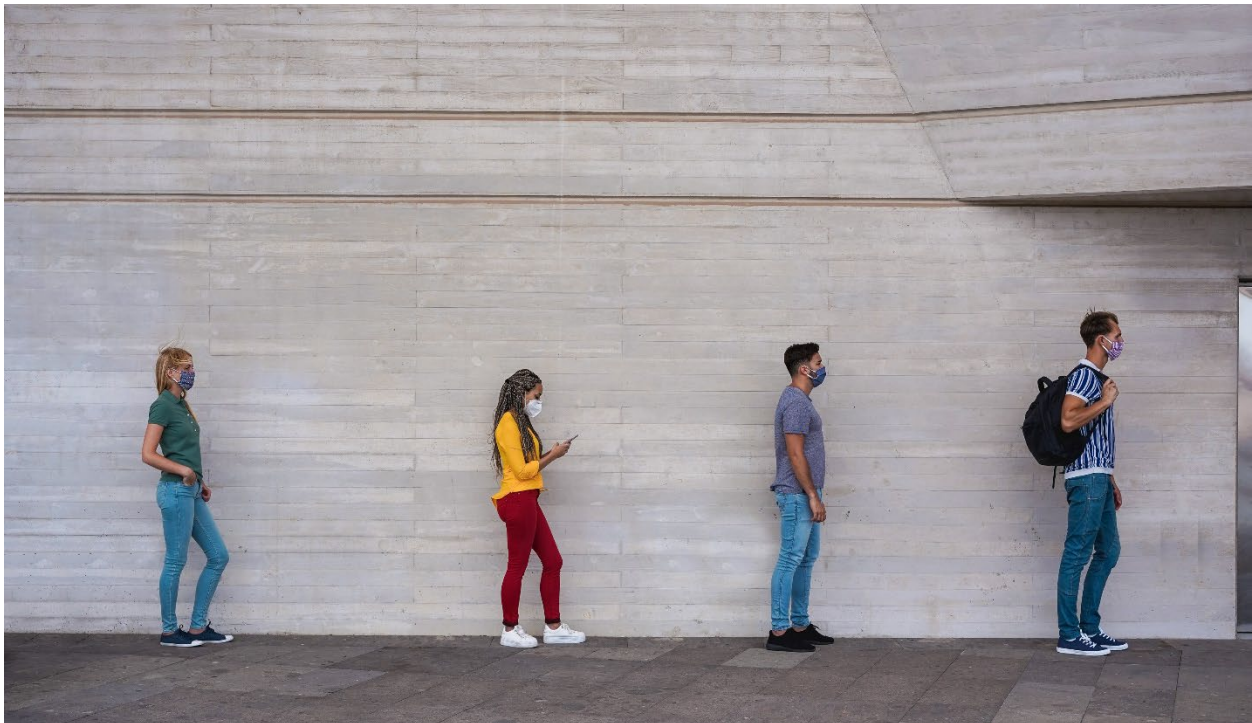
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Third Party SPOC Providers: Single Stop USA is a non-profit organization that partners with colleges and universities to establish a SPOC on campus. Since 2009, Single Stop has helped over 260,000 students receive $548 million in benefits from services such as free tax preparation and the federal nutrition programs like SNAP.[47] The SPOC typically employs 1-2 full time staff who conduct outreach, screen students for benefit eligibility, provide application and enrollment assistance, make referrals, use case management to follow-up with students, and perform data collection.[43] Single Stop trains at least one dedicated resource counselor at each institution and provides ongoing technical assistance.[48] Single Stop operates mostly at community colleges. In North Carolina, Single Stop is implemented at Robeson County Community College (Lumberton, NC) and Asheville Buncombe Technical Community College (Asheville, NC).[49] There is evidence connecting Single Stop's use of SPOCs to improved academic outcomes at a large, public institution of higher education and specifically in North Carolina.

Evaluation of Single Stop at a large (28,000 student enrollment) community college in Philadelphia found that Single Stop users had significantly higher persistence, credit pass rates, and GPAs compared to similar students who did not use Single Stop.[43] Evaluation of Single Stop at four community colleges in North Carolina had similar findings. Compared to the general student population at their respective colleges, Single Stop users were 1.37 times as likely to persist (not significantly) and completed 9 percent more credits.[44] These results varied widely across the four institutions and were more significant for older students (>24 years), financially independent students, and students of color compared to their counterparts.[44]

Institution Specific SPOC Programs: These third-party SPOC intervention results are consistent with an evaluation of the Benefits Access for College Completion Initiative (2014), a SPOC project implemented at 7 community colleges across the country. One of the colleges in the initiative found those who were connected to multiple benefits enrolled in more terms (3.3 terms vs 2.4), passed more credits (43 versus 34.8), and a larger percentage earned their degree (24 percent versus 18.4 percent) during the study period (Summer 2011 to Fall 2013) compared to a matched comparison group that did not report receiving benefits.[50]

Although no studies found have addressed the effectiveness of online only student basic needs hubs, SPOCs often have a virtual component to help bring students into the physical SPOC and/or directly connect students to resources via online applications or other remote services. UC Berkeley does not have a centralized in-person location but has an advanced online SPOC hub called the Basic Needs Center that links to a wide variety of services. Their 2016-2017 end of year evaluation found that 79 percent of basic needs service users reported experiencing low food security (53 percent very low food security), indicating they are reaching their target population.[58]

Factors that promote SPOC success as detailed project reports include:

