

The Relationship Between Food Security, Housing Stability, and School Performance Among College Students in an Urban University

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Abstract

Although younger populations, such as emerging adults, have been shown to be particularly susceptible to food insecurity and housing instability, the current research is predominantly devoid of literature examining these experiences on college campuses. The present study explores the food and housing vulnerabilities that may be barriers to academic success for students who attend an urban university. The results of a survey of students ($n = 390$) indicated that nearly a quarter of the students had experienced some level of food insecurity. Furthermore, students reported disproportionately high rates of housing instability, which negatively affected their class attendance and performance as well as their ability to continue at the university. Implications of these findings pertaining to students, college personnel, administrators, and other stakeholders are discussed.

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Poverty and homelessness affect many people in the general population of the United States. The National Alliance to End Homelessness (2015) found that more than 578,000 people living in the United States experience homelessness on a given night. However, younger populations are particularly susceptible to housing instability (HI), homelessness, or poverty. Specifically, 18- to 24-year-olds, or emerging adults (Arnett, 2000), are uniquely vulnerable. Approximately 4.6% of individuals aged 18 to 28 have experienced an episode of homelessness (Shelton, Taylor, Bonner, & van den Bree, 2009). Although there is not a uniform federal definition of homeless youth (Toro, Dworsky, & Fowler, 2007), HI is defined by the McKinney-Vento Homeless Assistance Act, Subtitle VII-B, as the lack of a fixed, regular, and adequate nighttime residence or sharing housing with others because of the loss of previous shelter (Wong, Elliott, Reed, & Ross, 2009). Emerging adults who experience an episode of homelessness, chronic homelessness, or chronic poverty resulting in HI are often still able to attend college and work toward earning a degree. Unfortunately, although there is federal legislation enacted to support students through high school graduation, limited safeguards are in place for students attending postsecondary education (Hallett, 2010).

Annually, tuition has increased in response to poor economic conditions and subsequent state budget cuts (Hemelt & Marcotte, 2011). Despite the mounting fiscal pressures increasing the costs to attend college, there is also a rise in emerging adults managing HI, food insecurity (FI), and poverty to attend college (Toro et al., 2007). For example, when City University of New York (CUNY) undertook one of the most comprehensive assessments of housing among college students, survey results showed that approximately 1% of students lived in a shelter, 11% lived in public housing, and 6% received a rental supplement (e.g., Section 8 housing; Tsui et al., 2011). Further, in the 2013–2014 academic year, 56,224 students self-identified as being homeless on the Free Application for Federal Student Aid (B. Duffield, personal communication, November 5, 2015). The overall number of homeless college students is most likely higher, however, as students may not indicate being homeless due to stigma, fear of repercussions, or the temporary nature of their homelessness (Moon Johnson, 2015; Ringer, 2015).

A majority of postsecondary institutions do not provide on-campus housing to undergraduate students (Snyder & Dillow, 2012). Of undergraduate students attending U.S. postsecondary institutions (i.e., 2- and 4-year colleges and universities) in the 2007–2008 academic year, 14% lived on campus, 54% lived off campus, and 32% lived with parents or relatives (Snyder & Dillow, 2012). In a study that examined the relationship between living on campus and academic

performance, campus engagement, and stress, the authors found that although commuting to school resulted in lower class attendance, less campus involvement, and higher levels of chronic stress, there were no significant difference in mean grade point average (GPA) between residential and commuter students (Alfano & Eduljee, 2013). For students experiencing HI, unique barriers related to their housing status (e.g., insufficient housing options, inadequate financial resources) may impede their ability to fully participate in postsecondary education (Hallett, 2010). Thus, efforts to decrease the stressors associated with HI are essential for the promotion of both educational, health, economic, and social development in emerging adults.

