

ASSOCIATION BETWEEN HOUSING INSECURITY AND FOOD INSECURITY IN COLLEGE AND UNIVERSITY STUDENTS IN THE UNITED STATES: A SYSTEMATIC REVIEW

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INTRODUCTION

Food insecurity is defined by the U.S Department of Agriculture (USDA) as a lack of consistent access to enough food for an active, healthy life, while housing insecurity encompasses a broad set of challenges including an inability to pay rent or utilities or the need to move frequently. Food and housing insecurity are major challenges for college and university students in the United States. According to the USDA, the most extreme form of housing insecurity is homelessness, in which an individual is without a place to live. Limited literature estimates the rate of food insecurity and housing insecurity at 14% to 59% and 35% to 60%, respectively among college and university students in the United States. In 2017 to 2018, the rate of food insecurity among college and university students was 25.4% higher than the rate (11.1%) of food insecurity in U.S. households. Similarly, the rate of housing insecurity among college and university students was 23.2% higher than the rate (13.3%) of housing insecurity in the overall U.S. population. Research suggests that the myriad of problems—for example negative social relationships, self-perceived mental and physical health—associated with a lack of basic needs undoubtedly impedes academic success. Despite the fact that research on food and housing insecurity among college and university students has grown, existing research does not report the prevalence of a possible association between food insecurity and housing insecurity among college and university students in the United States. Furthermore, although attempts have been made to systematically identify students who are food insecure in colleges and universities, there is a lack of a systematic approach to identifying students who are housing insecure across colleges and universities. To date, no known study has specifically assessed the association between food insecurity, housing insecurity, and/or homelessness at an open enrollment unified community college and university institution. Perturbingly, food and housing insecurity among college and university students is a public health issue and the burden among students is steadily increasing. Against this background, we attempted to answer the question: What is the association between food insecurity and housing insecurity among college and university students, and further, how might this association impact students.

PURPOSE

To systematically review the association between food insecurity and housing insecurity among college and university students in the United States.

METHODS

We systematically searched the relevant literature. Additional details about the search process are outlined in Figure 1.

- Reviewers also hand-searched references for articles that met the inclusion criteria.
- Articles were preliminarily screened by four reviewers starting with titles and abstracts relating to food and housing insecurity.
- Each reviewer worked independently before regrouping to discuss findings and deliberate discrepancies.
- The remaining articles were then searched thoroughly and put through the inclusion and exclusion criteria.
- The team of reviewers compiled the articles and manually removed duplicates from the grouping in a shared document.
- When discrepancies arose, the team discussed and came to a consensus to move forward.
- The qualifying articles were assessed for risk of bias by two reviewers using the CLARITY group at McMaster University criteria.
- Each reviewer independently used the risk of bias tool to assess the qualifying articles.
- The scores were then compared, and the two reviewers came to a consensus about the final assessment.
- Data were extracted and recorded in a chart on a shared document as follows: study design, participant characteristics, results on prevalence of housing and food security among participants, as well as secondary outcomes such as academic performance. As appropriate, descriptive data analysis was employed, and data were reported as percentages.

