Analysis of Food Insecurity Solutions and Evaluation Methods on Colorado Campuses

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ABSTRACT

This paper explored the solutions of food insecurity on Colorado Campuses through qualitative research. More specifically, it analyzed what barriers to food security students faced at each college, how colleges chose to address these barriers, whether these barriers were addressed, and how colleges evaluated their solutions. While each campus experienced different barriers to food insecurity, there was a necessity to consider what has been done in order to create successful solutions. Ten institutions overall were part of this study; the five community colleges, 4 four-year institutions, and one junior college were a part of a semi-structured interview that worked to answer the questions above. I used a framework analysis to analyze the results. Of the ten universities interviewed, economic barriers were the most common. Food pantries, meal card programs, and emergency funds were the main solutions used to address these barriers. Decisions to implement these resources were made based on what students identified they wanted and what economic and political resources the school had on hand. Key takeaways from this research are that long-term economic barriers and cultural barriers still need to be addressed. Whether this is because decisions are made without directly considering the barriers that students face, is unclear. It is clear, however, that evaluation methods should be expanded and further developed.
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PREFACE

I want to thank my committee, most notably my primary advisor Dale Miller for continuing to push me to accomplishing my thesis. To Kelly Simmons and Vanessa Baird, thank you for joining me in this experience and giving me constructive feedback and advice throughout the project's development. Your contributions have helped shaped the thesis to be the best it could be. I finally would like to acknowledge the interviewees that were part of this thesis and thank them for their time in participating in this process.
INTRODUCTION

My research examined the solutions for food insecurity on college campuses in Colorado. Food insecurity among college students has become a rising concern because of its negative impacts on students’ health and education (Broton and Goldrick-Rab, 2016, Bruening, van Woerden, Todd, and Laska, 2018, Payne-Sturges et al., 2017). In order to address this concern, colleges have implemented a variety of solutions, which can include food pantries, meal programs, emergency funds, and help with SNAP benefits. Research has looked at how these solutions have addressed food insecurity and the challenges that come with each, but the research is limited.

Therefore, the objective of my undergraduate honors thesis was to describe the solutions that exist, find out why these solutions were chosen, how the solutions were addressing food insecurity, and find out how college administrators were evaluating these solutions. My specific research questions were:

1. What are the specific barriers to food security at each college?
2. How are colleges deciding on the solutions they implement and are the solutions addressing food insecurity?
3. How are colleges evaluating their programs?

To answer these questions, I conducted a semi-structured interview with 2-year universities, 4-year universities, and junior colleges in Colorado. I then used the framework analysis approach to organize and analyze my results. I used the framework analysis approach because I wanted to get the administrators perspective and experience with addressing food insecurity.

This paper is organized as follows: I will begin with an overview of food insecurity in college. After which, I will present the previous research on solutions to food insecurity. I then will discuss methodology and the results of my qualitative research. Considering the barriers to
food security that each individual college faced and how the universities evaluated their solutions, I have found that universities could improve in addressing cultural barriers, long-term food insecurity, and their evaluation methods. I conclude with what those results could mean for universities and the key aspects that can be taken away to further food insecurity prevention. These key takeaways include the need to further develop evaluation methods of solutions and the importance of partnerships and collaborations to establish long-term solutions to food insecurity.

BACKGROUND

This background includes the definition of food insecurity as it relates to colleges. I discuss the factors that are correlated to food insecurity, the barriers that students face, and finally, I will discuss the effects food insecurity has on students.

Food Insecurity

Food insecurity is complex because it is not just a question of poverty, although those that are poor are likely to be food insecure. Food insecurity can result from barriers that include but are not limited to economic, time, transportation, cultural, and accessibility. Food insecurity also looks different across locale (i.e. local, state, national, international) because different contexts create these different barriers that foster food insecurity. For instance, food insecurity in Colorado Springs looks very different than food insecurity in Boulder. To encompass the complexity of food insecurity, definitions of food insecurity generally include four components: availability, accessibility, utility, and stability. Availability depends on whether food is physically available to a person. Accessibility describes the factors that influence a person’s ability to obtain food; this can include how much the food is, how far the grocery store is, etc. Utilization refers to if the person has the knowledge and ability to cook and prepare the food.
Stability is the consistency and the sustainability of availability, access, and utilization over time (Adamovic, 2016, FAO, 2008).

While food insecurity is variously defined, for the purposes of my research, I am using the 1996 World Food Summit definition of food security; food security is “when people, at all times have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (FAO, 2008, para 1, Hughes, Serebryanikova, Donaldson, and Leveritt, 2011).

Food insecurity among college students has been around for a long time, but it has been recently recognized as a systematic failure. A systematic review of the peer-reviewed literature around food insecurity found that the average rate of food insecurity among college students surveyed was 43.5% (Nazmi et al., 2018). The lowest reported food insecurity was 14% at the University of Alabama, and the highest reported food insecurity was 59% at the Western Oregon University (Knol, Rob, McKinley, and Wood, 2017, Gaines, Robb, Knol, and Sickler, 2014, Patton-Lopez, Lopez-Cevallos, Cancel-Tirado-Vazquez, 2014).

While measures of food insecurity differ across these studies, most studies tend to use a survey tool designed by the United States Department of Agriculture (USDA) to determine whether food insecurity is at the college. According to the systematic review of the peer-reviewed literature, at least twenty-eight studies used a USDA survey tool to measure food insecurity (Nazimi et al., 2018). Another systematic review of the literature, which included international colleges and gray literature (thesis, conference presentations, newsletters, data published on websites) found that at least twelve studies used a USDA survey tool out of 18 peer-reviewed studies. Two studies were using different validated “food security screeners” and four studies used newly developed food insecurity assessment measures. The gray literature did
not report on measurement tools (Bruening, Argo, Sturges, and Laska, 2017). The USDA survey tool is the most used because it is a simple to follow, standardized way to measure food insecurity. The survey has also been validated as a way to measure food insecurity.

Factors that have high-correlations with food insecurity include economic factors, housing factors, and certain demographic factors, such as being first generation. Year in school and cooking self-efficacy (whether or not students cooked their own meals) were considered, but the correlations to food insecurity were not strong. One limitation to consider should be that despite the intent to survey all students, the surveys might be only taken by students who have low food security (Adamovic, 2017, Dubick, Mathews, and Cady, 2016). However, this does not mean that food insecurity is not real or that it shouldn’t be addressed.

