

The Acceptability and Feasibility of an On-Campus Food Pantry to Address Student
Food Insecurity

by

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ABSTRACT

Although past literature has examined the prevalence of campus food pantries, most have not examined student satisfaction of campus food pantries the acceptability and feasibility of the campus food pantries in the U.S. This descriptive and quasi-experimental study assessed the acceptability and feasibility of campus food pantry intervention on two campuses (Downtown Phoenix and Tempe) at Arizona State University (ASU). The acceptability measures were composed of 30 survey questions including demographics, satisfaction survey, and food insecurity questionnaires, which were abstracted from the U.S. Adult 10-Item Food Security Survey Module. The food pantry was open once a week at each site. Any ASU students who enrolled in Spring 2017 and visited a food pantry were eligible to participate in the study. A total of 39 ASU students participated in the study during January 2017 and February 2017 (48.1 % female, 42.3 % White). The number of surveys collected at each site was 52. The majority of students were first-year undergraduate students (57.9% Downtown Phoenix, 45.5% Tempe). Based on their answers to the U.S. Adult 10-Item Food Security Survey Module, 21.2% of students (n=11) indicated low food security, while 48.1% of students (n=25) indicated very low food security. Almost 70% of pantry users reported that they have experienced food insecurity. In this study, the majority (90%) of students were satisfied with the service, hours of operation, and location for both the Downtown and Tempe food pantries. Additionally, 85.7% of students reported that they need additional resources such as financial aid (49%), a career center (18.4%), health services (10.2%), and other services (8.2%). The Pitchfork Pantry operated by student, university, and community support. Total donations received between Fall 2016 and Spring 2017 were

4,600 food items. The study found that most students were highly satisfied with the campus food pantries and it was feasible to operate two pantries on the ASU campus. These findings can be used to contribute to future research into campus food pantries, which may be the solution for food insecurity intervention among college populations.

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CHAPTER 1

INTRODUCTION

Overview

Food insecurity is a major public health problem.^{1,2} The U.S Department of Agriculture (USDA) reported that 12.7% (15.8 million) of U.S. households had experienced food insecurity due to lack of access to healthy and adequate foods in 2015.⁷ Additionally, a report stated that low-income single households had a high prevalence of food insecurity in 2015.⁷ An example of low-income single households is emerging adults such as college populations who are financially and physically independent from their family or guardians.^{3,9}

During the transition to college, approximately 40% students reported that they had experienced food insecurity.^{4,9-12} The Social Impact of Physical Activity and Nutrition in College (devilSPARC) study, which was conducted at Arizona State University (ASU) reported that 37% of college freshmen had experienced food insecurity in the past three months during the 2014-2015 academic year.⁹ Additionally, Chaparro et al. found 21% of students from the University of Hawai'i reported food insecurity.¹² Of those responses, students who were single households and financially independent from their parents or guardians were more likely to be food insecure than those who were living with parents or guardians.¹² Another study conducted in Oregon, showed that over half of the students (59%) reported being food insecure.⁴ Studies have found that college students are at risk of developing a high level of depression, suicidal ideation, binge drinking, and poor nutrition due to food insecurity.^{9, 4, 5, 10-12, 14, 16}

Food insecurity among college students showed that there is lack of public assistance programs for this target populations.^{17, 25} Although there are well-known assistance programs including the Supplemental Nutrition Assistance Program (SNAP), the Supplemental Nutrition program for Women, Infants, and Children (WIC), and the National School Lunch Program (NSLP) for low-income households with children,¹⁸ the current study found that only ten percent of food-insecure college students reported that they participated in a food assistance program in the U.S.¹⁹ Many food-insecure students encounter barriers due to income and minimum work hours for applying to food assistance programs.^{19, 27, 29}

In order to cope with food insecurity in college populations, some studies suggested simplifying the eligibility process for SNAP, participation in financial coaching programs, and establishing campus food pantries.¹² However, the eligibility criteria seems complicated for college students to participate in the SNAP.²⁸ For example, students are required to commit the minimum work hours to receive SNAP because the program requires applicants to participate in an employment training program that is required by law.²⁸ Similarly, financial coaching programs are limited to certain regions such as New York and Florida.³⁰ Students who are living in rural areas may have additional challenges accessing the food assistance program. Consequently, SNAP and financial coaching programs were not suitable for students unless they implement increased accessibility for college students. Hence, establishing campus food pantries could be the most feasible solution to food insecurity due to the evidence of growing campus food pantries in the U.S.²⁷

Campus food pantries serve as an emergency food assistance program.⁹ This short-term assistance program provides food to students directly on site.⁹ The number of campus food pantries is growing quickly in the U.S.²⁴ For example, the College and University Food Bank Alliance (CUFBA) reported that there are 508 campus food pantries serving the college students in 2017.²⁴ The food pantry programs from Feeding America (the largest network of food banks and pantries) provided 1,141 sites with food including 25 millions meals to more than 150,000 children in 2014.²² Research has shown that creating the food pantries in elementary school-based settings reduced the prevalence of food insecurity and improved students' academic performance by relieving anxiety and stress due to the shortage of food in the family.²² A study from a large university based in Florida reported that 87% of students expressed the desirability of creating food insecurity interventions such as thru a campus food pantry.¹⁶ In international research, results indicated that college students were highly satisfied with the food pantries,¹⁷ in regards to current food insecurity in the U.S.

A study of evaluating the acceptability and feasibility of a food pantry for U.S. college students will fill a gap in current research by examining the tendency to utilize the food pantry among college students. Given the high rates of food insecurity at ASU,⁹ an immediate solution to student food insecurity is needed. While one other study has shown the feasibility of food pantries on college campuses, we need to know which aspects need more work at ASU to alleviate students' food insecurity. Since no U.S. based studies have been published in this area, the findings will help to provide empirical data for other institutions to develop and evaluate their food pantries.

Purpose of the Study

This study is a descriptive and quasi-experimental in design to serve the purpose of assessing the acceptability and feasibility of food pantries on both ASU's Downtown Phoenix and Tempe campuses. Creating the campus food pantries to address the food insecurity among college students was part of this process. The results of this study will indicate the acceptability and feasibility of food pantry and may help to reduce the prevalence of food insecurity in college populations.

Research Aim and Hypotheses

Research question 1: What is the acceptability of a food pantry for ASU college students?

H₁: Students will report high satisfaction of the having food pantries on campus.

Research question 2: What is the feasibility of a campus food pantry for ASU college students?

H₂: At least one food pantry will remain in operation after Spring 2017.

Definition of Terms

Food security: Consistent access to foods for maintaining healthy living in family based on income levels, household circumstances and economic conditions.¹⁰

Food insecurity: A condition that results from a lack of money and other resources for food based on income levels in size of households.¹⁰

Supplemental Assistance Program (SNAP): SNAP is the Nation's largest domestic food and nutrition assistant program for low-income and serves as a source of demand for the products in the U.S.¹¹

The Supplemental Nutrition Program for Women, Infants, and Children (WIC): WIC program provides food, breastfeeding education, and referrals for women, infants and children age up to 5 years with low-income families.³

Limitations and Delimitations

This study has limitations because it is a descriptive and quasi-experimental research design with a convenience sample. Due to the study design, the samples are not randomly selected. The result of the study cannot determine cause and effects between two variables. Additionally, the survey data are self-reported, which may result in bias of college students who utilize the food pantries at both ASU's Downtown Phoenix and Tempe campuses.

