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An Assessment of On-Campus Food Pantry Management and Nutrition Environment at Louisiana Colleges and Universities

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AN ASSESSMENT OF ON-CAMPUS FOOD PANTRY

MANAGEMENT AND NUTRITION ENVIRONMENT AT

LOUISIANA COLLEGES AND UNIVERSITIES

by

Courtney Hammons, Bachelor of Science in Nutrition & Dietetics, RDN

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ABSTRACT

The use of the Nutrition Environment Food Pantry Assessment Tool (NEFPAT) along with an examination of food pantry management systems will fill a needed gap in the understanding of the effectiveness of college on-campus food pantries. This descriptive, exploratory research study is designed to assess 4-year and 2-year higher education food pantries in the state of Louisiana. Specifically, food pantry management, nutrition education provided, and available food items will be assessed using the validated Nutrition Environment Food Pantry Assessment Tool (NEFPAT). This study assessed: (1) the characteristics of the food pantry management system, including the presence of nutrition professionals; (2) the on-campus food pantry using the NEFPAT's objectives of a) increasing client choice for nutritious options; b) establishing marketing of more healthful products; c) increasing provision of various forms of fruits and/or vegetables; d) increasing provision of various types of fruits and/or vegetables; e) promoting additional resources; and f) planning for alternative eating patterns. Food pantries served as subjects of this study; managers, volunteers, or sponsors of the on-campus food pantries were asked to provide information about the pantry's management. Researchers conducted observations at the pantry locations. The inclusion criteria for the colleges and universities were: (1) 4-year college/university or 2-year community college in the state of Louisiana with a physical address; and (2) colleges/universities who were found to have a food pantry on the college's/university's website. Those excluded from

this study were: (1) colleges/universities who refuse to participate in the study or do not respond to recruitment efforts; (2) those whose website do not identify a pantry being in existence or who post "food pantry is coming soon"; (3) those institutions classified as "other" or as "trade schools." Twenty-three of 54 eligible institutions clearly identified having a campus food pantry on their website. Sixteen of the 23 eligible institutions agreed to be a part of the study. This was a response rate of 69.6%. Descriptive statistical analysis, scaled/continuous data, categorical data, relationships among the variables, and non-parametric tests were all used for statistical analyses. Of the 16 institutions assessed, 12 were classified as a 4-year university and four were classified as a 2-year community college; additionally, 14 were considered public institutions and two were considered private institutions. Five institutions offered a nutrition/food science/dietetics degree. The majority of food pantries were managed by student affairs/student services (62.5%) departments, and only one institution was managed by their nutrition and dietetics department. The majority of institutions were sponsored by their university/college foundation (31.3%). One institution had an unmanned food pantry on campus that was managed by an external organization not affiliated with the institution. Of the 16 food pantries, 37.5% were members of the Feeding America nonprofit organization, or they had an established partnership with a food bank that was part of the Feeding America nonprofit organization. As a whole all 16 institutions assessed need to work on providing resources to clients who use the services of on campus food pantries. For those five institutions that have a nutrition/food science/dietetics degree, they should consider assessing their nutrition students to create materials and assessing their nutrition faculty to sit on advisory boards or councils to provide advisement regarding nutrition

environment. Recommendations for increasing marketing efforts of the on-campus food pantry should be considered. Additionally, pantries have the opportunity to explore ways to increase monetary donations and grant funding to purchase items targeted to healthy food items. Providing food pantry volunteers with nutrition education needs improvement. Focusing on these improvements will help increase the overall NEFPAT score and nutrition environment.

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DEDICATION

This thesis is dedicated to my advisor, Dr. Simone Camel, the one who helped me see the vision of this thesis all the way through. Because of this study, I aspire to continue working to combat food insecurity.

This thesis is also dedicated to those individuals currently insecure about where their next meal is coming from. May we one day live in a land where people not only have access to adequate amounts of food, but also have access to adequate amounts of nutritious foods.

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CHAPTER 1

INTRODUCTION

1.1   Introduction

The United States Department of Agriculture (USDA) states that food insecurity

is experienced when there is a lack of access to enough food to live a healthy and active

lifestyle that effects all members at the level of the household (USDA, 2020).

Additionally, food security explained by the United Nations Comprehensive Framework

for Action, is when "all people, at all times, have physical, social and economic access to

sufficient, safe and nutritious food which meets their dietary needs and food preferences

for an active and healthy life" (Updated Comprehensive Framework for Action, 2010).

Food pantries operate in communities in both the public and private sector. The

majority of food pantries are members of the Feeding America network (Feeding

America, 2018). Many colleges across the country have become increasingly aware of the

need for food assistance and have established on-campus food pantries. This study aims

to assess college food pantries at four-year and two-year colleges and universities in the

state of Louisiana.

According to Bruening, Nelson, Woerden, Todd, & Laska (2016), college

students, an understudied population, are typically overlooked because of their access to

on-campus housing and meal plans, however, they are not protected from the stressors

associated with poverty-like food insecurity (Bruening et al., 2016). College student food insecurity effects academic performance (Weaver et al., 2019). On-campus college food pantries are helping close the hunger gap around the United States and in Louisiana, however, little is known about the management structure, resources, or the nutrition environment of on-campus food pantries.

The Nutrition Environment Food Pantry Assessment Tool (NEFPAT) is a standardized tool aimed at assessing a food pantry's available food provided, management, and nutrition education provided. The questionnaire is answered by the food pantry's management and an observation of the food pantry operation was conducted by the researcher (Nikolaus, Laurent, Loehmer, An, Khan & McCaffrey, 2018). However, NEFPAT does not assess whether or not food pantry management has a background in health, healthcare, home economics, or nutrition & dietetics. This study aimed to determine if a food pantry's management's educational/professional background impacts its NEFPAT evaluation and the components of a healthy nutrition environment.

1.1.1   Purpose and Objectives

The purpose of this exploratory, descriptive research design is to assess two- and four-year colleges'/universities' on-campus food pantries in the state of Louisiana. Specifically, food pantry management, nutrition education provided, and available food items were assessed using the validated Nutrition Environment Food Pantry Assessment Tool (NEFPAT) (Nikolaus, Laurent, Loehmer, An, Khan & McCaffrey, 2018). This study assessed: (1) the characteristics of the food pantry management system, including the presence of nutrition professionals; (2) the on-campus food pantry using the NEFPAT's objectives of a) increasing client choice for nutritious options; b) establishing

marketing of more healthful products; c) increasing provision of various forms of fruits and/or vegetables; d) increasing provision of various types of fruits and/or vegetables; e) promoting additional resources; and f) planning for alternative eating patterns.

Keywords: food insecurity, food pantry, food bank, NEFPAT Tool, emergency food assistance

CHAPTER 2

BACKGROUND

2.1 Definitions, Measurement, and Characteristics of Food Security

According to the United States Department of Agriculture (USDA), food security is defined as, "the access by all members at all times to enough food for an active healthy life," and it is measured at the level of a household (USDA, 2020). Food security is also measured along a continuum. The USDA separates the continuum of food security into four ranges: high food security, marginal food security, low food security, and very low food security. High food security households experience no problems/anxiety about adequate access to enough food without reducing the quality, variety, and quantity of food. Marginal food security households at times experience problems/anxiety about adequate access to enough food without substantially reducing the quality, variety, and quantity of food. Low food security households experience some problems/anxiety about adequate access to enough food with reduced quality and variety but not quantity of food. Very low food security households experience several problems/anxieties during the year about adequate access to enough food with reduced quality, variety, and quantity of food because of a lack of resources and/or money (USDA, 2020). At a minimum, food security includes: "(a) the ready availability of nutritionally adequate and safe foods; (b) assured ability to acquire acceptable foods in socially acceptable ways (that is, without resorting

to emergency food supplies, scavenging, stealing, or other coping strategies)" (USDA, 2020). Food security can simply mean having enough food, but it does not necessarily mean food is adequate for an individual's nutritional needs such as appropriateness for medical conditions. Ingram (2020) explains there is a difference between food security and nutrition security (Ingram, 2020). In 1996, the World Food Summit included the adjective, "nutritious" in the definition of food security. Therefore, "the inclusion of the adjective 'nutritious' signaled that food also needs to contain sufficient nutrients as nutrients are a necessary contributor to food security. In 2012, the "Committee for World Food Security set the benchmark as 'when all people, at all times, have physical, social, and economic access to food which is safe and consumed in sufficient quantity and quality to meet their dietary needs and food preferences, and is supported by an environment of adequate sanitation, health services and care, allowing for a healthy and active life'" (Ingram, 2020). Food is only one contributing factor to nutrition security.

The United States Department of Agriculture (USDA) states that food insecurity is experienced when there is a lack of access to enough food to live a healthy and active lifestyle that effects all members at the level of the household (USDA, 2020). Contrarily, food security explained by the United Nations Comprehensive Framework for Action, is when "all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life" (Updated Comprehensive Framework for Action, 2010). There are differences between the way food insecurity is described and measured at the household and the individual level. At the household level, food insecurity is recognized as a household-level economic social condition of limited access to food (USDA, 2020).

Food depletion, unsuitable food, food anxiety, and unacceptable means of food acquisition all fall underneath the umbrella of food insecurity at the household level. Inadequate food quantity can be described as food depletion, and inappropriate food quality can be described as unsuitable food. The psychological component of food insecurity is described as feeling deprived and lacking choice, which is known as food anxiety. Lastly the integrity component of food insecurity addresses whether an unacceptable means of food acquisition is being experienced. Hunger is an individual-level physiological condition that may result from food insecurity that includes insufficient intake (quantity), inadequate diet (quality), feeling deprived and lacking choice (psychological), and disrupted eating patterns (social) (USDA, 2020).

Food insecurity is a phenomenon that is multifaceted; according to Decker and Flynn (2018), the following factors have been identified as contributors to food insecurity: (1) unemployment or underemployment; (2) high housing costs; (3) poverty; (4) lack of access to Supplemental Nutrition Assistance Program (SNAP) or other food assistance programs; and (5) medical or health costs. Without access to nutrient-dense meals needed to promote health and prevent disease, food insecure individuals are less able to lead productive, active lives and are at increased risk for developing chronic diseases. This results in increased spending on healthcare for persons who experience food insecurity (Decker & Flynn, 2018).

2.1.1   Feeding America Nonprofit Organization: Food Pantries vs. Food Banks

The Feeding America nonprofit organization is the largest network of food banks and food pantries in the nation including 200 food banks and over 60,000 food pantries (Waite, 2019). Feeding America has defined the terms "food pantry" and "food bank"

such that they are not interchangeable. As defined by Feeding America, a food bank is, "a warehouse for millions of pounds of food and other products that go out to the community" (Feeding America, 2020). Food banks vary in size, and food banks may receive food from the community, restaurants, and grocery stores. In the Feeding America organization, food banks serve specific regions and counties/parishes in the state they reside (Waite, 2019). Food pantries are "a distribution center where hungry families can receive food. Supplied with food from a food bank, pantries feed hundreds of people per week" (Waite, 2019). Food pantries differ depending on the community they serve; there are school food pantries and even mobile food pantries (Waite, 2019). Pantries serve the direct need of a community and can receive food directly from the Feeding America food banks by becoming partners in the organization (Waite, 2019).

Waite (2019) explains that providing access to food by establishing school food pantries for grades K-12 has been identified as the best place for access to food for those in need. Feeding America reported school food pantry programs help alleviate child hunger by helping children and their families have access to on-site food pantries that are available throughout the school year and during school breaks (Feeding America, 2020). If K-12 schools have seen success with school food pantries can help fill a need, then college/universities can do the same. The use of on-campus food pantries for college students has increased, and in October 2019, Feeding America along with authors, Berry, Doll, and Sloper, posted a College Hunger Landscape Report (Feeding America, 2019). As of 2019, 129 food banks of the 200 food banks nationwide are helping in the fight to end hunger on college campuses (Feeding America, 2019). Of those food banks, 110 food banks directly provide services to college campuses, 33 participate in advocacy efforts,

and 39 encourage Supplemental Nutrition Assistance Program (SNAP) application for qualifying students; of the 110 food banks who directly provide services to college campuses, 98 food banks operate 316 campus pantries, and 51 food banks operate 124 mobile distributions (Feeding America 2019).

2.2   Prevalence of Food Insecurity

2.2.1   Prevalence of Food Insecurity in the United States

The United States Department of Agriculture Economic Research Service (USDA ERS) 2019 estimates that 10.5% of U.S. households were food insecure at some point during the year (USDA, 2019). According to Feeding America, about one in nine people (over 37 million people) struggle with hunger in the United States (Feeding America, 2018). Although there is a 42.4% obesity rate in America, 11.5% of Americans do not know where their next meal is coming from (Feeding America, 2018). Feeding America's Impact of the Coronavirus in 2020 (2020) study finds that these numbers have been projected to increase due to the coronavirus (COVID-19) pandemic, a global pandemic that began in 2019. They project that more than 50 million people may be experiencing food insecurity due to the effects brought on by the coronavirus pandemic (Feeding America, 2020). Food insecurity impacts every community in the country, and many households are not eligible for access to federal nutrition programs (like SNAP and WIC); so, households rely on food banks and food pantries which are a part of the Feeding America Nonprofit Organization to put food on the table (Feeding America, 2018).