Economic Factors

The main indicators of food insecurity are economic. “Economic factors” here, refers to an overall grouping of students who can be low-income, receive SNAP, use financial aid, or work long part-time hours. A report released by the Government Accountability Office on college food assistance benefits found that having low income was the most common risk factor (GAO, 2019). This is backed up by multiple studies that find financial aid and hours worked have been significant factors in correlation with food insecurity (Grabmeler, 2015, Payne-Sturges et al., 2017, Meldrum and Willows, 2007, Broton and Goldrick-Rab, 2016, Duke-Benfield, 2015, Adamovic, 2017). One study in the University of Colorado Boulder found that students who worked more than twenty hours per week were likely to be food insecure (Adamovic, 2017). This is problematic because a study at Melbourne University finds that students can work a maximum of 112 hours before it negatively affects their education. Further, being low income can also mean that the person has multiple risk factors (Hughes et al., 2011).
The GAO report found that of the 7.3 million low income students they surveyed, 2.3 million were first generation and 1.8 million were single parents (GAO, 2019).

Housing Factors

Housing factors, here, describes the effect of living off-campus and housing security. The literature around the effect of living off-campus is conflicting. Patton-Lopez (2014) reported no significant difference of food insecurity between students who were off-campus and students who lived on-campus. However, Chaparro, Zaghloul, Holck, and Dobbs (2009) and Payne-Sturges et al., (2017) have determined that the studies have found a significant difference. Chaparro et al. (2009) goes on to report that students living on their own were at increased risk of food insecurity. The conflicting literature is likely because food insecurity differs by location and the measures of insecurity are different. One clear correlation in terms of housing is students who are experiencing housing insecurity or are homeless are also likely to be food insecure (Dubick et al., 2016, GAO, 2019). Dubick et al. (2016) reported 64% of the students facing food insecurity were also housing insecure in the past twelve months.

Demographic factors

Food insecurity on campuses, even with widely different definitions, impacts different demographics in different ways. Underserved populations are disproportionately impacted by food insecurity on campus (Cady, 2014). Chaparro et al.(2009) reports that students who identified as Hawaiian or Pacific Islander were more likely to be food insecure than the Japanese or white students on their campus. Payne-Sturges et al. (2017) reports a similar situation, where students who identified themselves as African American or multi-racial were at risk for food insecurity. However, there is research that notes that ethnic demographic factors were not
significant (Patton-Lopez et al., 2014). Other demographic factors that have been highly correlated with food insecurity include first generation students, being a single parent, being disabled, and being a former foster youth (GAO report, 2019).

Weak correlations

Year in school and cooking self-efficacy had weak correlations to food insecurity compared to economic factors, residence, and ethnicity. Adamovic (2017) found that year in school was not statistically significant in predicting food insecurity but being a fifth-year in school was almost statistically significant. It should be noted that Bruening et al. (2018) reported in their study that a third of the freshmen were food insecure and they had higher chances of having mental health issues. Again, this difference might be explained because food insecurity manifests differently in each context. With cooking self-efficacy, the idea was that students who cooked on their own were more likely to be more food insecure; however, it was found that there was no significant difference between students who cooked on their own and students who ate at dining halls (Gaines et al., 2014). While these measures are weakly correlated, they should not be discounted.

Barriers to Food Security and Food Access

This section explains the barriers to food security and food access, which works to explain why the correlations and risk factors exist. As previously mentioned, barriers to food security vary per university, but there are common barriers. Commonly listed barriers to food security are economic, transportation, awareness, shame, and distrust of authority figures. One
barrier that is not listed explicitly in the overall literature of college food insecurity is a cultural barrier. I will discuss this further in this thesis.

Economic barriers can take form as “expensive meal plans,” a high cost of living, having to choose to pay rent over food, etc. Students can face these barriers already because they are low income; it can also be the case that students face economic barriers and are being forced into poverty because of educational costs (Diamond and Stebleton, 2017). Economic barriers in college can be huge especially with the shift nowadays from traditional to nontraditional students. Traditional students are the ones who are commonly pictured: they are eighteen to twenty-four years old, they are financially dependent on their parents, and they are able to be a student full time. In contrast to the typical belief that colleges are comprised of traditional students, the GAO report found that an increasing number of students enrolling in colleges are nontraditional. Non-traditional students are those who are working part time jobs, there is somebody dependent on them, and they are not able to be a full-time student. Traditional and nontraditional students would have different needs and would face different economic barriers.

Economic barriers can arise from the fact that scholarships and financial aid do not cover what they used to anymore. At the same time, college is becoming increasingly more expensive. The GAO report found that “the average Pell Grant used to cover 50% of average cost in-state tuition fees, and 39% in four-year colleges. But now, the Pell Grant only covers 37% for two-year institutions and 19% for four-year institutions” (GAO, 2019, p. 29). The Pell-grant is a well-known grant that is provided by the federal government to students with dire financial needs.

Along with an economic barrier, colleges face an awareness barrier, which is when students are not aware of the resources available. This can be because information is not well advertised or because there are many hoops that students have to jump through, resulting in
underutilized services. Goldrick-rab, Broton, and Eisenberg (2015) have found that when students are referred to multiple points for service, they feel discouraged and don’t end up using the resources. Students also face the additional burden of shame and can be distrustful of authority figures. Diamond and Stebleton (2017) revealed that students had expressed that they were embarrassed to use the pantry and they felt uncomfortable with authority figures. Students may also face transportation barriers. A student who is food secure because of transportation can be someone who lives far from the grocery store or they left their packed lunch at home and are not able to eat for the rest of the day.

Cultural barriers can refer to food preferences, dietary needs, or how food is acquired. Evidence in the general discussion of food insecurity has found that cultural barriers are important logically and emotionally. Cultural barriers can specifically affect the availability and utilization aspect of food insecurity. Available foods can be unfamiliar to immigrants and people may not know how to cook them (Moffat, Mohammed, and Newbold, 2017). In terms of how cultural barriers have a negative effect mentally, the lack of familiar foods can lead to anxiousness or the feeling of social isolation (Moffat et al, 2017). This is because food selection has social meanings and cultural practices behind it (Willard, 2002). Food selection includes the preservation of dignity.

*The Effect of Food Insecurity*

It is imperative for colleges to address all the barriers to food insecurity listed above. The limited research on the effects of food insecurity in college indicates that food insecurity has been correlated to lower performance at schools and higher chance of mental health issues (Broton and Goldrick-Rab, 2016, Payne-Sturges et al., 2017, Bruening et al., 2018). Students who have food insecurity also report not being able to buy required texts, missing a class, or dropping a class
(Dubick et al., 2016). Research has also found a clearer correlation between education and food insecurity; students that are food insecure are likely to have GPAs less than 3.1 (Broton and Goldrick-Rab, 2016, Patton-Lopez et al., 2014). Food insecurity can have physical effects as well. Food insecure students generally self-report that they have fair or lower health (Knols et al., 2017 and Patton-Lopez et al., 2014). Self-reporting is subjective, but this perception has been shown to predict poor future health because of the behaviors that are associated from this perception (Knols et al, 2017). The general research supports that food insecurity can have negative physical effects; those who are food insecure, do not get enough nutrients and have an increased risk of hypertension and heart disease (Dharod, Croom, Sady, 2013). Given the fact that food insecurity affects education and the mental and physical health of students, colleges are working to address food insecurity. The next section explores the literature on the current solutions.