- Leadership and support from top administration and across departments[50,41,43]
- Strong relationships between program staff and advocates, and service providers[45,43,42]
- Integration into first-year experiences (orientation, online modules, "college basics" courses)[43]
- Highly visible, geographically centralized placement of hub[45,42]
- Embedding public benefits services, like SNAP access, into academic aid portals and advising to destigmatize benefits[41]
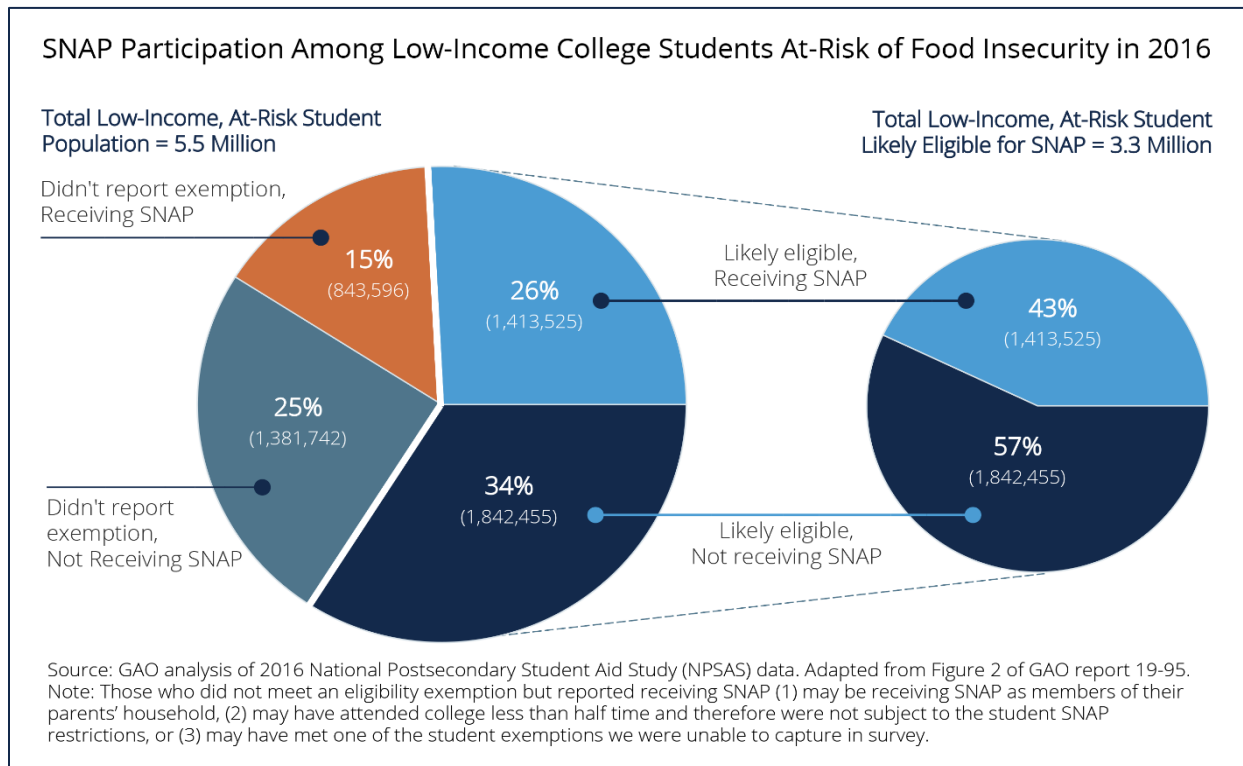
Support SNAP Application and Use

The Supplemental Nutrition Assistance Program (SNAP, formerly "food stamps") is the largest food program administered by the U.S. Department of Agriculture (USDA). SNAP provides monthly benefits to eligible low-income people to purchase food via electronic benefit transfer (EBT) card at approved grocery stores, corner stores, and farmers' markets. The benefits of SNAP are well documented. SNAP has been shown to reduce hunger and food insecurity, improve dietary intake, reduce health care costs for participants, lift individuals out of poverty, and bolster local economies. [51, 52]

Despite the numerous benefits, SNAP is reaching far too few eligible college students. Assessment of Department of Education data by the Government Accountability Office (GAO) found that over half of students (57 percent or almost 2 million) who were potentially eligible for SNAP did not report receiving SNAP benefits in 2016 (Figure 6).[4] A survey of over 700 California State University (CSU) – Chico students found that among students reporting food insecurity who were also eligible for CalFresh (California's SNAP program), only 20 percent currently used benefits and 12 percent had never heard of the program.[33]

Figure 6.

SNAP Participation Among Low-Income College Students At-Risk of Food Insecurity in 2016

Total Low-Income, At-Risk Student Population = 5.5 Million

Total Low-Income, At-Risk Student Likely Eligible for SNAP = 3.3 Million

Didn't report exemption, Receiving SNAP — 15% (843,596)

Didn't report exemption, Not Receiving SNAP — 25% (1,381,742)

26% (1,413,525)

34% (1,842,455)

Likely eligible, Receiving SNAP — 43% (1,413,525)

Likely eligible, Not receiving SNAP — 57% (1,842,455)

Source: GAO analysis of 2016 National Postsecondary Student Aid Study (NPSAS) data. Adapted from Figure 2 of GAO report 19-95. Note: Those who did not meet an eligibility exemption but reported receiving SNAP (1) may be receiving SNAP as members of their parents' household, (2) may have attended college less than half time and therefore were not subject to the student SNAP restrictions, or (3) may have met one of the student exemptions we were unable to capture in survey.

Students attending college greater than half-time are often not eligible for SNAP unless they meet a student exemption *and* meet all other SNAP eligibility requirements such as income and asset limits.[53] Student exemptions include having a disability, receiving Temporary Assistance for Needy Families (TANF), enrolling in a job training program, working greater than 20 hours per week, participating in a work study program, and more.[53] Because many of the exceptions are tied to employment or training programs and the COVID-19 pandemic has reduced these types of opportunities for students, many state SNAP agencies, including North Carolina, submitted requests to the USDA to suspend student eligibility rules.[54] The USDA denied all state requests on April 10, 2020.[55]

In addition to challenges posed by the COVID-19 pandemic, low SNAP participation rates among eligible college students may be partially due to unfamiliarity with the program,[4] confusion regarding SNAP eligibility rules for college students,[4, 56] lack of time to navigate application and enrollment systems while balancing other responsibilities,[56] and lack of retailers on campus accepting SNAP benefits.[57]

Institutions can reduce barriers, thereby promoting application and enrollment in SNAP, through a variety of recommendations. Recommendations offered by the Hope Center[56, 57] and U.S. Department of Housing and Urban Development[56] include:

- Increasing awareness of SNAP among potential advocates
- Directly assisting students in applying
- Clarifying student eligibility with the state SNAP agency
- Accepting EBT on campus
- Adding a SNAP prescreening tool into existing services (e.g. academic advising, student health services, or orientation)
- Providing access to benefits from a single point of contact or hub

SNAP Application Clinics: SPOCs can direct students to other resources like SNAP application clinics. SNAP application clinics provide education on the basics of SNAP, eligibility criteria, and the process to attain benefits.[58, 59, 60, 61] Attendees can usually receive help completing their online SNAP application during the clinic.[61,70,58,59,62] Clinics are often led by trained volunteers or interns[60,58,61] but some partner with community based organizations[59] or campus food pantry personnel[70,62] to lead the clinics. Staff often coordinate with applicants and the SNAP agency after the clinic to guide the student through the application process and troubleshoot any issues that may arise. Programs also offer online appointment scheduling, a website with links to the online SNAP application,[70] and remote application assistance[59] which is especially relevant as college campus programs are largely transferred online during the COVID-19 pandemic. Most programs advertise through flyers or websites. Programs vary in the number of students reached and SNAP application approval rates.