A delimitation of the study was that participants were only recruited by local area at ASU. The result may be not generalizable to entire college students in the U.S.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

College students are at high risk of experiencing food insecurity during the transition to college.^{3, 4, 6, 9-12, 19, 25} Most college students are under stress and anxiety as they achieve financial and physical independence from their family or guardians.^{3, 9, 14} Because being away from home challenges college students, many students are not able to afford food due to financial difficulties, insufficient knowledge of cooking skills, poor time management, and lack of support from family or guardians.⁹ Additionally, food insecurity in college is associated with high level of depression, suicidal ideation, binge drinking, and poor nutrition.^{5, 8, 9, 14, 38} Consequently, food insecure students may have a difficult time succeeding academically.^{3-5, 10, 11}

A recent study that examined the role of financial factors in food insecurity among college students found that less than ten percent of students who answered the surveys participated in a food assistance program.¹⁹ College students had low participation rates in federal nutrition assistance program due to facing the income barriers such as eligibility criteria that most college students do not fit into the programs including low poverty levels and unemployment status.^{19, 27, 29} In 2015, the U.S. Department of Agriculture (USDA) reported adults below the poverty line who live alone had a higher prevalence of food insecurity compared to adults who did not live alone.⁷ Although the national data did not specify the description of single households (it is unknown what proportion of college students were included), the results showed that the single

households such as college students have a higher risk of being food insecure compare to students who live with their parents or guardians.⁷

Some studies demonstrate the satisfaction and nutritional evaluation of food pantries in family-sized populations,^{18,31} but much less research has been conducted on the acceptability and feasibility of a food insecurity intervention for college students in the U.S.¹³ In order to address the food insecurity among U.S. college students, food insecurity interventions that are targeting college students should be built on campus and to ease the risk of food insecurity.^{16,23,27} Campus-based interventions that address college student food insecurity may help to better understand how food pantries on university campuses can be better designed to reduce the rate of food insecurity among college students.

Prevalence of food insecurity

In 2015, the USDA reported that 3 millions of households with children in the U.S. answered that they had been food insecure during the previous year.⁷ Although there is a lack of national data that determine the food insecurity rate among college populations in the U.S., this study found that there is an association between inequality of child' and family income.³² Survey data that were abstracted from the U.S. Bureau of Labor Statistics showed that college students from the top quartile income were 6 times more likely to complete school compare to students from the lowest quartile income.³² Additionally, research found that the students who are from food insecure parents and guardians were more vulnerable to experience the food insecurity than the students who are from food secure parents and guardians.¹¹

Food pantries tend to serve those most in need. Wood et al. showed that 61% of food pantry clients with children in Washington state answered that they are food insecure with hunger (now called very low food security).³³ As a result, children experiencing food insecurity have shown adverse health status, academic performance, and a greater likelihood of adulthood food insecurity compare to the children who live in food secure households.¹⁰

Food insecurity is not only an issue in U.S. college students but foreign studies also reported that students food insecurity is highly prevalent.^{3, 5, 15, 25} For example, some studies conducted in Australia found that between 12.7 and 46.5% of college students were food insecure.^{3, 6, 25} In Canada, research found that 82.8% of students at the University of Alberta reported that they were food insecure.⁵ Additionally, Munro et al. found that 20.8% of college students in South Africa experienced food insecurity with hunger between 2007 and 2010.¹⁵ A few years later, another study in South Africa showed 60% of college students reported experiencing food insecurity with hunger in 2013.³⁴ The rates of food insecurity among college students are varied in different countries; however, the studies demonstrated that food insecurity is prevalent among college students in the U.S.^{4, 8-12, 19, 27, 35, 38}

Similarly, the prevalence of food insecurity in college populations is a gaining recognition in the U.S.²⁷ For instance, Chapparro et al. found 21% of students reported that they experienced food insecurity while studying at the University of Hawai'i. Of those responses, students who are living with roommate had a higher rate of food insecurity than those students who live with guardians.¹² In addition, another study showed that 35% of students at Illinois University reported food insecurity.¹¹ Likewise, a

recent study that is conducted in Oregon showed that over half of the students, 59% demonstrated food insecurity.⁴ Similarly to the research in foreign countries, food insecurity in the US is highly prevalent.

The Problems of Food Insecurity Among the College Population

Food insecurity is associated with low-income households.^{1, 3, 4-7} A recent study by Coleman-Jensen et al. showed 38.8% of U.S. households were below the poverty line and experienced food insecurity.⁷ Thus, most food insecurity research studies were designed for family-sized households rather than examining single households such as college students populations, because heads of households tend to have primary economic responsibilities.^{1, 7, 8, 38} However, there is a strong association between children who were raised in food insecure families and college students with low financial status status.^{27, 32} For example, students with lack of financial support from their parents were more likely to experience food insecurity.^{7, 32} As a result, college students who grew up in food insecure families tended to experience food insecurity while studying in college,²⁷ however, there is not clear data to show this relationship yet. Food insecurity among college students is a major problem because of economic hardship that can affect a students' academic performance.^{3, 4, 6, 19, 25, 27, 32, 36} Thus, the college completion rates for food insecure students were much lower than students who were food secure.³² Given the multiple factors that may negatively affect food insecure students, literature reported a correlation between food insecurity status and poor health and mental outcomes among college students.^{4, 5, 8, 9, 14, 35, 37, 38} Results of U.S. studies reported that the prevalence of student's food insecurity status is significantly associated with sociodemographic factors,

financial situations, and academic performance.^{3, 4, 8, 10-12, 15, 17, 19, 25, 27, 38-40} In addition, negative behaviors such as binge drinking can be observed in the food insecure students more frequently than food secure students.⁹ College students who experienced food insecurity might be more at risk than food secure students. Furthermore, food insecurity not only occurs as a short-term issue during college but it may persist as a long-term issue when the students are experiencing food insecurity continuously.¹⁹

Food Insecurity and Academic Performance Among College Students

The major concern of students' food insecurity is linked to poor academic performance.^{3-5, 10, 11, 27, 41} Jyoti et al. reported that food insecurity is associated with developmental consequences for children in the U.S.⁴¹ Although there are few studies evaluating the correlations between academic performance and food insecurity status among college students, self-reported surveys found that students have a difficult time succeeding in academic work due to food insecurity.^{3-5, 10, 11, 41} In addition, food insecurity research has shown that grade point average (GPA) is negatively associated with food insecurity status in college populations.^{4, 10} For example, Patton-López et al. found the food insecure students are less likely to maintain GPA above 3.1 than the food secure group in Oregon.⁴ Another study from Maryland found 54% of community college food insecure students received GPA between 2.0 and 2.49 while 69% of the food secure students received a GPA between 3.5 and 4.0.¹⁰ Farahbakhsh et al. also reported that 60.3% of college students had experienced negative impacts on academic performance due to stress related to the inability of accessing the adequate food.⁵ Some studies reported that there is a significant correlation between food insecurity among college

populations and academic works including poor concentration and absenteeism at school.^{3, 4, 5, 10, 11, 27, 40, 41} Another study conducted on international college students in Canada reported that students who had experienced lack of money to purchase foods had poor academic performance because of stress and anxiety.³⁹ Consequently, college students tend to have a high level of stress because of food insecurity, which may be related to poorer academic performance.^{9, 10, 14, 40}