**LITERATURE REVIEW**

The literature around food insecurity solutions is still limited. The literature mainly highlights what solutions colleges are implementing. Solutions vary from college to college, because there are different political and economic barriers that each institution faces. The most common solutions are food banks and food pantries, loan/financial programs, meal swipes, and partnerships with other non-profits (Broton and Goldrick-Rab, 2016, Goldrick-Rab et al., 2015, Twill et al., 2016). Along with a description of what solutions are available to colleges, there has been a limited examination of how food insecurity is addressed and what challenges these solutions still face. There has yet to be an evaluation of the effectiveness of these programs.
Food Pantries

Food pantries are places in the campus or community where food is being passed out to students who are food insecure. They have been the most commonly established solution for campuses with students who face food insecurity. Most pantries work to address economic needs, transportation barriers, and the shame and stigma that comes with getting food from a food pantry (Broton and Goldrick-Rab, 2016, Jacobvitz, 2017, Goldrick-Rab, Cady, and Coca, 2018). They address economic barriers because they are handing food out without cost. Food pantries address transportation barriers because they are on campus. If the food pantry is located off-campus, schools have worked to create a shuttling system to get students there. They work to address shame and stigma because it was reported that of the 262 colleges and universities that responded, only five percent of pantries required proof of financial need. Moreover, for those that are located on campus, Broton and Goldrick-Rab (2016) found that putting food pantries on campuses reduce shame and stigma because students felt it was like another free program that they got for being a student, and not for being hungry.

The challenges for food pantries are mainly funding, finding sufficient food, and finding the right staff to work at the pantry (Twill et al, 2016, Goldrick-Rab, Cady, and Coca, 2018). Twill et al. (2016) reports on the process of designing and implementing a food pantry on their campus, and they report that a successful pantry will also need “high advertisement” of the food pantry. Food pantries are also suggested to be more useful if they are on campus because this reduces the barriers of transportation (Broton and Goldrick-Rab, 2016, Goldrick-Rab, Cady, and Coca, 2018). Goldrick-Rab, Cady, and Coca (2018) summarize that, among the 217 pantries across forty states that participated in their research, there is generally a need for addressing the bureaucratic “systemic challenges unique to colleges” in order to implement a successful pantry.
One report also found that logistical barriers can still be a challenge that pantries face. El Zein, Mathews, House, and Shelnutt (2018) found that low food secure students reported more barriers to using the food pantry compared to those who are high or marginally food secure. Logistical ones include not knowing the hours of operation or not knowing who could use the pantry. The same report also highlighted that social stigma was still an issue that this food pantry had to contend with. Those with low food security were not comfortable using the pantry because they were worried about how their peers would perceive them (El Zein et al., 2018). While the findings from the report are only applicable to one university, it is important to note that shame and stigma or logistical barriers can still be a problem, and that evaluating food pantries is important. Methods of evaluation are not mentioned in the literature yet.

**Meal Swipes**

“Meal swipes” are the second most common solution following food pantries. They are a payment method where students pay an initial fee for a set number of meals that they can use at any time during the semester. Colleges usually offer a meal swipe program as a cheaper alternative because students pay one upfront cost. This program also tends to be more cost effective than buying multiple meals in the long run. Solutions that involve meal swipes usually take two forms: one is when the institution sets up a system where students with excess meal swipes (a.k.a. meal vouchers) are able to donate them. Any student who wants a meal at a dining hall is able to pull from that pool. The other solution is more focused on students at risk of food insecurity; institutions would set aside extra meal swipes for food insecure students. Students experiencing food insecurity could apply for these meal swipes and administrators would choose students who meet eligibility criteria (Jacobvitz, 2017, Broton and Goldrick-Rab, 2016,
Goldrick-rab et al., 2015). Both forms of meal swipe solutions are free of charge to the students. In my thesis, I distinguish between meal swipe solutions based on if a student had to pay for it. A “traditional” meal swipe program describes the meal swipe program that has already been established by the school. And the “separate meal” program is a program where colleges set aside free meal swipes for food insecure students. Meal swipe donations and meal vouchers are as described previously. I am making a distinction between colleges with separate meal programs, from meal voucher donations, and from the “traditional” meal programs because the literature has found that “traditional” meal programs are hard to access for food insecure students. While the traditional meal program is cheaper in the long run, it can be hard for college students to come up with the initial fee to pay for the meals.

The research around food insecurity has found separate meal programs and meal swipe donations address economic barriers. Moreover, depending on the program, shame and stigma barriers can be addressed using meal swipes. This is because students are given meal cards like any other student, or they are using donated meal swipes that any student can access. The inability to distinguish between a food insecure student and a food secure one can eliminate the feeling of shame because food insecure students are not able to be identified as “someone who needs help.” For traditional meal card programs, if universities have increased the number of meal swipes that they have offered, then all students would benefit, and no one would feel ashamed.

The main challenge to meal swipes as a solution is that it may not address long term food insecurity. As Dubick et al. (2016) reports, 43% of students who had a meal plan were still food insecure. This report finds that food insecure students often run out of meals before the end of the semester and they tend to eat less at the dining halls.
**Policies**

“Policies” describe the solutions that change the rules or institutional structures of the university to accommodate for food insecure students. One of the common solutions implemented is emergency loans. Emergency loans are a set amount of money that colleges have reserved for students, so that when an unexpected emergency situation arises, students have support. Students can apply if they can demonstrate that the money they get, makes a “significant” difference. Another “policy solution” is creating a space where all resources are centered in one place. The University of Massachusetts Amherst created a space where a student could go to a single place to get whatever they needed. In this place, there was a food pantry, free community meals, health center, and free store (UMassAmherst, 2018). Policy also describes support from the university with SNAP benefits. Dubick et al. (2016) reports that of the 3,675 students surveyed across thirty-four community colleges and four-year colleges across twelve states, SNAP benefits were the “most widely used [service]… which was used by 25%” of the students who participated in the study. The main challenge with providing support around SNAP benefits is providing clear guidelines of who is eligible. The GAO report on food insecurity on college campuses reported SNAP use and policies and found that SNAP was highly under-utilized by those that could have been eligible. 3.3 million students were eligible to get SNAP, but around a third of these students (1.8 million) reported not receiving SNAP because they didn’t know they were eligible (GAO, 2019).