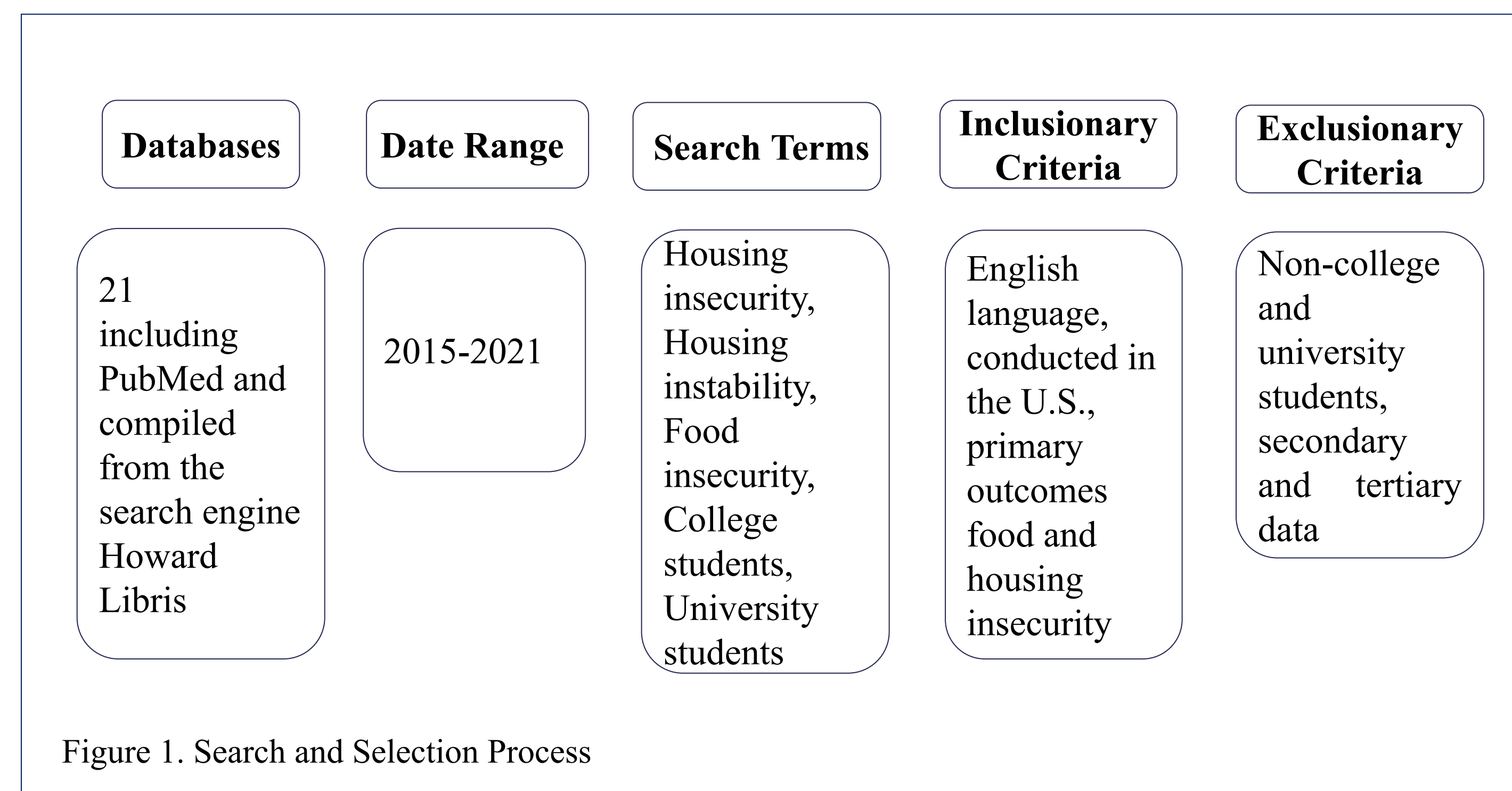


Figure 1. Search and Selection Process

RESULTS

Of the 2,780 articles identified, ten cross-sectional studies were included in the final review. Based on the quality assessment conducted, five of the studies were determined to be low risk, two moderate risk and the rest were qualitative studies that were not subjected to quality assessment. Results of the search and selection process are presented in Figure 2 (PRISMA). Participants were majority White and Asian females. Additional demographic data are shown in Table 1. Housing and food insecurity rates from the seven quantitative studies are shown in Table 2. Collective findings revealed that the prevalence of food insecurity was 33.1% and housing insecurity was 30% among college students as shown in Table 2. Further, one study examined and showed that freshmen and sophomores were significantly more likely to be food insecure than seniors. Two studies that examined the association between food and housing insecurity and ethnicity, found that Hispanics and African Americans experienced more housing and food insecurity compared to whites ($p < .0001$). Moreover, one study examined and revealed that students experiencing housing insecurity and/or food insecurity significantly affected class attendance and academic performance compared to those not experiencing food and housing insecurities ($p < 0.001$), and this was corroborated by results from one of the qualitative studies. The qualitative studies in our review, revealed the following characteristics of students who were food and housing insecure:

- Feeling ashamed
- Not utilizing food pantries and other resources provided
- Tendency to isolate themselves
- Prioritizing housing over food
- Diminished mental, emotional, and physical health
- Difficulty focusing on academics
- Negatively impacted academic performance

