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A content analysis of qualitative research on college student food insecurity in the United States

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Abstract

Using a content analysis methodology, we examined 15 peer-reviewed articles published between 2009 and 2019 that used qualitative and mixed methods approaches to explore how college and university students experience food insecurity. Concerningly, there was limited variety in the methods employed across these articles and more discussion of methodology was needed. Despite this, our analysis of student statements in these articles yielded three common themes: (1) co-occurring basic needs; (2) academic, physical, psychological, and social effects of food insecurity; and (3) institutional satisfaction and/or critique. We include implications for research and practice.

KEYWORDS

basic needs insecurity, college student food insecurity, content analysis, United States higher education

INTRODUCTION

Against the backdrop of ongoing national conversations in the United States about rising college prices (Goldrick-Rab, 2016; Kelchen, 2018), mounting evidence indicates that students are facing basic needs insecurity (Baker-Smith et al., 2020). Food insecurity is one of the most prevalent and troubling manifestations of basic needs (in)security. Surveys of campuses across the United States revealed disturbingly high rates of food insecurity, which

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Context and implications

Rationale for the study

Few qualitative studies centre students' food insecurity experiences in the United States. We examined available research to unearth commonalities across student narratives while connecting food insecurity to broader social class inequality in higher education.

Why the new findings matter

Our findings underscore the urgent need for additional qualitative food insecurity scholarship that foregrounds student voices. Future researchers examining food insecurity should consider: (a) the nuances of on-campus food insecurity, (b) the impact of food insecurity on student success, and (c) the linkages between food insecurity and social class in higher education.

Implications for policy makers

Campus leaders and policy makers can help address campus food insecurity by building holistic wraparound systems to support the multi-faceted needs of students facing food insecurity. To do this, policy makers and leaders must begin to understand food insecurity as more than a statistic and acknowledge the human experiences of those it affects.

threaten students' overall well-being and academic performance (Dubick et al., 2016; Maroto et al., 2015; Martinez et al., 2019). As the after-effects of the COVID-19 pandemic continues to disrupt higher education and the US economy, food insecurity among college students has become even more acute (Goldrick-Rab et al., 2020; Owens et al., 2020). Indeed, loss of employment, campus housing and overall stability have pushed students who were previously food secure, or at the margins of food security, into worsening food insecurity. Although the rising price of college (including non-academic expenses) is a significant factor in student food insecurity that merits continued focus, other potential contributing factors also require closer examination.

Although interviews have alerted scholars to food insecurity among college students (Goldrick-Rab, 2016), research on the issue has primarily maintained a quantitative focus. Researchers continue to seek out metrics such as representative rates of food insecurity and its numerical impact among all college students (McArthur et al., 2018; Payne-Sturges et al., 2018). While ascertaining the scope of the problem is a laudable goal, quantitative approaches cannot create space for students to express their meanings of food insecurity and its multilayered effects on their lives. This is especially vital as the tendrils of food insecurity can grip every facet of students' lives, including their mental and physical health (Bruening et al., 2018), peer engagement (Daugherty et al., 2019), sense of belonging on campus (Fernandez et al., 2019), and academic success and persistence (van Woerden et al., 2018; Weaver et al., 2020).

Further, quantitative studies limit the exploration of broad conceptualisations of students' social class identities, often oversimplifying class identity by focusing on seemingly objective measures such as income or wealth and education level, which are only part of the lived experience of social class (Martin & Elkins, 2018; Soria, 2018). Garrison and Liu (2018) argued that researchers should ‘ask about [research subjects'] internal understanding of social class’ (p. 20) because social class is inherently subjective, fluid and omnipresent (Liu, 2011; Liu et al., 2004; Soria, 2018). Moreover, Rubin et al. (2014) asserted that subjective

self-identification of social class can 'provide more reliable and predictive assessments than objective measures, especially in educational research' (p. 198). Qualitative approaches invite students to explore and name the subjective nuances of social class identity and how it can shape their worldviews (Liu, 2011; Liu et al., 2004) and experiences, particularly in classist systems such as higher education (Ardoin & Martinez, 2019; Liu, 2011).

In this study, social class is operationalised through multiple forms of capital (Bourdieu, 1984; Yosso, 2005), including how those forms of capital shape students' worldviews (Liu, 2011) and why different forms of capital are valued or excluded in higher education (Ardoin & Martinez, 2019; Martin & Ardoin, 2021). Students from more affluent social classes (e.g., middle class, upper class) are often privileged for possessing the normative forms of capital seen as assets by higher education institutions. In contrast, students from poor and working-class backgrounds are often disadvantaged and shamed for their own forms of classed capital (Locke & Trolian, 2018). This divergence creates systemic barriers to college access, belonging, and completion for students from poor and working-class backgrounds (Ardoin & Martinez, 2019; Martin & Ardoin, 2021). Moreover, it makes it difficult to fully understand the qualitative differences in students' conceptions and experiences of food insecurity amidst widely held perceptions and tropes of *poor college students* and *typical college student meals*.

To capture and maintain the attention of campus leaders and state and national policy makers, food insecurity discussions must expand beyond statistics to reveal this issue's multifaceted impact more closely on students. Similarly, it is necessary to situate food insecurity into broader conversations on social class inequality in college contexts and how social class impacts college students' experiences (Martin et al., 2018; Martin & Ardoin, 2021; Williams & Martin, 2021). Although we focus explicitly on better understanding students' articulations of food insecurity, we recognise that many other identities and issues influence this narrative. However, we seek to use the present study to bridge our work to social class research to encourage more holistic support for food-insecure students to disrupt and eliminate the existence of this issue, not merely to lower the reported incidence of food insecurity in the United States.

RATIONALE

Despite a burgeoning body of research, there is an urgent need for nuanced investigations of food insecurity in the United States that expand beyond the typical lens of rising college prices (Goldrick-Rab et al., 2019). The preponderance of quantitative methods within the extant literature is of particular concern since qualitative and mixed methods approaches provide students with a greater ability to name and make meaning of their unique food insecurity experiences. Further, narrative accounts can tremendously impact US policy changes. This comprehensive analysis examines consistent and divergent themes across food insecurity research, centring on students' reported experiences. By conducting a content analysis that encompasses the existing qualitative and mixed methods literature, we illuminate the potential for future scholars to expand outward from the current trend of examining food insecurity through quantitative means.

We choose to highlight student quotes as they exist in the extant literature to amplify researchers' framing of student narratives. Further, our analysis draws attention to the paucity of existing qualitative research on food insecurity. While the student quotes we include are mediated through individual researchers' lenses, we use them to illuminate the broader trends emerging from the current body of knowledge. Furthermore, our methodology of foregrounding student voices underscores the importance of situating food insecurity as a human issue that cannot be fully expressed through numbers alone.

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PURPOSE AND RESEARCH QUESTIONS

The purpose of this content analysis was to examine the state of peer-reviewed qualitative and mixed methods food insecurity research as described, experienced, and understood by college students in the United States through a critical perspective. Using a blended and modified version of Domas White and Marsh (2006) and Hsieh and Shannon's (2005) content analysis approaches, we reviewed qualitative and mixed methods research published by peer-reviewed outlets across all disciplines from 2009 to 2019 in the United States. This period marks the time between the entrance of student food insecurity into the literature and the last full year preceding the start of the study and the COVID-19 pandemic. We intentionally selected 2019 as a cut-off in the present study to eliminate the proven impact of COVID-19 on the scholarly peer review process (Behera et al., 2021; Ramos, 2021). Two questions drove this study: (1) How many and what types of peer-reviewed qualitative and mixed methods research articles exploring how students describe and make meaning of their experiences with food insecurity in the United States were published between 2009 and 2019? (2) What topics and major themes emerge from student accounts in this research?