2.2.2   Prevalence of Food Insecurity in Louisiana

According to the USDA ERS, from 2017 to 2019, prevalence rates of food insecurity in Louisiana were above the U.S. average (USDA, 2019). Prevalence of food insecurity in Louisiana was 15.3% with prevalence rates of very low food security at 7.0% for the state of Louisiana compared with prevalence of food insecurity for the nation was 10.5% with prevalence rates of very low food security at 4.1% for the U.S. (USDA, 2019). In 2017, 87% of food-insecure counties were located in the southern U.S. states. Louisiana was leading the nation as one of the most food insecure states in the nation (Feeding America, 2018). According to Feeding Louisiana (Feeding Louisiana, 2018), one in six people struggle with hunger in Louisiana. This amounts to an estimated 784,000 family members in Louisiana struggling with food insecurity, who may not know where their next meal is coming from and are sometimes forced to choose between paying household expenses and food (Feeding America, 2018 & Feeding Louisiana, 2018). According to the United States Department of Agriculture, Economic Research Service government publication (2019), the prevalence of food insecurity varies by state and is affected by household characteristics such as income, employment, and household structure, as well as by the state-level characteristics of "average wages, cost of housing, unemployment, and State-level policies affecting access to unemployment insurance, the State Earned Income Tax Credit, and nutrition assistance programs" (USDA ERS, 2019).

2.2.3   Prevalence of Food Insecurity in College Students

Food insecurity contributes to the increased prevalence of disease and comorbidities in the United States (USDA ERS, 2017). Bruening, Argo, Payne, and Laska (2017) conducted a systematic review of peer-reviewed and gray literature

available addressing food insecurity in college students. Fifty-eight institutions were assessed, and Bruening et al., found that "food insecurity appears to be alarmingly high at postsecondary education institutions, and the limited evidence available to date suggests that it is experienced by an average of approximately one-third to one-half of students across the institutions assessed." (Bruening et al., 2017). They also stated that "food insecurity is a complex problem and is understudied among post-secondary education students". According to their findings, the prevalence of food insecurity among postsecondary education students appeared double the general US population (Bruening et al., 2017). Among the systematic review of both peer-reviewed research and gray literature, Bruening et al., found a 42% average food insecurity rate reported in postsecondary education students from peer-reviewed research and a reported 35% average food insecurity rate in postsecondary education students in the gray literature (Bruening et al., 2017).

In April 2019, a study was released by the Hope Center for College, Community and Justice that included 123 colleges and resulted in responses from 86,000 students (Goldrick-Rab et al., 2019). The study results indicated that 48% of students from two-year community colleges and 41% of students from four-year universities were found to be food insecure as measured by administering the #RealCollege survey created by the Hope Center for College, the "nation's largest annual assessment of basic needs security among college students" (Goldrick-Rab, Baker-Smith, Coca, Looker, & Williams, 2019). Specifically, the Hope Center for College #RealCollege survey "evaluates access to affordable food and housing". To assess food security, questions from the validated USDA 18-item Household Food Security Module was utilized and food security was

classified as either high, marginal, low, or very low food security (Goldrick-Rab et al., 2019).

Recently, Raskind, Haardofer, and Berg (2019) conducted a study that examined the association between food insecurity, GPA, and psychosocial health among college students. This longitudinal cohort study analyzed 2377 eligible English-speaking students between the ages 18 to 25 from seven Georgia colleges and universities. There were 4 waves of data collection between autumn 2014 and autumn 2015. Data was collected via web-based surveys every 4 months. Researchers assessed food security status using the USDA Household Food Security Survey Module Six-Item Short Form to assess food security status at various kinds of colleges/universities; two or more affirmative responses to the six-items indicated that the individual was food insecure. Overall, the study reported that food insecurity was 29% across institutions who participated in this study. However, further data analysis indicates that food security was 23% for private college, 33% historically black college and university (HBCU), 34% public university, and 37% technical colleges (Raskind et al., 2019).

Wooten, Spence, Colby, and Steeves (2018), found similar increased prevalence of food insecurity among college students. Their study was conducted with three campuses, all part of a large university system in Southeast United States. The final sample for analysis included 4842 students, majority undergraduates enrolled full-time. Food insecurity status was assessed using the 10-item questionnaire from USDA. However, freshmen were ineligible to complete the study as Wooten et al., used the FSSM survey to assess food insecurity rates over the course of one year; freshmen were ineligible because they had not been enrolled for at least one year. They assessed scores

as high food security (score: 0), marginal food security (score: 1 to 2), low food security (score: 3 to 5), and very low food security (6 to 10). Overall, they found 35.6% of students were food insecure with 16.1 % of students with low food security and 19.5% of students with very low food security (Wooten et al., 2018).

Bruening, Woerden, Todd, and Laska (2018) conducted the first longitudinal study to examine effects of food insecurity and its relation to health behaviors and outcomes over time among college freshmen. They investigated food insecurity over time in a diverse sample of university freshman over the course of one academic year, two semesters. During the fall and spring semesters of 2015-2016, college freshmen were recruited from a university in Arizona at three campuses, from six residential halls. The participants were surveyed using the USDA six-item food security short form to assess food security status, however, the scale for the food security short form module was altered to examine food security status over the course of one month instead of one year. There were four time points of assessment. The initial survey assessed food security status prior to moving on campus since it was conducted at the beginning of the semester. In addition to the food security measure, student eating behaviors, physical activity, mental health, alcohol behaviors, sociodemographics, and anthropometric measurements (height, weight, BMI) were obtained and analyzed. Self-reported consumption of food, alcohol, physical activity, sleep, and mental health were recorded four times during the 2015-2016 academic year. The researchers found that Pell grant recipients had higher odds of being food insecure, but "no differences were observed between gender, or race/ethnicity, and food insecurity at any of the time points" (Bruening et al., 2018). They found that although college freshman who live on-campus are required to purchase a

meal plan, this meal plan covered as few as eight meals per week. Additionally, students were allowed to opt out of a meal plan under special circumstances (Bruening et al., 2018). Similarly, Wooten et al., found no significant difference between students who participated in on-campus meal plan and those who did not (Wooten et al., 2018).

2.3   Implications of Food Insecurity in College Students

2.3.1   Implications of Food Insecurity in College Students

Bruening et al., students were found to be significantly more food insecure if they were recipients of Pell grants, at the end of the semester compared to the beginning, if they did not regularly consume an evening meal or regularly consuming breakfast, if they were experiencing decreased mood, if they were experiencing high levels of stress or reported of having anxiety, if they reported having unhealthy eating habits on campus, and if they felt tired during the day or did not obtain enough sleep. (Bruening et al., 2018). According to Raskind, Haardofer, and Berg (2019), food insecurity was associated with poorer psychosocial health and poorer academic performance.

Raskind et al. (2019), also found that college students possessed similar characteristics of the characteristics of a household with food insecurity. Higher odds of food insecurity were found in the following characteristics when compared to their counterparts, students living off campus, students receiving SNAP benefits, students with lower monthly discretionary budget, students with parents who only completed high school, some college or an associate's degree compared to a bachelor's degree or higher, and students who reported at least one or more adverse childhood experience (Raskind et al., 2019). Wooten, Spence, Colby, and Steeves (2018), found similar results in their study assessing rates of food insecurity among college students. Greater instances of food

insecurity were found associated with the following characteristics: students with

previous food insecurity; students receiving loans; students who had part-time jobs,

students without full-time jobs, students who used personal savings as income; students

whose essential spending increased; and students classified as seniors (Wooten et al.,

2018). Additionally, Wooten et al. (2018), found that students who do not receive

familial financial support or scholarships that did not require repayment but instead they

receive financial support from financial aid or student loans were more likely to be food

insecure. For example, a student from a higher socioeconomic background may receive

more familial financial support to cover costs of tuition, housing, and food compared to a

student from a lower socioeconomic status who may not receive familial financial

support. This supports Wooten et al.'s (2018) statement that indicates "a potential

relationship between independence from familial financial support and food insecurity"

(Wooten et al., 2018, p. 387). This theory is further supported by Bruening et al. (2017)

in which the authors stated at that time, interestingly, no identified studies on "food

insecurity in postsecondary settings described the role of families as a means of solutions

in addressing food insecurity, which may be because families have limited capacity to

support struggling students" (Bruening et al., 2017, p. 1787).

2.3.2 <u>Implications of Food Insecurity in Nontraditional College Students</u>

Nontraditional students are defined by The National Center for Education and

Statistics (NCES) as meeting one of seven characteristics: "(1) delayed enrollment into

postsecondary education; (2) attended part time; (3) financially independent; (4) worked

full time while enrolled; (5) had dependents other than a spouse; (6) was a single parent;

or (7) did not obtain a standard high school diploma" (NCES, 2015). To understand food

insecurity in the collegiate population, it is important to understand the current demographics of college students. Yesterday's nontraditional student is today's traditional student (NCES, 2015). Today's college students are no longer the traditional students–18- to 22-years-old, financially dependent on parents, living on campus who attend college right out of high school, and enrolls as a full-time college student (NCES, 2015). NCES found that students today are older and more diverse with family obligations. From findings in 2012, NCES found that 40% of undergraduate students to be 25 years or older. They also project the nontraditional college student age to grow more than twice as fast by 2022 than traditional aged students (NCES, 2015).

There is limited research on the prevalence of food insecurity in nontraditional college students, however, in a 2019 dissertation (Beam, 2019) devoted to looking at the implications of food insecurity on nontraditional students, the researcher found that when food insecurity existed, nontraditional students had a lower overall GPA, was twice as likely to fail or withdraw from a course and was four-times more likely to take an incomplete grade. Beam (2019) also found nontraditional college students "more likely to experience food insecurity at higher rates compared to other student populations". This was not surprising, recognizing that many characteristics of nontraditional students overlap with characteristics of food insecure households as mentioned in the current literature.

Prevalence of food insecurity in the United States for 2018 was higher in the following households: those with children, with children under the age of 6, with children and single female/male, headed by black non-Hispanic or Hispanic, with incomes below 185% poverty threshold, located in metropolitan areas or nonmetropolitan (rural) areas,

with women or men living alone, and with elderly members (USDA ERS, 2018). Decker and Flynn have also identified "college students and those without reliable transportation are also at risk for food insecurity" (Decker & Flynn, 2018).

2.3.3   Implications of Food Insecurity Exacerbated by COVID

According to the Impact of the Coronavirus on Food Insecurity in 2020 Feeding America report, before the COVID-19 pandemic threatened many lives and livelihoods, food insecurity in the United States was the lowest it had been in 20 years (Feeding America, 2020). In August of 2020, Feeding America created an interactive map, Impact of the Coronavirus on Food Insecurity, to show 2020's projected overall food insecurity rate (The Impact of the Coronavirus on Food Insecurity, 2020). In 2018, Louisiana was ranked as the state with the fourth highest food insecurity rate. The Impact of the Coronavirus on Food Insecurity study projected Louisiana would remain at that rank, with a projected increase in the food insecurity rate in the Pelican State from 16.1% to 20.1%. Mississippi, Louisiana's neighboring state, is projected to remain the state with highest food insecure rate at 22.6% (Feeding America, 2020).

2.3.4   Implications of Food Insecurity in Academic Performance

According to Weaver Vaughn, Hendricks, McPherson-Myers, Jia, Willis, and Rescigno (2019), in their study assessing the relationship between food insecurity and academic performance, "the odds of the food insecure falling in the lowest 10 percent of the grade point average (GPA) are two times those of food secure counterparts" (Weaver et al., 2019). Bruening et al., found the prevalence of food insecurity in a sample of college freshmen to be significantly higher at the end of the semester (35% and 36%) vs the beginning (28%); the end of a semester is typically a time when students run out of

food provided by caregivers and deal with the added stress brought on by final exams (Bruening, et al., 2018).

In 2019, Raskind et al., examined "whether psychosocial health mediates the association between food insecurity and grade point average (GPA) among college and university students." GPA was self-reported at wave 4. Findings included an association of food insecurity with decreased GPA (Raskind et al., 2019). Similarly, Wooten et al. (2018), assessed participants academic standing/success and recorded self-reported GPA. Students who reported lower self-reported GPA's were more likely to be food insecure. Wooten et al. (2018), suggested that "it may be beneficial to screen for food security status during the financial aid review process to identify students who may need additional support or resources to successfully complete their studies".

2.3.5   Implications of Food Insecurity in Psychosocial Health

Raskind et al., (2019) examined the effects food insecurity had on psychosocial health, specifically, depression, anxiety, and hope. Depression was assessed with the Nine-item Patient Depression Questionnaire, which measures depression severity. Anxiety was assessed using the eighteen-item Anxiety Sensitivity Index, which measures anxiety sensitivity. Lastly, hope was assessed using the six-item Adult State Hope Scale, which "measures participant hope or belief in their capacity to take action towards reaching their goals and belief in their capacity to generate routes to reach those goals." The researchers found that food insecurity was associated with an increase in depression and anxiety and a decrease in hope. Overall, they found food insecurity to be associated with poorer psychosocial health (Raskind et al., 2019).

2.4   Why Evaluate Food Pantries?

The focus of this research is to investigate on-campus food pantry management and nutrition environment through an assessment using Nutrition Environment Food Pantry Assessment Tool (NEFPAT). The NEFPAT is a validated assessment tool. Nikolaus et al., (2018) listed consumer nutrition environment characteristics as, "price, promotions, placement, range of choices, freshness, and nutritional information". Addressing consumer nutrition environment factors have improved outcomes for low-income populations who typically rely on emergency food and supplies provided by food pantries. The NEFPAT assesses the consumer nutrition environment, and the researchers who developed it state that "the tool was designed to be completed by external observers who complete a standardized training to increase uniformity of reporting and reduce self-report biases (Nikolaus, 2018, p. 725).