Food Insecurity and Health Among College Students

Food insecurity status is strongly associated with poor nutrition outcomes.^{9, 18, 31, 39} A recent study that was conducted in Canada showed that food insecure students had significantly lower intake of dairy, fruits, vegetables, and legumes in contrast to food secure students.⁵ Gallegos et al. reported that the food insecure students consume less than two servings of fruits and vegetables per day.³ Thus, the negative results of food insecurity affect the students' health status and diet patterns.³ In a different study, Bear et al. reported that there is a connection between health related social problems (i.e., low rates of healthcare access and food insecurity status) among adolescent clinic patients aged between 15 and 25 years old.^{8, 38} Similarly, a recent study from the University of California San Diego (UCSD) reported that the prevalence of students with diabetes was approximately 4.7 times higher in the food insecurity group contrast with food security group.⁴² Consequently, the concerns of inadequate food and poor diet behavior may result in the negative health outcomes in college students with food insecurity.^{3, 5, 9, 17, 39}

Food Insecurity and Mental Health Outcomes

Depression, stress, and anxiety are also concerns for food insecure students because the prevalence of food insecurity is strongly associated with the poor mental health outcomes.^{5, 8, 9, 14, 38} For example, Munro et al. showed students experience a difficult time concentrating on academic work because of hunger.¹⁵ In this study, college students who reported being food insecure with hunger were more fatigued during the academic year.¹⁵ In a different study, Farahbakhsh et al. found both stress levels and life satisfaction levels are inversely associated with food insecurity status, where food insecure students reported higher levels of stress and lower levels of life satisfaction.⁵ Similarly, another study showed that levels of depression, suicidal ideation, and substance abuse were two times higher in food insecure students compare to those who were not food insecure.¹⁴ Thus, food insecurity status is associated with mental health such as stress and anxiety.³⁹ In addition, Pryor et al. found that food insecurity is positively associated with levels of depression.¹⁴ Because the presence of food insecurity may contribute to additional stress on students, the result of the study suggested that preventing food insecurity in earlier life stage may reduce the risks of poor mental outcomes in the later life.¹⁴

Use of Food Pantry to Address Food Insecurity on College Campuses

Although there is a lack of research determining the effectiveness of the food insecurity interventions in college populations, some solutions including the SNAP program, a financial coaching program, and campus food pantries.^{9, 18, 19, 23, 29, 30} However, SNAP requires that students enroll full-time at a college or university unless they meet certain criteria such as participating in the employment training program.²⁹

Additionally, Micevski et al. found 56% of students who received food stamp benefits in Australia reported a higher rate of food insecurity in contrast with those who did not receive the benefits.⁶ Similarly, financial coaching programs were only offered the specific regions, and many students failed to stay in the programs long-term.³⁰ Though campus food pantries have yet to be evaluated to solve with food insecurity, many colleges have begun considering building a food pantry to assist with student's food insecurity.^{24, 27} In one study conducted in Canada, students were highly satisfied with the food pantries on campus.¹⁷ Given the high satisfaction of the students in Canada, U.S. based research is needed to investigate students satisfaction related to the campus food pantry.

A food pantry provides emergency food assistance to students directly on site.⁹ Recent study that observed the students at the food pantries for 25 months found 51% of pantry users visited the food pantry more than one time.⁴² Because the food pantry is a short-term assistance program,⁹ it could be more feasible to assist the students with food insecurity rather than the SNAP and financial coaching program. However, current studies have not yet measured the significant factors that can promote campus food pantries. For example, the study conducted in Canada reported that students are highly satisfied with the food pantry, but it did not evaluate the internal factors (hours, locations, and types of food) that contribute to an intention of revisit.¹⁷ In order to fill the gap in the literatures, more research is needed to determine student satisfaction of a food pantry and prevalence of food insecurity on campus.

Summary

Student food insecurity is associated with academic performance, mental health, dietary behavior, and social development.^{5, 8, 14, 19, 37, 38, 41, 43} This review of literature has examined the current research related to the prevalence of food insecurity, outcomes, existing interventions, and a campus food pantry. Although there are more than 510 on-campus food pantries assisting college students,²⁴ little research has evaluated the acceptability and feasibility of the food pantry intervention that are targeting college populations. More research needs to be conducted in order to fill the gap in current research related to a campus food pantry and student satisfaction data rather than the prevalence of food insecurity. Because the prevalence of food insecurity in college students is increasing regardless of numerous food assistance programs in the U.S.,²⁷ understanding the main factors that contribute to the acceptability and feasibility of a campus food pantry will promote the future interventions, so the prevalence of food insecurity can be reduced in college populations.

CHAPTER 3

METHODS

Study Design

This was a descriptive and quasi-experimental study evaluating the acceptability and feasibility of food pantry intervention to address food insecurity among college students at Arizona State University (ASU). Two food pantries were opened in January 2017 at the ASU's Downtown Phoenix and Tempe campuses. The name of the food pantry was Pitchfork Food Pantry. Any ASU students who enrolled during the 2016-2017 academic years were eligible to participate in the study. Recruitment for participants in the food pantry began in January 2017 via distributing information flyers, creating the Facebook page, and posting the resources on the MyASU website.

Students who visited the pantries were asked to complete a survey on Qualtrics with a written consent form at each visit. All participants who visited the food pantry received the food, a reusable bag, and referrals to the dean of students including the financial office, career center, and health services if needed. The Arizona State University Institutional Review Board approved the study protocol.

Measures

The survey consisted of 30 questions including demographics, food insecurity status, and satisfaction related to food pantry experiences. The average time for completing the acceptability survey was five minutes. The main instrument that was used for data collection was tablet PCs. Each time a participant visited the pantry, s/he was

required to complete the survey before leaving the pantry. An identical survey was collected each time when the participants visited the food pantry.

Satisfaction Measures

Twenty questions were used to assess student satisfaction with the food pantry. The first survey question identified the location of food pantry, asking, “What location did you visit today?”. The answer choices included Downtown campus or Tempe campus. The next question asked about the student’s previous experience with the food pantry, “How many times have you visited the pantry before?” The answer choices ranged from 0 to 10 or more. Then, for the following four questions, participants were asked to rate 1 (being the lowest) and 4 (being the highest) their agreement with, “How well the food pantry met your food needs today?”, “How satisfied are you with the overall food pantry services you received?”, “How satisfied are you with the food pantry hours of operations?”, and asked, “How satisfied are you with the food pantry location?” Participants were then asked to report on their experience with staff at the pantry, “How would you rate the helpfulness of our staff in the food pantry?”, “Did the staff give helpful suggestions when guiding you through the pantry?” The second subset question was, “Did the staff help you feel comfortable as you go through the pantry?”. Subsequently, the next question addressed perception of quantity of food, “How many days of food did you receive?” The options for this question were 1 day or less, 2-3 days, 4-5 days, 6-7 days, 8 days or more. In order to assess additional needs, participants were asked, “What other resources do you need?” The answer choices included financial aid, career center, ASU health service, and others (please specify the answer). The last

question of the survey asked, “Do you have any suggestions to help us make the food pantry services more helpful?” The answer choice consisted of a textbox.