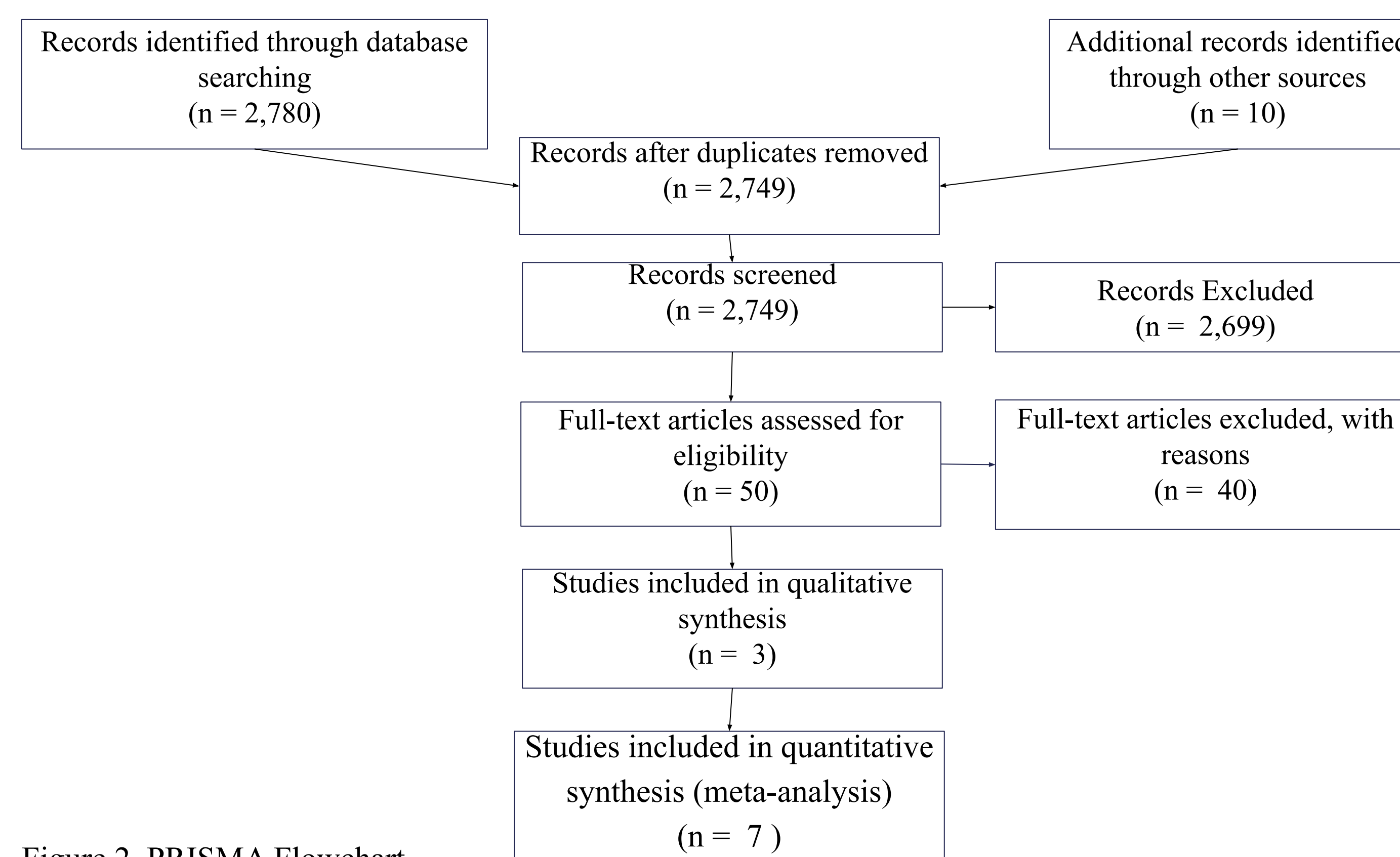


Figure 2. PRISMA Flowchart

Table 1. Demographic Characteristics of Respondents (n=81,659)

Characteristics	%
Gender, female	70.6
Gender, male	27.8
Gender, other	1.6
Race/ethnicity	
white	39.4
Asian	25.0
African American	16.1
Native American	2
Multiracial, other	17.4

Table 2. Participants Experiencing Housing Insecurity, Food Insecurity or Both (n=81,325)

Outcome Variable	Description	%
Housing Insecurity	Not knowing where to sleep for the next two weeks	30
	Extreme form of housing insecurity: couch surfed, lived in vehicles, lived in places not intended for habitation	
Food Insecurity	Skipping meals, inability to eat balanced meals	33.1
	Not eating for more than 1-2 days	
Housing Insecurity & Food insecurity		12.4