The tool was developed and evaluated by pilot testing with four professionals and nine pantries. The pantries were located in four counties in Illinois. Following the pilot test, the tool was revised and then used again in 27 pantries in both rural and urban counties. The NEFPAT scores (gold, silver, and bronze) are based off of ranges taken from the number of affirmatively answered questions a part of each objective. A bronze score is a total number of affirmative answers ranging from 0 to 15, a silver score is a total number of affirmative answers ranging from 16 to 31, and a gold score is a total number of affirmative answers ranging from 32 to 47. Results from the pilot test when NEFPAT was revised, NEFPAT scores ranged from five to 26. The average score was 15.9, and 81.5% of pantries were categorized as silver with the remaining 18.5% scoring

bronze. No pantry scored a gold score. Out of the 27 pantries, few provided nutrition education (Niklaus et al., 2018).

NEFPAT is one of the only validated tools available to assess the consumer nutrition environment of pantries. Pantries provide millions of pounds of food to millions of Americans every year, however optimization of food pantries is often overlooked and has been hindered for years without having access to a validated tool to assess food pantries. Moreover, there is a need for food pantries to provide a nutrition environment that promotes health to food insecure individuals is imperative to address the health consequences that arise from food insecurity (Nikolaus et al., 2018).

2.4.1   Food Pantries on College Campuses

Bruening et al., (2017) suggested that because of the high rates of food insecurity recently found in postsecondary education students, more interventions are needed on campuses to assist students who are struggling with food insecurity. The authors also discussed that "it appears that the most common approach to addressing on campus food insecurity is focused on quick wins at the intrapersonal level (eg, educational programming) and interpersonal level (eg, food donation among peers, faculty, and staff), and institutional level (food pantries) (Bruening et al., 2017). In another study by Bruening et al. (2018), it is stated that, "the primary means by which postsecondary institutions are addressing food insecurity is through campus food pantries, or sites that provide free food, often procured by donation, to people in need". The size of a food pantry can vary from a small closet to a large room filled with cabinets and refrigerators. As of 2018, there were over 500 food pantries on US college campuses (Bruening et al., 2018). On-campus college food pantries are helping to close the hunger gap in Louisiana,

and, in the state of Louisiana, there are 23 institutions with an on-campus food pantry with two institutions stating a food pantry is coming soon.

There is not much known about the causal factors for college students experiencing food insecurity (Bruening et al., 2018). Lasting effects of food insecurity in this population are unclear, however, with college freshmen, "short-term effects of food insecurity on health outcomes are more notable" (Bruening et al., 2018). The authors felt that future research could focus on how food insecurity affects the diet of college students. Additionally, stating that "food pantries may not address the root causes of food insecurity among students, given the current findings, food pantries may be an appropriate intervention to help those students with short-term, acute food insecurity" (Bruening et al., 2018). Furthermore, they discuss the lack of research addressing food insecurity and the effectiveness of on-campus pantries, the longevity of the pantry on campus, student reach, and the types of foods provided by the pantry (Bruening et al., 2018). Because Wooten et al. (2018) found that students with food insecurity prior to enrolling at a college/university were almost five times more likely to be food insecure, it was suggested that additional early screening should be implemented, as did Bruening et al.(2018). Moreover, extra outreach to students at the end of a semester may be beneficial (Bruening et al., 2018).

2.4.2   Nutrition Environment Food Pantry Assessment Tool

The NEFPAT has identified six objectives to address to provide a health promoting environment in a food pantry. They include: (1) increasing client choice, (2) marketing healthful foods, (3) diversifying fruit/vegetable forms, (4) diversifying fruit/vegetable types, (5) promoting additional resources (i.e. low-income, nutrition

education, affordable healthcare, health screening, gardening, and employment assistance information), and (6) accommodating alternative eating patterns (i.e. education for food pantry volunteers, food for low-income elderly, labeled section for specific foods (gluten free, dairy free, etc.), diverse protein options, and culturally diverse foods (Nikolaus et al., 2018). Under each objective, strategies to be assessed using both objective observations and responses to questions by pantry staff are assessed. After the NEFPAT is scored, pantries will receive either bronze, silver, or gold rating (Nikolaus et al., 2018). The NEFPAT uses the verbiage, foods to encourage (F2E) in some of the questions included in the questionnaire. F2E is a term derived from the Feeding America Nonprofit Organization, and it is meant to be a framework for food banks to describe nutritional contributions of the different types of foods included in food banks' inventories. See Appendix E. Foods must meet certain criteria within four different categories (fruits and vegetables, grains, protein, and dairy) to qualify as a food to encourage (Feeding America, 2015). These qualifications are included in the NEFPAT questionnaire.

2.4.3 <u>NEFPAT: What is Missing?</u>

In 2017, Precious, Baker, and Edwards published a qualitative study investigating the emergency food network of Oregon. The researchers used the concept of bricolage to assess how discretionary decisions change in a voluntary organization like a food bank/pantry. They assessed street level bureaucrats (like public service workers who directly interact with citizens as part of their occupation). Bricolage is from the French word, bricoler, which means to tinker and combine. Weick, (1993) defines a bricoleur as "someone able to create order out of whatever materials at hand" (Weick, 1993, p. 639).

From a management perspective, when bricoleurs are faced with difficult situations, old practices used before may be too inefficient and costly and new practices may be seen as too risky; a bricoleur tinkers and combines old and new logics into novel combinations that are more appropriate for the current situation. This style of management has been shown to produce new behaviors and roles within an organization.

Precious, et al. (2013) explored Oregon's emergency food network because there was only one food bank in the entire state, and that meant all food pantries in the state are serviced by that one food bank. This gave a greater opportunity for the state of Oregon to have a stronger sense of policy with consistent practices, thus a stronger network and ability to compare less than optimal practices among operations. The researchers stated that even though "paid professionals at the federal, state, and sometimes sub-state regional levels make policy decisions within the national emergency food network," a large majority of food pantries are staffed by volunteers, and the volunteers are the ones getting the emergency food assistance to the needy and making distribution decisions (Precious et al., 2017, p. 2013). They also noted that volunteers volunteer because they are intrinsically motivated to help for a variety of reasons. It is important to understand their decision-making methods especially from a management perspective. Bricolage attempts to reconcile director's role strain while maintaining an understanding of the purpose of the food pantry (Precious et al., 2017).

Precious et al. (2017) collected empirical data from semi-structured interviews with employees of the Oregon Food Bank. Additionally, directors of each pantry were recruited for the study to further assess the policies and procedures each food pantry abide by. They found the interviewees to be initially motivated by a desire to help the

food insecure, which is not surprising since individuals who desire to work in food banks/pantries are often motivated by a sense of altruism. They found that individuals make sense of things in different ways, which is reflected by their findings (Precious et al., 2017).

Currently, research related to managerial strategies and practices in food pantries are very limited, especially in relation to alleviating food insecurity on college campuses. In the college setting, many students are motivated to volunteer because of curriculum requirements. Less is known about motivating factors behind volunteering at a university or college institution's on-campus food pantry. Additionally, less is known about management practices in general on university and college institution's on-campus food pantries and whether having a nutrition degree or nutrition professional on the advisory board or staff has any effect on nutrition environment of the pantry.

Nikolaus et al. (2018) discussed that the NEFPAT can be used to assess the six objectives and also "to assess the consumer nutrition environment of food pantries," which can be seen as baseline data. However, the NEFPAT does not assess food pantry staff, management, or volunteers' characteristics. For example, NEFPAT does not assess food pantry staff, management, or volunteer's occupations, education, experience and knowledge of food insecurity, nor experience with or knowledge of food and nutrition principles. This study aims to assess food pantry's consumer nutrition environment using the NEFPAT, and also identify food pantry staff, management, and volunteers' characteristics to evaluate whether these characteristics are related to the nutrition environment of the pantry.

2.5   Conclusion

Based on current research, the NEFPAT is a validated tool that examines consumer nutrition environment in food pantries. The use of the NEFPAT along with an examination of food pantry management systems will fill a needed gap in the understanding of the effectiveness of college on-campus food pantries. This descriptive, exploratory research study is designed to assess 4-year and 2-year higher education food pantries in the state of Louisiana. Specifically, food pantry management, nutrition education provided, and available food items were assessed using the validated Nutrition Environment Food Pantry Assessment Tool (NEFPAT) (Nikolaus, Laurent, Loehmer, An, Khan & McCaffrey, 2018). The researcher assessed the pantry operation for observations. This study (1) identified the characteristics of the food pantry management system, including the presence of nutrition professionals; (2) assessed the on-campus food pantry using the NEFPAT's objectives of a) increasing client choice for nutritious options; b) establishing marketing of more healthful products; c) increasing provision of various forms of fruits and/or vegetables; d) increasing provision of various types of fruits and/or vegetables; e) promoting additional resources; and f) planning for alternative eating patterns.

CHAPTER 3

METHODS

3.1   Study Design

A descriptive, exploratory, cross-sectional design was used to assess two- and four-year college and university on-campus food pantries in the state of Louisiana. Specifically, the pantry's management and nutrition environment were assessed/evaluated. The environment included assessment of available nutrition education, variety of food items, and availability of quality food items. Quality food items are foods that are acceptable to consumers based on appearance, size, texture, and flavor. Food pantries served as subjects of this study; managers, volunteers, or sponsors of the on-campus food pantries were asked to provide information about the pantry's management. In addition, researchers conducted observations at the pantry locations. The inclusion criteria for the colleges and universities were: (1) 4-year college/university or 2-year community college in the state of Louisiana with a physical address; and (2) colleges/universities who were found to have a food pantry on the college's/university's website. Those excluded from this study were: (1) colleges/universities who refuse to participate in the study or do not respond to recruitment efforts; (2) those whose website do not identify a pantry being in existence or who posted "food pantry is coming soon"; (3) those institutions classified as "other" or as "trade schools."

A list of universities and community colleges in the state of Louisiana was obtained from the Niche website which lists colleges and universities found in each state (Niche, 2020). In the state of Louisiana, 30 four-year colleges/universities and 24 two-year colleges/community colleges were listed. For simplicity, three colleges, Blue Cliff College, Central Louisiana Technical Community College, and Northshore Technical Community College, that have multiple smaller satellite locations across Louisiana, were recognized as one campus, and the main campus was the only campus that was investigated, resulting in a total eligible sample of 54 higher education institutions. Twenty-three of the 54 eligible institutions clearly identified having a campus food pantry on their website. Twenty-nine eligible institutions did not identify having a campus food pantry, and two of the eligible institutions' website indicated that the institution was in the process of bringing a food pantry to that campus or information on the Internet was not clear and a phone call was needed to determine whether they had a functioning food pantry.

3.2 Data Collection

This study was approved by the Louisiana Tech Institutional Review Board prior to the researcher beginning the process of contacting the 23 colleges/universities that had clearly identified having a campus food pantry on their website. The researcher initially emailed a contact from each university stating that they would be called by the researcher soon about the project concerning the food pantry environment. The researcher asked for clarification on the correct food pantry contact phone number and if the contact had a specific time/date available for a phone conversation. If the contact did not follow up with an email, the researcher planned to call the phone number that was associated with

the food pantry provided on the university/college website or call the university operator. During the initial phone conversation with the food pantry contact, the researcher presented the research to each operator over the phone and sought permission to assess their food pantry. If the operator verbally consented to participation, a consent form was emailed after the initial phone conversation to be completed, scanned, and emailed back. An appointment time was scheduled during the phone conversation for an in-person interview and observation of each food pantry to be completed during one visit. Before visiting campus food pantries, the researcher and the research assistant completed the NEFPAT training, a 42-minute video explaining how to use the NEFPAT tool, created by Cassandra Nikolaus (NEFPAT developer).

A researcher-developed electronic data collection tool utilizing Qualtrics Software was created (Qualtrics XM, 2020), see Appendix G. The data collection tool included food pantry management characteristics by interview questions and observation items for the NEFPAT component of the assessment. The objectives addressed by the data collection included (1) identification of the management systems of the food pantries including the presence of nutrition professionals; (2) assessment of on-campus food pantries using the NEFPAT's objectives of a) increasing client choice for nutritious options b) establishing marketing and nudging of more healthful products c) increasing provision of various forms of fruits and/or vegetables d) increasing provision of various types of fruits and/or vegetables, e) promoting additional resources; and f) plan for alternate eating patterns.

The researcher traveled to the college/university campuses who agreed to participate in the study at a date and time negotiated by the researchers and the operator.

The Qualtrics data collection tool was utilized during the one-time visit to each food pantry. The data collection tool was used during both the interview component, where the researcher interviewed food pantry staff, and the observation component, where the researcher objectively assessed the food pantry. At the end of the interview and observation, the researcher presented the food pantry operator with the incentive literature holder (See Appendix D). Data collection from start to finish took approximately 30 to 45 minutes not including travel time.

Two of the institutions were not assessed by observation because of one being an unmanned food pantry that is not managed by the institution and the other was due to COVID-19 regulations, therefore, all information for both of those institutions were obtained via Zoom Video Communications or a phone call.