Demographic Factors

Demographic factors assessed in the study included gender, age, ethnicity, year in college, residence status, Pell grant status, and meal plan enrollment. The first survey question of the study was to identify the gender of the participants, asking: “What is your gender?”. The answer choices included male or female. The next question looked at the participants with different age groups and asked, “Please indicate your age group”. The answer choices included 17 years or less, 18-20 years, 21-23 years, 24-26 years, 27-29 years, and 30 years or more. Then, the ethnicity question asked, “How do you usually describe yourself? (please check all that apply).” The options included White, Black or African American, Hispanic or Latino/a, Asian or Pacific Islander, American Indian or Alaskan, and Mixed/other.²⁰ The next question asked about students’ residency status such as, “Are you a permanent Arizona resident?”. The answer choices included yes or no. When students answered ‘no’ to the residency status, the next questions asked, “Are you an international student?”. The options for this question were yes or no. If the student responded ‘yes’ to international status, the next questions prompted and asked, “How long have you been in the U.S.?” The answer choices included 1-2 years, 3-4 years, 5-6 years, and 7 years or more. The next question applied to all students and asked, “Are you a Pell grant recipient during 2016-2017 academic year?”. The options for this question were yes, no, and not sure. Then, the next question asked, “Are you enrolled in meal plan?”. The answer choices included yes or no. If the students responded ‘yes’ to the

meal plan status, the following subset question prompted and asked, “Please specify meal plan”. The answer choice consisted of a textbox.

Food Insecurity Status

In order to determine the levels of the students’ food insecurity status, 10 survey questions were derived from the U.S. Adult 10-Item Food Security Survey Module.²¹ Based on the original survey questions, the period of experiencing food insecurity was changed from past 12 months to a month. The first question asked, “In the last one month, I worried whether my food would run out before I got money to buy more”. The second question asked, “In the last one month, the food that I bought just didn’t last, and I didn’t have money to get more”. The third question asked, “In the last one month, I couldn’t afford to eat balanced meals”. The answer choices for those questions included often true, sometimes true, never true, and don’t know or refused. The fourth question asked, “In the last one month, did you ever cut the size of your meals or skip meals because there wasn't enough money for food?” The options for this question were yes, no, and don’t know. For those students, who responded ‘yes’ to this question, the next question prompted and asked, “How often did this happen—almost every day, some days but not every month, or in only 1 or 2 months?” The answer choices included almost every month, some day but not every day, only 1 or 2 week, and don’t know. Then, the fifth question asked, “In the last one month, did you ever eat less than you felt you should because there wasn’t enough money for food?”. The options for this question were yes, no, and don’t know. The sixth question asked, “In the last one month, were you every hungry but didn't eat because there wasn't enough money for food?”. The options for this

question were yes, no, and don't know. The seventh question asked, "In the last one month, did you lose weight because there wasn't enough money for food?" The options for this question were yes, no, and don't know. The eighth question asked, "In the last one month, did you ever not eat for a whole day because there wasn't enough money for food?". The answer choices included yes, no, and don't know. If the students responded 'yes' to this question, the last question prompted and asked, "How often did this happen?". The answer choices included almost every day, some days but not every day, or in only 1 or 2 week, and don't know. Food security scores were coded as affirmative.²¹ The sum of affirmative responses were reported as a raw score on the scale.²¹ For example, a raw score of zero indicated high food security, a raw score of 1-2 indicated marginal food security, a raw score of 3-5 indicated low food security, and a raw score of 6-10 indicated very low food security.²¹

Feasibility Measures

The feasibility measures included the sustainability of food procurements, total counts of food distributed, and number of visits between January 2017 and February 2017. Feasibility in terms of food donations to the pantry was evaluated through a food inventory-tracking program, Asset Panda. This software program was a mobile app that helped to create inventory lists for the food pantries. The food pantry volunteers who were trained to use the program scanned the individual bar code of the each food item when food came in and out. Additionally, Asset Panda recorded the amount of food items received and distributed to the participants at each site. The program tracked the types, amounts, and quantity of the food at the food pantry.

For food storage, the food items were stored in a clean and dry area where the food was stacked in the three wire shelving units that were placed six inches from the floor and away from the wall.²⁶ All the food items distributed to the students were non-perishable, dry and canned foods. The donated items were categorized based on the food category such as proteins, vegetables, fruits, soups, and miscellaneous. An expiration date of the food items were checked on a monthly basis. When the food item was close to the expiration date (i.e., within a month), those items were removed from the shelving units. Additionally, any opened or dented food items were not distributed to the students.

Students were required to bring their student's ID to each visit. A shopping process was implemented at the pantry, where students could select which foods they wanted to take home in specific categories based on enhancing nutrition and inventory status. When a student was ready to shop at the food pantry, pantry volunteers recommended that the student choose five items including two proteins, two fruits and vegetables, and one miscellaneous item. After shopping, students were asked to complete the survey while the pantry volunteers were scanning the barcodes of food items using the Asset Panda (tracking distribution).

Additional measures of feasibility included volunteer staff support and ASU support. Volunteer time was tracked for the two pantries. A timeline of ASU administrative support was also created.

Statistical Analysis

To determine the results of the surveys in this study, the measures of demographic factors, food insecurity and satisfaction were reported as frequencies. A chi-square test

was used to evaluate the acceptability of the food pantry by running the Stata Statistical software. For example, to answer research question 1, we conducted a survey analysis using food insecurity status and satisfaction as variables of analysis. Additionally, the number of food distribution and use of the respective food pantries were analyzed to answer research question 2.

CHAPTER 4

DATA AND RESULTS

Timeline

The timeline for establishing the food pantries at ASU is described in table 1. Two food pantries were open at ASU during January and February 2017. To support the pantries, the Students Anti-Hunger Coalition (SAHC) was formed in October 2016. The SAHC members represented from the leaders of Student Nutrition Council, Future Leaders of Holistic Healthcare, Phi U, Pitchfork Pantry, and Generation Zero.

The first food drive was held on both the Downtown Phoenix and Tempe campuses in November 2016. Then, the next food drive, which was supported by the College of Health Solutions was held on November 30, 2016. On the Downtown campus, starting January 15, 2017, the pantry opened every Sunday between 6:00 PM and 9:00 PM. On the Tempe campus, starting January 12, 2017 the pantry opened every Thursday between 10:00 AM and 2:00 PM. Subsequently, the third food drive, 'Share the Love' was held on both campuses on February 14, 2017. Due to concerns regarding the regulation of the food pantry, the university requested the food pantry to close until more information regarding jurisdiction of food pantry regulation was clarified. As a result, the Downtown Phoenix campus was closed on February 22, 2017 and Tempe campus was closed on February 15.

