Evaluation of Food Insecurity among College Students

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Abstract

Food insecurity, defined as concern or experience with inadequate food, affected 14.7% of households in the United States in 2012. Low income and being a child are strong predictors of food insecurity suggesting that some college students will be food insecure. In addition to a low income, college students incur unique financial stresses of tuition and educational materials. This pilot study surveyed the frequency of food insecurity, and identifies some behaviors and factors associated with it. In this sample of 67 students, 19.7% were food insecure citing insufficient money as the primary contributor. Students were reducing meal size, or skipping meals for up to a whole day. Regular assessment of food insecurity would be instructive to universities in determining the impact of this distraction to academic success. Such information could be used to identify or develop resources tailored to alleviating or preventing food insecurity in this unique population.

Keywords: Supplemental Nutrition Assistance Program (SNAP), university, security

1. Introduction

Food insecurity can range from concern for, or experience with, having insufficient food. In 2012, across the United States (US) 14.7% of households experienced food insecurity of varying severity (Coleman-Jensen, Nord, & Singh, 2013). This is an increase from the 9.7% of households in 1999 (Andrews, Nord, Bickel, & Carlson, 2000). Food insecurity is most strongly correlated to low income, but children are disproportionately affected (Coleman-Jensen et al., 2013). These data have supported appropriation of federal funding for approximately 30 million children in the US who receive free or reduced price lunch in their schools (FNS, 2013). Among people between the ages of 18-24 years, 13 million were enrolled in higher education in 2010 (NCES, 2014). Reasonably, some number of these individuals would be the same students who received free or reduced price lunches in high school, but gaining entrance to college would not eliminate food insecurity. Many students live on low incomes accompanied by unique expenses, such as tuition and other instructional expenses, that increase their cost of living relative to other young adult populations. Economic fluctuations, and in particular the depression of the first decade of the 21st century, have pushed tuition costs up across the nation's public campuses (NCES, 2014). There have been only a few reports of the extent of food insecurity among students of higher education (Chaparro, Zaghloul, Holck, & Dobbs, 2009; Patton-Lopez, Lopez-Cevallos, Cancel-Tirado, & Vazquez, 2014) and none are done on an annual basis to track changes. Without a nationwide system for assessment in this specific population, further investigation is warranted to identify the characteristics of students at risk for, or experiencing food insecurity.

This study was conducted as a pilot for testing the hypothesis that food insecurity is present on college campuses. The study also investigated student characteristics associated with food insecurity.

2. Methods

The survey and research methods were approved by the Institutional Review Board of the California State University Sacramento on Human Subjects. The content of the survey was modified from the Economic Research Service of the US Department of Agriculture 'Community Food Security Assessment Toolkit' (Cohen, 2002). Students were asked about who provides their food, what types of experiences they have had with insufficient food, and the frequency of these experiences.

An electronic survey was constructed using Class Climate® (Scantron© Corp, Minnesota, US) and faculty from each campus colleges were asked to share the survey opportunity with their classes. Descriptive statistics, and where appropriate, comparisons with Chi^2 analysis were conducted using SPSS (version 21.0, IBM Corp. New York, US).

Students were categorized as food secure if they indicated they had enough to eat or had enough to eat, but not always the kinds of food they want. Food insecure students were those who indicated they sometimes did not have enough to eat or often did not have enough to eat.

3. Results

Basic demographics of survey respondents are shown in Table 1. Students tended to be unemployed or earning low incomes (77% earned less than $1000 per month). Among students reporting income from military service, loans, grants or scholarships (n=62) 54.8% were receiving between zero and $100 per month. The majority of students were responsible for their own food (47%) with 33.3% indicating that someone else was primarily responsible for their food. A few (12%) were responsible for their own food and that of others, with 3 students reporting that they had children under the age of 18.

Among this sample (n=67) 80.6% were food secure and 19.4% were food insecure at some time in the past 12 months. The most common reason for food insecurity was not having enough money or time for shopping and preparation (Table 2). Food insecure students reported behaviors such as reducing the size of meals, skipping meals, or not eating for a whole day due to food insecurity (Table 2). Ethnicity, hours spent working, being responsible for his/her own food, or source and amount of income, were not statistically associated with food insecurity. Understandably, a smaller proportion of food secure students utilized food stamps (Supplemental Nutrition Assistance Program, SNAP) in the past 12 months (17.5%) compared to food insecure (46.2%) students ($p=0.037$). Similar numbers of students from food secure and insecure situations utilized SNAP (n=6 & 7, repsecitvely), while there were also a similar number of food insecure students who had not used SNAP (n=7). Among this latter group, no student worked more than 20 hours per week.

Students enrolled in more than 13 units of courses were significantly more likely to be food insecure ($p = 0.019$). No students over the age of 24 years (n=8) were food insecure, and this approached statistical significance ($p=0.072$).

4. Conclusion

These data support the contention that food insecurity is present on college campuses and this may be more prevalent among younger students compared to those over age 24 years. The food insecure students exhibit behaviors that restrict food, and thus nutrient intake, primarily due to insufficient money for purchasing food. Food insecurity has been reported for a small number of other college campuses where frequencies ranged from 21% (Chaparro et al., 2009) to 59% (Patton-Lopez et al., 2014) of students surveyed. Depending upon campus demographics, ethnicity, time spent employed, low income, or living off campus was related to food insecurity. The current study did not find similar relationships, possibly due to the small sample size or differences in the characteristics of the communities from which the different student populations come from. Meldrum and Willows found that the amount of college students' financial aid allotted for food was less than the current cost for balanced meals from local groceries (Meldrum & Willows, 2006). Even when menus were created for a low budget, the financial aid allotment still fell short (Meldrum & Willows, 2006). While devoting more time to employment was correlated with greater food insecurity at one college campus (Patton-Lopez et al., 2014), this was not the case in the current study where the majority of students did not work. The unique demands on students (paying tuition and devoting sufficient time to studies) may require the difficult choice of obtaining sufficient money for food at the expense of academic success.