The CSU-Chico Center for Healthy Communities (CHC) has developed a robust CalFresh Outreach Program that uses a train-the-trainer model to equip other institutions of higher education with the knowledge and resources to help their students enroll in SNAP.[62] The CHC provides over 40 subcontractor college campuses with outreach templates, SNAP logos and social media, and up-to-date resources on relevant policy and events.[62] Using this program, CSU-Chico's own campus food pantry provided 1,300 students with on-the-spot SNAP application assistance in the 2018-2019 academic year.[62] Evaluation of CalFresh Outreach Programs across the CSU system found that the program was reviewed positively by students and mitigated barriers to SNAP access that students had faced in the past when applying directly with the SNAP office.[61]

One subcontractor of the CHC CalFresh Outreach Program is CSU-Long Beach. CSU-Long Beach runs the CalFresh Outreach Program as part of their broader initiative to address student basic needs, the Student Emergency Intervention and Wellness Program (SEIWP).[61] CHC trained 3 social work interns on SNAP application for college students, confidentiality requirements, and sensitivity.[61] These interns then held an on-campus outreach day each semester where interested students are screened for eligibility, receive personalized help in completing the online application, and instructions for next-steps.[61] Interns can help to process paperwork and serve as a liaison between the student and the SNAP office.[61] In 1 year (January 2017 to December 2017) the program successfully enrolled 41 students in SNAP.[61]

At UC Berkeley, SNAP Clinics are offered multiple times a month. A survey of Clinic attendees found that 84 percent of those who submitted SNAP applications were approved for benefits and the average benefit per student was $196/month.[58] Qualitatively, this survey found that the majority of respondents indicated SNAP benefits had a "tremendous impact" on their ability to eat sufficiently.[58] SNAP application assistance at UC-Irvine provided by 2nd Harvest Food Bank employees and student interns yielded 70 SNAP applications submitted over 1.5 years (June 2014-November 2015) with 21 (30 percent) approved, 20 (29 percent) denied, 12 pending, 12 unknown, and 5 withdrawn.[59] Reasons for the low approval to denial ratio are not provided in the process evaluation which demonstrates the need for further research into which practices are integral to the effectiveness of SNAP application clinics.

Lessons learned as detailed in these project reports include:

- Confidentiality, anonymity, and sensitivity are vital[60,59]
- Meeting students in high traffic, centralized areas will yield a larger reach[59,60]
- Student groups and interns are valuable resources[60,59,70]
- There is significant need for advertisement of the program and SNAP before implementation[59,60]

SNAP campaign best practices proposed by Freudenberg and Goldrick-Rab (2019) include using campus-wide email, text messaging, classroom announcements, listing on syllabi, and peer outreach programs to reduce stigma and promote enrollment of eligible students. [63]

These sources highlight that SNAP clinics are feasible within the context of higher education, and are effective at increasing awareness of and connecting students to SNAP. However, more research needs to be done to evaluate the reach of SNAP clinics in the target population, the rate of application acceptance for participants versus non-participants, and the impact on student food insecurity and academic performance. A Google search for "SNAP Application UNC Chapel Hill" yields no relevant results from UNC-CH to help students find out if they are eligible or how to apply for SNAP, indicating that UNC-CH likely does not provide advertised SNAP application support at this time.

Accepting EBT on Campus: Applying for and enrolling in SNAP benefits are the first hurdles, but there are also barriers for the use of SNAP benefits for college students. Once a student receives SNAP benefits, benefits must be used at an authorized retailer using an EBT card (similar to a debit card). Having a store that accepts EBT on campus can facilitate student use of their SNAP benefits. This is especially true for students living on campus who do not have access to transportation like many of the undergraduate first year students at UNC-CH who are not allowed to park vehicles on campus without an exemption. [64] Based on a search using the SNAP retailer locator tool, [65] there are no stores that accept EBT on the UNC-CH campus. Furthermore, the closest full grocery store to UNC-CH is 1.7 miles from mid-campus and even further from some residence halls (Figure 7).[65]

Multiple institutions of higher education accept EBT on their campuses. No academic evaluations were found on this strategy, but gray literature resources provide insight into how this strategy becomes practice and the impact it can have on retailer sales. California Community Colleges,[66] the CSU Basic Needs Initiative,[67] and CSU-Chico[68] provide guides for understanding and implementing EBT on college campuses. Tips in these guidebooks include assessing if campus markets currently stock required foods, ensuring point of sale systems are compatible with EBT, training staff on use of EBT, and collecting documentation to apply to be an authorized SNAP retailer.[66,67] The CSU-Chico webpage also provides videos and flyers to train employees and support implementation.[68] The guidebooks are all California specific and not all points may be applicable to North Carolina or UNC-CH.

In 2016 Humboldt State University (HSU), as part of their *OhSNAP!* program, was able to set up EBT on campus for a couple thousand dollars.[70] This cost was quickly offset by EBT sales made. HSU reports that EBT accounts for 5% of campus market sales which generates an additional $10,000 each month on average.[70,69] *OhSNAP!* also helps to provide outreach on the availability of EBT and campaigns to reduce stigma surrounding EBT use.[70]

Figure 7.

SNAP Retailers Within 2 Miles of UNC-CH Campus

Store	Distance
Franklin Mart	0.51 mi
CVS Pharmacy	0.54 mi
Target	0.67 mi
Key Food Mart	0.9 mi
Mediterranean Deli	0.9 mi
La Nueva Guadalupana	1.0 mi
Hill's Family Asian Market	1.2 mi
Run-In-Jims	1.4 mi
Cruizers	1.5 mi
Family Fare	1.5 mi
The Fresh Market	1.7 mi
Weaver Street Market	1.7 mi
CVS Pharmacy	1.7 mi
Harris Teeter	1.7 mi
Cliff's Corner Market	1.7 mi
Walgreens	1.9 mi
Circle K	1.9 mi
Walgreens	1.9 mi
Circle K	2.0 mi
Farmers of Orange NC	2.0 mi

Source: USDA FNS SNAP Retail Locator

Provide Direct Food Assistance

Direct food assistance is a critical service to provide to students in addition to SNAP support because not every student who experiences food insecurity meets the requirements to receive SNAP or other public benefits. The GAO found that 1.4 million low-income students who also had at least one risk factor for food insecurity did not qualify for SNAP benefits.[4] This represents about 25 percent of the low-income, at-risk population they surveyed (Figure 6).[4] Direct food assistance strategies include access to community food banks or pantries, campus food pantries, food scholarships, and meal vouchers or "swipes".