UNDERSTANDING FOOD INSECURITY ON CAMPUS

Although food insecurity has become an urgent focal point in the US higher education environment, it was not a major topic of scholarly inquiry and examination until Chaparro et al.'s (2009) landmark study at the University of Hawai'i at Mānoa. Since then, scholars and practitioners have embraced the challenge of researching and addressing food insecurity on college campuses (Broton & Goldrick-Rab, 2018; Cady, 2014; Crutchfield & Maguire, 2017). Indeed, as awareness of student food insecurity on college campuses began to grow, researchers and campus leaders around the country sought to understand the scope of the issue at their institutions (Freudenberg et al., 2011; Morris et al., 2016; Wooten et al., 2018). Initially, food insecurity research consisted mainly of smaller, single-institution studies that found rates of food insecurity to vary widely, anywhere from 14% to 67% (Bruening et al., 2016; Chaparro et al., 2009). This variance led some researchers (Nikolaus et al., 2019) to question the validity and reliability of the instruments used to measure student food insecurity.

Despite this, the United States Department of Agriculture's (USDA) US Adult Food Security Survey Module employed by The Hope Center for College Community and Justice and their #RealCollege partners yielded remarkably consistent results in US studies surveying institutions of varying sizes and types (Goldrick-Rab et al., 2019). The Hope Center's 5 years of annual student hunger surveys (Baker-Smith et al., 2020) found a 43% weighted average rate of food insecurity that is identical to the estimate reported in a recent systematic analysis of food insecurity research (Nazmi et al., 2019). Nevertheless, as cautioned by a report from the US Government Accountability Office (2018), the absence of studies containing a nationally representative sample inhibits our ability to capture the true scope of food insecurity among college students in the United States. Fortunately, the tremendous work of The Hope Center, the College and University Food Bank Alliance, the #RealCollege movement, and other anti-hunger advocates around the country has yielded, among other successes, a commitment from the federal government to collect data on student food insecurity through the National Postsecondary Student Aid Survey as of autumn 2020 (The Hope Center, 2020).

Beyond studying overall prevalence rates, researchers have also explored rates of food insecurity among specific student populations, particularly those marginalised by policies, practices and structures in higher education and broader society. For example, researchers

(Payne-Sturges et al., 2018; The Hope Center, 2020; Wood & Harris, 2018) have found higher rates of food insecurity among Black and Indigenous students than their white peers. Others have similarly found elevated rates of food insecurity among LGBTQ+ students, first-generation college students, and former foster youth (Camelo & Elliott, 2019). Food insecurity is also more common among students from economically depressed regions, such as Appalachia (McArthur et al., 2018).

The effects of food insecurity significantly hinder students' academic performance. Some scholars (Broton, 2017; Collier et al., 2020; Maroto et al., 2015) have found that students struggling with food insecurity earn lower GPAs than their food-secure peers. Other studies have indicated that food-insecure students will drop classes or skip buying course materials to help make ends meet (Dubick et al., 2016), which further stratifies college access and success as students are forced to choose between securing their basic needs and academically progressing towards graduation (Errington Nicholson, 2020). Amidst the pressure of these conflicting priorities, studies have found that food-insecure students are far more likely than their peers to experience depression, anxiety and heightened stress levels (Diamond et al., 2020; Wattick et al., 2018). Such issues are common among community college students who, despite attending lower-cost institutions, find their lack of food access exacerbated due to the costs of books, labs, health insurance and transportation (Errington Nicholson, 2020).

Along with facing academic and mental health hurdles, food-insecure students struggle to engage and build relationships with their peers. Indeed, students consistently report that added financial burden has prevented them from engaging in typical social activities, such as going out for a meal or drinks (Cliburn Allen & Alleman, 2019; Daugherty et al., 2019) or joining student organisations (Ardoin, 2020). This social isolation not only prevents food insecure students from developing the type of social capital often needed to garner more rewarding academic and professional opportunities (Williams et al., 2021), but it also inhibits their sense of belonging as part of the campus community (Meza et al., 2019). Combined with food insecurity's adverse effects on academic performance, this diminished—or absent—sense of belonging greatly reduces retention and completion rates among food insecure students (Davis et al., 2019).

Using content analysis to explore food insecurity

As of 2020, we identified five published peer reviews of research on US college student food insecurity across all disciplines. These articles consist of one narrative review (Lee et al., 2018), two literature reviews (Cady, 2014; Mukigi & Brown, 2018), and two systematic reviews (Bruening et al., 2017; Nazmi et al., 2019). Reflecting the role quantifiable data plays as a driver of public policy, researchers' overwhelming focus in these reviews was on the prevalence of food insecurity reported in their study samples. Only two reviews (Bruening et al., 2017; Lee et al., 2018) included qualitative and mixed methods studies in their respective samples; however, neither analysed these articles' qualitative findings. Of these reviews, two (Bruening et al., 2017; Lee et al., 2018) also included articles that explored food insecurity among international students. Many of these reviews included non-peer-reviewed literature, with only one (Mukigi & Brown, 2018) restricting its sample to peer-reviewed content. The present study fills a gap in the existing content, systematic and literature review studies, given the prior lack of focus on students' self-reported experiences explored via qualitative and mixed methods research. In presenting our content analysis, we use student quotes from the literature both to reflect the salient themes that emerged from our comprehensive review, and to emphasise the rhetorical importance of centring students' experiences in their own words and on their own terms in basic needs research.

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MATERIALS AND METHODS

We used a blended content analysis methodology (Domas White & Marsh, 2006; Hsieh & Shannon, 2005) to synthesise 10 years of pre-COVID-19 published peer-reviewed qualitative research on US campus food insecurity. Content analysis is a method concerned with contextual meaning, numerical prevalence and frequencies (Krippendorff, 2004) with roots in twentieth-century scholarship (Mayring, 2004). As such, content analysis approaches allow researchers to deduce (dis)connections among a given topic (Domas White & Marsh, 2006) and can reveal summative overviews of a given topic (Hsieh & Shannon, 2005) within a specific context and set of constructs (Williams & Thompson, 2022). In academia, scholars apply content analysis approaches to explore methodological (mis)alignments within a specific subject and reveal what gaps exist within current literature (Wells et al., 2015). Content analysis methodological approaches are closely tied to systematic literature reviews and meta-analysis practices as their findings are similarly constructed and reported in the United States (Linder et al., 2020; Williams & Thompson, 2022). These approaches can be applied to qualitative, quantitative and mixed-methods research to generate new data from existing findings (Linder et al., 2020).

In addition to the content analyses and systematic reviews on food insecurity discussed earlier, higher education researchers have also used these approaches to explore other basic needs related topics. Specifically, there is some synthesis of research examining homelessness and housing insecurity among college students (Bowers & O'Neill, 2019; Miller, 2011), as well as social class decisions and socioeconomic status-related struggles on campus (Rodríguez-Hernández et al., 2020). Broadly, these studies allow researchers to explore trends and divergences in the literature associated with student basic needs and campus integration and performances. They also offer a guide for applying meta-analysis, systematic literature review and content analysis approaches to one of the most pressing issues: college students' basic needs.