3.3 Data Analysis Plan

For the first objective addressed during data collection, identification of the management systems of the food pantries including the presence of nutrition professionals, the management questions are researcher developed and were evaluated with descriptive statistical analysis to summarize food pantry characteristics and describe qualitative data. For the second objective addressed during data collection, assessment of on-campus food pantries using the NEFPAT's objectives, the scores from the NEFPAT tool provided scaled/continuous data along with categorical data to evaluate the nutrition environment using the NEFPAT objectives and scoring system. Relationships among the variables measured by the NEFPAT tool and the pantry characteristics were performed. Non-parametric tests of comparison were used to showcase scaled/continuous data and categorical data from the scoring of the NEFPAT tool (gold, silver, bronze) due to the

small sample size. Relationships among NEFPAT total scores and ratings (gold, silver, bronze) and patterns, if any, of areas of improvement that may be consistent in state of LA were also analyzed. The research matrix can be found in Appendix B.

CHAPTER 4

RESULTS

The purpose of this exploratory, descriptive research design was to assess two- and four-year colleges/universities' on-campus food pantries in the state of Louisiana. Specifically, food pantry management, nutrition education provided, and available food items were assessed using the validated Nutrition Environment Food Pantry Assessment Tool (NEFPAT) (Nikolaus, Laurent, Loehmer, An, Khan & McCaffrey, 2018). The first objective, identification of the management systems of the food pantries including the presence of nutrition professionals, assessed food pantry management, and the management questions were researcher developed and added to assess the impact, if any, on the nutrition environment of food pantries. The second objective, assessment of on-campus food pantries using the NEFPAT's objectives, assessed the food pantry nutrition environment with the scores from the NEFPAT tool evaluate the nutrition environment using the NEFPAT objectives and scoring system. Scoring categories for NEFPAT include bronze, silver, and gold. A bronze score is a total number of affirmative answers ranging from 0 to 15, a silver score is a total number of affirmative answers ranging from 16 to 31, and a gold score is a total number of affirmative answers ranging from 32 to 47. Gold is considered the most desirable score and bronze is considered the least desirable score. This chapter will present the results from this study.

4.1   Food Pantry Characteristics

Of the total 54 higher education institutions in Louisiana, 23 had clearly identified having a campus food pantry on their website. Twenty-nine eligible institutions did not identify having a campus food pantry, and two indicated that the institution was in the process of bringing a food pantry to that campus. Of the 23 institutions that clearly identified having an on-campus food pantry, 14 were assessed in person and two were assessed virtually, over the phone or over Zoom Video Communications, resulting in a total sample of 16 institutions used for analysis. Of the six institutions eligible but not assessed, two institutions had numerous scheduling conflicts and four did not respond to recruitment efforts. This was a response rate of 69.6%. Of the 16 institutions assessed, 12 were classified as a 4-year university and four were classified as a 2-year community college; additionally, 14 were considered public institutions and two were considered private institutions. Five institutions offered a nutrition/food science/dietetics degree. The majority of food pantries were managed by student affairs/student services (62.5%) departments, and only one institution was managed by their nutrition and dietetics department. The majority of institutions were sponsored by their university/college foundation (31.3%). One institution had an unmanned food pantry on campus that was managed by an external organization not affiliated with the institution. Of the 16 food pantries, 37.5% were members of the Feeding America nonprofit organization, or they had an established partnership with a food bank that was part of the Feeding America nonprofit organization.

The food pantries marketed their operations in a number of ways. All 16 operations stated that they market their operation through word-of-mouth, 87.5% stated

that they send out campus-wide emails to faculty and students, 62.5% stated they posted

pamphlets/flyers around campus, 56.3% stated that the pantry is discussed and promoted

during student orientation, 50% promote on social media, 37.5% were promoted with

recruitment materials for the university and during a first year experience class or

equivalent, 18.8% stated that the operation is promoted during the financial aid/student

loan process and information is included in course syllabi and on institution's website,

and 12.5% stated information was included in a school newspaper/newsletter. See Table

1.

4.2   Food Pantry Services

During the 9-month school year, pantries served a range of clients. When asked to

provide an average monthly count of clients, they reported the following: less than 50

clients (6.3%), 50-100 clients (18.8%), 100-150 clients (6.3%), 150-200 clients (6.3%),

and over 200 clients (25%). All 16 institutions stated their food pantries were also open

during the summer months, or the operations planned to be open during the summer

months if it had not been open for one full year yet. Fifty percent of the pantries served

100 or less clients on average during the summer months and one pantry served 150-200

clients (6.3%). Of the 16 institutions, 50% provide referrals to food assistance programs,

31.3 % provide referrals to the Supplemental Nutrition Assistance Program (SNAP),

12.5% provide referrals to Women, Infants, and Children (WIC), and 6.3% provide

referrals to an additional food bank. Fourteen food pantries have eligibility regulations

(87.5%) that included 37.5% of food pantries only allowing students to utilize pantry

services while 12.5% of pantries do not have restrictions on who may utilize pantry

services. See Table 2.

Table 1

Food Pantry Characteristics (N = 16)

Question	*n* %
What type of institution is the food pantry located on?	
4-year University	12 (75.0)
2-year Community College	4 (25.0)
Public	14 (87.5)
Private	2 (12.5)
How many institutions offered a nutrition/food science/dietetics degree?	5 (31.3)
Which department is the food pantry managed by?	
Nutrition/Dietetics	1 (6.3)
Student Affairs/Student services	10 (62.5)
Religious	2 (12.5)
Student Government Association	1 (6.3)
Department of Agriculture	1 (6.3)
Helio Foundation (external organization)	1 (6.3)
Is there a department that sponsors the food pantry?	14 (87.5)
Which department is the food pantry sponsored by?	
Student Dietetic Association	1 (6.3)
University/College foundation	6 (31.3)
Student Government Association	2 (12.5)
Helio Foundation (external organization)	1 (6.3)
Agriculture	1 (6.3)
Whataburger	1 (6.3)
Social work and alpha lambda honors society	1 (6.3)
Student Affairs	1 (6.3)
Is the food pantry operation a member of the Feeding America organization?	6 (37.5)
How do food pantries market the operation?	
Recruitment materials for the university	6 (37.5)
Campus wide emails to students	14 (87.5)
Campus wide emails to faculty	14 (87.5)
Pamphlets/flyers around campus	10 (62.5)
Information included in syllabi	3 (18.8)
Word of mouth	16 (100)
Discussed and promoted during student orientation	9 (56.3)
Discussed and promoted during first year experience class	6 (37.5)
Discussed and promoted during financial aid/student loan process	3 (18.8)
Social media	8 (50.0)
Website School newspaper/newsletter	3 (18.8)

4.3   Food Pantry Management

Of the 16 institutions, eight food pantries had paid employees on staff (50%).

Only 18.8% of institutions had someone on their food pantry staff, board, or volunteers

who had formal nutrition sciences education or training, and 31.3% of institutions had

someone on their food pantry staff or advisory board who had any professional health

care background (nutrition and dietetics (6.3%), nursing (12.5%), social work (6.3%),

and psychology (6.3%). At any given time, food pantries had less than five volunteers

(56.3%), six to 10 volunteers (12.5%), 11-15 volunteers (6.3%), and more than 15

(12.5%). See Table 3.

4.4   Food Pantry Resources

All food pantries stated that they obtain food from food donations/food drives

(100%). The majority of food pantries stated they received funding through direct

monetary donations (75%). See Table 4 and Table 5. A wide variety of donor types

provided funds and food as resources for the food pantries operation. The most common

donor type was private individuals. Additional detail of donor type can be found in Table

5.

4.5   NEFPAT Objectives

Of the food pantry management and policy questions from the NEFPAT

objectives, "clients are able to come to the pantry for food more often than once per

month" was answered with a unanimous "yes" from all institutions. The majority of

institutions affirmatively answered that clients may choose which types of F2E they

would like to take (87.5%). A little over half of institutions affirmatively answered that a

Table 2

Food Pantry Services (N = 16)

Question	*n* %
Clients served per month (average) during 9-month school year	
< 50	1 (6.3)
50-100	3 (18.8)
100-150	1 (6.3)
150-200	1 (6.3)
200+	4 (25.0)
Open during the summer months?	16 (100)
Clients served on average during the summer	
< 50	6 (37.5)
50-100	2 (12.5)
150-200	1 (6.3)
Provide referrals to food assistance programs	8 (50.0)
SNAP	5 (31.3)
WIC	2 (12.5)
Food bank	1 (6.3)
Are there eligibility regulations?	14 (87.5)
Who can utilize the pantry's services?	
Students only	6 (37.5)
Students and faculty	4 (25.0)
Income guidelines/food bank guidelines	4 (25.0)
No restrictions	2 (12.5)

Table 3

Food Pantry Management (N = 16)

Question	*n* %
Paid employees on food pantry staff i.e. how many schools had paid employees on staff	8 (50.0)
Someone on food pantry staff, board or volunteers who has formal nutrition sciences education or training?	3 (18.8)
Paid staff	1 (6.3)
Volunteer (non-student)	1 (6.3)
Student volunteer	1 (6.3)
Is there someone on the food pantry paid staff or advisory board who has any professional healthcare background?	5 (31.3)
Nutrition & Dietetics	1 (6.3)
Nursing	2 (12.5)
Social Work	1 (6.3)
Psychology	1 (6.3)
Active volunteers on roster at any given time	
<5	9 (56.3)
6-10	2 (12.5)
11-15	1 (6.3)
15 +	2 (12.5)

policy was in place for proper food safety (62.5%). Half of institutions affirmatively answered that the operation encouraged nutritious donations (i.e. by distributing a list of suggested items or asks donors not to provide certain foods) and that the operation provided recipes featuring F2E are available to clients. Additional details about food pantry management and policies from NEFPAT objectives can be found in table 6. Two schools did not participate in an in-person observation for this study. Observation questions were asked via telephone or Zoom Video Communications to complete the observation objectives inquiry. One pantry was an unmanned pantry and NEFPAT objectives were assessed through a picture sent via text from the food pantry operator and

Table 4

Food pantry resources (N = 16)

Question	n %
How do food pantries obtain food?	
Food donations/food drives	16 (100)
Feeding America Organization	5 (31.3)
Other larger food bank	7 (43.8)
Purchase food	9 (56.3)
How do pantries receive funding?	
Monetary donations	12 (75)
Grants	6 (37.5)
Feeding America Organization	3 (18.8)
Other larger food bank	3 (18.8)
Does not receive funds	2 (12.5)

Table 5

Types of Donors

Donor	Funds	Food	Funds & Food
	n (%)	n (%)	n (%)
Food Bank	2 (12.5)	7 (43.8)	2 (12.5)
Faith-Based Organization	7 (43.8)	6 (37.5)	5 (31.3)
Non-Profit Organization	3 (18.8)	6 (37.5)	3 (18.8)
Government	1 (6.3)	2 (12.5)	1 (6.3)
Private Individual Donor	12 (75)	12 (75)	11 (68.8)
Commercial Business	2 (12.5)	6 (37.5)	2 (12.5)
Community Group	3 (18.8)	7 (43.8)	3 (18.8)
Faculty, students, staff	2 (12.5)	4 (25)	2 (12.5)
Partnerships with grocers	0 (0)	1 (6.3)	0 (0)

Table 6

Food Pantry Management and Policies from NEFPAT Objectives (N = 16)

NEFPAT Objective	*n* (%)
1.1 Clients may choose which types of F2E they'd like to take	14 (87.5)
1.2 Has established nutrition policy used for purchasing food for clients	1 (6.3)
1.3 Clients are able to come to the pantry for food more often than once per month	16 (100)
1.4 Encourages nutritious donations (i.e. by distributing a list of suggested items or asks donors not to provide certain foods)	8 (50.0)
1.5 Food Pantry is listed on AmpleHarvest.org website (if not, seeks donations from local gardeners/farmers or community gardens)	1 (6.3)
1.6 A policy is in place for proper food safety	10 (62.5)
2.1 Recipes featuring F2E are available to clients	8(50)
2.2 Offers food samples to clients	1 (6.3)
5.1 Provides information on SNAP, WIC, Senior Farmers Market coupons or other low-income resources	7 (43.8)
5.2 Provides nutrition education to clients (i.e. by partnering with Extension or other sources of expertise)	2 (12.5)
5.3 Distributes Medicaid/affordable health care information	2 (12.5)
5.4 Provides employment assistance information	5 (31.3)
5.5 Provides other educational/self-improvement resources	5 (31.3)
5.6 Has onsite garden or other gardening resources	4 (25.0)
5.7 Promotes or provides health screenings (blood pressure, glucose, BMI, etc.) by partnering with local organizations	4 (25.0)
5.8 Promotes or provides mobile markets during the summer months	3 (18.8)
6.1 Provides food pantry volunteers with nutrition education	0 (0)
6.2 Utilizes Commodity Supplemental Food Program (CSFP) to provide food tailored for low-income elderly clients	0 (0)

through questions asked via telephone conversation, and objectives 4.1-4.5 regarding the

various types of fruits and/or vegetables provided in the pantry were not assessed for this

pantry. The second pantry was unable to meet in person due to COVID-19 guidelines, so

NEFPAT objectives were assessed via Zoom Video Communications, and objectives 2.6-

2.8 regarding the overall general appearance of the food pantry and 4.1-4.5 regarding the

various types of fruits and/or vegetables provided in the pantry were not able to be

assessed. See additional results in Table 7.

Tables 8 through 13 address each NEFPAT question according to its objective

and includes the categorization achieved of gold, silver, bronze according to each

objective. Objectives contain both interview and observation questions. Table 8 addresses

the first NEFPAT objective: increase client choice for nutritious options. One institution

earned gold status (33 points), nine institutions earned silver (18-29 points), and six

institutions earned bronze (10-15 points). Objective 1.5, food pantry is listed on

AmpleHarvest.org website, was the only question a part of the first objective where all

institutions answered "no." Objective 1.3, clients are able to come to the pantry for food

more often than once per month, was affirmatively answered by all institutions. See

additional results in Table 8.