Table 1: Pitchfork Pantry Feasibility Timeline

| Pitchfork Pantry History | Date |
|--|-----------------------------|
| 2016 | |
| Principal Investigator (PI) requested to start a pantry | August 4 th 2016 |
| College of Health Solutions (CHS) Leadership Team approved plans of implementing a food pantry in the Taylor Place Kitchen | August 22, 2016 |
| First Student Anti-Hunger Coalition (SAHC) meeting | October 21, 2016 |
| Attended the ASU hunger meeting at University Lutheran Church | November 1, 2016 |
| Food Drive on Tempe and Downtown Campus | November 17, 2016 |
| Pitchfork Pantry approved as a new Partner Agency with St. Mary's Food Bank | November 15, 2016 |
| Food drive supported by College of Health Solutions | November 30, 2016 |
| 2017 | |
| Data collection began | January 12, 2017 |
| Pitchfork Pantry opened at Tempe location on Wednesday from 10am-2pm | January 12, 2017 |
| Pitchfork Pantry opened at the Downtown location on Wednesday from 6pm-9pm | January 15, 2017 |
| Attended mandatory training with St. Mary's Food Bank as a new partner agency | January 16, 2017 |
| Met with a Director of Uptown Farmers Market about supporting the pantry and providing fresh produced | January 23, 2017 |
| A staff of St. Mary's Food Bank did a site visit and approved our Pantry | January 31, 2017 |
| ASU Foundation account for Pitchfork Pantry approved | February 7, 2017 |
| Share the Love Food Drive at both campuses | February 14, 2017 |
| Pitchfork Pantry closed at Tempe location | February 15, 2017 |
| Pitchfork Pantry closed at the Downtown location | February 22, 2017 |
| Data collection completed | February 22, 2017 |

Donations and Distributions

The main sources of food donations were from the food drives. Students, faculty, and staff voluntarily donated food items at both the Downtown Phoenix and Tempe campuses. The approximate amount of total food donations was 4,600 items. Then, the food items were distributed to the two food pantries on campuses during the 2016 - 2017 academic year (November 2016 – February 2017). The Downtown Phoenix campus received 2,364 items and the Tempe campus received 2,236 items. The food donations included canned foods, dried foods such as pasta, rice, breakfast cereals and ramen, and peanut butter. Another type of donation was monetary donations. Especially, there was a Facebook page where people could make monetary donations. Accordingly, the amount of monetary donations that the food pantry had collected from the Facebook website was \$236.00 during January 2017 and February 2017. The ASU Foundation managed the food pantry account and received the donations for the pantry's future needs.

Between January and February 2017, the number of students who visited the campus was greater on the Tempe campus (n=33) than on the Downtown Phoenix campus (n=19). (Table 2) Based on Asset Panda records, 87 food items were distributed on the Downtown Phoenix campus and 75 food items were distributed on the Tempe campus; however, volunteer reports indicated that the distribution of foods was not always tracked. There were technical issues such that some student volunteers were not able to properly scan the items during the checkout process. As a result, the number of food items distributed to students was relatively lower on the Tempe campus than on the Downtown campus.

Student Support

In order to operate the food pantry, the main concern was receiving constant supplies of food donations to stock the two pantries. The student organization, SAHC, held food drive events three times during the 2016-2017 academic year. The food pantries received 4,737 food items and served 52 students between January and February 2017. With ASU student support, the Pitchfork Food Pantry received two honors, the Changemaker Award for Social Change and the Most Promising New Student Organization in Spring 2017.

Community Support

The community partners near the ASU campuses supported the food pantry with monetary and food donations. On November 1, 2016, an ASU Hunger Meeting was held at the University Lutheran Church in Tempe. Pitchfork Food Pantry was invited to the meeting to discuss the plans to support for the campus food pantries. Community partners from United Food Bank, ASU graduate students, and individual groups that included faith-based organizations who were interested in this food insecurity intervention. These organizations cooperated to support the food pantries by donating the food items. After the meeting, the faith community shared the marketing materials regarding the Pitchfork Food Pantries with their neighborhoods for food donations. Additionally, the Uptown Farmers' Market, which is one of the most extensive farmers' markets in the North Phoenix area, was interested in supporting the campus food pantry. On January 23, 2017, the founder of the Uptown Farmers' Market offered the food donations from vendors and a future transportation system for delivery of the foods to the food pantries. During the

meeting, another idea was that the food pantry could become a partner with the Careers through Culinary Arts Program (CCAP) to prepare the fresh produce in order to provide vegetables and fruits for the students in the future. However, the food safety specialist stated that providing fresh produce for the students was not feasible due to potential food safety issues.

University Support

In order to place the food pantries in convenient locations, the ASU Housing allowed use of spaces at the center of the campuses under the residence halls. To display the food items, there were three shelving units that were categorized by proteins, vegetables, soups, and fruits. Likewise, six shelving units were allocated at the Tempe campus. The hours and locations of the two food pantries were posted at the Resources tab on the MyASU website, which is the web portal for all ASU students, faculty and staff. To expand the outreach to the ASU campuses, the student outreach director of the Pitchfork Food Pantry posted flyers about the food pantries on Facebook.

In February, questions arose from university administrators regarding the health codes, liability, and food pantry spaces that were being shared with other college services. Additionally, the university requested the installation of three-compartment sink, a hand sink and a restroom at the food pantry space when serving non-canned foods. The food pantries were asked to close until additional AZ health code information could be provided.

Food Code

University administrators had questions regarding the possible liabilities related to the food pantries. According to the food safety specialist at ASU, the regulations of the food pantry had to follow the same regulations as food retail space, which require a handwash sink, a mop sink, a bathroom and a three-compartment sink. Because the Pitchfork pantry was the first campus food pantry at ASU, a correction of regulations regarding the campus food pantries was required in order to comply with university food safety issues.

Liability

To help others in good faith, donors may voluntarily provide food items and monetary donations to the food pantries. The food pantries solely utilized the donations for targeted needy individuals on the campuses.⁴⁴ According to the *Federal Bill Emerson Good Samaritan Food Donation Act*, the law protects both food pantries and donors from civil and criminal liability for causing harm to the recipients of food banks and food pantries.⁴⁴

Descriptive Characteristics of Student Pantry Clients

A total of 52 surveys were collected during January 2017 and February 2017. Participants were asked to complete the same portion of the survey each visit. There were slightly more male students 51.9% (n=27) than female students who visited the food pantries, with 73.1% (n=38) of students aged between 18 and 20 years. Half (50%) of students were first year undergraduate students. The number of students in each group of

years was 15.4% (n=8) in second year, third year, and fourth year undergraduates respectively. Only 3.9% (n=2) of the students were 5th year undergraduates. Almost half were 42.3% (n=22) of white decent and 57.7% (n=30) were non-white decent. Of total visits (n=52), the number of students visited the food pantry at the Downtown Phoenix campus was 30.8% (n=19), and Tempe campus was 69.2% (n=33). (Table 2)

Most students (75%) reported that first time visiting in any food pantries in the past. Additionally, 85.8% of students expressed they need additional resources including financial aid (49%), a career center (18.4%), health services (10.2%), and other services (8.2%). There was no significant difference in the amount of foods that students ate after they visited the food pantry. (Table 4)