To meet the aims of this study, we combined and modified Hsieh and Shannon's (2005) summative content analysis approaches with Domas White and Marsh's (2006) quantitative guidelines. At least two previously published studies have taken this approach in the United States (Linder et al., 2020; Williams & Thompson, 2022). The culmination of this process yielded the following steps: (a) selection of keywords (e.g., 'food insecurity', 'food insecure' and 'food pantry') relating to peer-reviewed food insecurity scholarship; (b) constructing research questions aligning with the purpose of the study; (c) developing a scholarly article search plan (e.g., use of *Publish or Perish*) to identify the types of research published using our selected keywords; (d) creation of an individual and collective coding practice; (e) identifying and organising all potential data for inclusion and exclusion using steps one through three; and (f) individually and collectively (re)coding of all data for (in)consistency.

Further, across each of these steps, we employed a critical lens to consider how food insecurity is framed in the existing literature. We considered how attitudes about food insecurity and the myth of American meritocracy can cause stigma and shame that obscures the realities of food insecurity on campus, all of which are tied to broader social class misconceptions (Martin et al., 2018; Martin & Ardoin, 2021). Using a critical perspective enabled us to underscore how identity was framed across our sample and the type of journals most consistently publishing food insecurity research. Moreover, critical scholarly review enabled us to draw inferences regarding who and whose identities and needs are best addressed by current food security initiatives and how identity is connected to and across these common trends. Although many intersecting identities impact how students influence food insecurity, we focus on social class and food insecurity linkages explicitly because they are less examined in scholarly literature when compared to race and gender. Further, a critical lens allowed us to (re)articulate and centre what students themselves position as important for addressing food insecurity.

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Data collection and generation

To meet our criteria for inclusion in this study, articles had to use qualitative or mixed methods, focused on food insecurity among US college students, and peer-reviewed and published in academic journals (across disciplines) between 2009 and 2019. We searched Google Scholar via Harzing's *Publish or Perish* software (*PoP*; Harzing, 2007) to locate potential articles. We employed *PoP* because it is an interface to Google Scholar's database that facilitates the exportation of search results into an external, editable document (Harzing, 2007). The primary keywords we used were 'food insecurity', 'food insecure', 'food security', 'food secure' and 'food pantry'. Food pantry was incorporated as a search term because research indicates that campus food pantries are among the most common institutional responses to student food insecurity (Goldrick-Rab et al., 2018). We chose not to include 'basic needs' as a search term to isolate experiences related solely to food insecurity. To restrict results to the higher education environment, we paired each of these individual search terms with the following keywords, each in a separate search: 'student, 'college' OR 'higher education', 'postsecondary education' OR 'post-secondary education' and 'tertiary education'. Each search was restricted to the years 2009–2019. From these 20 total searches, we retrieved a preliminary sample of 18,340 articles. Although the *PoP* software does apply a ranking to its search results, the lack of relevance among articles returned in the latter half of each search and the prominent duplication of articles across searches suggests that it is unlikely any potentially relevant articles were excluded from the results.

Upon completing all 20 searches, we reviewed the titles, abstracts and, in some cases, text of the articles in this preliminary sample to determine whether they met all inclusion criteria. Whenever a question arose about whether an article met inclusion criteria, we met to review the article as a team and make a final determination. We removed all articles that did not focus on food insecurity among US college students ($n = 16,398$), used exclusively quantitative methods ($n = 1094$), and did not undergo peer review ($n = 258$). We decided to further restrict the sample to those studies that collected and reported direct student statements and used those statements in their analysis. Such statements could include interviews, written reflections and focus groups, among other approaches. This restriction served to honour our goal of better understanding the overall content of qualitative and mixed methods research wherein students could self-define and describe their experiences with food insecurity. We therefore excluded 356 additional articles (e.g., conceptual papers, studies interviewing practitioners, etc.) that did not directly capture students' voices and/or experiences with food insecurity.

Our process relied upon the accepted rigour and standards of quality widely believed to exist in peer review to ensure the scholarship quality represented in our sample. We focused on critically examining the scholarship that exists, rather than assessing perceived quality of this work. Accordingly, we only included articles from reputable journals (i.e., we automatically excluded journals with a fee for publication that was for the scholarship itself rather than fees for open access) that contribute to the scholarly canon.

Data analysis and triangulation

Using our sample ($n = 15$), we gathered the article title, journal title, authors and publication year of each article into a primary spreadsheet (Linder et al., 2020; Williams & Thompson, 2022). We analysed each article individually and summarised the components, including methodology, data collection method, participant demographics and key findings. After completing our coding processes, we compared the initial individual coding results across team members and collapsed them into a joint primary document (Patton, 2015).

We then met weekly for 5 weeks to discuss areas of difference in our respective findings so that we could refine all coded data for final analysis. At our completion of code refinement, and to enhance our data triangulation (Denzin, 1978), we calculated our intercoder reliability using the Miles and Huberman (1994) standard wherein we divided our total number of agreements on assigned codes by quote ($n=104$) by the number of agreements plus disagreements ($n=119$). Our resulting intercoder reliability was 87%, which exceeds the recommended minimum of 80% (Miles & Huberman, 1994). Finally, we engaged in a round of descriptive statistical analysis and inferential qualitative coding that culminated in our forthcoming findings. This process of intercoder reliability is widely perceived as one way to facilitate and enhance research quality control.

Because we were interested in students' experiences as reported in their own words, we included quotes compiled from the articles included in our review. Since we arrived at these quotes after they have been synthesised through the research and publication process, we do not assume that they represent interviewees' unmediated experiences. Rather, we position these quotes as a rhetorical tool that embodies the themes that emerged through our own review. These excerpts are further leveraged to underscore the need for a more robust investment into qualitative research on campus food insecurity that focuses on students' own articulations of the issue.

Data boundaries and limitations

Although this study illuminates important findings, our approaches have some limitations. First, given our use of existing data, we acknowledge the boundaries of the scholarship included in our analysis and its overall scope. Our intention was to focus on qualitative and mixed methods research centring students' voices; therefore, our data was mediated through other authors and publications. Although it is standard to analyse secondary data in content analysis research, we recognise that the decision to excerpt student quotes means that our work is heavily contingent upon the quality of analysis—and, relatedly, the ethic of care—practised by those researchers upon whose articles we draw. The use of direct quotes, then, are a departure from prior US higher education content analysis studies (Linder et al., 2020; Williams & Thompson, 2022). However, it is generative given the qualitative student-focused aims of our study. The culmination of our approaches enabled us to consider these articles in context and conversation with one another. Furthermore, our use of students' voice can draw researchers' attention to the wealth of opportunities for future research in this content area.

Second, our findings and examinations depend exclusively on previously peer-reviewed research. Since the publication process is contingent upon human actors' interpretations of scholarly significance and privilege, the research we examined does not capture the totality of important work around this subject. We opted to exclude any publications perceived as predatory (e.g., pay-for-publication journals); however, we do not view our role as critical researchers as arbiters of research quality. Conceptions of quality and rigour in academic research are often racially, gendered and class-coded in the United States (King et al., 2017; Williams & Collier, 2022). Instead, we sought to review the state of the literature as it currently exists and to allow our critical perspectives to illuminate future research possibilities for improving what we know and understand about food insecurity.