Campus Food Pantries: Campus food pantries provide shelf stable and perishable foods directly to students to address their immediate food insecurity. Campus food pantries may also provide auxiliary services such as cooking classes, SNAP application assistance, and referral to other public and campus benefits, to promote longer-term food security.[71,72,81]

Campus food pantries are a growing source of support for college students. The College and University Food Bank Alliance (CUFBA) reported that at least 656 colleges across the U.S. have or were developing food pantries as of September 2018.[g,4] This represents an increase of 680 percent over six years (Figure 8).[71] In a national survey of campus food pantries conducted by Goldrick-Rab (2018) found that 217 of 262 responding institutions (83 percent) currently operated campus food pantries and almost all of those without pantries were planning to open one.[71]

Characteristics

Characteristics of campus food pantries vary widely based on funding, space, and support. Based on the Hope Center's national survey and food pantry evaluations included in this brief, campus food pantries typically use relatively small designated space on campus to provide services,[71,72] only offer services to on-campus students,[71] procure food from a variety of sources (including community donations, food banks, and purchases),[71] are mostly volunteer run,[71,72] have informal outreach campaigns (flyers, word of mouth, etc.),[71] and do not require proof of financial need.[71] Interestingly, the survey found that the number of hours a pantry is open and the size of their budget does not correlate with number of students served.[71] This highlights the need for research to explore which characteristics of campus food pantries do contribute significantly to reach and effectiveness.

Insufficient funding, volunteers, and food are challenges that campus pantries face. To negate some financial barriers many of the pantries surveyed

Figure 8.

Growth of CUFBA Members from 2012 to September 2018

680% increase

Source: College and University Food Bank Alliance (CUFBA) as cited in Goldrick-Rab (2018).

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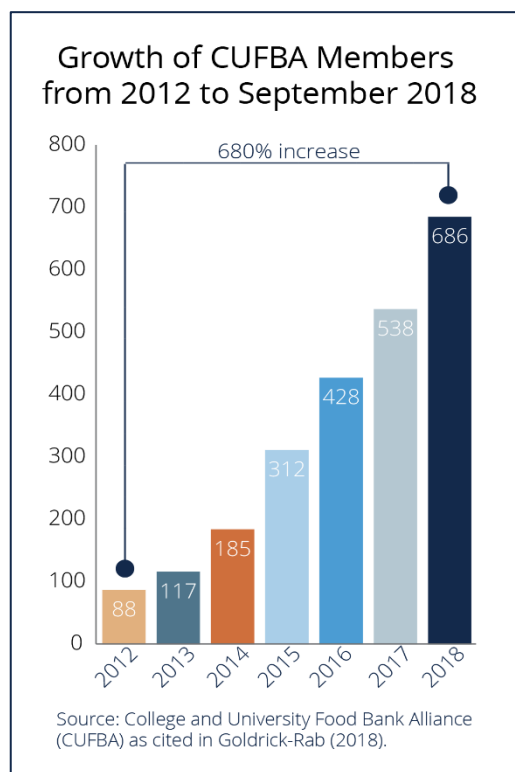
[g] This is the number of college food pantries registered as members with the College and University Food Bank Alliance and does not include college food pantries that are not members.

partner with non-profit organizations including their campus foundation (65 percent), hunger relief organizations (16 percent) and religious organizations (7 percent).[71] The Hope Center survey of campus food pantries provides further insight into typical characteristics of campus food pantries.[71]

The campus food pantry at UNC-CH, Carolina Cupboard, is located in a residence hall on campus and provides services during set hours or via appointment.[73] Any UNC-CH student can access the pantry using their OneCard as identification.[73] Over 370 students accessed services in Spring 2019 and many accessed the pantry more than once.[h,73] Students are encouraged to choose any foods they want and can come as much as they need to. Before or during the time of visit, students fill out an anonymous intake form.[73] Their website has links to other food resources on campus and in the community.[73] Carolina Cupboard is supported by their affiliate registered student organization.[73,74]

Barriers
Although the presence of campus food pantries is increasing, barriers to accessing services that may limit their effectiveness remain. Barriers can include stigma, misconceptions about the pantry, lack of awareness, and inconvenient pantry hours or location.

Students may feel embarrassment or stigma associated with using their campus food pantry, resulting in underutilization[76,4,75,81]. Additionally, students at UNC-CH have expressed they refrain from accessing the campus food pantry to preserve that resource for individuals in more need than themselves.[h] One way to help negate this barrier, suggested by Fung *et al* (2020), is to brand the pantry using input from students experiencing food insecurity.[76] The example provided is to advertise the campus pantry as an everyday wellness resource rather than a crisis resource.[76] Another article (El Zein, 2018) recommends shifting messaging away from increased demand for the food pantry and need for food supplies to combat thinking that the food pantry is only for others who need it more.[75] Stakeholders at UC San Diego led a successful *Triton Food Pantry* marketing campaign including, email, press release, business cards, and presentations.[59] In the first few weeks of opening, food pantry usage increased as communication to students increased.[59] They indicate that collaboration between many campus groups at all levels and strong student engagement made the campaign effective.[59]

Misperceptions about the food pantry may also hinder use by some students. For example, some students experiencing food insecurity at the University of South Florida expected food pantry foods to be unhealthy (ultra-processed and high in sodium), of low quality, and/or unable to meet their food preference needs.[76,75] This highlights the need for campus food pantries to provide a variety of quality, culturally relevant foods.

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[h] These findings are detailed in FFORC's unpublished Food and Financial Assistance Resources on Campus Research study, based on student focus groups and key informant interview with a Carolina Cupboard representative.

Lack of visibility or awareness (eg, not knowing the physical location, hours, or eligibility criteria of the pantry) is a common barrier to access cited.[59,76,75,84,81] A survey of 434 University of South Florida graduate and undergraduate students found that among those who were food insecure (125 students or 29 percent), 41 (32.8 percent) had never heard of the campus food pantry and only 5 (0.4 percent) students had visited the campus food pantry to obtain assistance.[76] These findings are consistent with another study of pantry use by El Zein *et al*, finding that only 38.5 percent of food insecure students at the University of Florida in Gainesville used the food pantry.[75] However, of these students, over one third use the pantry as their sole source of food.[75] Therefore, although participation could improve at some institutions, campus food pantries fill a significant gap in food access for vulnerable students.

Balancing visibility with privacy is a challenge for campus food pantries because student preference for privacy versus ease of access varies.[84,72,61] Some institutions place campus food pantries in fairly remote locations with the intention of preserving student dignity whereas some locate pantries in prominent areas on campus to normalize use.[4,72,84,71]

Intervention Evaluation

Evaluation of food pantries serving the general public show that food pantries, coupled with other services, can lead to improvements in food security status and diet quality among participants[77,78,79] but no formal outcome evaluations specifically for campus food pantries were found. However, there is evidence from process evaluations that campus food pantries are feasible and accepted. These evaluations also provide qualitative evidence that campus food pantries intend to and do result in improvements in student food security and academic achievement.