DISCUSSION

The purpose of the study was to determine the association between food and housing insecurity in college and university students. Food and housing insecurity appear to be interrelated and greatly influence one another. Previous students have found that food and housing insecurity among college and university students represent a burden to this population and are both steadily increasing. The rates of food and housing insecurity found in our review fell within the range reported by previous studies. To our knowledge, this was the first study to systematically examine the rate of both, occurring simultaneously among college and university students. Therefore, it was challenging to find data to which we could compare our finding that 12.4% of college and university students experienced both food and housing insecurity. Our findings, though generated from sparse literature, exposed many factors that contributes to food and housing insecurity and their relationships. Moreover, the review shed light on the negative effect of food and housing insecurity on class attendance and performance. The findings are extremely valuable in the context of research on health disparities and determining the needs of students faced with disproportionate opportunities. They highlight significant implications as well as opportunities for improving health outcomes associated with food and housing insecurity in colleges and universities through the use of mobile applications and other technology to communicate available resources, especially to students who might be ashamed to seek resources in person, as well as enhancing awareness and education about resources for college staff who can in turn provide information to students when needed.

CONCLUSIONS

- Food and housing insecurity affects a significant proportion of college and university students in the US.
- Many students experience both housing and food insecurity simultaneously.
- The burden significantly impact students differently as a function of gender, race and ethnicity, which requires strategies that address these differences.
- Insight on practice, policy, and research efforts to increase food and housing security in college students should be explored in future studies.
- Developing strategies that target these two major issues may help to increase the academic success of at-risk college and university students.

REFERENCES

Brotan, K. M., & Goldrick-Rab, S. (2018). Going Without: An Exploration of Food and Housing Insecurity Among Undergraduates. *Educational Researcher*, 43(2), 121-133. doi: 10.1020/0013189X17741303

Crutchfield, R. M., Carpena, A., McCloy, T. N., & Maguire, J. (2020). The starving student narrative: How normalizing deprivation reinforces basic need insecurity in higher education. *Families in Society*, 101(3), 409-421.

Crutchfield, R. M., Maguire, J., Campbell, C., Charman, D., Layman, D., & Nunez, S. (2020). "I'm Supposed to Be Helping Others": Exploring Food Insecurity and Homelessness in Social Work Students. *Journal of Social Work Education*, 56(sup1), S150-S162. DOI: 10.1080/10437797.2020.1741478

El Zein, A., Mathers, A. E., House, L., & Shelton, K. P. (2019). Why are hungry college students not seeking help? Predictors of and barriers to using an on-campus food pantry. *Nutrients*, 10(9), 1163. https://doi.org/10.3390/nu10091163

Goldrick-Rab, S., Richardson, J., Schneider, J., Hernandez, A., & Cady, C. (2019). Still Hungry and Homeless in College: Results from a National Study of Basic Needs Insecurity in Higher Education. Retrieved from https://www.theccc.org/wp-content/uploads/2018/05/Wisconsin-HOPE-Lab-Still-Hungry-and-Homeless.pdf

Goldrick-Rab, S., Richardson, J., Schneider, J., Hernandez, A., & Cady, C. (2018). Food and housing insecurity among NC State students. Retrieved from https://data.ncsu.edu/wp-content/uploads/2018/03/NC-State-Food-and-Housing-Insecurity-1.pdf

Hoge, A., Stephenson, T., Pessell, M., Revell, B., VanMeter, C., Stahl, D., ... & Crosby, C. (2020). College food insecurity: implications on student success and applications for future practice. *Journal of Student Affairs Research and Practice*, 1-18.

Payne-Sturges, D. C., Tjebk, A., Caldeira, K. M., Visconti, K. B., & Arria, A. M. (2018). Student hunger on campus: Food insecurity among college students and implications for academic institutions. *American Journal of Health Promotion*, 32(2), 149-154. doi:10.1177/08980101177179620

Silva, M. R., Klenert, W. L., Shepard, A. V., Cantrell, K. A., Freeman-Coppidge, D. J., Tsoy, L., ... & Parrow, M. (2017). The relationship between food security, housing stability, and school performance among college students in an urban university. *Journal of College Student Retention: Research, Theory & Practice*, 19(3), 284-299.

Thompson, L., Caste, C., Gayle, R., & Johnson, A. (2019, June 13). The Implications of Food Insecurity at a HBCU (P04-066-19). Retrieved January 31, 2021, from https://www.ncel.nrh.edu/pnc/articles/PMC6579337/

Travis, R. R., & Hedwig, T. (n.d.). Food and housing insecurity and homelessness among students in an open-enrollment university*. Retrieved January 31, 2021, from https://www.usf.edu/online/doi/abs/10.18801/USF09.2020.1670987

Vasquez, M. C., Vang, M., Garcia, F., & Harris III, F. (2019). What do I eat? Where do I sleep? A concern for men of color in community college. *Community College Journal of Research and Practice*, 43(4), 295-306.