Although we function under the assumption that the researchers approached their projects ethically, we have few ways to prove this beyond their reported triangulation and data limitations. Similarly, our decision to examine peer-reviewed journal research precluded us from including theses and dissertations that may have contained trends or insights not otherwise present in our sample. Although this decision decreased the accessible data available

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to us, we decided to underscore the paucity of peer-reviewed qualitative and mixed methods scholarship.

Beyond our design and analytic approaches, our reliance on the *PoP* software introduced an intermediary element between ourselves and the search engine that may have influenced search results returns (Jacsó, 2009). We accepted the limitations of our chosen software given the minimal resources available to us at the time of data analysis. The resource divide among scholars is another way available data is obscured. However, the PoP software offered us a consistent way to review, extract and clean data results from Google Scholar. Next, the *PoP* software capped each search to 1000 total results, which could influence which studies we could include and exclude. It is worth noting, however, that only one search—'food insecurity' AND 'college' OR 'higher education'—hit this 1000-result cap; the remaining searches each returned fewer than 1000 total results. Third, although unpublished scholarly research is included in the systematic reviews of food insecurity's rate of prevalence on college campuses, it was important to restrict our analysis to peer-reviewed articles as these are more likely to be read widely by scholars, practitioners and policy makers in and relating to higher education settings.

RESULTS

In this section, we discuss our sample articles' publication years, methods and methodological diversity ($n=15$). Next, we include the three major student experiences and trends. Our findings are illustrated by student quotes from within the sample. We indicate the sources from which the quotes are drawn (see Appendix A) to honour researchers' intervening role in selecting, framing and interpreting students' statements.

Publication year, methods and methodological diversity

As one of our research questions focused on analysing the frequency of publication and methodological approaches of qualitative and mixed methods food insecurity research, we delved deeply into the publication dates, methodological variance and methods of the articles included in our study ($N=15$). Of the articles we reviewed, the majority were published in 2019 ($n=8$), with 2018 ($n=5$) and 2017 ($n=2$) close behind. Articles appeared roughly evenly across three main disciplines/subject groups: health and nutrition ($n=6$), social sciences ($n=5$), and higher education ($n=4$), with no single journal publishing more than one included article. There were several more qualitative ($n=9$) than mixed methods ($n=6$) articles. Within these articles, the qualitative studies employed phenomenology ($n=2$), narrative inquiry ($n=1$), generic qualitative ($n=1$), and ethnography ($n=1$) methodology. Most qualitative and mixed methods articles we reviewed ($n=10$) did not include a specific methodological approach beyond noting they collected and analysed qualitative data (see Appendix A). Nearly half of the studies we examined ($n=7$) included multiple data collection methods (see Appendix A). Interviews ($n=10$) and surveys ($n=6$) were the most prevalent data collection methods while a small number of studies also used focus groups ($n=3$) and writing samples, photo elicitation, and so on ($n=3$).

Trends in students' experiences and understandings

Across the 15 articles we reviewed for trends in students' self-reported and self-described food insecurity experiences, we found three major themes. These themes were: (1)

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co-occurring basic needs; (2) academic, physical, psychological and social effects of food insecurity; and (3) institutional satisfaction and/or critique. To capture how students have articulated experiences with these issues in their own words, each theme is further illustrated by direct student quotes from the articles in our sample. Along with examining trends across the reported findings in articles, we offer these themes as an indicator of common threads associated with food insecurity on campus.

Co-occurring basic needs: Difficult choices, complex interactions and support structures

Across our sample, researchers found that participants reflected on food insecurity alongside other basic needs insecurity. Students suggested they needed more housing, transportation and childcare resources. In one study, a participant explained,

> Sometimes going to class and being hungry is better than spending your last $8 in the student center when you still got 'til Friday to make it through and you gotta put gas in your car … and you still have to have some left over in case of emergencies.
>
> (Study #15)

As demonstrated above, students often prioritised their basic needs by rank with food taking a secondary place—particularly when the food was costly. Indeed, students in the sample frequently noted how high-priced food options on campus exacerbated their budget woes. One student shared, 'I already have to spend more than $100 on transportation, and unfortunately [I am] forced to spend more than $30 a week on food alone because of the overpricing in the school' (Study #11). Our sample showed that, rather than go beyond budget or into debt, students skipped meals when remaining on campus for an extended period.

These comments from Studies #15 and #11 reflect a consistent trend in the literature. They point to the consideration of food as a 'flexible need' of lower priority than other essentials despite sufficient nutrition being integral to students' overall health. Moreover, some students experiencing food insecurity provide aid to their families and relatives despite struggling. One student explained, 'when someone can pitch in and pay for basic necessities like groceries, they do so for the entire family' (Study #3). This excerpt indicates that, while family can provide much-needed support for college students, it can also represent an additional responsibility on students' already limited time and resources. Family demands proved especially salient for student-parents who reported a similar focus on food consumption prioritisation. Student-parents often ensured their children had sufficient food even if it meant they themselves went without. As one study participant noted, 'I tend to not worry about myself as far as eating; I make sure that my son has enough, more than myself, [because at the] beginning of the semester usually money is very tight' (Study #14). This suggests student food insecurity has far-reaching implications beyond campus.

The concerns above exemplify how food insecurity reflects broader social class disparities. In one study, a participant succinctly connected these issues, noting, 'Eating … That's my main issue—no money to eat because we so living in poverty' (Study #3). The student continued, 'My phone is off because I didn't pay my bill cause my pay wasn't enough from my job' (Study #3). From this example, one can infer that this student, like others, is already making difficult choices about what to consider necessary expenses. The interconnection among food insecurity and social class worldviews also permeated students' experiences regarding work decisions. As one student explained, 'I had gotten a job just to have a little

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extra money in my pocket to use it for food or whenever I needed it … but after I knew the pantry was there, I could go there just in case' (Study #10). Campus food pantries are, then, lifelines for students who are negotiating their status as both a student and an employee. Accordingly, these difficulties underscore the significance of campus support as much as reliance on one's resourcefulness.

Another way resourcefulness manifested was in decision-making around student engagement. Students frequently reported attending campus events with free food to obtain a meal or to help stretch their food budget. As one study participant explained,

> I line myself up to go to functions and stuff where I know I can get the free food. There's always a lot of free food around campus … I try not to drink as much water and stuff because I know that if I drink a lot of water, it opens me up or makes me hungry … I'll just wait till later in the evening because I know I'm only basically going to eat this one time a day.
>
> (Study #4)

This highlights how students are working within the resources available to them, even if free food at campus events is insufficient in quantity and nutritional value to meet their needs long term. Thus, the savviness students demonstrate to mitigate food insecurity must be balanced by recognition that reliance on such informal forms of support is not without drawbacks.

Indeed, student resourcefulness is not without critique. Students often negotiate ongoing stereotyping of what it means to be food insecure when people at community food pantries and shelters remark, 'If [you] was really hungry, [you] shouldn't have a cell phone' (Study #13). Any questions of what qualifies as food insecurity and what it *looks* like to be food insecure are all connected to social class and classism. These social class indicators send messages that are interpreted and filtered by the person or people noticing them—even in spaces meant to ease social class barriers like food insecurity—so much so that students experience hyper-social-class consciousness and saliency. One student explained, 'There's just a lot of status symbol stuff on campus, and not having that status kind of makes you feel like, "Oh, everybody notices"—which I'm sure most people don't, but it's still like I'm just constantly aware' (Study #9). Here, this student's insecurities regarding class and their awareness of other students' class presentation, and assumed standing, suggests that these markers and indicators are used in their self-selection out of certain social circles and groups.