Two "Pitchfork Pantries" were opened at Arizona State University (ASU) in January of 2017.[80] The pantries partnered with a local food bank to supply food on campus and were open one day a week.[80] A one-month (January-February 2017) process evaluation of the pantry found that the pantries served 52 students during this time and referred 89 percent of those students to additional campus supports such as ASU financial aid and student health.[80] The evaluation also found that the pantry received an abundance of support from student and community populations, supplying adequate food, monetary donations, and volunteers, but administrative concerns over liability temporarily suspended operations.[i,80] Students who used the food pantry were overall satisfied with pantry services, hours, and location. One student's testimony speaks to the pantry's effect on their food security status, "This [the pantry] is a huge help to me because my paycheck doesn't allow me to be able to buy much food in groceries".[80] Results from two separate studies that interviewed campus food pantry directors, faculty, and staff found that supporting student success and the graduation mission of the institution are main themes.[72,81] One director stated, "Our goal is to help students stay enrolled and complete their education".[81]

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[i] The Federal Bill Emerson Good Samaritan Food Donation Act protects food pantries and donors to from civil and criminal liability for causing harm to the recipients of food banks and food pantries.

Recommendations and Lessons Learned

General recommendations and lessons learned based on campus pantry reports include:

- Convene an advisory committee to guide pantry development and implementation[82]
- Widely advertising the pantry (student orientation, social media, dedicated website, partnering with student leaders, on course syllabi as part of a "basic needs security" statement[j,59,71,75,84]
- Integrate additional services into campus food pantries[72, 83]
- Provide a variety of culturally appropriate, quality foods in a dignified manner[84]
- Locate the pantry and provide hours of service according to the preference of students[59,72,84,61]

The College & University Food Bank Alliance and Student Government Resource Center have created a toolkit for students governments and other stakeholders that outlines additional recommendations for how to lay the groundwork for, set up, and operate a campus food pantry.[82] Wish4Campus (Wellbeing Increased by Security from Hunger) is an initiative from the University of West Virginia that is developing and evaluating a toolkit to assist higher education institutions in supporting student basic needs. The toolkit contains information on initiatives surrounding food pantries, campus gardens, farmers markets, dining and recovery programs, mobile applications, and policy initiatives and have been evaluated by 30 experts from land-grant universities.[85]

Meal Vouchers: In addition to offering food in campus food pantries, institutions of higher education can provide food directly to students by offering coupons, cards, campus cafeteria/restaurant access "swipes", or food scholarships, collectively referred to as meal vouchers hereafter. Meal vouchers can be exchanged for prepared meals[86] or unprepared foods[87, 88] on- or off-campus. Alternative to campus food pantries or community food banks, meal voucher programs that use existing, conventional food retailers like restaurants, grocers, or campus cafeterias, serve as a stimulus for those retailers as well as a support for student's food needs. Some meal voucher programs advertise for students to apply[59,89] and some select students based on financial and academic factors using a lottery system to prevent the need to deny applications.[86,87]

Based on literature found, meal voucher programs are effective and have relatively more evidence to support their impact on student food insecurity and academic achievement than other basic needs insecurity interventions.

A food scholarship program at Texas Women's University provided fresh fruits, vegetables, dairy, and meat products to 49 participants twice a month from the Houston Food Bank.[88] After 10 weeks of the program, the proportion of participants who reported very low security decreased 18 percent (from 19.1 percent to 15.6 percent) and participants ate significantly more vegetables compared to baseline.[88] These results are promising, but many participants still experienced food insecurity, suggesting that multiple interventions are necessary to combat food insecurity within this population. A similar program at Houston Community College that provided food via a rotating campus market found that participation did not improve food security or academic outcomes.[87] The mixed results show that further research is needed to identify vital aspects of program success.

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[j] A sample basic needs security statement included in the Hope Lab report includes, "Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to provide any resources that they may possess." [71]

Bunker Hill Community College (BHCC) is a large multi-campus institution in the greater Boston area. In Spring 2016, BHCC piloted the One Solid Meal (OSM) Program where 30 students[k] received vouchers to eat a free meal in the campus cafeteria each day.[86] These students were followed for three semesters and all but one persisted or graduated.[86] Based on this success, BHCC rebranded to the Meal Voucher Program (MVP). In the 2017-2018 academic year, MVP provided 105 students $700 ($300 in fall and $400 in spring semester) each in money for food at on campus retailers via debit card.[86] Evaluation of MVP cohort by the Hope Center found that MVP reduced food insecurity (not statistically significantly) and improved self-reported depression, anxiety, stress, and sense of belonging.[86] Academically, MVP participants attempted (1.5 credits more, $p<0.05$) and completed (2.3 credits more, $p<0.10$) more credits than the control group.[86] MVP participants also had a higher persistence rate and GPA than the control group, but not significantly.[86] UC Berkeley offers a similar program that selects students through an open online application. In 2013, UC Berkeley's Food Assistance Program helped 51 percent of applicants create a personalized financial plan and add funds to their dining card for use at on-campus and at select off-campus food retailers.[59]

Swipe Out Hunger is a national non-profit that partners with institutions of higher education to leverage extra student meal plan "swipes" as a resource for other students who experience food insecurity.[89] The program works by holding "Swipe Drives" where students can donate up to two of their unused swipes at the end of each semester.[89] Money from donated swipes is then added to the dining card of students experiencing food insecurity or used toward the campus food pantry.[l,89] Swipe Out Hunger has more than 120 partner institutions including three in North Carolina, UNC Charlotte, Elon University, and North Carolina State University.[90] Swipe Out Hunger's 2019 Impact Report indicates that the program has positive impacts on food insecurity, health, and academic outcomes. Of the 414 students surveyed who received donated meal swipes, the majority reported that they ate more regularly (72 percent), felt less stress and anxiety about where they got their next meal (73 percent), were more able to make ends meet and stretch money (66 percent), and performed better in class and on exams (>50 percent) after receiving donated swipes.[89]

Evaluation of campus specific meal swipe donation programs supports these findings with additional evidence that this type of program is well accepted among students and translates into improvements in academic outcomes. As part of their Student Emergency Intervention and Wellness Program (SEIWP), CSU Long Beach developed a campus specific meal donation program.[91] The CSULB Meal Assistance Program obtains meal donations through their *Feed a Need* campaign which averages 1,400 meal donations each semester.[91] From Spring 2015-Fall 2017, 185 students received donated meals through the Meal Assistance Program after meeting with a SEIWP case manager.[91] Additionally, from Spring 2015 through Spring 2016, the Colorado State University (CSU) Students Against Hunger (SAH) program provided meal swipes to 191 of 320 applicants(60 percent).[92] The remaining eligible applicants were waitlisted.[m,92] Comparing SAH recipients to waitlisted applicants, shows that both groups had high persistence rates, but SAH recipient persistence is significantly higher (98 percent versus 93 percent).[92]

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[k] Selection criteria for students in OSM included a low or no estimated family contribution (<$3,000), completion of >30 academic credits, and GPA ≥ 3.0.