In summary, previous literature has described the solutions that colleges use to address food insecurity, how the solutions address food insecurity, and the challenges that each solution still faces. According to the current literature, the main solutions that colleges implement are food pantries, meal swipe cards, emergency loans, creating a centralized area for resources, and
creating support around obtaining federal SNAP benefits. These solutions generally address economic barriers to food security, but each solution could address a different barrier as well. For instance, a food pantry may be able to address economic barriers and transportation barriers. The literature acknowledges how each solution still has challenges to overcome, but questions still remain about the decision-making processes that lead to a college to choose one solution over the other and how these colleges evaluate their solutions and determine success.

METHODS

To address my research questions, I conducted a semi-structured interview with staff and/or university administrators in Colorado. All universities in Colorado were contacted, so there were not any exclusion criteria. However, I did conduct preliminary research into which schools had programs that addressed food insecurity, and which did not. This was mainly done through news articles and through information that was published on the school’s website. This differentiation was because I had different interview questions for colleges that had food insecurity and for colleges that didn’t have food insecurity. Overall, the process of the interview was the same. These staff and/or administrators were interviewed over the phone or Zoom call, a web conferencing tool in the early spring semester of 2019 (January- February). Their interviews were recorded if they gave permission.

Questions

If the colleges did identify food insecurity, I asked the following questions as a way to begin and guide the conversation:

1. What does food insecurity look like at your university?
   a. Who is usually impacted?
   b. What are common barriers to food security?
c. What are you identifying are the main causes of these barriers?

2. Is there a need for culturally appropriate food?
   a. How are you addressing this need (if there is one)?

3. What solutions have you implemented to address food insecurity?
   a. How long has the solution been in place?
   b. Why have you chosen the solutions you have as opposed to other solutions?
      i. What is the data that backs this up?
   c. What are the benefits of the solution(s) you put in place?
   d. What are some challenges and costs that you face?
   e. What are your recommendations for colleges that are trying to start a food pantry? (Same question for other solutions that have been implemented)?
   f. How have you been education/getting support to address food insecurity?

4. What is the most important thing that people need to know about food insecurity?

Colleges that did not identify food insecurity in their school were asked the following questions:

1. Is there food insecurity at your school?

2. How do you know that food insecurity is not at your school?

3. Who would have knowledge about whether food insecurity is at your school?

4. What has been done to look at food insecurity at your school?

5. What are the policies that you believe support your students with their food needs?

6. Are you looking to do more for students?
   a. How have you decided with the option you are looking at?
7. Is there a need for culturally relevant food?

8. What are the policies that you believe support your students with their culturally relevant food needs if any?

**Data Analysis**

After conducting the interviews, I transcribed and coded them according to common themes and phrases. I followed the framework analysis to analyze the results. The framework analysis has been used for applied policy research. It has been used to answer various questions; contextual, diagnostic, evaluative and strategic. For my purposes, it was to answer questions that were contextual (what is food security like; how are colleges addressing food security?), diagnostic (how are colleges choosing solutions), and evaluative (how are colleges evaluating their solutions to food security?). There are five steps to the framework analysis:

1. Familiarization;
2. Identifying a thematic framework
3. Indexing
4. Charting
5. Mapping and interpretation

Familiarization is the process of a researcher becoming familiar with the data that they have selected. The steps that follows is identifying a thematic framework. This is where the researcher examines the data and makes logical and intuitive conclusions and connections. The third step is indexing; this is putting quotes or ideas to a particular code or theme. The fourth step is charting, which is the visual organization of the data into headings or subheadings that best present the data. The final step is mapping and interpretation; this is the analysis of characteristics.
interpreting the results (Srivastava and Thomson, 2009). I followed these steps as described and came up with the results below.

RESULTS

This section discusses the common codes and themes that were used. It will begin with a general overview of the information before results are divided according to the solutions that were listed. After contacting schools, only ten colleges gave full responses. Of the ten, four colleges were four-year institutions, five colleges were community colleges, and one was a junior college. The interviews were with directors of the food pantries, directors of admissions, coordinators of student intervention, and the directors of the student life at schools.

When asked whether there was food insecurity at their school, nine of the colleges said yes, and one said no. Of the ones who reported food insecurity, three colleges had concrete data about who was food insecure and how many. Five colleges had not collected data but had started to address food insecurity. One college I was unsure of whether they had data because it was not mentioned, and I had not clarified.

When asked what was the most important takeaway that people should know about food insecurity, all colleges answered regardless of whether there were food insecure students on their campus. The three main themes that emerged were intersectionality, food insecurity was an invisible problem, and there is a need to preserve dignity. Intersectionality describes the fact that food insecurity is connected to many things, not just lack of food. The code “invisible problem” describes the complexity in dealing with food insecurity because it is unseen. Finally, “preservation of dignity” is the idea that there is a stigma around food insecurity that needs to be addressed.
FOOD INSECURITY (FIS): IMPORTANT TAKEAWAYS

| INTERSECTIONALITY | “it is not just food or lack of food that students are facing. There are other things students are dealing with through finance, mental health, homelessness… we are usually helping them with something else.”  
“some of the behavioral problems might be tied to FIS, the reason why a student is late might be tied to hunger.”  
“when somebody is not focusing well, it could be they are hungry.”  
“food insecurity presents itself in different ways, it can be the struggling with the government shutdown, or they just lost their job…there needs to space to talk about it.” |
| INVISIBLE PROBLEM | “don’t make assumptions about who is food insecure; work with partner so FIS can be identified and give people the opportunity to comment about what they may experience.”  
“People sitting next to you might be experiencing it. Hunger is not always visible.”  
“it exists for college students; people usually assume that it is just in community colleges; it is probably on all college campuses and it is pretty invisible.”  
“it exists; I think that there are misconceptions about students having enough left-over student loan money or whatever to purchase what they need.”  
“there are people who eat a meal a day.” |
| PRESERVATION OF DIGNITY/ ERASURE OF STIGMA | “Preserving dignity is an obligation.”  
“don’t stigmatize social services.”  
“It can happen at any time to anybody so it is just awareness out there that we have these resources to students and letting them know that it is okay that they can ask for help to make sure they can provide for themselves and their family to not go hungry.” |
Table 1 highlights the themes and codes around what schools see food insecurity as.