Other campuses run food pantries for emergency relief of food insecurity, suggesting there is need within this population. Similar to assessments conducted by researchers on community food banks and pantries, some research has been conducted at campus pantries to assess nutrient quality (Willows & Au, 2006) or user satisfaction (Azurdia, Lecompte, & Sibbald, 2011). No peer-reviewed reports were found to show routine assessment of the frequencies of food insecurity, food pantry utilization or effect on student success.

5. Implications

Student experiences that interfere with academic success can contribute to reduced graduation rates or student drop out. In response to these outcomes many campuses provide counseling and support services to address issues that place stress on students, such as employment, financial hardship, underdeveloped time management skills, or being the first in the family to attend college. Food insecurity, however, is not universally addressed among such university services. Given the paucity of published research on the frequency of food insecurity among college students, it is difficult to track trends or assess the impact of food insecurity to student graduation rates. This pilot study suggests that regular assessment of food insecurity on a larger scale would be helpful in determining need for campus support services, such as food panties. Comparing survey results to economic trends could provide predictive information on demand for student services.

While insufficient money was most often indicated as the reason for food insecurity, time for shopping and food preparation was also an important factor. This suggests that, in addition to a campus food pantry, students may benefit from education on time efficient food preparation, budgeting and shopping skills. Campuses could also partner with local groceries to offer students incentives and convenience for healthy food access.

That students who are food insecure are not utilizing SNAP, suggests that they are not aware of the program, or that they are not eligible. In support of the latter, all food insecure students not utilizing SNAP also indicated they worked fewer than 20 hours per week. Under current policies, this low level of employment makes them ineligible for SNAP. Comprehensive research results on food insecurity for this specific population could be used to support advocacy efforts to make federal and local policies that support food access.

References

Andrews, M., Nord, M., Bickel, G., & Carlson, S. (2000). Household Food Security in the United States, 1999 *Food Assistance and Nutrition Research Report.* Economic Research Service USDA. (Vol. 8):

Azurdia, A. X., Lecompte, E., & Sibbald, E. (2011). Bon Appetit! A Process Evaluation of a Campus-Based Food Bank. *J Hunger & Env Nutr, 6*, 324-342.

Chaparro, M. P., Zaghloul, S. S., Holck, P., & Dobbs, J. (2009). Food insecurity prevalence among college students at the University of Hawai'i at Manoa. *Public Health Nutr, 12*(11), 2097-2103.

Cohen, B. (2002). *Community Food Security Assessment Toolkit*. Food Assistance and Nutrition Research Program, USDA (E-FAN-02-013, 13).

Coleman-Jensen, A., Nord, M., & Singh, A. (2013). Household Food Security in the United States in 2012 *Economic Research Report* (Vol. 155).

FNS, Food and Nutiriton Service. (2013). National School Lunch Program (NSLP). 2014, from http://www.fns.usda.gov/nslp/national-school-lunch-program.

Meldrum, L. A., & Willows, N. D. (2006). Food Insecurity in University Students Receiving Financial Aid. *Can J Diet Pract Res, 67*(1), 43-46.

NCES, National Center for Education Statistics. (2014). Fast Facts: Back to School Statistics 2013. from http://nces.ed.gov/fastfacts/display.asp?id=372.

Patton-Lopez, M. M., Lopez-Cevallos, D. F., Cancel-Tirado, D. I., & Vazquez, L. (2014). Prevalence and Correlates of Food Insecurity Among Students Attending a Midsize Rural University in Oregon. *J Nutr Educ Behav*. *46*(3)20, 209-214.

Willows, N. D., & Au, V. (2006). Nutritional Quality and Price of University Food Bank Hampers. *Can J Diet Pract Res, 67*(2), 104-107.

Table 1: Demographics of Survey Respondents (n = 67)

Age (years)	**N (%)**
18-20	13 (19.4%)
21-24	39 (58.2%)
25-30	12 (17.9%)
31-40	2 (3%)
>40	1 (1.5%)
Gender	
Male	25 (37.3%)
Female	42 (61.2%)
Race/ethnicity	
White	23 (34.3%)
African American or Black	4 (6%)
Asian/Pacific Islander	20 (29.9%)
Hispanic	13 (19.4%)
Latino	3 (4.5%)
Other	4 (6%)
Academic year	
Freshman	3 (4.5%)
Sophomore	7 (10.4%)
Junior	23 (34.3%)
Senior	20 (29.9%)
Post-Bachelor	14 (20.9%)
Course unit load	
0-6	7 (10.4%)
7-12	21 (31.3%)
13-16	31 (46.3%)
>16	8 (11.9%)

Table 2 Reasons for Food Insecurity and Behaviors in Response to Food Insecurity among Food Insecure Students

Reasons (N=13)	**n (%)**			
Insufficient money	13 (100%)			
Insufficient time for shopping and preparation	5 (38.5%)			
Too hard to get to store	4 (30.8%)			
Behaviors (N = 13)	**n (%)**	**Frequency**		
		Always	**Monthly**	**Some months**
Reduced the size of a meal	12 (92.3%)	2 (16.7%)	5 (41.7%)	5 (41.7%)
Skipped a meal	9 (69.2%)	2 (22.2%)	4 (44.4%)	3 (33.3%)
Not eat for a whole day	5 (38.5%)	0	0	5 (100%)
Not eat balanced meal	13 (100%)	10 (76.9%)	0	3 (23.1%)