Table 7

Nutrition Environment Observations from NEFPAT Objectives (N=16)

NEFPAT Objective	*n* (%)
1.7 Pantry hosts a "shopping style" distribution (set up like a grocery store)	11 (68.8)
1.8 Food pantry offers items from each of the five food groups (fruits, vegetables, grains, protein, dairy)	11 (68.8)
2.3 MyPlate or other healthy eating materials that promote F2E are visible (i.e. posters, fliers, window stickers, etc.)	4 (25.0)
2.4 Displays/hangs supporting materials for a F2E (such as shelf talkers/shelf tags, nutrition information, etc.)	5 (31.3)
2.5 Includes at least one F2E item in a bundle to display items together as a meal (i.e. beans and rice)	7 (43.8)
2.6 F2E are stocked to appear "abundant"*	9 (56.3)
2.7 Majority of F2E are displayed/angled to be viewed easily from the eye-level of an average client*	12 (75.0)
2.8 At least one F2E item is within eyesight upon entering the pantry during distribution*	11 (68.8)
3.1 Fresh	7 (43.8)
3.2 Canned (Any type, no rust and minimal dents)	16 (100)
3.3 Canned (Fruit in lite syrup or juice or ≤12 g Sugar, or Vegetables with ≤230 mg Sodium and ≤2 g Sat. fat)	14 (87.5)
3.4 Frozen (Any type, no frostbite)	5 (31.3)
3.5 Frozen (≤12 g Sugar, ≤230 mg Sodium, & ≤2 g Sat. fat)	5 (31.3)
3.6 Dried (any type, no mold and packaging intact)	15 (93.8)
3.7 Dried (≤12 g Sugar, ≤230 mg Sodium, & ≤2 g Sat. fat)	14 (87.5)
3.8 Juice (100% fruit juice)	9 (56.3)
4.1a Red > 2 types?*	10 (62.5)
4.1b Additional?*	0 (0)
4.2a Yellow/Orange > 2 types?*	11 (68.8)

Table 7 (continued).

4.2b Additional?*	4 (25)
4.3a White or Tan/Brown > 2 types?*	10 (62.5)
4.3b Additional?*	1 (6.3)
4.4a Green > 2 types?*	10 (62.5)
4.4b Additional?*	6 (37.5)
4.5a Blue/Purple > 2 types?*	5 (31.3)
4.5b Additional?*	0 (0)
6.3 Has labeled sections for specific foods (i.e. gluten free, dairy free, no/low sodium, vegetarian or no-prep- required)	4 (25.0)
6.4 Provides diverse options for protein (i.e. tofu, beans, fish, peanut butter)	15 (93.8)
6.5 Provides culturally diverse foods (Kosher, Halal, ethnic cuisine)	8 (50.0)

* $N = 14$.

Table 8

Increasing Client Choice for Nutritious Options Affirmative Responses

NEFPAT Objective One	Total	Gold	Silver	Bronze
	n (%)	n (%)	n (%)	n (%)
1.1 Clients may choose which types of foods to encourage they'd like to take*	14 (87.5)	1 (100)	9 (100)	4 (66.6)
1.2 Has established nutrition policy used for purchasing food for clients*	1 (6.25)	0 (0)	1 (11)	0 (0)
1.2 Clients are able to come to the pantry for food more often than once per month*	16 (100)	1 (100)	9 (100)	6 (100)
1.4 Encourages nutritious donations (i.e. by distributing a list of suggested items or asks donors not to provide certain foods)*	8 (50)	1 (100)	5 (55.5)	2 (33.3)

Table 8 (continued).

1.5 Food Pantry is listed on AmpleHarvest.org website (if not, seeks donations from local gardeners/farmers or community gardens)*	0 (0)	0 (0)	0 (0)	0 (0)
1.6 A policy is in place for proper food safety*	10 (62.5)	1 (100)	7 (77.7)	2 (33.3)
1.7 Pantry hosts a "shopping style" distribution (set up like a grocery store)	11 (68.7)	0 (0)	7 (77.7)	4 (66.6)
1.8 Food pantry offers items from each of the five food groups (fruits, vegetables, grains, protein, dairy)	11 (68.7)	1 (100)	8 (88.8)	2 (33.3)

* Interview questions

Table 9 addresses the second NEFPAT objective: market and nudge healthful products. These objectives address the nutrition environment at the food pantry. Both bronze and gold scores unanimously scored a zero for objectives 2.2 through 2.4, which means seven schools total did not answer affirmatively to those objectives. The objective with the highest affirmative response rate, ≥ 75% included only objective 2.7, the majority of foods to encourage are displayed/angled to be viewed easily from the eye-level of an average client. See additional results in Table 9.

Table 10 displays the third NEFPAT objective, provide various forms of fruits and/or vegetables. The one institution that earned gold answered affirmatively to all eight objectives, thus the one gold institution provided its clients with various forms of fruits and/or vegetables. Additionally, objectives with the higher affirmative response rates with (≥75%) included objectives 3.2 (100%), 3.3 (87.5%), 3.6 (93.8), and 3.7 (87.5%).

Table 9

Market & "Nudge" Healthful Products

Objective Two Item	Total n (%)	Gold n (%)	Silver n (%)	Bronze n (%)
2.1 Recipes featuring F2E are available to clients*	8 (50.0)	1 (100)	7 (77.8)	0 (0)
2.2 Offers food samples to clients*	1 (6.25)	0 (0)	1 (11.1)	0 (0)
2.3 MyPlate or other healthy eating materials that promote F2E are visible (i.e. posters, fliers, window stickers, etc.	4 (25.0)	0 (0)	4 (44.4)	0 (0)
2.4 Displays/hangs supporting materials for a F2E (such as shelf talkers/shelf tags, nutrition information, etc.)	5 (31.25)	0 (0)	5 (55.6)	0 (0)
2.5 Includes at least one F2E item in a bundle to display items together as a meal (i.e. beans and rice)	7 (43.75)	1 (100)	5 (55.6)	1 (16.7)
2.6 F2E are stocked to appear "abundant"**	9 (56.25)	1 (100)	7 (77.8)	1 (16.7)
2.7 Majority of F2E are displayed/angled to be viewed easily from the eye-level of an average client**	12 (75.0)	1 (100)	9 (100)	2 (33.4)
2.8 At least one F2E item is within eyesight upon entering the pantry during distribution**	11 (68.7)	0 (0)	8 (88.9)	3 (50.0)

*Interview questions; ** $N = 14$.

Table 10

Provides Various Forms of Fruits and/or Vegetables

Objective Three Item	Total n (%)	Gold n (%)	Silver n (%)	Bronze n (%)
3.1. Fresh	7 (43.8)	1 (100)	5 (55.6)	1 (16.7)
3.2. Canned (Any type, no rust, minimal dents)	16 (100)	1 (100)	9 (100)	6 (100)

Table 10 (continued).

3.3. Canned (Fruit in lite syrup or juice or ≤12g sugar, or vegetables with ≤230 mg Sodium and ≤ 2g sat. fat	14 (87.5)	1 (100)	9 (100)	4 (66.7)
3.4. Frozen (Any type, no frostbite)	5 (31.3)	1 (100)	4 (44.4)	0 (0)
3.5. Frozen (≤12 g Sugar, ≤230 mg Sodium, & ≤ 2g sat. fat)	5 (31.3)	1 (100)	4 (44.4)	0 (0)
3.6. Dried (any type, no mold and packaging intact)	15 (93.8)	1 (100)	9 (100)	5 (83.3)
3.7. Dried (≤12 g Sugar, ≤230 mg Sodium, & ≤2g sat. fat)	14 (87.5)	1 (100)	9 (100)	4 (66.7)
3.8. Juice (100% fruit juice)	9 (56.3)	1 (100)	6 (66.7)	2 (33.3)

Table 11 displays the fourth NEFPAT objective; provide various types of fruits and/or vegetables. No institutions provided additional red or blue/purple fruits and/or vegetables (0%). Among the total 16 institutions, there were no objectives with 75% or greater affirmative response.

Table 12 displays the fifth NEFPAT objective: promote additional resources. Among the total 16 institutions, there were no objectives with ≥ 75% affirmative responses.

Table 13 addresses the sixth NEFPAT objective: promote additional resources. Among the total 16 institutions, there was only one objective, 6.4 (93.8%) with a ≥ 75% affirmative response. Objectives 6.1 and 6.2 both did not receive a single affirmative response (0%) See additional results in Table 13.

Table 11

Provide Various Types of Fruits and/or Vegetables

Objective Four Item	Total n (%)		Gold n (%)		Silver n (%)		Bronze n (%)	
	>2 types	Additional	>2 types	Additional	>2 types	Additional	>2 types	Additional
4.1. Red*	10 (62.5)	0 (0)	1 (100)	0 (0)	7 (77.8)	0 (0)	2 (33.3)	0 (0)
4.2. Yellow/Orange*	11 (68.8)	4 (25.0)	1 (100)	0 (0)	8 (88.9)	4 (44.4)	2 (33.3)	0 (0)
4.3 White or Tan/Brown*	10 (62.5)	1 (6.3)	1 (100)	0 (0)	7 (77.8)	1 (11.1)	2 (33.3)	0 (0)
4.4 Green*	10 (62.5)	6 (37.5)	1 (100)	1 (100)	7 (77.8)	5 (55.6)	2 (33.3)	0 (0)
4.5 Blue/Purple*	5 (31.3)	0 (0)	1 (100)	0 (0)	4 (44.4)	0 (0)	0 (0)	0 (0)

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Table 12

Promotes Additional Resources

Objective Five Item	Total N (%)	Gold *n* (%)	Silver *n* (%)	Bronze *n* (%)
5.1 Provides information on SNAP, WIC, Senior Farmers Market coupons or other low-income resources*	7 (43.8)	1 (100)	3 (33.3)	3 (50.0)
5.2 Provides nutrition education to clients (i.e. by partnering with Extension or other sources of expertise)*	2 (12.5)	0 (0)	0 (0)	1 (16.7)
5.3 Distributes Medicaid/affordable health care information*	2 (12.5)	1 (100)	0 (0)	1 (16.7)
5.4 Provides employment assistance information*	5 (31.3)	1 (100)	2 (22.2)	2 (33.3)
5.5 Provides other educational/self-improvement resources*	5 (31.3)	1 (100)	2 (22.2)	2 (33.3)
5.6 Has onsite garden or other gardening resources*	4 (25.0)	0 (0)	2 (22.2)	1 (16.7)
5.7 Promotes or provides health screenings (blood pressure, glucose, BMI, etc.) by partnering with local organizations*	4 (25.0)	1 (100)	3 (33.3)	0 (0)
5.8 Promotes or provides mobile markets during the summer months*	3 (18.8)	1 (100)	1 (11.1)	1 (16.7)

*Interview questions

Table 13

Plans for Alternate Eating Patterns

Objective Six Item	Total N (%)	Gold n (%)	Silver n (%)	Bronze *n* (%)
6.2 Utilizes Commodity Supplemental Food Program (CSFP) to provide food tailored for low-income elderly clients*	0 (0)	0 (0)	0 (0)	0 (0)

Table 13 (continued).

6.3 Has labeled sections for specific foods (i.e. gluten free, dairy free, no/low sodium, vegetarian or no-prep- required)	4 (25.0)	1 (100)	3 (33.3)	0 (0)
6.4 Provides diverse options for protein (i.e. tofu, beans, fish, peanut butter)	15 (93.8)	1 (100)	9 (100)	5 (83.3)
6.5 Provides culturally diverse foods (Kosher, Halal, ethnic cuisines)	8 (50.0)	1 (100)	5 (55.6)	2 (33.3)
6.1 Provides food pantry volunteers with nutrition education*	0 (0)	0 (0)	0 (0)	0 (0)

*Interview questions

CHAPTER 5

DISCUSSION

This study was conducted to explore the on-campus food pantries in higher education institutions of Louisiana: (1) the characteristics of on-campus food pantry management systems, including the presence of nutrition professionals and (2) the on-campus food pantry nutrition environment using the NEFPAT objectives of a) increasing client choice for nutritious options; b) establishing marketing of more healthful products; c) increasing provision of various forms of fruits and/or vegetables; d) increasing provision of various types of fruits and/or vegetables; e) promoting additional resources; f) planning for alternative eating patterns.

Characteristics of on-campus food pantry management

Five institutions with on-campus food pantries offered academic programs in nutrition, food science, and or dietetics. These institutions earned silver and bronze category statuses with an average score of 19, the highest score being 26 and lowest 12. All five were 4-year universities, two were private, which happened to be the only two private institutions assessed in the study sample. Of the five institutions with food and nutrition related degrees, only one institution's food pantry was operated with volunteers from a nutrition- related organization, the Student Dietetic Association, and was managed by a nutrition faculty member at the institution. That institution earned silver status with a score of 26, the highest in that category. The presence of faculty and students studying

nutrition may be, in part, responsible for the high score in that category. The remaining institutions were managed by student affairs, an external organization not affiliated with the institution, mission/campus ministries, or by the agriculture programs. Two institutions reported that they recruited students from the food and nutrition related degree programs as volunteers for the pantry. One of the institutions with those academic programs had an unmanned pantry that was managed and sponsored by an external organization not affiliated with the university. The representative of the external organization also was employed by the university, but the external organization was not a department of the institution. Not all pantries with access to nutrition students/faculty made use of this resource. Since this study examined the management and the nutrition environment of the food pantries, nutrition students/faculty are most likely to provide assistance with the nutrition environment specifically, subsequently resulting in higher overall scores.

