Food Insecurity Among University of Nebraska-Lincoln Students

Lindsey Bremer
University of Nebraska - Lincoln

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Food Insecurity Among University of Nebraska-Lincoln Students

by

Lindsey Bremer

AN UNDERGRADUATE THESIS

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For the Degree of Bachelor of Arts

Major: Environmental Studies
With Minors in: Communication Studies, Society and the Environment, and Community and Regional Planning

Under the Supervision of Dr. Ursula Kreitmair

Lincoln, Nebraska

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Food Insecurity Among University of Nebraska-Lincoln Students
Lindsey Bremer, B.A.

University of Nebraska, 2019

Advisor: Dr. Ursula Kreitmair, Dr. Yunwoo Nam

A survey of 38 University of Nebraska-Lincoln students was conducted to determine the food insecurity levels of respondents. Food insecurity is defined as limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways (Bickel et al, 2000). A systematic review of 8 food security studies on college and university students found an average food insecurity level of 43.5%, (Nazmi et al, 2018) while the national level is 11.8% (Coleman-Jensen et al, 2017). The research was driven by the question, What is the food insecurity rate among University of Nebraska-Lincoln students? A goal of this study was to analyze what effects having a meal plan had on food insecurity for students. The study utilized the Usda 10 item food security survey and was distributed on SurveyMonkey and received 38 responses. The survey found that 29% of respondents experienced food insecurity with 33% food insecurity for those with a meal plan.

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PREFACE

I’d like to thank my main thesis advisor, Dr. Ursula Kreitmair for all her advice and support throughout this process. Thank you to Dr. Yunwoo Nam for your feedback. A special thank you to the Environmental Studies program for the support, resources, and tools given throughout my 4 years of schooling, and especially during the course of this thesis.

Introduction

Food insecurity is defined as limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable
ways. Food insecurity is also known as a condition resulting from financial resource constraint (Bickel et al, 2000). This affects an estimated 11.8 percent of U.S households. In Nebraska, food insecurity is estimated at 13.5 percent (Coleman-Jensen et al, 2017) and hunger affects 1 in 8 adults and 1 in 6 children (Feeding America, 2016). The Food Trust “Grocery Gap” found that lower income areas, communities of color, and rural communities have less access to affordable, healthy foods. They analyzed a study on a Baltimore neighborhood that reported 46% of lower income people had low availability of healthy food (Treuhaft & Karpyn, 2010).

Even though the national food insecurity rate is 11.8 percent, it is much higher among college and university students. A systematic review of 8 food security studies on college and university students found an unweighted average food insecurity level of 43.5%. This suggests that college and university students are at a much higher risk of experiencing food insecurity, close to 1 out of every 2 students (Nazmi et al, 2018). The effect and impact of food insecurity can be long-lasting. A study conducted by the U.S. Department of Agriculture found that food insecurity increased the probability of working age adults having chronic diseases like hypertension, coronary heart disease, hepatitis, stroke, cancer, asthma, diabetes, arthritis, chronic obstructive-pulmonary disease, and kidney disease (Gregory and Coleman-Jensen, 2017).

The Hunger on Campus study surveyed ~3,800 students at over 30 colleges and universities across 12 states. They found that 48% of respondents were food insecure in the previous month and that 22% had very low food security. Results showed that students who identified as “Hispanic or Latino” or “Black or African American” were more likely to be food insecure and experience very low food security. 17% of white and asian respondents experienced very low food security while 25% of hispanic respondents and 28% of african america
respondents experienced very low food security. This study also found that 43% of 4 year college students with a meal plan experienced food insecurity (Dubick et al, 2016).

The University of California system administered 2 surveys to 8,932 undergraduate and graduate students across all 10 campuses. They found that 42% were food insecure, with 19% of respondents experiencing very low food security. The self-administered version of the six-item USDA food security module was used (Martinez et al, 2016).

Another study conducted by the Wisconsin Hope Lab surveyed 43,000 students at 66 institutions in 20 states and the District of Columbia. The United States Department of Agriculture’s 10-item Adult Food Security Survey Module was used to assess food insecurity. During the month leading up to the survey, 42% of community college respondents and 36% of university students indicated that they were at the lower levels of food security. The study also found that rates of food and housing insecurity were higher among students working longer hours. “34-38% of students working 6-20 hours per week were food insecure (low or very low food insecurity), compared to 48-51% of students working 40 hours or more per week.” (Goldrick-Rab et al, 2018).