**Food Insecurity Barriers**

The most cited barrier to food security was an economic barrier. Only one school cited awareness. The table below lists the barriers as well as comments that were associated with it. Of the economic barriers, rent had the highest mention; four institutions stated it explicitly. The next barrier was unexpected events; three schools mentioned this in the interview. There was one mention that students face a hard choice between rent and food. All colleges mentioned there was a need for culturally relevant food. Most mentions were in terms of dietary restrictions (vegan, vegetarian, gluten-free) and preferences. One college stated that cultural need was in terms of level of need within the family.

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<th>BARRIERS TO FOOD SECURITY</th>
<th>ECONOMIC</th>
<th>GENERAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>“The biggest of course is being able to afford all the things that students need to have.”</td>
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<tr>
<td></td>
<td>“students who use our pantry are PELL eligible, so they come from lower socioeconomic families.”</td>
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<tr>
<td></td>
<td>“common barriers to food security...lack of socioeconomic resources...”</td>
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<td></td>
<td>“college students come with really significant financial need and hard to make all ends meet.”</td>
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<tr>
<td></td>
<td>“…living wage is not enough to go to college, work, and afford all the expenses as an adult.”</td>
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<tr>
<td></td>
<td>“students have concerns related to cost of meal plans or generally with financial struggles.”</td>
<td></td>
</tr>
<tr>
<td>HOUSING</td>
<td>“we don’t have a lot of concrete data, but… we do know that the cost of living is really high.”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Cost of housing is a barrier; people feel there is less flexibility with paying mortgage.”</td>
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</tr>
</tbody>
</table>
“their job might not be paying them a living wage with the cost of living in the Denver metro.”

**UNEXPECTED EVENTS**

“common barriers… can be unexpected events, health care events, loss due to illness…”

“if they had SNAP benefits with the government shutdown, a lot of them were impacted; they were only funded through February, and they weren’t sure if they could get food.”

“we don’t have enough data here, if there is something chronic; if people have food insecurity or if it is much more situational.”

**CHOICE OF SURVIVAL**

“given cost of living, a lot of students ask themselves do I pay rent or buy food…”

**AWARENESS**

“…what limits things is awareness; students don’t know about the resources that are out there to help them on our campus as well as within the surrounding communities.”

*Table 2 highlights the barriers to food security that college administrators know about.*

Those who were food insecure were generally low income; the most cited example was students on the Pell Grant. These students were also off-campus and working part time jobs. These students would be described as “traditional,” meaning students who were in the age of eighteen to twenty-five. Colleges listed the following as solutions: food pantry, emergency fund, meal cards, FAFSA and scholarships, help with navigating SNAP benefits, informal pantries, food recovery, academic courses, meal vouchers donation, and fresh fruit and vegetable initiatives. The figure below illustrates the number of colleges that list each program.
Food Insecurity Solutions

Figure 1 illustrates what food insecurity programs there are among the ten colleges interviewed. Blue represents solutions listed by community colleges, orange represents solutions listed by four-year institutions, and the grey represents the solutions listed by the junior college.

Of the solutions listed, food pantries were the most common; eight schools listed that they had food pantries. Following food pantries, five schools reported meal cards as a solution for food insecurity. Emergency funding was the third most common solution listed; four schools stated they had emergency funds. The fourth solution was academic courses that address food insecurity. Three colleges listed that they had courses that educated students about food security. All colleges had more than one solution to address food insecurity. There is not a pattern of pairing solutions.

The sections below detail why the solutions were implemented, how the solutions were evaluated, and the benefits and challenges of the solutions. The fresh fruit initiative and food recovery program were still being developed and implemented, so there will not be a description
of the data. Moreover, due to time constraints, not a lot of questions were asked about the evaluation of FAFSA, so there is not a description of those results.

**Food Pantry**

As previously discussed, eight schools listed they had food pantries to address food insecurity among their students. Food pantries at schools varied in when they were implemented. Some pantries were only in effect for two months, while some pantries had been in effect for three years. Overall, pantries were started at schools because students identified it as a need. Some students at universities took the initiative to start the pantry; some administrators noticed the amount of times the emergency fund was used for food, or they realized they needed to do more. Other reasons were because there were grants from donors who wanted to establish a pantry.

**Pantry Evaluation and Benefits/Challenges**

Pantries were commonly evaluated by surveying the users of the pantry. Pantries were also evaluated by the quantity of food given, the number of students who use it, and tracking the amount of funds spent per student. There were some pantries that were still developing evaluation methods, and one expressed the desire to survey students that use the pantry.

Pantries were found to address the immediate needs of students and they were used as a tool to generate awareness around food insecurity.

**PANTRY BENEFITS**

<table>
<thead>
<tr>
<th>ADDRESSING IMMEDIATE NEEDS</th>
<th>“the pantry is very immediate, so somebody could send me an email or stop by my office and we can get them food immediately.”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>“the benefit is that there is this service; there is a place where we have, where students can go.”</td>
</tr>
<tr>
<td></td>
<td>“helps relieve some of the pressure; though it does not completely solve the problem; provides a resource for students.”</td>
</tr>
</tbody>
</table>
“if they need help with free campus food and things, we collect through food drives that is right on site.”

“AWARENESS
the work speaks for itself; it is hard to argue when you show how many people show up to the food pantry.”

“another benefit that we get from our pantry is that it is an area where a lot of students can get community service… it is a place where students can give back to our university by volunteering their time.”

Table 3 highlights the benefits that administrators list about food pantries.

Challenges varied given the political and economic contexts of institutions. Overall, the challenges that were identified include the cost, capacity, quality of food, communication of need, space, time of the employee, engagement of opposites on campus, and shame.

“Engagement of opposites,” in this case, was used to describe engaging those who had different opinions about food insecurity; it can be that they disagree that food insecurity is on campus or they may have a different solution. Under cost, some universities identified that being able to fundraise or obtain steady funds to keep the pantry running as a challenge. Challenges with capacity include sustainability, only being able to serve students once per week, and being able to serve future students. The challenge of quality of food can include the challenge of refrigerating and getting perishable items like fruits and vegetables or it can include the challenge of finding the healthier alternative to non-perishable items. The distribution of colleges that list these challenges are illustrated in the graph below.
Figure 2 illustrates challenges to running a food pantry; Cost includes being able to fundraise or maintenance. Capacity is defined as a pantry's ability to serve students; this includes challenges with ability to serve future students or limiting amount students can take. Quality of food is defined as items that are non-perishable. Community colleges are represented in blue and four-year institutions are represented in the orange.

Commonly listed challenges are space and quality of food; each were listed by three universities. Cost, capacity, communication of need, and time of employee were listed by two universities respectively. Only one college mentioned shame as a challenge to running a food pantry and only one college mentioned engaging support as a challenge.