Table 2: Information of Students Visiting the Pitchfork Pantry by Locations

| Variables | Total n=52 | Downtown Phoenix Campus n=19 | Tempe Campus n=33 |
|--|---------------|---------------------------------------|-------------------------|
| Age % (n) | | | |
| 18-20 years | 73.1 (38) | 94.7 (18) | 60.6 (20) |
| 21-23 years | 21.2 (11) | 5.2 (1) | 30.3 (10) |
| 24 years or more | 5.8 (3) | 0.0 (0) | 9.1 (3) |
| Sex % (n) | | | |
| Male | 51.9 (27) | 57.9 (11) | 48.5 (16) |
| Race/ethnicity % (n) | | | |
| White | 42.3 (22) | 42.1 (8) | 42.4 (14) |
| Black or African American | 3.9 (2) | 5.3 (1) | 3.0 (2) |
| Hispanic or Latino | 21.2 (11) | 15.8 (3) | 24.2 (8) |
| Asian or Pacific Islander | 9.6 (5) | 15.8 (3) | 6.1 (2) |
| Mixed/other | 23.1 (12) | 4 (21.1) | 8 (24.2) |
| Years in college % (n) | | | |
| 1 st year undergraduate student | 50.0 (26) | 57.9 (11) | 45.5 (15) |
| 2 nd year undergraduate student | 15.4 (8) | 31.6 (6) | 6.1 (2) |
| 3 rd year undergraduate student | 15.4 (8) | 10.5 (2) | 18.2 (6) |
| 4 th year undergraduate student | 15.4 (8) | 0.0 (0) | 24.2 (8) |
| 5 th year undergraduate student | 3.9 (2) | 0.0 (0) | 6.1 (2) |
| Father's education % (n) | | | |
| High school diploma | 19.2 (10) | 15.8 (3) | 21.2 (7) |
| Some college | 19.2 (10) | 10.5 (2) | 24.2 (8) |
| Associate's degree | 11.6 (6) | 10.5 (2) | 12.1 (4) |
| Bachelor's degree | 30.8 (16) | 42.1 (8) | 24.2 (8) |
| Graduate or professional degree | 19.2 (10) | 21.1 (4) | 18.2 (6) |
| Mother's education % (n) | | | |
| High school diploma | 19.2 (10) | 21.1 (4) | 18.2 (6) |
| Some college | 28.9 (15) | 15.8 (3) | 36.4 (12) |
| Associate's degree | 7.7 (4) | 0.0 (0) | 12.1 (4) |
| Bachelor's degree | 27.0 (14) | 42.1 (8) | 18.2 (6) |
| Graduate or professional degree | 17.3 (9) | 21.1 (4) | 15.2 (5) |
| International students, yes % (n) | 7.1 (2) | 0.0 (0) | 16.7 (2) |
| AZ residence status, yes % (n) | 31.6 (6) | 48.5 (16) | 42.3 (22) |
| Pell grant status, yes % (n) | 57.7 (30) | 68.4 (13) | 51.5 (17) |
| Meal plan, yes % (n) | 38.5 (20) | 26.3 (5) | 45.5 (15) |

Food Insecurity Status

The survey results showed that almost half of the students who visited the food pantries were experiencing very low food security, 48.1% (n=25) (Figure 1). The percentage of students who reported that they had experienced food insecurity in the past academic year was 69.3% (n=36). Of those responses, more than half of the students, 68.4% (n=13) from Downtown campus and 69.7% (n=23) from Tempe campus reported that they had experienced food insecurity during 2016-2017 academic years. (Table 3)

Figure 1. Students' Reports of Food Insecurity at the Pitchfork Pantry

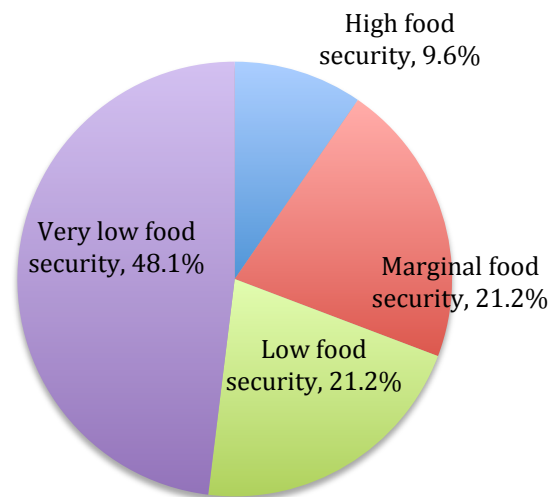


Table 3. Demographics and Food Insecurity among Students Visiting the Pitchfork Pantry

| | Total n=52 | Food secure n=16 n (%) | Food insecure n=36 n (%) | p-value |
|--|---------------|---------------------------------|-----------------------------------|---------|
| Campuses % (n) | | | | 0.924 |
| Downtown Phoenix | 30.8 (16) | 31.6 (6) | 68.4 (13) | |
| Tempe | 69.2 (36) | 30.3 (10) | 69.7 (23) | |
| Year in college % (n) | | | | 0.531 |
| 1 st year undergraduate student | 50.0 (26) | 62.5 (10) | 44.4 (16) | |
| 2 nd year undergraduate student | 15.4 (8) | 12.5 (2) | 16.7 (6) | |
| 3 rd year undergraduate student | 15.4 (8) | 6.3 (1) | 19.4 (7) | |
| 4 th year undergraduate student | 15.4 (8) | 18.8 (3) | 13.9 (5) | |
| 5 th year undergraduate student | 3.9 (2) | 0.0 (0) | 5.6 (2) | |
| International students, yes % (n) | 7.1 (2) | 0.0 (0) | 10.5 (2) | |
| Pell Grant status % (n) | | | | 0.888 |
| w/ Pell Grant | 42.3 (22) | 43.8 (7) | 41.7 (15) | |
| Meal plan status % (n) | | | | 0.476 |
| w/ Meal plan | 61.5 (32) | 68.8 (11) | 58.3 (21) | |
| Visited the pantry before % (n) | | | | 0.488 |
| Yes | 25.0 (13) | 18.8 (3) | 27.8 (10) | |
| How much they ate if they have visited before % (n) | | | | 0.738 |
| 25% or less | 7.7 (1) | 0.0 (0) | 10.0 (1) | |
| 50% | 30.8 (4) | 33.3 (1) | 30.0 (3) | |
| 75% | 15.4 (2) | 0.0 (0) | 20.0 (2) | |
| 100% | 46.2 (6) | 66.7 (2) | 40.0 (4) | |

Table 4. Student Satisfaction of the Pitchfork Pantry

| | Number of subjects | Percent of total |
|--|--------------------|------------------|
| Times visited | | |
| 0 (first time) | 39 | 75 |
| 1 | 6 | 11.5 |
| 2 | 5 | 9.6 |
| 3 | 1 | 1.9 |
| 4 | 1 | 1.9 |
| Approximately how many days worth of food do you feel you receive today | | |
| 1 day or less | 6 | 11.8 |
| 2-3 days | 25 | 49.0 |
| 4-5 days | 16 | 31.4 |
| 6 days or more | 4 | 7.8 |
| Other resources needed | | |
| ASU Financial aid | 24 | 49.0 |
| ASU career center | 9 | 18.4 |
| ASU health services | 5 | 10.2 |
| Other | 4 | 8.2 |
| None | 7 | 34.7 |

Qualitative Responses and Suggestions

Helpfulness of the food pantry staff

Six subjects provided comments regarding the satisfaction of staff's helpfulness. Most of the subjects provided positive feedback about staff at the food pantry such as, "This is such an amazing organization! Staff (name) was helpful and friendly!" One subject stated, "Very friendly and helpful, made me more comfortable as it was a little embarrassing." Two of six subjects listed, "It's pretty straight forward." One subject expressed the quality of food, "I feel this would be a great opportunity for students to eat healthier as well as eat something." One subject reported that the food pantry financially helped, "This is a huge help to me because my paycheck doesn't allow me to be able to buy much food in groceries."