Social class worldviews—including consciousness, attitudes and saliency about social class (Liu, 2011; Liu et al., 2004)—are not limited to students from working-class backgrounds. Rather, students across the social class identity spectrum are aware that social class influences their experiences, and they have reactions to that inequity. In one study, the authors noted that 'food secure students reported feelings of awkwardness because they did not know how to deal with … bringing up the topic of hunger and food scarcity [out of fear that they] may embarrass their peers who are food insecure' (Study #1). Thus, conversations centred on social class identity were considered taboo (Liu, 2011; Martin et al., 2018), and even those students with some social class privilege intentionally avoided difficult conversations about food (in)security. Although they took these steps to decrease awkwardness, food secure students also inadvertently continued the culture of silence around social class broadly and campus food insecurity issues specifically, evading the difficulty of engaging in cross-class conversations.

In addition to helping themselves, study participants frequently shared the proactive steps they took to assist peers who they knew were also struggling. In one study, a student veteran explained, 'I go here and get free food to bring back to the lounge or faculty will give me food

to bring back to the veteran's lounge. Because some of us are struggling without nothing' (Study #14). Another student shared how they would sacrifice their limited resources to help a friend:

> There are often times when I don't have a lot of food left but a friend doesn't have any so I share what I have with them. This makes it harder for me because I don't have money to buy more food but I also don't feel right about letting someone else starve.
>
> (Study #8)

These examples indicate that some students struggling with food insecurity recognise they are not alone and the barriers they face are faced by others as well.

Academic, physical, psychological and social effects of food insecurity

In the studies we reviewed, students often noted how physical manifestations of being food insecure, such as headaches and fatigue, led to an inability to focus. They also described instances of falling asleep or even passing out in class. Because they could not concentrate on class material, study participants' grades often suffered. Several students further shared how food insecurity caused them to re-evaluate their academic goals. As one study participant disclosed, 'I didn't have the stamina so that almost made me quit science. I just felt weak most of the time. I felt like I couldn't continue with the STEM field because I didn't have the energy' (Study #12). These findings underscore added layers of struggle that food-insecure students face as they pursue degree completion.

The challenges posed by their situations also forced students to make trade-offs between their academics and basic needs. Unlike the choice between food and rent discussed earlier where students typically prioritised the latter, students in the studies we reviewed made divergent choices when it came to purchasing food or course materials. In one study, a student stated, 'So at the end of that, all those payments, when I get all my books and all that stuff, food is like the last thing I worry about' (Study #15). In contrast, another student shared that:

> I couldn't buy textbooks this semester because I simply couldn't afford them and food is more important, as is rent. [It's] really sad, and my schedule is so rough between two jobs and being a full-time student, my grades have really suffered.
>
> (Study #8)

As these experiences illustrate, the costs of college that go beyond the sticker price can play a significant role in students' ability to engage, and therefore succeed, academically.

As they navigated their experiences, food insecure students in the studies we analysed struggled with significant anxiety and stress. These feelings emanated from various sources, but typically revolved around the constant focus students had to maintain on their food supply and budget. This stress further distracted students from their performance at work and in school. One study participant shared, 'being so overwhelmed and stressed about food, the apartment, and all of that, that really affected those exams that particular week' (Study #9). The cumulative toll of this constant stress and anxiety often resulted in depression as students struggled with a negative self-concept and a pervasive lack of self-worth. As one student shared, 'You can be A+, but the inability of paying for food takes your self-esteem deep down' (Study #7). Interestingly, there were also a few instances in the articles we

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reviewed where students shared that their struggle resulted in feelings of irritability and resentment, particularly towards their peers who did not have to think twice about accessing their next meal.

Another common thread among students was a resistance to the food insecure label and the idea that they deserved support. One student indicated that, because they chose to go to school, they 'should be able to provide for themselves' (Study #1). Frequently, students referenced an internalised image of 'real' hunger, often associated with unhoused people and those experiencing abject poverty, that did not mesh with their self-concepts. As one student expressed, 'I don't see myself as someone who is food insecure and so when I say yes to these questions, I'm thinking like I'm making myself sound like I'm food insecure when really I'm not' (Study #13). More commonly, students recognised they were struggling but assumed their need was not as great as others', which led them to self-select out of receiving support due to a feeling they would be taking resources from those who could use them more.

Throughout the studies we reviewed, students also reported feelings of stigma, shame and isolation due to their food insecure status and need for food assistance. One student explained, 'I mean, there's a little bit of shame in not being able to go out to eat with people because you can't' (Study #6). Accessing resources, such as a campus food pantry, was a particular source of stigma and shame for students in the studies we examined. One student reported they 'would be embarrassed to be seen [at the pantry]' (Study #5) and 'don't want others to see that's where you get your food from' (Study #5). Despite the stigma surrounding pantry use, some students did develop positive associations with their campus pantry over time, such as one student who shared, 'At first I was self-conscious that I was going there but now I like tell people about it' (Study #10). As with our findings on peer support, such comments suggest student networks may be the most effective at increasing usership of campus support resources.

The stigma and social isolation students felt due to their food insecure status further impacted their campus engagement. Across the sample, students recalled making serious negotiations regarding participation in campus activities. In one study, a student explained, 'going to football games and spending $8 on water. I hate that. I'm like, "This is extortion"' (Study #9). In another, a student added, 'Making friends itself is expensive, so I don't really have a huge support network either' (Study #1). A third student, in another study, expressed, 'Food is such a social thing too. No one wants to say, "Oh, I can't go out just to be with my friends just because I don't want to spend money"' (Study #2). These examples highlight how everyday events and on-campus experiences can decimate the minimal funds food insecure students have available. However, not attending can also yield costs in the form of exclusion from campus culture and missed opportunities.

These missed opportunities can be both social and organisational. Another student shared a common sentiment that, 'people [l]ike social things, like "hey let's go out to the movies" or "let's go out to dinner or something" and I'm like "oh no"' (Study #6). In other instances, however, students expressed missing out on activities that could impact their lives for years to come. For example, students in several studies reinforced that they had to skip out on opportunities, such as national association functions, school organisations, study abroad trips and cultural events to maximise time for work or because they could not afford to participate and eat. Participation in sports was another area where students sacrificed opportunities due to food insecurity's physical and mental effects. In one instance, a student joined an athletic team but had to quit. They explained, 'I've wanted to play rugby since I got here, and I played for two weeks and was like, "Hey, I gotta go." … It kind of got thrown off just because school and work got in the way' (Study #7). Their precarity as a student forced them to pull away where the bonding, kinship and skills typically cultivated through team membership could have sustained them.

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As with campus engagement, stigma and shame surrounding their food insecure status also impacted how students engaged with their peers on and off campus. In describing how they felt compelled to lie about their situation, some students believed their peers would not understand. In contrast, others feared being judged or treated differently should their peers learn that they could not afford food. One student noted, ‘I just, I say “I'm not hungry” or that kind of stuff, like I come up with excuses to avoid participating in social gatherings requiring spending money on food’ (Study #13). As one student succinctly noted, ‘Food insecurity—it really affects everything. I try not to feel embarrassed, but it happens. It really hits home with relationships with other people’ (Study #12). Food insecure students can have strained peer relationships or seem unapproachable without some recourse for spaces to engage with peers over meals.