There is a lack of research on food insecurity for University of Nebraska-Lincoln students despite the fact that food insecurity for students is 43.5% (Nazmi et al, 2018). This drives the main research question, What is the food insecurity rate among University of Nebraska-Lincoln students? This research also hopes to shed insight into how having a meal plan affects food security for students, since there is very little research on it. Another goal of this study is to provide a framework for further research on food insecurity among UNL students. It is predicted that this study will find food insecurity rates similar to what has been found in previous studies.
To better understand the food insecurity for University of Nebraska-Lincoln students, it is important to analyze how this issue affects Nebraska and Lincoln. Food deserts are an expanding problem throughout the U.S. and Nebraska. Samantha Corr (2015) found that Lincoln contained three food deserts, areas that lack access to fresh, healthy food. The USDA further defines what constitutes a low-access community as having at least 500 people and/or at least one third of the census tracts population must reside more than one mile from a grocery store (Coleman-Jensen et al, 2017). Michimi and Wimberly (2010) found that as distance to a supermarket increased, so did the odds of being affected by diabetes and obesity. A study on neighborhood disparities in healthy food access found a correlation between lower income areas and a high volume of fast food restaurants and convenience stores (Hilmers et al, 2012).

While the issue of food insecurity plagues Nebraska, the state is actively trying to solve this problem for its people. Nebraska legislators like Sen. Matt Hansen (Nebraska Legislature, 2016) and former Sen Brenda Council have tried combating this food access issue by proposing legislature that would increase funds for food programs and research. Unfortunately, neither have passed (Schulte, 2016). The Joslyn Institute conducted a feasibility study in 2015 on the viability of turning Pershing Auditorium in Lincoln into a public food market. It found that implementing the public market would create about 200 jobs and close to that much in new farmers. However, the City of Lincoln has failed to take any action or even make a decision on what to do with the Pershing Auditorium (Steward, 2018).
Materials and Methods

To analyze food insecurity the 10 item survey provided by the U.S. Department of Agriculture’s (USDA) Economic Research Service (ERS) on measuring household food insecurity will be utilized to guide this research. This version of the survey was chosen because of its use in the Wisconsin Hope Lab study, which included a sample of 43,000 students and was sent across the United States. Other questions were developed to be asked along with the 10 item survey. These included demographic questions, as well as questions regarding meal plans.

The survey was distributed online by use of Surveymonkey. The targeted sample population for this study is University of Nebraska-Lincoln students age 19 or older. If possible, having samples from all or as many colleges at UNL would be preferred for a more diverse and random sample population. The target sample size was 50 participants, however, time for the research is limited. Participants were found through the researcher’s personal network, which included classmates from the environmental studies program and courses in community and regional planning and physics. The message sent with the link of the survey mentioned it was a brief food security survey that should take less than 5 minutes. The survey was sent to 120 people, giving a response rate of 32.7%.
Table 1. Characteristics of Respondents: Shows how respondents answered demographic questions by percent.

<table>
<thead>
<tr>
<th>Gender</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>57.90%</td>
</tr>
<tr>
<td>Male</td>
<td>39.50%</td>
</tr>
<tr>
<td>Other</td>
<td>2.60%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>76.30%</td>
</tr>
<tr>
<td>Graduate</td>
<td>23.70%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Living Situation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>On campus</td>
<td>13.20%</td>
</tr>
<tr>
<td>Off campus</td>
<td>86.80%</td>
</tr>
</tbody>
</table>

To protect the participants and guarantee confidentiality, the survey will be anonymous and voluntary. No names, age, or specific addresses will be collected. To help further analyze the demographics of the population, potentially sensitive information that will be collected is students gender, what student type they are, and whether they live on campus. 57.9% or 22 of the 38 respondents identify as female, while 39.5% or 15 respondents identify as male. 76% or 29 of the participants were undergraduate students with the other 23% or 9 participants were graduate students. Only 13.2% or 5 of the 38 participants live on campus.
The guide provided by the USDA includes information on how to analyze the data. The responses need to be coded into “affirmative” and “negative” responses. The guide outlines how to code responses and assess food security status, “Responses of “yes,” “often,” “sometimes,” “almost every month,” and “some months but not every month” are coded as affirmative. The sum of affirmative responses is the household’s raw score on the scale. Food security status is assigned as follows:

- Raw score zero—High food security among adults
- Raw score 1-2—Marginal food security among adults
- Raw score 3-5—Low food security among adults
- Raw score 6-10—Very low food security among adults

(Bickel et al, 2000)

Results:

The sample of 38 University of Nebraska-Lincoln students surveyed were 29% food insecure. 15.8% of these respondents experience very low food security, with 13.2% experiencing low food security. 33% of respondents with a meal plan experienced food insecurity. Only 15.8% or 6 of the 38 participants had a meal plan. Of these, 33% are food insecure (2 of the 6 with a meal plan). 50% or 3 of the 6 with a meal plan listed time as a limitation to using their meal plan, 2 of the 6 said having a specialized diet was a barrier, and 1 person selected allergy/dietary restrictions.