Precious et al. (2017) stated that individuals who work/volunteer in food pantries/banks were initially motivated by a desire to help the food insecure, which is not surprising since individuals who desire to work in food banks/pantries are often motivated by a sense of altruism. The five institutions assessed in this study that offer a nutrition/food science/dietetics degree will likely have students who need to accumulate volunteer hours for academic degree requirements. For individuals in nutrition interested in applying for post-baccalaureate internships and graduate degrees, having volunteer experiences in the field enriches their applications. Some of these programs require documented hours of volunteering. The more hours spent in a variety of nutrition-related volunteer experiences the more competitive that individual for future educational

experiences or employment. Additionally, other academic programs within institutions will likely have students who need volunteer hours to meet curriculum requirements and/or club/organizational involvement. Some institutions stated that work-study students, the student government association members, scholarship students, an unpaid intern, campus student leaders, student workers, and student activities board members would also volunteer. It seems students' motivation for volunteering may look different among them and when compared to those who work or volunteer at a food pantry/bank outside of the campus environment. Students' true motivation may stem from completing a class or filling out an application to be more competitive rather than altruistic. Perhaps future research could explore the motivation for volunteering in an on-campus food pantry to gain a better understanding.

Three institutions had a food pantry board member or volunteer(s) with a professional healthcare background. Healthcare backgrounds included nutrition, psychology, and social work, and an individual who worked with wellness programs and health fairs in school systems. The same three institutions had someone on the food pantry staff, board, or volunteers who had formal nutrition sciences education or training. One institution had student volunteers and a faculty member who sponsors the residing student organization over the food pantry with formal nutrition sciences education or training. Training included student volunteers pursuing a degree in nutrition and dietetics at the institution with some having ServSafe training and faculty with ServSafe training and a higher education degree in nutrition and dietetics. One institution had non-student volunteers with formal nutrition sciences education or training. Training included involvement in LSU Agriculture education, however, the extent of nutrition knowledge

associated with this training is unknown. Lastly, one institution had a paid staff member with formal nutrition sciences education or training. Training included the paid staff member having obtained a degree in health and kinesiology and is a certified personal trainer; however, the extent of nutrition knowledge is unknown. These institutions scored, silver (26 points), silver (18 points), and bronze (15 points) respectively.

Interview Responses

The question "how many employees do you have on staff?" was answered with a variety of responses. This question could mean a number of different things. How many paid employees at the institution with other responsibilities take care of the food pantry or how many employees' responsibility are solely food pantry employees. Most of the institutions interviewed responded affirmatively to there being a paid employee already employed as a staff or faculty member at the institution and their role with the food pantry was in addition to their duties/responsibilities at the institution. In the future, this question could be revised to say, "how many paid staff do you have whose sole responsibility is the on-campus food pantry?" Questions regarding the amount of time spent weekly managing the pantries could also be examined as time allotments may inhibit the pantries' ability to improve the nutrition environment aspects of the pantries.

The item from the NEFPAT tool, the "Food Pantry is listed on AmpleHarvest.org website (if not, seeks donations from local gardeners/farmers or community gardens)," was the most puzzling question for the respondents from the questionnaire. Every institution participating in the study either did not know the answer to the question or had never heard of the website. No institution answered affirmatively to this question. In the future, this question could be revised to ask the second part of the question in the

parenthesis, "Food Pantry seeks donations from local gardeners/farmers or community gardens." We found interviewees to be so puzzled by the first half of the question that they did not take into consideration the second half of the question. Therefore, this question should be simplified to the portion inside the parenthesis and the AmpleHarvest.org website or similar website more familiar to the geographical region should be included in recommendations for the pantry to consider.

The item "Utilizes Commodity Supplemental Food Program (CSFP) to provide food tailored for low-income elderly clients" was not applicable to the population surveyed. This question should have been omitted all together and scores scaled accordingly to reflect the change.

When asked was there "a policy is in place for proper food safety," the respondents and the researchers both found the question to be unclear. The question is unspecific and gives no context to what kind of policy or training in place for food safety in the food pantry setting. In the future, this question could be revised to define what "proper" food safety means (i.e. do volunteers/staff members have proof of a ServSafe certification, food handlers card, formal written policy for food safety/safe food handling practices, and/or complete food safety training from other sources or the pantry itself to work in the food pantry?). Or the question could be left open ended and left up to the interviewer to decide if they do in fact have a proper food safety policy in place, and their NEFPAT scores would be scaled accordingly.

When inquiring about the provision of "culturally diverse foods (Kosher, Halal, ethnic cuisines)," it was noted that an institution may offer culturally diverse foods, but does not actively and consistently seek to offer diverse or ethnic foods regularly. In fact,

many institutions stated that they have culturally diverse foods, but do not actively seek culturally diverse foods; if it is in the pantry, it just so happens to be there. Many do not have an international population on-campus that they serve currently. Scoring in the future for this question should take into consideration, the institutions that actually have a large international and ethnically diverse population where these foods would be beneficial and sought after intentionally to meet client needs.

For objectives 3 and 4 regarding the pantry providing various forms and types of fruits and/or vegetables, future work should also consider when institutions receive food, if there is a consistent delivery schedule. Scores should be scaled accordingly to what pantry's optimal condition is like.

NEFPAT Gold, Silver, and Bronze Categories and Scores

It is important to not only look at the category (gold, silver bronze), but also the numerical score values associated with the NEFPAT evaluation. Two institutions could have a score of silver, but one could be at the top of the range (31 points), just underneath gold (32-47 points), and the other could be at the lower end of the range (16 points), just above bronze (0-15 points). Knowing this, it would be important to evaluate what institutions are at the higher end of both bronze and silver ranges, and it would be important to know what is needed to bring each score up to the next level. One institution scored gold (33 points), nine institutions scored silver (18-29 points), and six institutions scored bronze (10-15 points). Scoring could impact food pantry services by showing institutions where they are lacking or deficient. Institutions may be more motivated by meeting a specific score, thus showing them where they can improve to improve their

overall score may be beneficial in improving food pantry services as well as improving food pantry nutrition environment.

Gold Category Institution

Only one institution received a gold rating (33 points). This institution's pantry was set up to be used virtually with COVID-19 precautions. So, many objectives like objective 1.7 (pantry hosts a "shopping style" distribution (set up like a grocery store)), 2.2 (offers food samples to clients), and objective 2.8 (at least one food to encourage item is within eyesight upon entering the pantry during distribution) were answered as "no", however, given the circumstances of COVID-19 precautions that were enforced at the time of the interview, these questions could have been seen as not applicable to this specific pantry and scores could be scaled accordingly. Where this institution lost points in the above-described areas, they excelled in other areas, thus helping the pantry receive a gold rating. There is always room for improvement, even for those who score the highest. This pantry could still improve by establishing a nutrition policy for purchasing healthier food items for clients. This could be in the form of a list or guidelines posted on the institution's website for donations as well. Additionally, the food pantry could provide MyPlate or other healthy eating materials to clients when they pick up their food and display healthy eating materials in the waiting area for clients easily access. Additionally, this institution has the opportunity to provide standardized nutrition education to clients and volunteers by partnering with either extension services or with a registered dietitian.

Silver Category Institutions

Among the nine institutions that scored silver, the institutions with scores higher than the average score of silver (24 points) were one institution at 29 points and three institutions at 26 points. Consistently, the silver institutions were lacking in promoting additional resources for obtaining food and for providing nutrition education. Objectives 5.1 and 5.4-5.8, all related to providing additional resources, received only 11% to 33% affirmative response rates. For example, the institution scoring 29 points is only three points away from leveling up to the gold level. Objectives 5.1 to 5.8, promotion of external resources, are arguably the easiest objectives to improve upon, and the institution with 29 points did not receive points from either. If this institution had provided other additional resources such as distributing Medicaid/affordable health care information, provided employment assistance information, or provided other educational/self-improvement resources, the institution would have reached the gold level by implementing those small changes. It was anticipated that most institutions would be lacking in providing additional referral resources to clients; therefore, the incentive provided for participation in this study was a literature holder to help institutions display additional resources to clients.

Bronze Category Institutions

Among the six institutions that scored at the bronze level, all scored higher than the midpoint score of bronze (8 points) with the highest institution scoring 15 points and the lowest institution scoring 10 points. As expected, the bronze institutions were lacking in many areas. Deficiencies were found in five of the measures of Objective 1, increasing client choice for nutritious options, all of the measures for Objective 2, market and nudge healthful products and four of the measures of Objective 3, provides various forms of

fruits and/or vegetables. Also, all measures of Objective 4, provides various types of fruits and/or vegetables, all measures of Objective 5, promotes additional resources, and four measures of Objective 6, plan for alternate eating patterns were deficient. Recommendations for improvement can begin with the objectives that had no affirmative responses from institutions. Those objectives alone would increase all institutions scores by 11 points. However, objectives dealing with providing frozen food, which would require equipment purchases, may be unrealistic goals for some food pantries, especially pantries that are unmanned, or may lack the funds or space. Additionally, promoting or provides health screenings (blood pressure, glucose, BMI, etc.) by collaborating with local organizations may also be unrealistic for some institutions as they may not have the ability to collaborate with other organizations. Taking into consideration those factors, seven points are still easily attainable, which would improve all institutions bronze institutions to a silver rating (17 and 22 points respectively).

CHAPTER 6

CONCLUSIONS AND FUTURE WORK

6.1   Conclusions

Scoring of NEFPAT could impact food pantry services by showing institutions where they are lacking or deficient. Institutions may be more motivated by meeting a specific score, thus showing them where they can improve to improve their overall score may be beneficial in not only improving food pantry services but also improving food pantry nutrition environment. As a group, all 16 institutions' services assessed would be improved by providing resources to clients who use the services of the on-campus food pantries. It was anticipated that the pantries would have a low referral rate when it came to referring clients or providing resources to clients for food assistance programs like SNAP, WIC, or to an additional food bank, which is why we incentivized participation in the study with a literature holder. See Appendix D.

Moving forward, the five institutions with a nutrition/food science/dietetics degree could also include more educational resources and nudges at their on-campus food pantry by engaging food and nutrition-related program students and faculty, and thus increase their overall NEFPAT score and nutrition environment. Additionally, for those five institutions, creation of client materials (i.e., promotional materials, shelf tags, literature to hang in the pantry for volunteers and clients to reference) would be helpful.

Nutrition faculty at those institutions should consider being on an advisory board or council for the food pantry. When not already available, a health and wellness class, a part of general education requirements should be offered at institutions to discuss general health and wellness, how to eat healthfully on a budget, and information about on-campus food pantry services.

Considerations for increasing marketing of the on-campus food pantry include providing information with recruitment materials for the university, during a first-year experience class (or equivalent), during the financial aid/student loan process, in course syllabi, on the institution's website, and in an institution newspaper or newsletter when applicable.

Additionally, pantries have the opportunity to explore ways to increase monetary donations and grant funding to purchase items targeted to healthy food items a part of the foods to encourage list (See Appendix E) and toiletries, therefore nudging targeted healthful products to further better the nutrition environment. In addition to monetary donations and grant funding, there are also opportunities for focused food drives. This allows the food pantry to provide a list of items/products needed to not only prioritize highly demanded items from clients, but also prioritize more healthful products to be included for clients to further better the nutrition environment.

Providing food pantry volunteers with nutrition education needs improvement as they will be assisting clients and may be clients themselves. Institutions with nutrition/food science/dietetics degrees have the opportunity to use their staff/students to create educational modules/sessions for volunteers/clients/staff. For institutions who do not have access to a nutrition department or a registered dietitian to help with nutrition

education, available credible online education modules could be made available to volunteers or staff members as training prior to handling food and interacting with clients. Future research could focus on module creation, selection and testing for effectiveness in this setting.

6.2   Future Work

Should additional research be conducted using the NEFPAT tool in higher education settings, considerations should be given to questions that need better alignment with the setting. A study could be conducted on validating the adjustment of the tool that would be specific to the university/community college setting. Additionally, the NEFPAT scoring could be tested for flexibility to allow for adjustment of scores that are not applicable to the specific population being assessed. Future work could also be focused on examining the motivating factors for volunteering in an on-campus food pantry, seeking to understand the different motivating factors and how they may affect the nutrition environment of the food pantry. The institutions that participated in this study overall had a few partnerships with regional food banks. These pantries should evaluate the benefits of partnering with a food bank.

Institutions of higher education in Louisiana have undergone many changes during 2020 and 2021 due to the COVID – 19 pandemic and natural disasters. Many converted to a variety of online operations to continue to serve their students while adhering to COVID-19 precautions. Future work should focus on a virtual food pantry ordering systems' nutrition environment. Future work could focus on assessing ways institutions with automated systems can nudge more healthful options to clients seeking services, leading to an overall better virtual nutrition environment.

APPENDIX A

A.1   Operational Definitions

Food insecurity: A lack of access to enough food to live a healthy and active lifestyle that

effects all members at the level of the household (USDA, 2020).

Food security: "All people, at all times, have physical, social and economic access to

sufficient, safe and nutritious food which meets their dietary needs and food

preferences for an active and healthy life" (CFA, 2010).