Institutional satisfaction and critique

Across the sample, students expressed various feelings towards their respective institutions, ranging from gratitude for a campus food pantry to scepticism and even anger about the inadequacy of their campus' response to food insecurity. On the positive side of the continuum, students expressed that the campus food pantry staff ‘really try to help as much as they can’ (Study #7). In another study, a participant noted how pantry staff ‘treated [me] with kindness and respect’ (Study #10). These interactions contributed to a normalisation of the pantry as a welcoming space for students where they could receive food without feeling a sense of blame or stigma for needing support.

Students also indicated that faculty served as a source of support in their struggle with food insecurity. Beyond offering academic aid, one student noted how faculty in their programme took a vested interest in their well-being outside the classroom, sharing:

> Literally, the dean, he said, ‘Come to my office.’ We sat down and he was talking to me and was like, ‘You know what? You're a really talented kid. I don't want you to drop out, and I don't want you to feel like nobody is here to help you.’ He literally reached in his own wallet and he gave me $60, and he said, ‘Your [professor] is going to take you shopping this afternoon and make sure that you're okay.’
>
> (Study #9)

Such individual acts of kindness, like campus food pantries, can be a godsend to the student receiving them; however, these resources are not enough to address the systemic underpinnings contributing to student food insecurity.

That food insecurity is indeed a systemic problem is a fact not lost on students in the studies we examined. Thus, it was common for students to critique their home campus. As one student expressed:

> There's so much money here, all this research, all that's going on. I think hunger shouldn't really be a problem at an institution like [redacted] … you know? We pride ourselves in being the best, but we can't even feed our own people.
>
> (Study #2)

In this instance, the student underscored the dissonance they felt from recognising the wealth of resources their campus had for some ventures that far exceeded those made available to fight student hunger.

Facing this dissonance, some students expressed anger and frustration. As one student indicated:

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> When one isn't able to afford a meal, it makes you frustrated and angry—angry with the institution that you're part of. It makes you frustrated at the macrocosmic institution of society that should be offering food—healthy food, good food—and a sustainable conduit through which food can be provided to people who need it more than others. Anger and frustration are certainly there. Then what comes from that is a sense of regret, sadness. It's a feeling that one is not worth food.
> (Study #12)

In essence, this student perceived their struggle with food insecurity not as a mere failing of higher education, and society at large, to secure individuals' basic needs, but as a devaluing of students' existence as human beings. These findings suggest that students harbour mixed feelings about their institution's commitments to food insecurity.

DISCUSSION

Our findings indicate that, despite food insecurity's recent rise to prominence in the higher education conversation, qualitative and mixed methods research centring student experiences remains largely absent from peer-reviewed journal publication. Indeed, only 15 articles met our inclusion criteria out of an initial pool of 18,340. That we encountered 1094 quantitative studies in that same initial pool underscores the continued scholarly elevation of quantitative methods over qualitative and mixed methods research. This reality is further exemplified by the gap between our sample and the larger body of non-peer-reviewed qualitative and mixed methods research (e.g., dissertations, theses and undergraduate papers) that exist. More troubling still is that few of the peer-reviewed articles we reviewed explicitly stated the qualitative approach researchers used in analysing their data, which prevents us from meaningfully examining how these researchers' positionality, assumptions and framing shaped their studies and their findings. Such methodologically neutral takes on food insecurity research can severely limit how we understand the researchers' philosophical assumptions and level of critical consciousness in their approaches to connecting with food-insecure students. Also problematic was the overwhelming use of one-on-one student interviews as a sole form of data collection. Such homogeneity restricts students' ability to reflect upon, construct and share more complex, nuanced descriptions of the challenges food insecurity poses to their lives. As a result, practitioners are left with a narrower, less experientially based and student-centred understanding of food insecurity upon which they can draw to address the issue among students at their respective institutions.

Our examination of qualitative and mixed methods research confirmed and furthered existing research on food insecurity (Broton & Goldrick-Rab, 2018; Hallett et al., 2019) and attended to calls to embrace subjectivity in social class research (Garrison & Liu, 2018; Liu, 2011; Liu et al., 2004; Rubin et al., 2014; Soria, 2018). Quantitative researchers have found that students often face other forms of basic needs insecurity in addition to food insecurity, most notably housing insecurity. This aligns with our content analysis findings that underscore how students' food insecurity is often tied to existing social class disparities (Baker-Smith et al., 2020) within the campus setting. The students in the studies we examined proved to have a heightened awareness of keenly visible social class markers on campus (e.g., clothing, dining out, student group membership) that impact how and with whom they interact (Williams & Martin, 2021). At the same time, students avoided discussing hunger and poverty—and, correspondingly, social class—thereby perpetuating food insecurity as a hidden issue not to be openly acknowledged and combatted (Crutchfield et al., 2020). Moreover, students in several articles we examined espoused beliefs downplaying their

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level of need, stating that they were not experiencing 'real' hunger or did not use available resources to avoid taking from others who 'need them more'. Despite this self-imposed disassociation from their situation, the students in the studies we examined demonstrated a concern for the needs of their families and peers, often sharing their limited resources or even sacrificing so that others would not go without.

Although research indicates that food insecure students are employed (Baker-Smith et al., 2020), our findings suggest that balancing work and school often exacerbates both students' food insecurity and academic performance. Reflecting previous findings on academic performance (Maroto et al., 2015; van Woerden et al., 2018), our findings suggest that struggling with the effects of food insecurity while also working long or odd hours can lead to elevated stress and a decreased ability to concentrate on coursework, which in turn inhibit students' classroom success and academic progress. Taken together, food insecurity threatens students' ability to persist to graduation, which may improve their overall social mobility and security.

Similarly, food insecure students consistently reported struggling to develop and maintain social relationships with their food secure peers for whom going out to eat, have drinks or see a movie were among the most common social bonding activities. Such activities can obliterate food-insecure students' already precarious budgets; however, lack of participation in formal and informal social activities also levies a cost on these students' ability to successfully navigate social groups and leadership opportunities on campus (Stebleton et al., 2020; Williams et al., 2021). This limited ability to participate in campus activities and social networks inhibits food-insecure students' opportunities to build the types of peer connections, personal and professional skills, and other forms of social capital often needed to establish a sense of belonging (Ardoin, 2020) and secure more stable, lucrative career options after graduation (Williams et al., 2021).

As they grappled with the array of ways in which food insecurity impacted their lives as students, participants in the studies we analysed espoused simultaneously competing views about their institutions. Notably, students consistently appreciated existing support resources, such as food pantries and empathetic faculty and staff. At the same time, however, these students also expressed reservations that institutional leaders would commit the resources needed to eliminate systemic food insecurity among students. In some cases, this led to frustration as students derided how institutional leadership boasted about the success of well-funded research and teaching efforts, while providing only meagre resources to support students mired in food insecurity—despite doing everything that was asked of them as students and members of the campus community.

Our findings unearth several links between food insecurity and other basic needs issues that can interfere with students' success on campus. These findings suggest that by removing food insecurity as a barrier to academic performance and campus engagement (Dubick et al., 2016; Fernandez et al., 2019), campus leaders can increase retention rates and financial stability (Baker-Smith et al., 2020) while helping students increase their independence and social mobility. Furthermore, the increased prevalence of food insecurity among already marginalised students (Camelo & Elliott, 2019; Goldrick-Rab et al., 2019; Payne-Sturges et al., 2018) suggests that addressing student food insecurity can help colleges and universities improve their ability to successfully enrol, educate and graduate low-income, under-resourced students.