[l] Swipe Out Hunger helps to create campus-specific procedures for students to request and receive meal swipes. The National Programs Coordinator, Emily Kass, at emily@swipehunger.org can provide more information on best outreach strategies for each campus community.

[m] Almost all applicants were eligible, but lack of program funding inhibited more students from receiving meals.

Analysis also shows that students who were waitlisted had a statistically lower GPA in the term they applied than the previous term, indicating that not receiving benefits is associated with worse academic outcomes.[92]

Insights listed in meal voucher program reports include:

- Transportation and service hours of meal redemption retailers[87]
- Perceived legitimacy of the program[86,87]
- Lack of Support[87]
- Be clear regarding eligibility[59]
- Combine with financial literacy and individual planning for long-term solutions[59]

The described evidence supports meal voucher programs as an accepted and effective intervention to address food insecurity and improve academic outcomes among students struggling to put food on the table. However, more research is needed to discern best practices and feasibility of these interventions at UNC-CH.

Summary

The evidence to support the creation of centralized resource hubs, development of SNAP application clinics, acceptance of EBT on campus, use of campus food pantries, and disbursement of meal vouchers as strategies to address student basic needs insecurity provide institutions of higher education an opportunity to create and enhance programs that address student basic needs insecurity. However, these interventions are not comprehensive and no one intervention fully resolves student basic needs insecurity. Strategies naturally build from one another and should be combined to increase impact. Additionally, other strategies and policies should still be considered at all levels of the socioecological framework to promote a sustained impact on food security and associated health and academic issues.

Evidence detailing the effectiveness of these interventions is limited in relation to evidence describing the depth and extent of student basic needs insecurity prevalence. More research is needed to evaluate short- and long-term outcomes of various programs as well as determine best practices for, essential components of, and synergies between interventions.

An annotated list of interventions, including additional context, activities, and findings, can be found in Appendix A.

CONCLUSION

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Student basic needs insecurity is a major public health issue among institutions of higher education, including the University of North Carolina – Chapel Hill. This issue has serious consequences for students that can result in negative impacts for the schools as well. Many institutions of higher education are starting to implement strategies to combat this issue. There is promising evidence to support interventions, including resource hubs, SNAP support, and direct food assistance, as interventions to address basic needs insecurity, but not enough is known about their implementation or effectiveness. Studies with thoroughly designed intervention and evaluation plans are needed so resources can be targeted to the interventions most effective at improving basic needs security within this marginalized population.

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APPENDIX A: Intervention Evidence Table

Program Name	First Author, Year	Source Type	Context	Intervention Summary	Outcomes/Findings
Centralized Resource Hubs					
Oh SNAP!	Bramlett, 2019	Report	Humboldt State University	Established in 2013, Oh SNAP! has grown from a CalFresh recruitment strategy to comprehensive food security program. Oh SNAP! is housed in the HSU campus food pantry and provides services such as the pantry, nutrition and gardening education, food recovery, meal point sharing, and a thrift store. Students can find information on resources using the Oh SNAP! website or by coming into the hub during set hours.	* 54% and 37%of survey respondents (n=26) responded "yes" or "maybe" to a question asking if the Oh SNAP! program helped their grades Key themes for critical success include: * having a student centered, peer-to-peer design * student basic needs advocacy campaign to frame basic needs as health services * diverse funding streams * outspoken campus and community champions of the program
Single Stop (SS), Community College of Philadelphia	Zhu, 2018	Report	Community College of Philadelphia (CCP)	Single Stop partners with colleges and universities to embed basic needs resources into campus activities. SS leverages government social service programs (including SNAP) to offer nonacademic support to students. Colleges establish a benefits hub and SS trains at least one resource counselor to staff it. Staff screen, refer, and provide ongoing case management to students SS offers technical assistance to the colleges and staff.	* Single stop users had significantly higher persistence, credit pass rates, and GPAs across first time in college (FTIC) students and non-FTIC students
Single Stop (SS), North Carolina	Daugherty, 2018	Peer-Reviewed Journal Article	Four community colleges in North Carolina, John M Belk Endowment	Single Stop partners with colleges and universities to embed basic needs resources into campus activities. SS leverages government social service programs (including SNAP) to offer nonacademic support to students. Colleges establish a benefits hub and SS trains at least one resource counselor to staff it. Staff screen, refer, and provide ongoing case management to students Single Stop offers technical assistance to the colleges and staff.	* SS participants were 1.37 times as likely to persist compared to those who did not, although not statistically significant * SS users attempted and earned more credits than their peers, statistically significant. Results varied by college, with SS users earning up to 3.92 times as many credits as their peers over a 1-year period. * Results were more positive for students of color, older students (>24 years), and independent students compared to their counterparts for persistence, credit attempts and credits earned
SparkPoint	Skyline College, 2018	Report	Skyline Community College (SCC), United Way of the Bay Area	Sparkpoint provides resources in a single hub on campus. SparkPoint is open to all members of the community, including Skyline College students, faculty and staff. Services include financial education/coaching, free tax preparation, assistance applying for public social services benefits (like SNAP), and a food pantry.	In the 2016-2017 fiscal year: * SparkPoint provided 38 benefits screenings and 48 benefits applications to students at SCC * 40 SparkPoint participants received benefits and 69 maintained benefits

Benefit Access for College Completion (BACC)	Duke-Benfield, 2014	Report	Students across 7 community college throughout the U.S.	BACC is a 2.5-year (summer 2012 through summer 2014) initiative that helped colleges implement basic needs services into existing institutional operations with the aim of helping low-income students access public benefits including food assistance (SNAP), child care subsidies (child care development block grants), WIC, TANF, CHIP, Section 8 housing, and transportation assistance. BACC helped fund 7 community colleges. Most colleges targeted independent students with an expected family contribution of less than $3000.	* 2,200 students across 5 of the colleges applied for benefits during the study period * Students who received SNAP, TANF, or TANF-funded child care enrolled in more academic terms on average than a matched comparison * Students who received multiple benefits enrolled in more academic terms, accumulated more credits, and a larger percentage earned a college credential than student receiving only one benefit Key lessons learned include: 1. Provide benefits in a highly visible, centralized hub with knowledgeable staff 2. Use an "opt-out" model by connecting initial pre-screening steps to existing student support services such as advising and financial aid 3. Leadership and policy at multiple levels and across all departments is needed
SNAP Application Supports					
UC Berkeley CalFresh Clinics	Altman, 2018	Report	University of California Berkeley	UC Berkeley provides access to basic needs services through their Basic Needs Center, including CalFresh (California's SNAP) application assistance clinics. UC Berkeley partnered with the Alameda County Community Food Bank CalFresh Outreach Team to offer CalFresh Clinics multiple times a month on campus. At clinics, students learn about the CalFresh program and the process to attain benefits. On-site help in applying is provided as well.	* From January 2015 through the spring 2017 semester, 199 of 296 SNAP applications were submitted and approved (67%) * Students reported receiving benefits within 1-4 weeks of attending the clinic * The average benefit for these students was $196/month * Most respondents said the SNAP benefits had a "tremendous impact" on their ability to eat sufficiently
UC Irvine CalFresh Application Assistance	University of California Global Food Initiative, 2017	Report	University of California Irvine (UCI)	In Spring of 2014, UCI partnered with the 2nd Harvest Food Bank to provide SNAP application assistance on the UCI campus. The program was advertised in residence halls, advising offices, campus health centers, and other high traffic areas. Student can schedule an appointment online or drop in during the set office hours. The CalFresh Coordinator employee and trained student interns (ideally from other campuses to maintain anonymity) provide in-person application assistance and continued case management. The program also provides assistance for Medicaid and TANF enrollment.	From June 2014 to November 2015: * 70 SNAP applications were submitted * Of those, 21 were reported to be approved, 20 denied, 24 pending or unknown, and 5 withdrawn
UC Santa Barbara CalFresh Outreach	University of California Global Food	Report	University of California Santa Barbara (UCSB)	In 2013, the Associated Students (AS) Food Bank of UCSB partnered with the Santa Barbara (SB) Food Bank to provide a monthly three-hour SNAP information and enrollment session at the campus food pantry and other campus locations. The program then transitioned to an online model where food bank staff provide assistance remotely. AS Food Bank staff refer students who use the campus	* County SNAP employees report an increase in the number of students applying for SNAP * Consistent hours help students to return for support and/or refer their peers * Campus leadership support is beneficial for space, funding, and program referrals