**Meal Swipe Program/Meal Vouchers Program**

The second listed solution was a meal swipe program, where five colleges listed this as a solution to food insecurity. And although this was counted separately, donation of meal swipe vouchers will be discussed here; one college listed this as a solution.
How long these meal programs were in place differed from each university. For universities that implemented a separate meal program from their “traditional” one, one university had it in place for four or five years, while another was going to implement it this spring. Universities that listed their traditional meal program likely had that program for more than five years; one university recently implemented a discounted meal program where students apply to set aside some of their tuition towards meals.

Decisions to implement this program varied as well, but the most common reason for implementing the solution was because of student desire. The other reason to implement a separate meal program was because leadership wanted them to.

**Meal Card Evaluation and Benefits/Challenges**

There was only one institution that had implemented a separate meal card program for food insecure students for around four to five years. They evaluated this program by conducting research to see if there is a difference in a student’s academic performance if they got a meal card versus if they did not. They did so by evaluating students who applied and got the meal card and students who applied and did not get the meal card. The one institution that listed traditional meal programs evaluated the meal card program through a survey of the dining hall. These surveys are done at least twice a year; there is also a student food committee that meets with the student government to identify problems that they have.

All the institutions that had the traditional meal program did not explicitly list the benefits of their program. One implicit one would be savings. One explicit one was being able to give students more options and resources in dealing with food insecurity. The university with a separate meal programs listed that the benefits were resolving a student’s immediate food need, the ability to get a variety of food, and the fact that the meal cards addressed feelings of shame.
The university that started the meal card program listed resolving immediate needs and alleviating stress as a reason for wanting to implement the meal card programs. Similarly, the students within the university that implemented the donation of the meal vouchers benefited because the program resolved their immediate needs.

### MEAL CARD BENEFITS

<table>
<thead>
<tr>
<th>TRADITIONAL</th>
<th>SAVINGS</th>
<th>“students that stay in dormitories have meal plans that they can choose… they can do ala cart or meal plan with terrific savings.”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MORE RESOURCES</td>
<td>“being able to have one on one meetings with students and being able to give them resources is a benefit.”</td>
</tr>
<tr>
<td>SEPARATE MEAL PROGRAMS</td>
<td>IMMEDIATE (ECONOMIC) NEED</td>
<td>“can get food at any time”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“…people who are asking for [it]… is in need of a meal for the week because they simply cannot afford the meal.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“meal is on the university.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“we would be able to provide a full meal to somebody who would really need or want it.”</td>
</tr>
<tr>
<td></td>
<td>CULTURAL NEED</td>
<td>“the dining halls on campus provide variety of food.”</td>
</tr>
<tr>
<td></td>
<td>ALLEVIATE STRESS</td>
<td>“Hopefully, this would alleviate some of the stress for those who worry about not knowing where that next meal comes from…”</td>
</tr>
<tr>
<td></td>
<td>SHAME</td>
<td>“addresses feelings of shame; can use the meal card like any other fellow student.”</td>
</tr>
<tr>
<td>MEAL VOUCHERS</td>
<td>IMMEDIATE NEED</td>
<td>“it is working, [students able to sign up to donate meal swipe and students can use it] and does not require a lot of resources.”</td>
</tr>
</tbody>
</table>

*Table 4 highlights the benefits that administrators list about the meal programs.*
Challenges to the traditional meal program for one university was to be able to reach students that may not know about the meal card option. There was also the initial cost of time; it was time consuming to implement the program. The challenge to the separate meal program was that there was a wait-list, and that the university was not able to serve everybody. The meal voucher program for one university faced two challenges: the first was being able to collect data of who was using it; the other was finding permanent staff. Currently, the program is run by volunteers.

Emergency Fund

Four stated they had emergency funds to address food insecurity among their students. Only one college explicitly stated that their emergency fund began in 2015. Two universities implemented an emergency fund because they wanted to help support students when unexpected events occurred. The other universities did not state explicitly about their decision to implement emergency funds.

Emergency Funds Evaluation and Benefits/Challenges

The colleges interviewed did not state how they were evaluating their emergency funds. Emergency funds were found to be useful to help students because they addressed immediate needs, they were relatively simple, and they provided support to college students.

<table>
<thead>
<tr>
<th>EMERGENCY FUNDS BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADDRESSING IMMEDIATE NEEDS</td>
</tr>
<tr>
<td>SIMPLE</td>
</tr>
<tr>
<td>SUPPORT</td>
</tr>
</tbody>
</table>

Table 5 highlights the benefits that administrators list about emergency funds.
Challenges varied given the political and economic contexts of institutions. Two institutions explained that there weren’t challenges or costs with the emergency fund. Most of the conventional challenges like funding have been addressed by foundations or staff deducting their pay roll to put into emergency funds. One university found there were bureaucratic challenges when trying to get funds outside of connecting with their foundation. There are different types of money, such as general funds, and explicit ways of how they can be spent. To continue with general funds as an example, colleges are not allowed to use general funds to fund meal plans or food. Another challenge that this university faced was in expanding their emergency fund to include more than groceries and gas.

Academic Courses

As stated previously, three colleges listed academic courses as a way to address food insecurity. The most common reason for establishing the course was faculty interest and the benefit was to increase awareness and education around food insecurity. Due to lack of time, I did not ask universities how they were evaluating the program or if there were challenges that they faced.

SNAP Help and Informal Pantries

Informal pantries describe the university program where students can quickly grab snack foods. The reason why it was implemented was because students wanted to get involved in food security solutions. The main challenge with these pantries was the fact that they were dependent on student leadership. It may exist one year but not the other, depending on priorities of the student government. SNAP help describes one university working closely with SNAP because
they wanted to get involved. Challenges of this program was that rules and eligibility are hard to sort through and who gets in is out of the universities control.

**DISCUSSION**

Literature around food insecurity solutions is sparse. My research gave insight to the solutions that are happening on Colorado campuses and what can be taken away from them. Moreover, my study contributed to growing literature around evaluations of food insecurity solutions.

**The Barriers**

Previous research has listed many barriers that college students face; of the many barriers, only two in the literature were directly mentioned: economic barriers and awareness.