Unstable housing situations are not the only challenges facing emerging adults who attend college. Another difficulty these students face is reduced availability and access to nutritious food. FI has been defined as the limited availability or decreased accessibility of healthy food, as well as the psychological effects that these conditions may induce for these individuals (Barrett, 2002; Campbell, 1991; U.S. Department of Agriculture, Economic Research Service [USDA], 2014). According to the USDA, in 2014, 14% of households in the United States were considered food insecure (Coleman-Jensen, Rabbit, Gregory, & Singh, 2015). Although existing research is devoid of literature that focuses exclusively on FI on college campuses, the few published estimates of FI rates for students enrolled in community and 4-year colleges have ranged from 14% to 59% (Chaparro, Zaghoul, Holck, & Dobbs, 2009; Freudenberg et al., 2011; Gaines, Robb, Knol, & Sickler, 2014; Maroto, Snelling, & Linck, 2015; Patton-López, López-Cevallos, Cancel-Tirado, & Vazquez, 2014).

FI is specifically detrimental to college students because it can also affect their academic performance. For example, students who face FI may have added difficulty attending classes (Roustit, Hamelin, Grillo, Martin, & Chauvin, 2010; Seligman, Laraia, & Kishel, 2010). Further, FI may produce fatigue, difficulty concentrating, anxiety, and irritability, all of which can affect students' classroom performance (Kleinman et al., 1998; Wehler, Scott, & Anderson, 1991). College GPAs may also be affected by FI as Maroto et al. (2015) explored the effects of FI on students' GPA and found food insecure students were more likely to have a lower GPA than their peers who were food secure.

Recognizing this growing problem, colleges across the country are aiming to provide some type of food assistance services (Sandoval, 2012). For example, according to a survey conducted among undergraduate students attending CUNY, although 39.2% of students reported experiencing FI, only 7.2% reported taking advantage of food assistance on campus (e.g., food pantry, food stamps; Freudenberg et al., 2011). This demonstrates that although colleges may provide resources for food assistance, the struggle for FI remains if students do not use them. To help ameliorate this issue, students from the University of Maryland, College Park, collaborated and formed the Food Recovery Network with a mission to donate unused food items to local food pantries and shelters

(Tucker, 2013). Although the Food Recovery Network demonstrates clear benefits to the communities it serves, research on the FI of college students suggests that food services should be tailored specifically to the college and its own students, to modify existing assistance programs, and create additional on-campus programs (Chaparro et al., 2009; Freudenberg et al., 2011). Some universities—such as the University of Hawaii at Manoa—have done this by creating on-campus food services (Chaparro et al., 2009). In addition, CUNY supports enrolling students in a federal food-stamp program, creating partnerships between campuses and food companies, and increasing food pantries and programs available on campus (Freudenberg et al., 2011). In summary, although it appears a small number of colleges and universities are beginning to address the food needs of their student body, additional research is needed regarding how FI and HI may act as barriers to academic success within institutions of higher education.

Purpose of Study

The purpose of this study was to identify the housing and food needs of students attending a large and diverse urban campus and explore how these needs impact their academic success. The University of Massachusetts Boston (UMass Boston) has attempted to provide resources for students who are struggling with HI and FI, particularly because it does not offer on-campus living options. The campus is located in an urban setting, and 59.5% of full-time UMass Boston undergraduate students receive need-based aid in the form of scholarships and grants. Four years ago, the university established an office on campus to address students' nonacademic struggles, such as housing and food availability. The Office of Urban and Off Campus Support Services, also referred to as U-ACCESS, was created to offer a range of comprehensive support and advocacy services to students who may be experiencing homelessness, persistent poverty, chronic hunger, or other unanticipated events in their lives. With the aim of aiding students in achieving their academic goals, U-ACCESS collaborates with community providers and other offices on campus, such as health services, public safety, and academic support services.

As of fall 2015, full-time undergraduate tuition and mandatory fees for a Massachusetts resident attending UMass Boston is \$12,682 annually. With the UMass Boston average need-based award approximately \$9,847 per year, many students are left to fund critical expenses for food, transportation, and housing through their own means. This situation is not unique to UMass Boston, as financial packages are not guaranteed to cover all college expenses (Hallett, 2010). However, UMass Boston students have an additional factor to consider: They must pay the exponentially higher Boston rental prices that are \$825 more per month than the national average ("Boston Home Prices & Values," 2015). With the annual tuition and mandatory fees of \$12,682, the average need-based

award being \$9,847, and the median apartment rental cost of \$2,400, UMass Boston students may face critical financial challenges.