IMPLICATIONS AND FUTURE DIRECTIONS

First, campus leaders can support food insecure students by advocating for, allocating resources to, and building awareness about new and existing support services. Additionally,

establishing food insecurity as a primary challenge that all institutions must proactively and systemically address can help reduce the stigma and isolation surrounding the issue, which was a common refrain in our findings and existing research (Stebleton et al., 2020). Next, bringing conversations about hunger, poverty and basic needs insecurity into the open can disrupt the *starving student narrative* (Crutchfield et al., 2020) that perpetuates and normalises the idea that student food insecurity (e.g., *eating ramen*) is somehow different from and more acceptable than other forms of food insecurity. In this vein, nuancing how food insecurity ties to social class identity and classism in higher education and society deserves greater exploration, particularly given the limited focus on social class we encountered in the 15 articles included in our review. Without this nuance, researchers may fail to understand the full scope of food insecurity issues among college students given the widely held, yet inaccurate, descriptions and stereotypes of who qualifies as a *college student*.

The threat food insecurity poses to students' mental health and academic performance was reflected across the existing research (van Woerden et al., 2018). Thus, we echo those researchers, practitioners and advocacy organisations (Cady, 2016; Gupton et al., 2018) who emphasise the importance of holistic wraparound services that support the multiple facets of student need. Similarly, we recognise the importance of informing students of available support resources by including a basic needs security statement on course syllabi (Goldrick-Rab, 2020), educating faculty and staff about campus and community support resources, and highlighting these resources during campus tours, student orientation and advising periods. As researchers and institutions alike consider the COVID-19 impact on student food insecurity, additional studies and comprehensive reviews exploring their findings are warranted. We position this article as a benchmark from which to steer future research that explores how COVID-19 has impacted food insecurity and higher education more broadly.

Institutions may also follow the lead of Muhlenberg College and the University of California-San Diego, among others, who have launched apps that notify students about campus events with free or leftover food (U.C. San Diego, n.d.; Keller, 2019). As underscored in the present study, free food from events is a significant source of supplementary nutrition. Thus, something as simple as daily social media posts announcing events with free and left-over food can help food insecure students find meals that they may not otherwise be able to access or afford. Even better, practitioners should seek to incorporate more nutritious, filling foods into their programming so that students who rely upon free food do not have to sacrifice their health.

While it is important to normalise food insecurity as an issue impacting all students, it is equally vital that we develop keener insight into the distinct ways students from specific backgrounds experience and make meaning of food insecurity in their lives. Among the studies we reviewed, only one (Study #14) explored students' experiences with a specific identity (i.e., Black men). As such, future qualitative and mixed methods research should focus on student populations at greater risk of food insecurity, such as Indigenous students, international students, and LGBTQ+ students (Diamond et al., 2020; The Hope Center, 2020). Lastly, researchers and practitioners alike should work alongside legislators and policy makers at the federal and state levels, particularly those involved in funding and setting eligibility criteria for financial aid and public assistance programmes (e.g., Supplemental Nutrition Assistance Program [SNAP]) to build more robust, responsive and accessible systems of student food security support. Such partnerships can help close the gaps for those at greatest risk of food insecurity by offering externally supported and funded resources not exclusively tied to campus attendance and enrolment status.

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CONCLUDING THOUGHTS

Without meaningful government action in the United States to address the rising costs of college, stagnant wages and depleted social service programmes, it falls to campus leaders at all levels to embrace the challenge of addressing student food insecurity. The importance of such commitments is particularly heightened as the COVID-19 pandemic has worsened the food secure status of many students (Goldrick-Rab et al., 2020; Owens et al., 2020). Thus, researchers and practitioners across disciplines and institution types must develop a keener understanding of how students experience and make meaning of being food insecure. Of particular importance are dimensions extending beyond simple conceptions of 'hunger' to incorporate the devastating psychological, social and academic effects food insecurity can have on college and university students (Fernandez et al., 2019; Wattick et al., 2018). Further, using an identity-conscious perspective in the collection and execution of food insecurity research can allow for a more nuanced understanding of how this issue impacts students. A more expansive examination can help guide campus leaders and government policy makers toward the type of equitable, systemic changes needed to eliminate student food insecurity.

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

ETHICS STATEMENT

This study did not require IRB approval, given it is a secondary analysis. We followed the BERA code of ethics.

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APPENDIX A

Article sample details.

Assigned number	Authors	Title	Publication year	Journal	Geographical or campus location(s)	Methodology	Data collection methods
1	Henry, L.	Understanding food insecurity among college students: Experience, motivation, and local solutions	2017	*Annals of Anthropological Practice*	University of North Texas (p. 6).	*Ethnographic Qualitative Research* '… the goal of this ethnographic and qualitative research was to investigate hunger and food insecurity more deeply, rather than broadly.' (p. 8)	*Interviews and Focus Groups* 'The population for this research was UNT students who were food insecure and food secure. The sample consisted of 27 semi-structured interviews with food insecure students and five focus groups with food secure students.' (p. 9)
2	Watson, T. D., Malan, H., Glik, D., & Martinez, S. M.	College students identify university support for basic needs and life skills as key ingredient in addressing food insecurity on campus	2017	California Agriculture	University of California, Los Angeles (UCLA; p. 131)	*General? Qualitative Methods* 'Our study used qualitative research methods …' (p. 131)	*Focus Groups* 'We conducted 11 focus group discussions between March and June 2016 with 82 students enrolled at University of California, Los Angeles (UCLA).' (p. 131)
3	Broton, K. M., Weaver, K. E., & Mai, M.	Hunger in higher education: Experiences and correlates of food insecurity among Wisconsin undergraduates from low-income families	2018	Social Sciences	'42 public colleges and universities in Wisconsin' (p. 1)	*General? Mixed Methods* 'In this mixed-methods analysis, we used the quantitative and qualitative data in an iterative fashion to inform the other' (p. 7)	*Surveys and Interviews* 'In this mixed-methods paper, we use survey data from students at 42 public 2- and 4-year colleges to examine which individual and contextual factors are associated with students' food security during college and longitudinal interview data to elaborate on their food insecurity experiences, key barriers, and coping mechanisms. (p. 2)

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APPENDIX A (Continued)