	Initiative, 2018			food pantry to SNAP application assistance by the SB Food Bank. Efforts expanded to weekly outreach sessions and two work-study student advocates were hired.	From November to December 2015: * SNAP materials were distributed to 240 unique students * 205 students were pre-screened and 55 completed applications or had SNAP benefits initiated
Food Access Workshops at Salt Lake Community College	Utahns Against Hunger (UAH), 2018	Report	Salt Lake Community College (SLCC)	Three volunteer trainings were held in February that included an overview of the SNAP Program, how students can qualify, and a walk through of the SNAP application. The UAH outreach manager, SLCC staff, and trained volunteers hosted three workshops in March of 2018 at three different SLCC campuses. Workshops provided information on the campus garden, pantry, and SNAP. During workshops, a presentation was given and physical outreach materials were provided. Workshops were held close to a computer lab so students could receive assistance in applying on-site.	* 200 students received information * Few (only 2) students enrolled in SNAP during the workshops * Many did not know about the pantry or garden and asked for SNAP information to take home * They plan to use a train the trainer model so pantry workers can screen students for SNAP eligibility and provide application assistance on-site * Coordinating the workshop with a student group or service-learning class was helpful in finding volunteers
Student Emergency Intervention and Wellness Program - CalFresh Outreach Program	Carpena, 2019	Report	California State University, Long Beach	CSU-Long Beach runs a CalFresh Outreach Program as part of their broader initiative to address student basic needs, the Student Emergency Intervention and Wellness Program (SEIWP). Three social work interns were trained on the SNAP application process for college students, confidentiality requirements, and sensitivity. These interns then promote and hold an on-campus outreach day each semester where interested students are screened for eligibility and receive personalized help in completing the online application. Interns can help to process paperwork and serve as a liaison between the student and the SNAP office after the application is submitted.	In 1 year (January 2017 to December 2017) the program successfully enrolled 41 students in SNAP
Campus Food Pantries					
Triton Food Pantry Marketing	University of California Global Food Initiative, 2017	Report	University of California San Diego	Created in February 2015, the Triton Food Pantry is run by the Associated Students of San Diego and is overseen by a Food Insecurity Workgroup. The workgroup, comprised of student, faculty, and staff representatives, was convened to develop a marketing campaign. The campaign included electronic and in person efforts, specifically emails, press releases, business cards, and presentations. Email communications were sent to financial aid users in waves as to not overwhelm the pantry.	* 12,500 undergraduates received the promotional email * Pantry usage increased as the number of emails sent increased * The pantry served an average of 200 students each week as of December 2015
SOAR Food Pantry	University of California Global Food Initiative, 2017	Report	University of California Irvine	The SOAR Food Pantry was established in October of 2015. It is currently located within the SOAR Center's Multi-Purpose Room, in a small space that was formerly used for storage. In partnership with the Orange County Food Bank the SOAR Food Pantry provides non-perishable food free of charge to students 3 days a week. Students swipe their student ID card at the time of visit.	* In the 2015-16 academic year, the pantry served 655 students for a total of 2,942 visits * Most students that accessed the pantry were undergraduate upperclassmen and students of color

University of California Davis Food Pantry Model	University of California Global Food Initiative, 2018	Report	University of California Irvine	Founded in 2010, the pantry is a student-run food resource that provides nonperishable food items, fresh produce, basic toiletries, family planning resources, and food security resources through programs like CalFresh. The pantry is open 5 days a week to all UC Davis students who use their ID card to gain access. Food is labeled using a points system and students can receive up to 3 points worth of food. The pantry is supported by a $7,500 budget, 4 directors, permanent volunteers, and community donations.	* In fall 2013, the pantry served 1,365 students, providing 1,954 items to students * In fall 2015, the pantry served 2,188 students, providing 6,653 items
University of California Berkeley Food Pantry	Altman, 2018	Report	University of California Berkeley	The food pantry is located on campus and open M-F 9:30am-3:30pm. All students are welcome to access services. When visiting, students fill out an intake survey via Google forms. The food pantry procures canned and fresh food from a variety of sources including United Natural Foods, Inc via the university's wholesale contract, Berkeley Student Food Collective, Clark Kerr Campus Garden, and Alameda Co Community Food Bank.	* After relocating to a more visible location, visits increased from a couple hundred per month in Spring 2016 to over 1,400 visits in February 2017 * In the 2016-17 academic year 2,303 unique students visited the pantry, producing 8,873 visits Pantry usage varied by group. In Spring 2017: * 7% of students overall used the pantry * 87% of students with $0 expected family contribution used the pantry * 47% of students with dependents used the pantry
Student Emergency Intervention and Wellness Program - ASI Beach Pantry	Carpena, 2019	Report	California State University, Long Beach (CSULB)	In 2015, the Associated Students Incorporated (ASI) of CSULB helped to create the Beach Pantry. The pantry partners with community organizations to provide food, hygiene products, and school supplies to any CSULB student. Students swipe their ID card at entry and have immediate access to pantry resources. The pantry refers students to SNAP application assistance through CSULB's larger basic needs intervention hub, the Student Emergency Intervention and Wellness Program.	* Pantry usage (number of unique participants and number of total visits) has increased each semester from Fall 2016 to Fall 2018. * The pantry had over 17,000 visits in Fall 2018.
Pitchfork Food Pantry	Kim, 2018	Master's Thesis	Arizona State University	Two food pantries opened in January 2017 at ASU's Downtown Phoenix and Tempe campuses. Any ASU students enrolled during the 2016-2017 academic year were eligible to access the resource. Marketing for the pantry began in January 2017 via distribution of flyers, creation of a Facebook page, and posting of the resource on the *MyASU* website. All participants received food, a reusable bag, and referrals to the other services including the financial aid office, career center, and health services.	From January-February 2017 the pantries: * Served 52 students * Referred 89 percent of those students to additional campus supports * Received an abundance of support from student and community populations; supplying adequate food, monetary donations, and volunteers Administrative concerns over liability temporarily suspended operations.