**Economic**

The most common barrier listed was an economic barrier. From the data provided by the Integrated Post-Secondary Education Data system (IPEDs), I calculated the average total cost of the community colleges interviewed to be $34,144 for on campus, in-state students and $20,612 for on campus, out-of-state students. For students that were off campus, they could be paying $27,198 as in-state students or $29,984 as out-of-state students. This average total costs for on-campus students includes the published tuition and required fees, books and supplies, room and board, and other expenses. The average financial aid that students from these colleges from any grant was $8,708. The average amount of money that students receive from the Pell grant at these schools is $4,783. Therefore, any scholarship or grant can cover up to 25.50% of the costs for on-campus, in-state students and cover up to 32.02% of the costs for off-campus students. Out-of-state students can have up to 42.25% of their costs covered if they live on campus, and up to 29.04% of their costs covered if they live off campus.
These calculations are averages of averages, which may skew the data. Also, with the on-campus student calculation of the community colleges, only two schools noted there were spaces to stay on campus, which is why the on-campus number is higher than the off-campus number. While these calculations do not give the entire picture of how much financial aid students in need can receive, it illustrates very broadly the economic burdens that students are facing. These students are also undergraduate students that are full-time. The IPED doesn’t have clear data about part time students and the cost they face.

Of the economic barriers, rent was the most mentioned. I averaged the fair market rent provided by the Department of Housing and Urban Development to mirror the economic burden that rent can be for college students. Rent at fair market price in the counties of these universities can be high. Fair market price was developed to help individuals with low income get housing. Arapahoe County, Adams County, Boulder County, Denver County, Douglas County, and Jefferson County have an average fair market price of $1183.85 for a single bedroom. Rio Blanco County, Moffat County, Las Animas County, El Paso County, and Alamosa County have an average fair market price of $703.40.

While these calculations are the average of fair market rents of counties, not the specific area where colleges reside, the numbers give an idea of why students expressed rent as a barrier to food security. Having to pay $700 to $1000 of rent on top of tuition can create situations where students are choosing not to eat. Unfortunately, there is no way to quantitatively support (or not) the statements that fall under the theme of unexpected events, choice of survival, or awareness.

There is one college that stated that food insecurity was not a problem at their school. This was the junior college. There are four reasons that may explain why the junior college had
no food insecurity. The first is that the institution was on the lower end of the spectrum for rent and tuition. Students may be able to afford food costs on top of the tuition and rent because it is less expensive. The second reason is the demographic of students that go to junior colleges. Generally, the student population at junior colleges tend to be high school students that are likely to have parent’s financial help. A third reason might be that their meal card program was effective in addressing food insecurity. The final reason might be that they may not have directly measured for food insecurity. I missed the opportunity to ask whether the institution has done an explicit survey, asking students if they have food insecurity. However, the college expressed that students had the opportunity to say if they needed economic support to afford food in a survey of the dining hall. Issues around food security could also be brought up in the meeting between the student food committee and the student government council.

Overall, solutions were not explicitly chosen because of the barriers that students faced. As mentioned before, three institutions formally surveyed students to identify need and barriers; five had anecdotal evidence and were either planning on a formal survey or had begun a solution. Most solutions were mainly chosen because students identified they wanted the resource and, because the solutions fit within the political and economic barriers that college administrators faced. Although colleges did not set out to explicitly address the barriers to food security that exist on their campus, each solution that colleges named still addressed the two barriers colleges explicitly mentioned.

**Food Pantries**

*Addressing the Barriers and Challenges*

In regard to food pantries and how they are addressing food insecurity, pantries are addressing the economic, awareness, stigma, and cultural barriers, but can improve and expand
the solutions to make sure students are food secure. From the benefits, we see that immediate economic needs were thoroughly addressed. Food pantries provided immediate relief when unexpected economic events occurred, or they provided some relief from having to worry about food. Food pantries also address awareness barriers. The solution works to bring attention to the issue of food insecurity because administrators and faculty and staff know about how many students are food insecure based on the numbers of people who are using the pantry. Colleges can expand on addressing awareness for students, by increasing the number of students who know about this solution.

Even though it was not stated explicitly by most colleges in this survey, stigma is a well-known barrier that exists (Dubick et al., 2017, Adamovic, 2017, Cady 2014, Gaines et al., 2014). Some implicit ways that colleges mentioned in the interview are placing the resource at the center of student life and not requiring proof of financial need. Placing the resource in the center of student life addresses shame and stigma because the placement normalizes the use of the pantry, and also makes the resource visible so that students know about it (Krueger, Parnell, and Wesaw, 2016). Moreover, by centralizing the pantry with other resources, students are able to get help for long-terms needs. None of the college pantries required proof of financial need; some colleges asked for student I.D., while others asked students to fill out a form, but no one was denied use of the pantry.

Colleges could be doing more to address cultural dietary needs in food pantries. Most items in food pantries are non-perishable and items that may be familiar to the American diet. Colleges do recognize this and are working to address this issue mainly by surveying the student population about their needs and creating a new fresh fruit and vegetable program. I will acknowledge that in terms of challenges that colleges still face, space and fundraising are still an
issue that would affect cultural dietary preferences. Some colleges have their pantries set up so that they can only get monetary donations from fundraising. This can mean that the only food items available are given by donation. Donation items usually are non-perishable items that may not meet the needs of many college students’ dietary preferences, but college administrators generally have no control. Other challenges that affect cultural barriers can be space. Having a fruit and vegetable program would mean that there would have to be space for refrigeration.

**Evaluation Methods**

As mentioned previously, colleges could improve on expanding awareness barriers and shame and stigma. The reason why they have not addressed this barrier might be because their evaluation methods can be improved. Colleges are good at asking students about their satisfaction and responding to their feedback. However, they should expand methods of evaluation outside of students who are using the pantry. As mentioned before, El Zein et al. found that students who were identified to have very low or low food security faced more barriers to pantry use than those who were marginally or highly food secure. The reasons why students weren’t using their pantry on campus was because of social stigma, insufficient information about how the pantry works, eligibility, and self-identity. Expanding survey methods to people who do not use the pantry can help colleges identify if there are barriers to using the pantry that have not been addressed, including shame and stigma and awareness.

**Meal Cards**

**Addressing the Barriers and Challenges**

As a whole, meal card programs are beneficial because they address immediate needs, cultural needs, and can be cost effective to implement. Moreover, the school that listed that they had no food insecurity had a traditional meal card program in place. However, given the
challenges and the evaluation methods used, meal card programs still have many improvements to make.

Traditional meal programs, separate meal cards, and meal vouchers all worked to address immediate needs because the programs provided free access to dining halls. The separate meal cards have been highlighted to address cultural barriers, although it can be inferred that the traditional meal plan and the meal vouchers also address cultural barriers too. This is because meal cards give access to dining centers, which have provided a variety of food. Depending on the institution, meal card programs can also beneficial because they can be less expensive to implement and to run. One institution expressed that this was easier for them than a meal pantry. The institution originally had a food pantry but because of space and costs challenges, they opted for meal program where students can set aside financial aid in advance to pay for their meals.