Overall food pantry services

Three participants provided comments regarding the hours and locations of the food pantry in both Downtown and Tempe campuses. Two subjects from Tempe stated the location such as, "I just moved on campus and need food for when I can't go to the dining hall, so It's nice It's close." Another subject stated, "Since this is on campus, it is never more than a 20 min walk from me." One subject provided suggestions about the hours of operation, "Be great if it was open until 3 PM cause most people have classes until 2 PM."

Suggestions for improvement

Ten subjects provided suggestions regarding the food pantry services. Two subjects suggested providing the healthy choices such as, “Maybe some more veggies!” and “Better veggies.” Two subjects stated that they want more options, “Better variety of options” and “Give options of what to make with the food.” One subject suggested increasing the amount of food such as, “Just provide more food.” One subject stated the marketing of the food pantry, “Spread awareness about it. I don’t think enough students know it exists.” Three subjects were expressed that they didn’t have any suggestions such as, “It’s great. No suggestions.”

CHAPTER 5

DISCUSSION

The purpose of this study was to evaluate the acceptability and feasibility of a food insecurity intervention by creating and opening campus food pantries for college students. The food pantries operated with the assistance of university, community, and students support. The majority of the students visiting the pantry reported very low food security, indicating that the pantries were reaching students in need.

Opening food pantries was feasible, given the high level of support from stakeholders. There were sufficient food donations, monetary donations, and volunteers to open and maintain two food pantries. Given that there are over 508 food pantries serving college campuses as of July 2017,²⁴ these results are not surprising. Running two food pantries was not without challenges, as there were some restrictions related to liability, food code, and food safety. Because campus food pantries were mainly serving college students, the university intervened with the food pantry services. In particular, the university's concerns regarding food codes and liability, forced the pantries to close after a month of service. Further studies that consider opening a food pantry should be aware of the federal law, *Federal Bill Emerson Good Samaritan Food Donation Act* that protects those who donate food to people in need.⁴⁴

The students who visited the food pantries were highly satisfied with the services, hours, and location. A previous study that examined the satisfaction of campus food pantry in Canada, almost 80% of students were highly satisfied with the food pantries because the location was convenient within walking distance to the campus.¹⁷ Location may play an important role for selecting food assistance programs for college students.

The ASU pantries were both located near freshmen residence halls, which may be the reason why the present study had higher participation among first year undergraduate students. More outreach may be needed for the ASU pantries to reach older students in need.

Based on the current findings, many students were also not aware of the financial resources that were available to the students. Specifically, approximately 86% of students responded to additional resources needed. For example, 49% of students reported that they need assistance with financial aid, a career center (18.4%), health services (10.2%), and other services (8.2%). Previous studies, which examined the satisfaction of campus food pantries, did not consider other university-based resources.^{16, 17} Although current studies focused on SNAP and financial programs were beneficial for low-income populations,^{18, 28, 30} one study found that students had low participation in SNAP due to the difficult eligibility process for college students.¹⁹ By promoting additional university support resources, food pantries may become a bridge between students and financial aid, career centers, and health services. Since there is little research on which resource works best, more is needed to evaluate the effectiveness of student referral regarding university-based resources at the campus food pantry.

In addition to creating and building the food pantries on campus, future programs and studies should consider food safety and liability issues. The main reason why the Pitchfork Food Pantry only provided canned food was due to food codes.⁴² There was also a lack of information on current studies where the university intervened; however, it is possible that some universities may require adherence to legal food codes and regulations. Therefore, future studies should consider collaborating with the university to

create an appropriate food pantry food code to facilitate the operation of food pantries and if necessary, work to adapt the food code to prevent complications prior to opening food pantries

Strengths and Weaknesses

The strengths and weakness of this study should be considered when understanding the main findings. This is the first study to evaluate the acceptability and feasibility of campus food pantries in the U.S. Additionally, students demographics indicated that the sample was diverse in race, ethnicity, and gender, enhancing the generalizability of findings. One weakness of this study was the design of study, which was a descriptive and quasi-experimental study with a convenience sample. This indicates that causality may not be assumed. In addition, the sample size was relatively small due to the short period of assessment. The majority of students were first year undergraduates, which may limit the generalizability to other college students. Finally, results may not be generalized to all college populations in the U.S. because the study was conducted in only one local area of Phoenix, Arizona.

Summary

This was the first study to assess the acceptability and feasibility of a food pantry intervention among U.S. college students. The results of this study indicated that majority of students visiting the food pantries were highly satisfied with the hours, locations, and services of the Pitchfork Food Pantries. In addition, the satisfaction surveys demonstrated that food insecure students were more likely to revisit the food pantries. Because the

trend for creating campus food pantries is increasing in the U.S.,²⁴ the results of this study indicate that the food pantry intervention was highly acceptable and feasible for this college populations. However, since it is the first intervention to solely targeting a college population, future research should consider that there were some regulations that may restrict the operations and that it is important to first address liability, food code, and food safety issues. Further, the findings of this study may assist in initiating and promoting the campus food pantry to address food insecurity among college students.

CHAPTER 6

CONCLUSION

Campus food pantries provide access to easy-accessible food within walking distance on a campus.^{9, 16} Some studies suggested that building and creating campus food pantries may assist food insecure students. However, little is known regarding satisfaction with campus food pantries. This descriptive and quasi-experimental research evaluated the acceptability and feasibility of food pantry intervention among college students.

The evidence of findings supported the hypotheses. For acceptability measures, a majority of students were highly satisfied with the Pitchfork food Pantry. Not surprisingly, food insecure students were more likely to utilize the food pantries. For feasibility measures, there were university, students, and community supports involved in operating the food pantries. The Pitchfork Food Pantry from the Downtown Phoenix campus will remain in operation during the 2017-2018 academic year. Furthermore, the findings indicated that food pantries could be one of the main solutions for addressing food insecurity in a college population.

This is the first study assessing the satisfaction with campus food pantries in the U.S. Most students who used the food pantries were first-year undergraduate students. More research is needed to determine how food insecure students were satisfied with the food pantry intervention in various years of college. The present findings add to the small body of literature that students were highly satisfied with the campus food pantry intervention. More research needs to be conducted to determine the effectiveness of the food pantry intervention. Current studies looking at the student food insecurity have only

focused on satisfaction data. Given the high rates of food insecurity at ASU, continuation of campus food pantries may assist the students with food insecurity.

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APPENDIX A
CONSENT FORM AND SURVEY

ASU Student ID: _____

FI Pantry Survey

Q1 Pitchfork Pantry Consent

We are conducting a research study to evaluate ASU students' satisfaction with the Pitchfork Pantries. In order to improve operations of the pantry we are inviting your participation, which will involve completing a short survey. You have the right not to answer any question, and to stop participation at any time. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. There are no foreseeable risks or discomforts to your participation. Each time someone visits the pantry, we will collect your student ID. Your responses to this survey and participation in this pantry will be kept confidential. The results of this study may be used in reports, presentations, or publications but your name and student ID number will never be used. If you have any questions concerning the research study, please contact the research team at: ykim121@asu.edu or Meg.Bruening@asu.edu. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788. By clicking next, you indicate your agreement to participate in the study.