A partnership was created between U-ACCESS and the new doctoral program in the Department of Counseling and School Psychology to use the abilities and resources of these programs to address the different needs present among the college community. The doctoral students from the program's inaugural class conducted interviews with members of the college community and identified U-ACCESS as a program that would benefit from a partnership with Department of Counseling and School Psychology. This partnership began an effort to systematically explore the food and housing needs of the students and its influence on school performance. By uncovering the food and housing needs of the student body, the university would be better prepared to provide resources to confront these challenges to enhance academic experiences and increase graduation outcomes. These issues have been identified as especially noteworthy, as the most recent data from fall 2011 indicated that the retention rate (students who returned for their second consecutive fall semester) was 78.8%, whereas the persistence rate (students who returned for their third consecutive fall semester) for the same cohort was 63.1%. The most recent 6-year graduation rate (fall 2007 cohort) for the university showed that just less than half of students who entered graduated within 6 years (44%).

The purpose of the present study was to explore the housing and food vulnerabilities that may be barriers to academic success. We asked the following research questions: (a) What are the rates of students on campus experiencing HI and FI; (b) do HI and FI affect students' abilities to perform and attend classes; and (c) do those who have experienced homelessness and severe FI demonstrate greater risks for failing courses and withdrawing from the university? We examined the following three variables via a self-report survey: housing stability, food security, and class performance. We conducted descriptive statistics and *t* tests to assess the presented level of needs and examine the relationships between the identified variables and demographics.

Method

Participants

The self-report survey was collected in the spring and fall semesters of 2014. The university enrollment was approximately 16,000 students, and the median age of undergraduate students was 22. In this study, 56% of participants were between the ages of 18 and 22, a third of participants (34%) were between the ages of 23 and 30, and 10% were over the age of 31. The participants in the present study were approximately reflective of the demographics of the university's student body (see Table 1).

Table 1. Participant Demographics ($n = 390$).

	Participant percentage	University percentage
Gender		
Male	39	41
Female	60	59
Race		
African American	13	16
White	43	56
Hispanic	9	12
Asian	26	12
Two or more races/Other	9	NA
Academic status		
Undergraduate	87	76
Graduate/Certificate	13	24

Materials

The authors completed a literature review to examine other surveys on FI and HI with college students with the goal of creating a survey to understand the needs of UMass students. Doctoral counseling and school psychology students, the school psychology program director, and a university administrator from U-ACCESS collaborated to create this metasurvey. The survey was piloted using two focus groups consisting of seven students (total) who self-identified as having food or housing insecurity. The purpose of the focus groups was to assure suitable wording of questions and response options. The duration of each focus group was 1 to 2 hours. The procedures for the focus groups were as follows: (a) confidentiality disclosure to participants and explanation of the goal of the focus group, (b) administration of the survey, and (c) a final discussion. During the final discussion, the students who took the survey gave input as to potential changes to the questions or response options. Following the focus groups, the authors discussed each suggestion and revised the survey accordingly.

The final version of the instrument was administered via paper and pencil. The 32-item survey contained multiple-choice and open-ended questions. Questions were organized into the following categories: demographic and student status information, living situation, food security, school performance, and accessing social services. Participants were asked to rate the extent that their current housing and food situation(s) affected their ability to attend and

perform in class on a 4-point Likert scale (1 = *does not affect* to 4 = *very much affects*).

Procedures

Surveys were disseminated to classes that were randomly selected from a master list of all graduate and undergraduate courses listed by the Registrar's Office at the university. Upon selection, instructors of identified classes were contacted by the program's faculty member and asked for permission for undergraduate assistants to disseminate the survey during class time. Of the instructors contacted, 15% agreed to allow their students to participate in the study. In the Spring semester, 10 out of 87 instructors (11%) agreed. In the Fall semester, 18 out of 96 instructors (19%) agreed. Three undergraduate work study students trained in survey administration disseminated the survey in the participating classes. Two forms of the survey were distributed randomly to maintain confidentiality during data collection. Each form of the survey (Form A and Form B) contained the same questions but in varying order. The UMass Boston Institutional Review Board approved the study.