At the same time, there are still economic and awareness barriers that need to be addressed. For the traditional meal card program, there were not a lot of explicit challenges. The literature listed previously that the meal card program may not address food insecurity because students were likely to run out of meals before the term. Therefore, an economic barrier still exists because students might be running out of meals before they finish their term. Another economic barrier is that the meal card can only address so many student’s needs. For the separate meal card program, the challenge was the wait-list and economic funding. The meal program could not be as big as the college wanted because there was a problem with funding.

The other barrier that might still needs to be addressed is awareness. For the institution that recently started their meal program, there was a challenge to advertise and let students know that this option was available.
Evaluation Methods

While colleges were very conscious of the challenges that they still have to overcome, they may be unaware of the additional challenges that they may face. Most of the meal card solutions are relatively new. The traditional meal card program that was established for more than six years had an evaluation method, but it was indirect. The method was through a survey of the dining halls; if students were unsatisfied, they were able to report so. While this method was accessible—it was an online survey available (twice a semester)—it is limited in that it does not evaluate the traditional meal card directly. As Dubick et al. report, enrollment in a meal plan does not guarantee food security; forty three percent of the people who responded to their survey were still food insecure, despite having a meal plan. Colleges with traditional meal card programs can consider asking students if they run out of meals before the end of the semester and consider raising the amount of meals.

Colleges with separate meal plan program can evaluate their program like the institution did in this survey. They compared the students who had received the meal card and students who had not. This method is effective in establishing correlations to whether meal cards improve education. Colleges could also consider using a difference-in-difference design to establish causal inferences. Difference in difference is a method that allows a researcher to evaluate causal relationships without the randomization of data (Colombia Mailman School of Public Health, n.d., Wing, Simon, Bello-Gomez, 2018, National Research Council, 2001). The method relies on many assumptions: there are unmeasured characteristics that might affect the outcome, it assumes exchangeability, it assumes that “treating” one unit will not affect assignment of treatment to other units, and it assumes there will be a parallel trend. The parallel trends assumption is the idea that if the studied program did not go into effect, the two groups (control and the treated) would have been growing at the same rate. This has been known to be very hard
to meet, but it can be tested beforehand if there are a lot of data points. If all the assumptions are met, difference in difference would be valuable in establishing a causal relationship between the program and educational benefits.

**Emergency Funds and Other Solutions**

Emergency funds are able to address student’s immediate needs as well. Other benefits include the fact that it was a simple process. Challenges were mainly economic ones, like finding outside university foundations or expanding the emergency fund to include other economic needs like groceries. Since evaluation methods of emergency funds have not been developed, it is imperative to create one to see if the emergency funds are fully addressing economic needs.

Academic courses and SNAP help were the least mentioned as a food insecurity solution. Academic courses were seen to address awareness barriers because these courses were a space where food insecurity was explored and where students could learn about the resources they had on campus. Since I did not ask about evaluation methods of academic courses, I can only mention briefly that colleges could consider evaluating academic courses to see how much it increased awareness.

Overall, my results confirm that each solution addresses a different aspect of food insecurity. For those universities with food pantries and meal programs, the problems that arise with stigma in pantries are addressed with meal programs because administrators have found that students feel that they are using options available to all students. Moreover, the problem with cultural barriers is addressed with the meal program. Thus, the implementation of more than one solution is necessary. Despite this result, there is not a conscious effort to pair solutions with one another. The main decision-making process is identifying student desires and identifying what are the political and economic barriers to decide what solutions to implement.
Whether this decision-making process leads to a need to improve solutions of food security is unclear. However, it is apparent that food security barriers still need to be addressed, especially economic barriers because they are the ones that were most listed. The solutions that colleges implement are currently addressing the immediate economic need. Colleges are doing their best by creating and forming partnerships to other nonprofit organizations so that students can have support in the longer term. In the end, food insecurity is a symptom of a larger problem, and that is the high cost of education. This is seen when administrators report that the issue is not just about the lack of food. My results confirm the previous literature that there needs to be a loosening of restrictions and bureaucratic tape for administrators.

**CONCLUSION**

Food insecurity is a complex issue to address because there are various barriers that differ across contexts. Previous research has mainly mentioned the three main ways that colleges have addressed food pantries, meal cards, and emergency funds, but the research is unclear in effective evaluation methods. I have asked what are the specific barriers to food security, how have colleges chose to address these barriers and are they effective, and how are colleges evaluating the effectiveness of the solutions? In trying to answer my questions, I have found that colleges are mainly responding to students who are saying what kind of solution they want. They are also considering the political and economic barriers that are at each institution to implement these solutions. Generally, decisionmakers would tailor solutions to the barriers that they face. These decision-making methods cannot be definitively determined to be effective (or not) in addressing the barriers to food insecurity. However, each solution does primarily address the economic barriers to food security. Multiple solutions are needed to address all the barriers to
food insecurity but there is no specific combination that universities use (food pantries and meal
cards to address economic and cultural barriers).

Key take-aways that my research provides are that colleges could be doing more to
adequately address barriers. For example, each solution generally addresses the immediate
economic needs of students, but colleges can do more to address the long-term economic needs.
This can be through partnerships with other organizations. This research also found that
evaluation methods of food insecurity solutions could be expanded. Evaluation methods are
incomplete for food pantries and traditional meal card programs. In regard to food pantries,
colleges can conduct another survey to find out why students aren’t using the pantry. For the
traditional meal card program, colleges should begin to understand if the amount of meals that
are provided are enough. A difference in difference method could be used for evaluating the
separate meal card program to justify its necessity to administrators.

Limitations
Although the focus was on college administrators and their perception of what food
insecurity is and how they were to address food insecurity, it would have been helpful to talk to
students who were using the program to compare. However, I did not want to place additional
burden on them by asking them to also participate in my study. I recognized that college
administrators or faculty would conduct their own evaluation. Another limitation is the colleges I
interviewed. Most solutions were too new to have been evaluated. Another study could include
colleges nationwide, especially the colleges with well-established programs. My interview
questions were not as extensive as they should be, instead they yielded answers in broad strokes.
Despite these limitations, my research adds to the literature around evaluating food insecurity
solutions and provides further points to research.
Further Research

After conducting this research, there are many questions that come up: specifically, what are action steps to decrease stigma for students? Since the questions I asked were broad, it would be good to know what are the action steps that colleges are taking to address shame and stigma and compare. It might also be worthwhile to reconduct my study and compare it to quantitative data to see if there is a solution that is more cost-effective than the other.
Bibliography