Meal Voucher Programs					
UC Berkeley Food Assistance Program	University of California Global Food Initiative, 2017	Report	UC Berkeley	Established in Fall 2013, the Food Assistance Program provides eligible students with short-term funding via dining cards that can be used at on-campus restaurants and with local food merchants during breaks and in emergency situations. Students apply for the program through an online application. Financial Aid staff review applications and eligible students have limited funds added to their dining cards available for immediate use. Staff work with students to develop spending plans and long-term solutions, including loans.	* 51% of applicants received assistance * Majority are upperclassmen (85%), live off campus (91%), and financially independent (64%)
Swipe Out Hunger	Swipe Out Hunger, 2019	Report	United States (120+ partner institutions)	Swipe Out Hunger is a national nonprofit that advises institutions of higher education on the design and implementation of anti-hunger programs. They leverage extra student meal plan "swipes" as a resource for other students who experience food insecurity. The program works by holding "Swipe Drives" where students can donate up to two of their unused swipes at the end of each semester. Money from donated swipes is then added to the dining card of students experiencing food insecurity or used toward the campus food pantry.	After receiving swipes, participants reported: * Eating more regularly (72%) * Feeling less stressed and anxious about where they get their next meal (73%) * Being more able to make ends meet and stretch money (66%) * Performing better in class and on exams (>50%)
UC Los Angeles Meal Voucher Program	University of California Global Food Initiative, 2017	Report	UC Los Angeles	Established in 2010, the UCLA Meal Vouchers Program provides eligible students with vouchers redeemable at dining halls and "to-go" restaurants on campus. Students are referred by faculty and staff or can fill out an application in-person at multiple on-campus distribution locations. Staff review applications and eligible students receive up to 11 vouchers per quarter for up to 3 quarters. For undocumented students, the limit is 20 vouchers per quarter throughout their degree. 80 percent of vouchers come from Swipe Out Hunger donations. Students with meal plans are not eligible.	* In 6.5 years of use, almost 35,000 vouchers were distributed to 5,874 students * The average number of vouchers accessed per student has increased each year * Undocumented students and those with a long commute access vouchers most
Meal Vouchers Program (MVP)	Broton, 2020	Report	Bunker Hill Community College	A Spring 2016 pilot program, One Solid Meal (OSM), identified (via Expected Family Contribution of $0, 30 completed credits, GPA >/= 3.0) and provided 30 students with paper meal vouchers redeemed for a free meal daily in the college cafeteria. OSM was then re-branded as the Meal Voucher Program (MVP). MVP selects students based on same criteria as OSM but prioritizes first year students. MVP provides participants a debit card that can be used at on-campus food retailers ($300 in Fall 2017 and $400 in Spring 2018). This amount allows students to eat 3-4 meals/week. Program staff emailed, mailed, and called selected students to pick up their cards. Debit usage was monitored by staff who intervened if too little or too much was being spent. MVP also made referrals to Single Stop.	* 29 of 30 students in pilot persisted over the evaluation period (3 semesters) * 105 of 126 selected MVP students picked up their cards * Participants ate more meals in the cafeteria (87%) than non-participants (35%) * MPV reduced food insecurity among participants (not significantly) * MVP participants were less likely to report depression, anxiety, stress; more likely to report greater sense of belonging * MVP participants attempted and completed more credits, had a higher fall-to-spring persistence rate, and had slightly higher GPAs (none significantly) than non-participants

Houston Community College Food Scholarship Program	Goldrick-Rab, 2020	Report	Houston Community College	Houston Food Scholarship (HFS) Program provided 500 eligible (EFC of $0, income <$25,000, and good academic standing) students with cards to redeem groceries at an existing on-campus market every other Friday to two cohorts, one each in the Spring and Fall 2018 semesters. Students were chosen via lottery and there were no academic or performance requirements to participate. Markets were spread out across different campuses and feature a wide variety of produce, meats, and dairy. Outreach to selected students included a discussion session, emails, video, and a website.	* 51% of students offered HFS accepted the offer. * Market attendance was 45% for the first cohort and 29% for the second * Transportation, timing, and lack of support were identified as barriers to attendance * Participants received an average of 233 pounds of food * Lack of significant outcomes on food insecurity status associated with HFS at time of follow-up
Houston Food Bank Scholarship Program	Moore, 2019	Peer-Reviewed Journal Article	Texas Women's University	Texas Woman's University in Houston partnered with the Houston Food Bank to provide 49 students with fresh fruits and vegetables, dairy, meat products, and non-perishable foods twice monthly on campus. The Houston Food Bank donated all foods.	* Participants were primarily food insecure, female, single, with an average age of 28 ± 8 years * Reports of very low food security dropped from 19.1% after 10 weeks * Healthy eating index increased, but not significantly * Total vegetable scores significantly increased * There as no significant food security group effect found ($P = 0.49$)
CSU Long Beach Meal Assistance Program	Carpena, 2019	Report	California State University, Long Beach (CSULB)	The Meal Assistance Program (MAP) is part of the CSU Long Beach Student Emergency Intervention and Wellness Program (SEIWP). Students apply with a SEIWP case manager and, if approved, receive meals on a dining card for immediate use in the campus cafeteria.	* Donation campaigns yield 1,400 donated meals per semester * 185 students were served from Spring 2015-Fall 2017
Rams Against Hunger (RAH)	Novak, 2016-17	Peer-Reviewed Journal Article	Colorado State University, Private donations	Initiated in Spring 20165, RAH provides free meal swipes to applicants via their dining card. Meals can be redeemed at campus dining halls. The cost per student is about $500/semester, paid for by private donors. 320 individuals submitted RAH applications in spring 2015, fall 2015, and spring 2016. 191 received meal swipes (60%). Most additional applicants were waitlisted, and all remaining applicants are used in the control group.	* RAH recipients have higher persistence rates to the next semester than waitlisted students * Waitlisted students have a lower GPA in the semester that they applied for RAH, relative to the previous semester, but RAH recipients do not have a similar reduction in GPA during the semester they applied for the program