Assigned number	Authors	Title	Publication year	Journal	Geographical or campus location(s)	Methodology	Data collection methods
4	Collier, D. A., & Parnther, C.	Conversing with Kalamazoo Promise scholars: An inquiry into the beliefs, motivations, and experiences of tuition-free college students	2018* *Advanced online access	*Journal of College Student Retentions: Research, Theory & Practice*	'Large, regional public research institution in an urban setting in Southwest Michigan' (576)	*General? Qualitative Methods* 'Qualitative Inquiry' (p. 572)	*Semi-structured Interviews* 'The sample was invited to engage in interviews via mass e-mails…;' '… in-depth questions interviews were intentionally positioned to be one-on-one'; 'Before the interview, students engaged with a survey that captured demographic data and self-reports of mental and physical health and average hours worked per week' (p. 577)
5	El Zein, A., Mathews, A. E., House, L., & Shelnutt, K. P.	Why are hungry college students not seeking help? Predictors of and barriers to using an on-campus food pantry	2018	Nutrients	University of Florida (p. 1)	*Mixed Methods* 'The authors distributed a cross-sectional, non-probability, Web-based survey' (p. 2) 'A subsample of students… provided qualitative answers' (p. 9)	*Survey (with both Quant and Qual response items)* 'The authors distributed a cross-sectional, non-probability, Web-based survey' (n=899; p. 2) 'A subsample of students who did not visit the pantry provided qualitative answers that yielded four thematic categories based on 68 responses.' (p. 9)
6	Mukigi, D., Thornton, K., Binion, A., … & Brown, O.	Food insecurity among college students: An exploratory study	2018	*Journal of Nutrition and Health Sciences*	'Public university in southeast United States' (p. 2)	*General? Qualitative Methods* 'This qualitative study used individual interviews' (p. 2)	*Interviews* 'Participants completed one semi-structured in person interview that lasted between 30 and 45 min.' (p. 2)

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APPENDIX A (Continued)

Assigned number	Authors	Title	Publication year	Journal	Geographical or campus location(s)	Methodology	Data collection methods
7	Paola, J., & DeBate, R.	Employing evaluation research to inform campus food pantry policy	2018	*Health Behaviour and Policy Review*	The University of South Florida (USF; p. 83)	*Mixed Methods* 'The current evaluation research comprised both process and impact evaluation using mixed-methods' (p. 84)	*Survey*; *Academic Achievement Data (Banner)*; & *Assessment* 'Data were obtained from 3 sources, including: (1) Feed-A-Bull Intake Assessment; (2) university data retrieved from Banner software; and (3) user Feed-A-Bull Satisfaction Survey' (p. 84)
8	Brescia, S. A., & Cuite, C. L.	Understanding coping mechanisms: An investigation into the strategies students use to avoid, manage, or alleviate food insecurity	2019	*Journal of College and Character*	'A 4-year, research intensive, public university in the Northeast' (p. 313)	*Mixed Methods?* 'The survey instrument included items about student meal plans, involvement in hunger relief efforts, place of residence, personal finances, and one open-ended question.' (p. 313)	*Survey (with both Quant and Qual response items)* 'All 34,596 matriculated undergraduate students at a 4-year, research intensive, public university in the Northeast were invited to participate in the online Qualtrics® survey via e-mail…' (p. 313)
9	Cliburn Allen, C., & Alleman, N. F.	A private struggle at a private institution: Effects of student hunger on social and academic experiences	2019	*Journal of College Student Development*	'Private, selective, normatively affluent institution' (p. 52)	*Phenomenological Qualitative Research* 'In this study, we used qualitative research methods and a phenomenological approach to conceptualize students' experiences of food insecurity at a private university' (p. 55)	*Semi-structured Interviews* 'We conducted single interviews with 10 students… using a semi-structured protocol'(p. 57)

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APPENDIX A (Continued)

Assigned number	Authors	Title	Publication year	Journal	Geographical or campus location(s)	Methodology	Data collection methods
10	Daugherty, J. B., Birnbaum, M., & Clark, A.	'Having enough:' Students' understanding of food insecurity and campus food pantry use	2019	*Journal of Poverty*	'A regional research university located in the rocky mountain west' (p. 603)	*Narrative Inquiry Qualitative Research* 'We selected narrative inquiry as our research design' (p. 603)	*Semi-structured Interviews; Journaling; and Photo Elicitation* 'Data collection included 4–6 semi-structured interviews over three months during the fall 2016 and spring 2017 semesters, ranging 1–1.5 hours, with each participant… Each participant had one in-person meeting with the primary researcher after initial virtual sessions; all other sessions were conducted over the phone or via skype… This was supplemented with journaling and photo elicitation …' (p. 604)
11	Ilieva, R. T., Ahmed, T., & Yan, A.	Hungry minds: Investigating the food insecurity of minority community college students	2019	*Journal of Public Affairs: An International Journal*	'HSI and public community college within the CUNY system' (p. 3)	*Mixed Methods (Survey with Narrative Inquiry)* 'This research was based on a combined quantitative survey and qualitative narrative assessments instrument containing 61 multiple-choice questions and three narrative prompts' (p. 2)	*Survey and Short Stories* Participating students filled out a survey instrument along with three narrative prompts, giving researchers a holistic understanding of how students accessed and perceived food inside and outside of campus' (p. 1); 'Participants wrote narratives (i.e., short stories)' (p. 5)

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APPENDIX A (Continued)

Assigned number	Authors	Title	Publication year	Journal	Geographical or campus location(s)	Methodology	Data collection methods
12	Meza, A., Altman, E., Martinez, S., & Leung, C.W.	'It's a feeling that one is not worth food': A qualitative study exploring the psychosocial experience and academic consequences of food insecurity among college students	2019	*Journal of the Academy of Nutrition and Dietetics*	University of California, Berkeley (p. 1714)	*General? Qualitative Methods* '… questions remain about how college students experience food insecurity differently from the general population and, subsequently, how food insecurity affects their health and well-being.13,25–27 These questions can be better addressed and answered by using qualitative research methods. Thus this study aimed to critically explore the impact of food insecurity on college students' psychosocial health and academic performance using in-depth interviews with students attending a large California public university' (p. 1714)	*Semi-structured Interviews* 'In-depth, semi-structured interviews were used to explore the experiences of 25 undergraduate students' (p. 1714)

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APPENDIX A (Continued)

Assigned number	Authors	Title	Publication year	Journal	Geographical or campus location(s)	Methodology	Data collection methods
13	Nikolaus, C. J., Ellison, B., & Nickols-Richardson, S. M.	College students' interpretations of food security questions: Results from cognitive interviews	2019	*BMC Public Health*	Public '4-year university with traditionally Aged undergraduate students' (p. 15).	*General? Mixed Methods* 'During a 60-min session, participants completed the 10-item Adult FSSM and then were cognitively interviewed about their responses using the think-aloud method. Interview transcripts were analysed by two researchers using a collaborative process and basic interpretative approach' (p. 1); A random sample of undergraduate students between 18 and 24 years of age was recruited for an initial quantitative study' (p. 2)	*Survey Questionnaire and Interviews* 'Students who participated were scheduled for a 60-min session where they completed paper-and-pencil questionnaires (both the 10-item USDA FSSM and demographic items) and were cognitively interviewed about the FSSM items' (p. 3)
14	Vasquez, M. C., Vang, M., Garcia, F., Harris III, F.	What do I eat? Where do I sleep?: A concern for men of colour in community college	2019	*Community College Journal of Research and Practice*	'Participants were enrolled in one of four community colleges in the Western region of the United States' (p. 299)	*Phenomenological Qualitative Research* 'This research followed the tenets of phenomenology' (p. 298)	*Focus Groups and Individual Interview* 'The research team conducted a total of 16 focus groups and five one-on-one interviews' (p. 299)
15	Zigmont, V. A., Linsmeier, A. M. & Gallup, P.	Understanding the Why of College Student Food Insecurity	2019	*Journal of Hunger & Environmental Nutrition*	'Mid-sized public university in New England' (p. 2)	*Generic Qualitative Research* 'A generic qualitative study design was utilized' (p. 1)	*Surveys and Semi-structured Interviews* 'This qualitative study used surveys and semi-structured interviews' (p. 2)

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