Results

Three hundred ninety-five students participated in the survey, 390 of which were analyzed after removal of four surveys with unusable data. Descriptive statistics, as shown in Table 2, indicate that nearly a quarter of the respondents experienced some form of FI over the past year, such as *worry about not having enough money for food* (27.4%), *skipping meals due to a lack of money to buy food* (26.9%), and *inability to eat nutritious meals due to monetary struggles* (27.3%). Furthermore, 6.4% of participants reported severe FI in that they Often or Sometimes did not eat for a day or two because they did not have enough money for food.

In terms of HI, 5.4% of the participants indicated that they had experienced homelessness since attending college. Furthermore, 4.3% of participants reported that they could not or did not know whether they could continue to

Table 2. Prevalence of Food Insecurity Among Participants ($n = 390$).

	Often	Sometimes	Never
Worried about having enough money for food	4.6%	22.8%	72.2%
Had to skip a meal	2.8%	24.1%	72.7%
Unable to eat balanced meals	6.8%	20.5%	71.9%
Did not eat for more than 1–2 days	1.8%	4.6%	92.7%

Table 3. Participants' Location of Sleep ($n = 390$).

With family	59.0%
Own or shared apartment	33.9%
Foster parents	1.5%
Temporarily with friend or relative	2.3%
Group home	0.3%
Shelter	0.3%
Other	1.8%

sleep in the same place they slept the previous night for the next 2 weeks. As shown in Table 3, when participants were asked where they slept the night before, a majority of students reported either staying with family or at their own apartment (92.9%). However, 4.4% indicated less predictable forms of housing and stayed with foster parents, temporarily with friends or relatives, or at a group home. Approximately 20.5% of respondents reported that they had lived at their current place of residence for less than 6 months. More than one third of participants (35.4%) reported having moved at least once in the last year, with 2.5% of respondents reporting moving more than twice in the past year.

Participants who had experienced homelessness (HI; $n = 21$) since attending the university were compared with those who did not (Not-HI; $n = 369$) to examine the second research question: how HI and FI affected vulnerable students' abilities to perform and attend classes. Similarly, some participants indicated that during the past 12 months they Often or Sometimes did not eat for a day or more because there was not enough money for food. These participants were selected to distinguish those with FI ($n = 24$) compared with those without this level of need (Not-FI; $n = 360$). This item was selected because it offered an objective, quantitative description that described FI. Although the other FI-related items, such as those involving skipping meals, not eating nutritiously balanced meals, and not having enough money for food are considered to be instances of FI according to the USDA (2014), we used the most restrictive definition of FI posed by the USDA, *very low food security*. The experience of very low food security is when one or more household members have to reduce their food intake due to a lack of resources (USDA, 2014). Therefore, for the purposes of our study, participants responding Often or Sometimes to not eating for a day or two due to limited monetary resources were identified as having FI.

For those with housing insecurity, descriptive analyses indicated that 47.6% of HI students were Somewhat to Very affected, and 17.5% of those Not-HI were Somewhat to Very affected in their ability to *attend* class. More noteworthy, 81% of HI students were Somewhat to Very affected, and 22.9% of

Table 4. Impact of Housing Instability and Food Insecurity on Class Attendance and Performance.

	Insecure	Not insecure	<i>t</i>
Attend class			
Housing	1.81 (1.08)	1.28 (0.70)	3.25**
Food	1.92 (1.01)	1.27 (1.27)	4.30**
Perform in class			
Housing	2.24 (.94)	1.34 (0.72)	5.48**
Food	2.29 (.86)	1.33 (0.71)	6.34**

***p* < .01.**Table 5.** Risk of Failing Courses or Withdrawal From Courses due to Housing and Food Issues.

	Insecure	Not insecure
Attend class		
Housing	42.9%	3.3%
Food	44.0%	3.0%
Withdraw/refrain from registering		
Housing	42.9%	3.8%
Food	29.2%	4.4%

those Not-HI were Somewhat to Very affected in their ability to *perform* in class. These groups were compared using *t* tests, which indicated statistically significant differences in the degree to which these issues impacted their ability to attend and perform in class (see Table 4).