Figure 1. Food Security by Type: Shows percentage of respondents belonging to each food security classification.
Table 2: Respondents With a Meal Plan: Shows how respondents answered questions regarding meal plans in percent.

<table>
<thead>
<tr>
<th>Has a Meal Plan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>15.80%</td>
</tr>
<tr>
<td>No</td>
<td>84.20%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Times per week meal plan is used</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>33%</td>
</tr>
<tr>
<td>11-20</td>
<td>66%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Limitations to using meal plan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>50%</td>
</tr>
<tr>
<td>Allergy/Dietary Restrictions</td>
<td>16.70%</td>
</tr>
<tr>
<td>Specialized Diet</td>
<td>33%</td>
</tr>
</tbody>
</table>
Table 3. **Food Insecurity Items**: Shows the percentage of respondents that answered with an affirmative response.

<table>
<thead>
<tr>
<th>Question</th>
<th>Percent Affirmative</th>
</tr>
</thead>
<tbody>
<tr>
<td>I worried whether my food would run out before I got money to buy more.</td>
<td>36.90%</td>
</tr>
<tr>
<td>The food that I bought just didn’t last, and I didn’t have money to get more.</td>
<td>26.30%</td>
</tr>
<tr>
<td>I couldn’t afford to eat balanced meals.</td>
<td>63.10%</td>
</tr>
<tr>
<td>In the last 12 months, since last March, did you or other adults in your household ever cut the size of your meals or skip meals because there wasn’t enough money for food?</td>
<td>18.40%</td>
</tr>
<tr>
<td>[IF YES ABOVE] How often did this happen?</td>
<td>10.50%</td>
</tr>
<tr>
<td>In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money for food?</td>
<td>26.30%</td>
</tr>
<tr>
<td>In the last 12 months, were you every hungry but didn’t eat because there wasn’t enough money for food?</td>
<td>18.40%</td>
</tr>
<tr>
<td>In the last 12 months, did you lose weight because there wasn’t enough money for food?</td>
<td>5.20%</td>
</tr>
<tr>
<td>In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn’t enough money for food?</td>
<td>13.20%</td>
</tr>
<tr>
<td>[IF YES ABOVE] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?</td>
<td>10.50%</td>
</tr>
</tbody>
</table>
Discussion:

This study found the food insecurity rate for the sample of 38 University of Nebraska-Lincoln students to be 29%. This is higher than both the national level of 11.8% and the state level of 13.5% (Coleman-Jensen et al, 2017). While the food insecurity found in this study is slightly more than double the level for Nebraska, it is 14.5 percentage points lower than the 43.5% food insecurity found by the systematic review (Nazmi et al, 2018). Compared to the Wisconsin Hope Lab study, the University of Nebraska-Lincoln students were 6.5 percentage points lower than the 36% food insecurity level for the respondents attending a 4 year university.

Table 3 was set up in a similar format to how the Wisconsin Hope Lab study presented their food insecurity item results. Most of the answers had similar percentages of affirmative responses. For example, for the question “I worried whether my food would run out before I got money to find more” had 36% of students give an affirmative response from 4 year universities in the Wisconsin Hope Lab study. According to table 3 this study had 36.9% of respondents give an affirmative response. There were a few items where these two studies differed. For the question, “I couldn’t afford to eat balanced meals” 63% of the 38 respondents to this survey gave an affirmative response compared to the 40% in the Wisconsin Hope Lab study. The question, “Did you ever not eat for a whole day because there wasn’t enough money for food” had 6% of the Wisconsin Hope Lab respondents give an affirmative response compared to this study’s 13.2%. Another question with differing results is. “Did you lose weight because there
wasn't enough money for food.” This question had 11% affirmative responses from the Wisconsin Hope Lab study and 5.2% from this survey.

Table 2 shows how respondents answered questions in regards to meal plans. Only 15.8% or 6 of the 38 respondents have a meal plan. Even though 6 is a small sample, it is not surprising since only 13.2% or 5 of the 38 lives on campus. Of those that have a meal plan, 33% are food insecure. This is 4 percentage points higher than the 29% for the overall study, however, the sample of those with a meal plan is much smaller than the 38 respondents in the whole survey.