Q2 What is your gender?

- Male
- Female

Q3 Please indicate your age group:

- 17 years or less
- 18-20 years
- 21-23 years
- 24-26 years
- 27-29 years
- 30 years or more

Q4 How do you usually describe yourself? (check all that apply)

- White
- Black or African American
- Hispanic or Latino
- Asian or Pacific Islander
- American Indian or Alaska Native
- Mixed/Other

Q5 What is your father's highest completed level of education?

- Less than High School (no degree)
- High School Diploma (or equivalent)
- Some College (no degree)
- Associate's Degree/Trade/Technical/Vocational Training
- Bachelor's Degree
- Graduate or Professional Degree

Q6 What is your mother's highest completed level of education?

- Less than High School (no degree)
- High School Diploma (or equivalent)
- Some College (no degree)
- Associate's Degree/Trade/Technical/Vocational Training
- Bachelor's Degree
- Graduate or Professional Degree

- Q7 What is your year in college?
- 1st year undergraduate student
 - 2nd year undergraduate student
 - 3rd year undergraduate student
 - 4th year undergraduate student
 - 5th year or more undergraduate student
 - 1st year graduate student
 - 2nd year graduate student
 - 3rd year graduate student
 - 4th year or more graduate student
 - Other

Q7. If What is your year in college? Others Is Selected (Please answer the following question)

Q8 Other (please specify the answer)

- Q9 Are you a permanent Arizona resident?
- Yes
 - No

Q9. If Are you a permanent Arizona resident? No Is Selected (Please answer the following question)

- Q10 Are you an international student?
- Yes
 - No

Q10. If Are you an international student? Yes Is Selected (Please answer the following question)

- Q11 How long have you been in the US?
- 1-2 years
 - 3-4 years
 - 5-6 years
 - 7 years or more

Q12 Are you a Pell Grant recipient?

- Yes
- No
- Not sure

Q13 Are you enrolled in an ASU meal plan?

- Yes
- No

Q13. If Are you enrolled in meal plan? Yes Is Selected (Please answer the following question)

Q14 Specify meal plan (***) indicates default meal plan selection)

- Unlimited meals/week + \$250 M&G
- Sparky - 14 meals/week + \$375 M&G***
- Maroon - 180 meals/semester + \$375 M&G
- Gold - 8 meals/week + \$ 150 M&G
- All M&G - \$1,015 M&G/semester, (Upper Division only)
- Barrett meal plan
- Not sure

Q15 In the last 1 month, I worried whether my food would run out before I got money to buy more:

- Often true
- Sometimes true
- Never true

Q16 In the last 1 month, the food that I bought just didn't last, and I didn't have money to get more:

- Often true
- Sometimes true
- Never true

Q17 In the last 1 month, I couldn't afford to eat balanced meals:

- Often true
- Sometimes true
- Never true

Q18 In the last 1 month, did you ever cut the size of your meals or skip meals because there wasn't enough money for food?

- Yes
- No

Q18. If In the last 12 months, since last (name of current month), did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough ... **Yes Is Selected** (Please answer the following question)

Q19 How often did this happen?

- Almost every day
- Some days but not every day
- Only 1 or 2 week

Q20 In the last 1 month, did you ever eat less than you felt you should because there wasn't enough money for food?

- Yes
- No

Q21 In the last 1 month, were you ever hungry but didn't eat because there wasn't enough money for food?

- Yes
- No

Q22 In the last 1 month, did you lose weight because there wasn't enough money for food?

- Yes
- No

Q23 In the last 1 month, did you ever not eat for a whole day because there wasn't enough money for food?

- Yes
- No

Q23. If In the last 12 months, did (you/you or other adults in your household) ever not eat for a whole day because there wasn't enough money for food? **Yes Is Selected (Please answer the following question)**

Q24 How often did this happen?

- Almost every day
- Some days but not every day
- Only 1 or 2 week

Q25 Which Pitchfork Pantry location did you visit today?

- Downtown campus
- Tempe campus

Q26 How many times have you visited the pantry before?

- 0 (this is my first time)
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 or more

Q26. If How many times have you visited the pantry before? 0 (this is my first time) **Is Not Selected (Please answer the following question)**

Q27 Approximately, how much food did you eat from your last Pitchfork Pantry visit?

- 25% or less
- 50%
- 75%
- 100%

Q27. If How much food did you eat? 25% or less Is Selected (Please answer the following question)

And How much food did you eat? 50% Is Selected (Please answer the following question)

And How much food did you eat? 75% Is Selected (Please answer the following question)

Q28 Please specify the answer

Describe why you didn't eat the food

Describe what foods you didn't like it

Describe what foods do you wish the pantry provided

Q29 How would you rate the helpfulness of our staff in the food pantry? (please rate the following questions)

| | Strongly disagree | Disagree | Agree | Strongly agree |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| The staff helped you feel comfortable as you go through the pantry | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The staff provided helpful suggestions when guiding you through the pantry | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q30 Comments

Q31 Please rate the following questions:

| | Strongly disagree | Disagree | Agree | Strongly agree |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| The food pantry met your food needs today | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am satisfied with the overall food pantry services I received | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am satisfied with the food pantry hours of operations | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am satisfied with the food pantry location | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q32 Comments

Q33 Approximately how many days worth of food do you feel you receive today from the Pantry?

- 1 day or less
- 2-3 days
- 4-5 days
- 6-7 days
- 8 days or more

Q34 What other resources do you need?

- ASU Financial aid
- ASU career center
- ASU health services
- Other _____
- None

Q35 Do you have any suggestions to help us make the food pantry services more helpful?

APPENDIX B
INSTITUTIONAL REVIEW BOARD APPROVAL

APPROVAL: EXPEDITED REVIEW

Meredith Bruening
SNHP: Nutrition
602/827-2266
Meg.Bruening@asu.edu

Dear Meredith Bruening:

On 1/4/2017 the ASU IRB reviewed the following protocol:

| | |
|---------------------|--|
| Type of Review: | Initial Study |
| Title: | Assessing The Acceptability, Feasibility, and Effectiveness of ASU Pitchfork Pantries |
| Investigator: | Meredith Bruening |
| IRB ID: | STUDY00005483 |
| Category of review: | (7)(b) Social science methods, (7)(a) Behavioral research |
| Funding: | None |
| Grant Title: | None |
| Grant ID: | None |
| Documents Reviewed: | <ul style="list-style-type: none"> • PitchforkPantryEval.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • StudentConsent_InfoForm.121216.pdf, Category: Consent Form; • Pitchfork Downtown Food Pantry checklist.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Food Pantry IRB Application_010317.docx, Category: IRB Protocol; |

The IRB approved the protocol from 1/4/2017 to 1/3/2018 inclusive. Three weeks before 1/3/2018 you are to submit a completed Continuing Review application and required attachments to request continuing approval or closure.

If continuing review approval is not granted before the expiration date of 1/3/2018 approval of this protocol expires on that date. When consent is appropriate, you must use final, watermarked versions available under the "Documents" tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc:

Erika Brown
Megan Dzurka
Monica Diaz
Rebecca Bender
Katy Argo
Ellie Kim