For those with FI, descriptive analyses indicated that 58.6% of FI students were Somewhat to Very affected, and 16.4% of those Not-FI were Somewhat to Very affected in their ability to *attend* class. More noteworthy, 87.5% of FI students were Somewhat to Very affected, and 22.1% of those Not-FI were Somewhat to Very affected in their ability to *perform* in class. Like the differences in housing insecurity, *t* tests similarly revealed statistically significant differences in the degree to which these issues impacted their ability to attend and perform in class (see Table 4).

Finally, this study sought to understand how these housing and food issues influenced students' risk for failing courses and refraining from enrolling in the university courses. As indicated in Table 5, those who had previous experiences

of homelessness and severe FI had much greater risk of not completing their studies in this higher education institution.

Discussion

The present study contributes to a small but growing body of literature regarding food and housing vulnerabilities facing college students, particularly those in urban communities. This study indicates that approximately one out of four students *Sometimes* or *Often* worry about having enough money to buy food, are unable to eat balanced meals, or actually skip meals. Vulnerability regarding access to food is not unique, with FI rates ranging from 14% at the University of Alabama, 21% at the University of Hawaii at Manoa, 39% at Western Oregon University, 56% at two community colleges in Maryland, to 59% at CUNY (Chaparro et al., 2009; Freudenberg et al., 2011; Gaines et al., 2014; Maroto et al., 2015; Patton-López et al., 2014). Thus, all of the students in these studies report a rate comparable or higher than the 14% national average rate of FI (Coleman-Jensen et al., 2015).

Similarly, instances of HI were present among the participants in this study. Other studies have indicated that university students who have HI are particularly susceptible to having difficulty attending classes or dropping out altogether (Alfano & Eduljee, 2013; Hallett, 2010). In the present study, results indicated approximately 4% of students had extremely unstable housing situations (e.g., not certain they could remain in their housing for next 2 weeks), while just more than 5% indicated having experienced homelessness at least once during their college career. Although there is limited research available specifically addressing the college-level population, research has shown that school-age children who are experiencing homelessness and HI have higher rates of detrimental health concerns in comparison with nonhomeless children, including hunger, asthma, stress, anxiety, and depression (National Center on Family Homelessness, 2011). Further, although not specifically examining college students, risk factors such as economic hardship, diagnoses of depression, psychiatric hospitalization, and drug addiction have all been identified as being positively associated with homelessness in young adults (Shelton et al., 2009). College students who are experiencing HI may also have similar negative health and economic conditions. Results from the present study strengthen our understanding of the previous research and highlights the vulnerability of students with HI and FI as they seek advanced learning and career opportunities.

According to the present study, students who experienced homelessness and severe FI were at profoundly greater academic risk in comparison with their peers who were not facing these challenges. Those who had been homeless were 13 times more likely to have failed courses and were 11 times more likely to have withdrawn or failed to register for more courses. Students who had experienced severe FI were nearly 15 times more likely to have failed courses and were

6 times more likely to have withdrawn or failed to register for more courses. FI may ultimately produce fatigue, difficulty concentrating, anxiety, irritability, general ability to learn new material, behavioral difficulties, and emotional problems, all of which can drastically affect students' performance in the classroom (Jyoti, Frongillo, & Jones, 2005; Kleinman et al., 1998; Murphy et al., 1998; Wehler et al., 1991; Winicki & Jemison, 2003). Similar to HI, participants who faced FI were more likely to have difficulty with attending classes. This has been demonstrated across other grade levels and can maintain negative educational attainment outcomes into adulthood (Roustit et al., 2010; Seligman et al., 2010). Therefore, efforts to decrease the challenges associated with FI and HI are crucial for the advancement of educational, economic, and health development in the college population (Alfano & Eduljee, 2013; Maroto et al., 2015).

Programs do exist to better assist students experiencing FI on college campuses as demonstrated by on-campus food services, collaborations with local food pantries, and university support for food-stamp enrollment (Chaparro et al., 2009; Freudenberg et al., 2011; Tucker, 2013). On the state-level, UMass Boston has helped to establish the Massachusetts Homeless Post-Secondary Students Network. This network brings together diverse stakeholders from around the state to identify systemic practices that can better assist students experiencing HI and chronic poverty on college campuses. For example, UMass Boston in collaboration with its partners has recently comprised a Single Point of Contact directory for the public 2- and 4-year colleges and universities in Massachusetts. Single Point of Contact lists the contact person at each respective campus who is responsible for working with students experiencing HI or homelessness. This resource is meant for college students, as well as for stakeholders in the community including high school personnel, religious organizations, and youth-based support programs. To determine the effectiveness of these supports and the aforementioned supports, future research could include evaluation studies focusing on programs and interventions targeting FI and HI on college campuses (Maroto et al., 2015).