Because of how the sample for this survey was obtained along with the small sample size, there is potential for bias in the results. The survey was sent out to those within the researcher’s academic network, and was not a random sample. The survey could potentially have included more upperclassmen due to the courses the respondents were in were primarily upper level courses. This can also be inferred by only 13.2% of respondents living on campus. This can lead to a potential bias in regards to food security because upperclassmen often have more stable jobs. This in turn can lead to higher incomes and less food insecurity.

Conclusion

Food insecurity is an issue that affects 13.5% of people in Nebraska (Coleman-Jensen et al, 2017) and 43.5% of college/university students (Nazmi et al, 2018). This research was driven by the question, What is the food insecurity rate among University of Nebraska-Lincoln students? A goal of this study was to analyze what effects having a meal plan had on food insecurity for
students. Of the respondents, 57.9% identified as female, while 39.5% respondents identified as male. 76% of the participants were undergraduate students with the other 23% participants being graduate students. Only 13.2% of the participants live on campus. The survey found that 29% of respondents experienced food insecurity, with 33% of those with a meal plan being food insecure. 50% of respondents with a meal plan listed time as a limitation to using it, 33% listed having a specialized diet was a barrier, and 1 person selected allergy/dietary restrictions.

When comparing responses to the food security items to those given in the Wisconsin Hope Lab study, there were similar affirmative response percentages. An outlier question for this survey, however, was “I couldn’t afford to eat balanced meals”. This survey had 63% of respondents answer affirmatively, which is more than 20 percentage points higher than the Wisconsin Hope Lab Study.

There are a few lessons that future studies that look to determine and analyze the food insecurity levels for University of Nebraska-Lincoln students could learn from this study. First and foremost, future studies should aim to have a diverse, random, and representative sample of the population. With around 25,000 students that attend the University of Nebraska-Lincoln, 38 is an incredibly small sample size. For future research, there are items/questions that could be included to better understand who is experiencing food insecurity. This can include questions regarding financial assistance, year in school, and ethnicity. Future research should also include questions regarding meal plans, to gain a comprehensive understanding of food insecurity among university and college students. With the barriers given to utilizing a meal plan, it is important to further analyze how having a meal plan can and does affect food insecurity. Many people would assume that having a meal plan would decrease food insecurity, but the findings of this survey conflicts with that assumption.
References


Appendix A: Survey Questions:

“Thank you for your participation in this study to analyze food security of UNL students. This is a voluntary activity, and you reserve the right to not answer a question. If you continue on with this survey, you are certifying that you are 19 years of age or older and a UNL student.

1. What is your gender?

Female / Male / Other

2. Are you an undergraduate or graduate student?

Undergraduate / Graduate

3. Do you live on or off campus?

On campus / Off campus

4. Do you have a meal plan?

Yes, the All Access / Yes, the Red 440 / Yes, the White 250 / Yes, but unsure which / No / Don't know
5. How many times per week do you use your meal plan? 0-10 / 11-20 / 21+ / Unsure / Don't have a meal plan

6. If you have a meal plan, what are limitations to using it?

Time / Allergy/Dietary restrictions / Specialized Diet / Other /None

For the following statements, choose whether the statement was often true, sometimes true, or never true for or your household in the last 12 months—that is, since last March

7. “I worried whether my food would run out before I got money to buy more.” Was that often true, sometimes true, or never true for you or your household in the last 12 months?

Often true / Sometimes true / Never true / Don't know

8. “The food that I bought just didn’t last, and I didn’t have money to get more.” Was that often, sometimes, or never true for you or your household in the last 12 months?

Often true / Sometimes true / Never true / Don't know

9. “I couldn’t afford to eat balanced meals.” Was that often, sometimes, or never true for you or your household in the last 12 months?

Often true / Sometimes true / Never true / Don't know

If NO affirmative response, "often true" or "sometimes true", to questions 7-9, choose the "don't know" option choice for the duration of the survey.

10. In the last 12 months, since last March, did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food?
Yes / No (Skip question 11) / Don't Know (Skip question 11)

11. [IF YES ABOVE] How often did this happen?

Almost every month / Some months but not every month / Only 1 or 2 months / Don't know

12. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?

Yes / No / Don't know

13. In the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food?

Yes / No / Don't know

14. In the last 12 months, did you lose weight because there wasn't enough money for food?

Yes / No / Don't know

If NO affirmative response to one or more of questions 10-14, choose "don't know" for the duration of the survey

15. In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food?

Yes / No (Skip question 16) / Don't know (Skip question 16)

16. [IF YES ABOVE] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
Almost every month / Some months but not every month / Only 1 or 2 months / Don't know

Appendix B: Coded Responses