Maslow's hierarchy of needs (Maslow, 1943) states that for a person to achieve safety and security, love and belonging, self-esteem, and self-actualization, a person must first have their basic physiological needs met. According to Maslow, some of these basic physiological needs include food and shelter. Therefore, unstable access to food and shelter may significantly impact an individual's ability to achieve higher human needs, such as feeling safe, secure, confident, and loved. When describing this phenomenon, Maslow (1943) used hunger as an example: "For the man who is extremely and dangerously hungry, no other interests exist but food. He dreams food, he remembers food, he thinks about food, he emotes only about food, he perceives only food and he wants only food" (p. 374). Indeed, the effects of FI, whether it be due to hunger, fatigue, behavioral, or emotional difficulties related to lack of food, can ultimately affect students' academic performance (Jyoti et al., 2005;

Kleinman et al., 1998; Murphy et al., 1998; Wehler et al., 1991; Winicki & Jemison, 2003). When a student is having trouble meeting their basic physiological needs—such as getting their next meal or where they will sleep that night—concentrating and performing well in school may be a futile endeavor.

Limitations

The intention of this study was to gain more information regarding the student vulnerabilities that could be barriers to academic success within an urban, public university, particularly those pertaining to FI and housing. Although the study provided data regarding this student body, there were also limitations.

One limitation was that this study was conducted in a single university. While these findings reflect the needs of this study body, they may not reflect others in suburban, rural, or other campuses that provide housing, making it difficult to generalize the findings. A second limitation is that while classes were randomly selected, a selection bias may have been introduced by the course instructors who were willing to allow the research team to distribute surveys. This is because the sample may have consisted of courses where the instructors addressed housing- and food-related issues in the past. The third limitation is that although participants were given different forms of the survey (Form A and Form B), they may have reported inaccurate responses due to fear of having their answers seen by peers. Finally, as with any self-report data collection procedure, the information regarding class attendance and performance were based on the perceptions and reports of the students.

Future Directions

Future research could address the limitations of this study and provide additional information on how to best support students with these environmental vulnerabilities. College personnel and researchers could use this survey instrument and replicate this study at additional universities to allow for broader generalization of these findings. In the future, it would be helpful to have de-identified data to link individual students' academic performance—using grades, GPA, or attendance—to determine how or if these housing and food factors influence educational attainment. In addition, focus groups and qualitative data could build greater understanding of issues unique to college students facing food and housing insecurity, as well as systemic factors that contribute to school success.

This study demonstrates the importance of partnerships within the college campus as well as with the local community. The partnership between U-ACCESS and UMass Boston has permitted doctoral students who are focusing on equitable access to education to build research skills in the context of an

applied, service learning opportunity. The newly demonstrated research skills allowed the institution to better understand and address a student need to build and target resources. The supports and resources needed for these college-bound young adults in an urban setting can more broadly address local community needs to create infrastructures that enhance opportunities for academic success throughout the community.

Conclusion

This study offers new information regarding student vulnerabilities that may be barriers to academic success within an urban, public university. Specifically, new information was obtained pertaining to FI and HI, and their impact on students' school success. This study confirms experiencing FI and HI negatively impact students' academic performance, attendance, and class completion. Despite minor limitations, the creation of this survey instrument and the information that was obtained are invaluable for better understanding the housing and food needs of a diverse, urban student population. Surveys such as the one used in the present study could be used by other universities to examine their student populations' food and housing needs. By identifying students who are facing housing and food difficulties, colleges and universities can intervene, potentially increasing retention, persistence, social, and emotional outcomes for this vulnerable student population. Lessons learned from this type of study can provide a foundation for creating housing practices and policies that can build sustainable opportunities for success in the early adult years.

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