Food Pantry: "The arms that reach out to that community directly. Some use mobile food

pantries, which reach people in areas of high need" (Feeding America, 2020).

Food Bank: "A warehouse for millions of pounds of food and other products that go out

to the community" (Feeding America, 2020).

Foods to encourage (F2E): "designed to more accurately evaluate and describe the

nutrition contributions of the food categories in food banks' inventories. [The]

framework serves as the Feeding America national office recommendation, not

requirement, for network food banks."

APPENDIX B

B.1   Research Matrix

Purpose Statement	Hypotheses/Objectives	Study Design	Variables (+ Measurement Tool)	Type of Data	Statistical Test(s)
The purpose of this exploratory, descriptive research design is to assess 4-year college's/university's and 2-year community college's on-campus food pantries in the state of Louisiana. Specifically, food pantry's management, nutrition education, and available food provided are assessed through a questionnaire, the validated Nutrition Environment Food Pantry Assessment Tool, and observations.	**Evaluate pantry provision of the following:** ***Objectives*** (1.) Increase Client Choice for Nutritious Options (2.) Market & "Nudge" Healthful Products (3.) Provide Various *Forms* of Fruits and/or Vegetables (4.) Provide Various *Types* of Fruits and/or Vegetables (5.) Promote Additional Resources (6.) Plan for Alternate Eating Patterns (7.) Identify the scoring of NEFPAT (8.) Identify the influence of having a nutrition professional somewhere in the organization	Descriptive, Exploratory, Cross-sectional study **Sampling Plan:** ***Technique*** Purposive sample 　Because we are purposely picking these colleges in the state of Louisiana ***Sample Size*** 16 institutions	**Independent:** - Management - Nutrition Education - Food - Measurement tool 　o NEFPAT Tool + additional questions 　o Questions asked of pantry staff + volunteers 　o Observation questions at time of visit **NEFPAT Tool objectives** - **Objective 1:** Increase Client Choice for Nutritious Options - **Objective 2:** Market & "Nudge" Healthful Products - **Objective 3:** Provide Various *Forms* of Fruits and/or Vegetables - **Objective 4:** Provide Various *Types* of Fruits and/or Vegetables - **Objective 5:** Promote Additional Resources - **Objective 6**: Plan for Alternate Eating Patterns **Dependent: (Outcome)** NEFPAT scores (numbers) - Measurement tool 　o NEFPAT Tool NEFPAT scores (silver, bronze, gold) - Measurement tool 　o NEFPAT Tool	Qualitative data + Descriptive data + Quantitative data Quantitative data (Numerical) - Data from surveys & Questionnaires Scaled/Continuous Categorical Scaled/continuous	Descriptive Scoring of NEFPAT tool Scaled continuous

APPENDIX C

C.1   Human Use Consent Form

HUMAN SUBJECTS CONSENT FORM

The following is a brief summary of the project in which you are asked to participate. Please read this information before signing the statement below. You must be of legal age or must be co-signed by parent or guardian to participate in this study.

TITLE OF PROJECT: AN ASSESSMENT OF ON-CAMPUS FOOD PANTRY MANAGEMENT AND NUTRITION ENVIRONMENT AT LOUISIANA COLLEGES AND UNIVERSITIES

PURPOSE OF STUDY/PROJECT:

To assess two- and four-year colleges'/universities' on-campus food pantries in the state of Louisiana. Specifically, food pantry management, nutrition education provided, and available food items will be assessed using the validated Nutrition Environment Food Pantry Assessment Tool (NEFPAT) and researcher observations.

SUBJECTS:

College food pantries

PROCEDURE:

A list of universities and community colleges in the state of Louisiana was obtained from the Niche website which lists colleges and universities found in each state (Niche, 2020). In the state of Louisiana, 30 four-year colleges/universities and 24 two-year colleges/community colleges were listed. For simplicity, three colleges, Blue Cliff College, Central Louisiana Technical Community College, and Northshore Technical Community College, that have multiple smaller satellite locations across Louisiana, are recognized as one campus, and the main campus is the only campus that will be investigated, resulting in a total eligible sample of 54 higher education institutions. Twenty-three of the 54 eligible institutions clearly identified having a campus food pantry on their website. Twenty-nine eligible institutions did not identify having a campus food pantry, and two of the eligible institutions' website indicated that the institution is in the process of bringing a food pantry to that campus or information on the Internet is not clear and a phone call needs to determine whether they have a functioning food pantry. A researcher developed electronic data collection tool was developed utilizing Qualtrics Software (Qualtrics XM, 2020). The collection will include data to assess food pantry management and items from the Nutrition Environment Food Pantry Assessment Tool that includes an observation component. The objectives addressed by the data collection includes (1) identification of the management systems of the food pantries including the presence of nutrition professionals; (2) assess on-campus food pantries using the NEFPAT's objectives of a) increasing client choice for nutritious options b) establishing marketing and nudging of more healthful products c) increasing provision of various forms of fruits and/or vegetables d) increasing provision of various types of fruits and/or vegetables, e) promoting additional resources; and f) plan for alternate eating patterns. Descriptive statistical analysis will be used to summarize food pantry characteristics and describe qualitative data. The scoring of NEFPAT tool will provide scaled/continuous data along with categorical data. Once scored, relationships among the variables measured by the NEFPAT tool and the pantry characteristics will be performed. Chi-Square and t-tests will be used to explore differences between classifications of each food pantry rating (gold, silver, or bronze).

BENEFITS/COMPENSATION:

A multiple pocket leaflet holder with handouts is what food pantries can expect to be given at the end of their participation in the project.

RISKS, DISCOMFORTS, ALTERNATIVE TREATMENTS:

There are no risks associated with participation in this study. It requires completion of a survey. There are no alternative treatments. Participation is voluntary.

The participant understands that Louisiana Tech is not able to offer financial compensation nor to absorb the costs of medical treatment should you be injured as a result of participating in this research.

The following disclosure applies to all participants using online survey tools: This server may collect information and your IP address indirectly and automatically via "cookies".

       I, _____, attest with my signature that I have <u>read and understood the following description of the study,</u> "(AN ASSESSMENT OF ON-CAMPUS FOOD PANTRY MANAGEMENT AND NUTRITION ENVIRONMENT AT LOUISIANA COLLEGES AND UNIVERSITIES)", and its purposes and methods. I understand that my (Or my Child's) participation in this research is strictly voluntary and <u>my (or my child's) participation or refusal to participate in this study will not affect my relationship with Louisiana Tech University or my grades in any way.</u> Further, I understand that I may withdraw (my child) at any time or refuse to answer any questions without penalty. Upon completion of the study, I understand that the results will be freely available to me upon request. I understand that the results of the material will be <u>confidential, accessible only to the principal investigators, myself, or a legally appointed representative.</u> I have not been requested to waive nor do I waive any of my rights related to participating in this study.

_____   _____
Signature of Participant or Guardian   Date

_____
Name of child if Applicable

CONTACT INFORMATION: The principal experimenters listed below may be reached to Answer questions about the research, subjects' rights, or related matters.

PRINCIPAL INVESTIGATOR: Courtney Hammons_____

       CO-INVESTIGATOR: _____

Members of the Human Use Committee of Louisiana Tech University may also be contacted if a problem cannot be discussed with the experimenters:

    Dr. Richard Kordal, Director, Office of Intellectual Property & Commercialization
    Ph: (318) 257-2484, Email: rkordal@latech.edu

APPENDIX D

D.1   Incentive: Literature Holder

This literature holder is what was used as an incentive to participate in the study. It was approximately $30. It provided room for a letter sized handout, two trifold handouts, and a business card. This literature holder can be placed on a countertop or hung on a wall.

APPENDIX E

E.1   Foods to Encourage from Feeding America

FEEDING
AMERICA

Detailed Foods To Encourage

The *Detailed Foods to Encourage (F2E)* framework was designed to more accurately evaluate and describe the nutritional contributions of the food categories in food banks' inventories. This framework below serves as the Feeding America national office recommendation, not requirement, for network food banks. Below are the qualifications required for the product categories to be listed within our Foods to Encourage.

Foods must meet all criteria below to qualify. Criteria is based on per serving basis.

Fruits and Vegetables
- Fresh with nothing added
- 100% Fruit or Vegetable Juice
- Canned, Dried or Frozen with no partially hydrogenated oils that meet the criteria below:
    - **Sodium:** ≤230mg[i]
    - **Total Sugar:** Fruit in lite syrup or 100% Juice[iii] or ≤12g[iii]
    - **Sat Fat:** ≤ 2g[iv]
    - **Trans Fat:** 0g

Grains
- 100% whole grain (Rolled Oats, Barley, Wild Rice)
- Bread & Pasta with "whole grain" listed as the first ingredient[v] & with:
    - >10% DV[vi] or ≥2.5g fiber
- Cereal with "whole grain" listed as the first ingredient[vii] & >3g of dietary fiber
- Bread, Pasta & Cereal that meet the criteria below:
    - **Sodium:** ≤230mg
    - **Total Sugar:** Bread/Pasta ≤ 0g[viii] Cereal ≤ 12g[ix]
    - **Sat Fat:** ≤ 2g
    - **Trans Fat:** 0g

Protein
- Eggs
- Nuts, Seeds, Beans and Lentils with nothing added
- Beans, Meat, Poultry and Seafood that meet criteria below:
    - **Sodium** ≤ 480mg[x]
    - **Sat Fat:** ≤2g[xi]
    - **Trans Fat:** 0g
- Nuts/Seeds responding spreads that meet the criteria below:
    - **Sodium:** ≤230mg
    - **Total Sugar:** <4g per 2T/1oz[xii]
    - **Trans Fat:** 0g

Dairy
- Unflavored/Unsweetened low-fat (1%), or skim/non-fat milk or yogurt
- Flavored skim/non-fat milk or yogurt
- Unsweetened milk substitutes (e.g. Soy)
- Cheese that meets the criteria below:
    - **Sodium:** ≤ 480mg[xiii]
    - **Sat Fat:** ≤3g | **Trans Fat:** 0g
- Flavored milk, milk substitutes, and yogurt, that meets the criteria below:
    - **Sodium:** ≤480mg[xiii]
    - **Total Sugar:** ≤ 22g(milk[xiv]) ≤ 30g(yogurt[xv])
    - **Saturated Fat:** ≤ 3g
    - **Trans Fat:** 0g

APPENDIX F

F.1   NEFPAT Objectives

NEFPAT

Supplementary Data

Nutrition Environment Food Pantry Assessment Tool (NEFPAT)

Directions: This assessment tool is meant to provide perspective on the nutritional environment of the food pantry. Evaluations will be made using both objective observations as well as questions to be asked of pantry staff/volunteers (items marked with a *). Please make your assessment based on observations made during the food pantry's food distribution services.

Date: _____

Name of Assessor:_____

Name of Food Pantry: _____

Address & City: _____

Number of **Individuals** Served Per Month by Food Pantry*: _____

How close is the pantry to the closest public transit access point (in miles)?

Pantry Days/Hours of Operation: _____

Does the pantry restrict which audiences can access its services (i.e. by Zip code or for students-only)?

☐ Yes   ☐ No

Contact Name & Details: _____
Additional Pertinent Information:

Types of Donors* (Optional):	Provides Funds	Provides Food
Food Bank	☐	☐
Faith-Based Organization	☐	☐
Non-Profit Organization	☐	☐
Government	☐	☐
Private Donor	☐	☐
Commercial Business	☐	☐
Community Group	☐	☐
Other (Please Specify):	☐	☐

Objective 1: Increase Client Choice for Nutritious Options

Strategies:
☐ 1.1. Clients may choose which types of F2E they'd like to take*
☐ 1.2. Has established nutrition policy used for purchasing food for clients*
☐ 1.3. Clients are able to come to the pantry for food more often than once per month*
☐ 1.4. Encourages nutritious donations (i.e. by distributing a list of suggested items or asks donors not to provide certain foods)*
☐ 1.5. Food Pantry is listed on AmpleHarvest.org website (if not, seeks donations from local gardeners/farmers or community gardens)*
☐ 1.6. A policy is in place for proper food safety*
☐ 1.7. Pantry hosts a "shopping style" distribution (set up like a grocery store)
☐ 1.8. Food pantry offers items from each of the five food groups (fruits, vegetables, grains, protein, dairy)
Number of Strategies Utilized: _____
Notes:

Objective 2: Market & "Nudge" Healthful Products

Strategies:
☐ 2.1. Recipes featuring F2E are available to clients*
☐ 2.2. Offers food samples to clients*
☐ 2.3. MyPlate or other healthy eating materials that promote F2E are visible (i.e. posters, fliers, window stickers, etc)
☐ 2.4. Displays/hangs supporting materials for a F2E (such as shelf talkers/shelf tags, nutrition information, etc.)
☐ 2.5. Includes at least one F2E item in a bundle to display items together as a meal (i.e. beans and rice)
☐ 2.6. F2E are stocked to appear "abundant"
☐ 2.7. Majority of F2E are displayed/angled to be viewed easily from the eye-level of an average client
☐ 2.8. At least one F2E item is within eyesight upon entering the pantry during distribution
Number of Strategies Utilized: _____
Notes:

Objective 3: Provide Various *Forms* of Fruits and/or Vegetables

Mark off each type as you see them, below:
☐ 3.1. Fresh
☐ 3.2. Canned (Any type, no rust and minimal dents)
☐ 3.3. Canned (Fruit in lite syrup or juice or ≤12 g Sugar, **or** Vegetables with ≤230 mg Sodium and ≤2 g Sat. fat)
☐ 3.4. Frozen (Any type, no frostbite)
☐ 3.5. Frozen (≤12 g Sugar, ≤230 mg Sodium, & ≤2 g Sat.   fat)
☐ 3.6. Dried (any type, no mold and packaging intact)
☐ 3.7. Dried (≤12 g Sugar, ≤230 mg Sodium, & ≤2 g Sat. fat)
☐ 3.8. Juice (100% fruit juice)
Number of Options Available: _____
Notes:

Objective 4: Provide Various *Types* of Fruits and/or Vegetables

Mark off each color type as you see them, below:
☐ 4.1. Red, if >2 types then additional ☐
☐ 4.2. Yellow/Orange, if >2 types then additional ☐
☐ 4.3. White or Tan/Brown, if >2 types then additional ☐
☐ 4.4. Green, if >2 types then additional ☐
☐ 4.5. Blue/Purple, if >2 types then additional ☐
Number of Options Available: _____
Notes:

Objective 5: Promote Additional Resources*

Strategies:
☐ 5.1. Provides information on SNAP, WIC, Senior Farmers Market coupons or other low-income resources*
☐ 5.2. Provides nutrition education to clients (i.e. by partnering with Extension or other sources of expertise)*
☐ 5.3. Distributes Medicaid/affordable health care information*
☐ 5.4. Provides employment assistance information*
☐ 5.5. Provides other educational/self-improvement resources*
☐ 5.6. Has onsite garden or other gardening resources*
☐ 5.7. Promotes or provides health screenings (blood pressure, glucose, BMI, etc.) by partnering with local organizations*
☐ 5.8. Promotes or provides mobile markets during the summer months*
Number of Strategies Utilized: _____
Notes:

Objective 6: Plan for Alternate Eating Patterns

Strategies:
☐ 6.1. Provides food pantry volunteers with nutrition education*
☐ 6.2. Utilizes Commodity Supplemental Food Program (CSFP) to provide food tailored for low-income elderly clients*
☐ 6.3. Has labeled sections for specific foods (i.e. gluten free, dairy free, no/low sodium, vegetarian or no-prep- required)
☐ 6.4. Provides diverse options for protein (i.e. tofu, beans, fish, peanut butter)
☐ 6.5. Provides culturally diverse foods (Kosher, Halal, ethnic cuisines)
Number of Strategies Utilized: _____
Notes:

Total for Objective 1:   _____

Total for Objective 2:   _____

Total for Objective 3:   _____

Total for Objective 4:   _____

Total for Objective 5:   _____

Total for Objective 6:   _____

Total of Ratings: _____

<u>Range</u>: 0 – 47
Score Classifications:
Bronze: 0 – 15
Silver: 16 – 31
Gold: 32 – 47

Overall Comments:

APPENDIX G

G.1   Qualtrics Data Collection Tool

Q1 (S) Name of College**

_____

- -

Q2 (S) Type of institution where the food pantry resides.**

○ 4-year University

○ 2-year Community College

- -

Q3 (S) Type of institution where the food pantry resides.**

○ Public

○ Private

- -

Q4 (S) Is there a nutrition/food science/dietetics degree offered at this university/college?**

○ Yes

○ No

- -

Q5 (S) Is there a department that manages the food pantry?**

○ Yes

○ No

*Skip To: Q7 If (S) Is there a department that manages the food pantry?** = No*
- -

Q6 (S) If yes, which department?**

○ Nutrition/Dietetics

○ Sociology

○ Biology

○ Engineering

○ Education

○ Student Affairs

○ History

○ Other _____

○ More than one _____

- -

Q7 (S) Is there a department that sponsors the food pantry?**

○ Yes

○ No

*Skip To: Q9 If (S) Is there a department that sponsors the food pantry?** = No*
- -

Q8 (S) If yes, which department?**

    ○ Nutrition/Dietetics

    ○ Sociology

    ○ Biology

    ○ Engineering

    ○ Education

    ○ Student Affairs

    ○ History

    ○ Other _____

    ○ More than one _____

Q9 (S) How many clients do you serve on average during the 9 month school year?**

_____

Q10 (S) Are you open during the summer months?**

    ○ Yes

    ○ No

*Skip To: Q12 If (S) Are you open during the summer months?** = No*

Q11 (S) If yes, how many clients do you serve on average during the summer months?**

_____

Q12 (S) Are there any regulations for operations regarding who is eligible for the food pantry?**

    ○ Yes

    ○ No

*Skip To: Q13 If (S) Are there any regulations for operations regarding who is eligible for the food pantry?** = Yes*

Q13 (S) If you chose yes, check all that apply pertaining to regulations for the pantry**

    ○ Students only can receive assistance from pantry

    ○ Full time status

    ○ Part time status

    ○ Income

    ○ Must receive financial aid

    ○ Other (please specify) _____

Q14 (S) Do you provide referrals to other agencies or food assistance programs (SNAP, WIC, etc.)?**

    ○ Yes

    ○ No

*Skip To: Q16 If (S) Do you provide referrals to other agencies or food assistance programs (SNAP, WIC, etc.)?** = No*

Q15 (S) If yes, which agencies or food assistance programs do you provide referrals to?**

_____

Q16 (S) How many paid employees do you have on staff?**

_____

Q17 (S) How many volunteers do you have working at the food pantry?**

_____

Q18 (S) Is there someone on the food pantry staff, board, or volunteers who has formal nutrition sciences education or training?**

○ Yes

○ No

Q19 (S) If yes, describe formal nutrition sciences education or training.**

_____

Q20 (S) If yes, please specify to which group this person belongs.**

○ Paid staff

○ Board or advisory member

○ Volunteer (non-student)

○ Student volunteer

Q21 (S) Is there someone on the food pantry paid staff or advisory board who has any professional healthcare background?**

○ Yes

○ No

Q22 (S) If yes, which profession most accurately reflects this person's educational background?**

○ Nutrition/Dietetics

○ Medical Doctor

○ Nursing

○ Other (please specify) _____

Q23 (S) How does the food pantry obtain food? (Check all that apply)**

☐ Food Donations/Food Drives

☐ Feeding America Organization

☐ Other larger Food Bank & the name of Food Bank:
_____

☐ Purchase food

Q24 (S) How does the pantry receive funding? (Check all that apply)**

☐   Monetary donations (if chosen, please specify)
_____

☐   Grants

☐   Feeding America Organization

☐   Other larger Food Bank & name of Food Bank:
_____

☐   Does not receive funds

- -

Q25 (S) Is the food pantry operation a member of the Feeding America nonprofit organization?**

○ Yes

○ No

- -

Q26 (S) How do you market the food pantry operation?**

☐   Recruitment materials for the university

☐   Campus wide emails to students

☐   Campus wide emails to faculty

☐   Pamphlets/flyers around campus

☐   Information included in syllabi

☐   Word of mouth

☐   Discussed and promoted during student orientation

☐   Discussed and promoted during first year experience class

☐   Discussed and promoted during financial aid/student loan process

☐   Other _____

☐   Notes/Quotes _____

- -

Q27 What changes have you made (if any) in operational procedures due to the COVID-19 pandemic

☐   No changes

☐   Other _____

☐   Notes/Quotes _____

Q28 (S) How many clients do you serve on average each month?*

_____

- -

Q29 (S) How close is this pantry to the closest public transit access point (in miles)?*

○ 0-5 miles

○ 5-10 miles

○ 10-20 miles

○ 20+ miles

- -

Q30 (S) Pantry days/hours of operation*

_____

- -

Q31 (S) Does the pantry restrict which audiences can access its services?*

○ Yes

○ No

Skip To: Q33 If (S) Does the pantry restrict which audiences can access its services?* = No
- -

Q32 (S) If yes, what are the restrictions (i.e. Zip code or for students-only)?*

_____

- -

Q33 (S) Types of Donors*

	Provides Funds	Provides Food	Not Applicable	Other (please specify)
Food Bank	☐	☐	☐	☐
Faith-Based Organization	☐	☐	☐	☐
Non-Profit Organization	☐	☐	☐	☐
Government	☐	☐	☐	☐
Private Individual Donor	☐	☐	☐	☐
Commercial Business	☐	☐	☐	☐
Community Group	☐	☐	☐	☐
Other	☐	☐	☐	☐
Notes/Quotes	☐	☐	☐	☐

- -

Q34 1.1 (S) Clients may choose which types of foods to encourage they'd like to take*

○ Yes

○ No

- -

Q35 1.2 (S) Has established nutrition policy used for purchasing food for clients*

○ Yes

○ No

Q36 1.3 (S) Clients are able to come to the pantry for food more often than once per month*

○ Yes

○ No

Q37 1.4 (S) Encourages nutritious donations (i.e. by distributing a list of suggested items or asks donors not to provide certain foods)*

○ Yes

○ No

Q38 1.5 (S) Food Pantry is listed on AmpleHarvest.org website (if not, seeks donations from local gardeners/farmers or community gardens)*

○ Yes

○ No

Q39 1.6 (S) A policy is in place for proper food safety*

○ Yes

○ No

Q40 2.1 (S) Recipes featuring foods to encourage are available to clients*

○ Yes

○ No

Q41 2.2 (S) Offers food samples to clients*

○ Yes

○ No

Q42 5.1 (S) Provides information on SNAP, WIC, Senior Farmers Market coupons or other low-income resources*

○ Yes

○ No

Q43 5.2 (S) Provides nutrition education to clients (i.e. by partnering with Extension or other sources of expertise)*

○ Yes

○ No

Q44 5.3 (S) Distributes Medicaid/affordable health care information*

○ Yes

○ No

Q45 5.4 (S) Provides employment assistance information*

○ Yes

○ No

Q46 5.5 (S) Provides other educational/self-improvement resources*

○ Yes

○ No

Q47 5.6 (S) Has onsite garden or other gardening resources*

○ Yes

○ No

Q48 5.7 (S) Promotes or provides health screenings (blood pressure, glucose, BMI, etc.) by partnering with local organizations*

○ Yes

○ No

Q49 5.8 (S) Promotes or provides mobile markets during the summer months*

○ Yes

○ No

Q50 6.1 (S) Provides food pantry volunteers with nutrition education*

○ Yes

○ No

Q51 6.2 (S) Utilizes Commodity Supplemental Food Program (CSFP) to provide food tailored for low-income elderly clients*

○ Yes

○ No

Q52 1.7 (O) Pantry hosts a "shopping style" distribution (set up like a grocery store)*

○ Yes

○ No

Q53 1.8 (O) Food pantry offers items from each of the five food groups (fruits, vegetables, grains, protein, dairy)*

○ Yes

○ No

Q54 2.3 (O) MyPlate or other healthy eating materials that promote foods to encourage are visible (i.e. posters, fliers, window stickers, etc)*

○ Yes

○ No

Q55 2.4 (O) Displays/hangs supporting materials for a foods to encourage (such as shelf talkers/shelf tags, nutrition information, etc.)*

○ Yes

○ No

Q56 2.5 (O) Includes at least one foods to encourage item in a bundle to display items together as a meal (i.e. beans and rice)*

○ Yes

○ No

Q57 2.6 (O) foods to encourage are stocked to appear "abundant"*

○ Yes

○ No

Q58 2.7 (O) Majority of foods to encourage are displayed/angled to be viewed easily from the eye-level of an average client*

○ Yes

○ No

Q59 2.8 (O) At least one foods to encourage item is within eyesight upon entering the pantry during distribution*

○ Yes

○ No

Q60 3.1 (O) Fresh*

○ Yes

○ No

Q61 3.2 (O) Canned (Any type, no rust and minimal dents)*

○ Yes

○ No

Q62 3.3 (O) Canned (Fruit in lite syrup or juice or ≤12 g Sugar, or Vegetables with ≤230 mg Sodium and ≤2 g Sat. fat)*

○ Yes

○ No

Q63 3.4 (O) Frozen (Any type, no frostbite)*

○ Yes

○ No

Q64 3.5 (O) Frozen (≤12 g Sugar, ≤230 mg Sodium, & ≤2 g Sat. fat)*

○ Yes

○ No

- -

Q65 3.6 (O) Dried (any type, no mold and packaging intact)*

○ Yes

○ No

- -

Q66 3.7 (O) Dried (≤12 g Sugar, ≤230 mg Sodium, & ≤2 g Sat. fat)*

○ Yes

○ No

- -

Q67 3.8 (O) Juice (100% fruit juice)*

○ Yes

○ No

- -

Q68 4.1-4.5 (O) Provide Various Types of Fruits and/or Vegetables*

	If >2 types		Additional?	
	Yes	No	Yes	No
4.1 (O) Red	○	○	○	○
4.2 (O) Yellow/Orange	○	○	○	○
4.3 (O) White or Tan/Brown	○	○	○	○
4.4 (O) Green	○	○	○	○
4.5 (O) Blue/Purple	○	○	○	○

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- -

Q69 6.3 (O) Has labeled sections for specific foods (i.e. gluten free, dairy free, no/low sodium, vegetarian or no-prep- required)*

○ Yes

○ No

- -

Q70
6.4 (O) Provides diverse options for protein (i.e. tofu, beans, fish, peanut butter)*

○ Yes

○ No

- -

Q71 6.5 (O) Provides culturally diverse foods (Kosher, Halal, ethnic cuisine)*

○ Yes

○ No

APPENDIX H

H.1   Trip Overview

YOUR TRIP:

⬦MapQuest
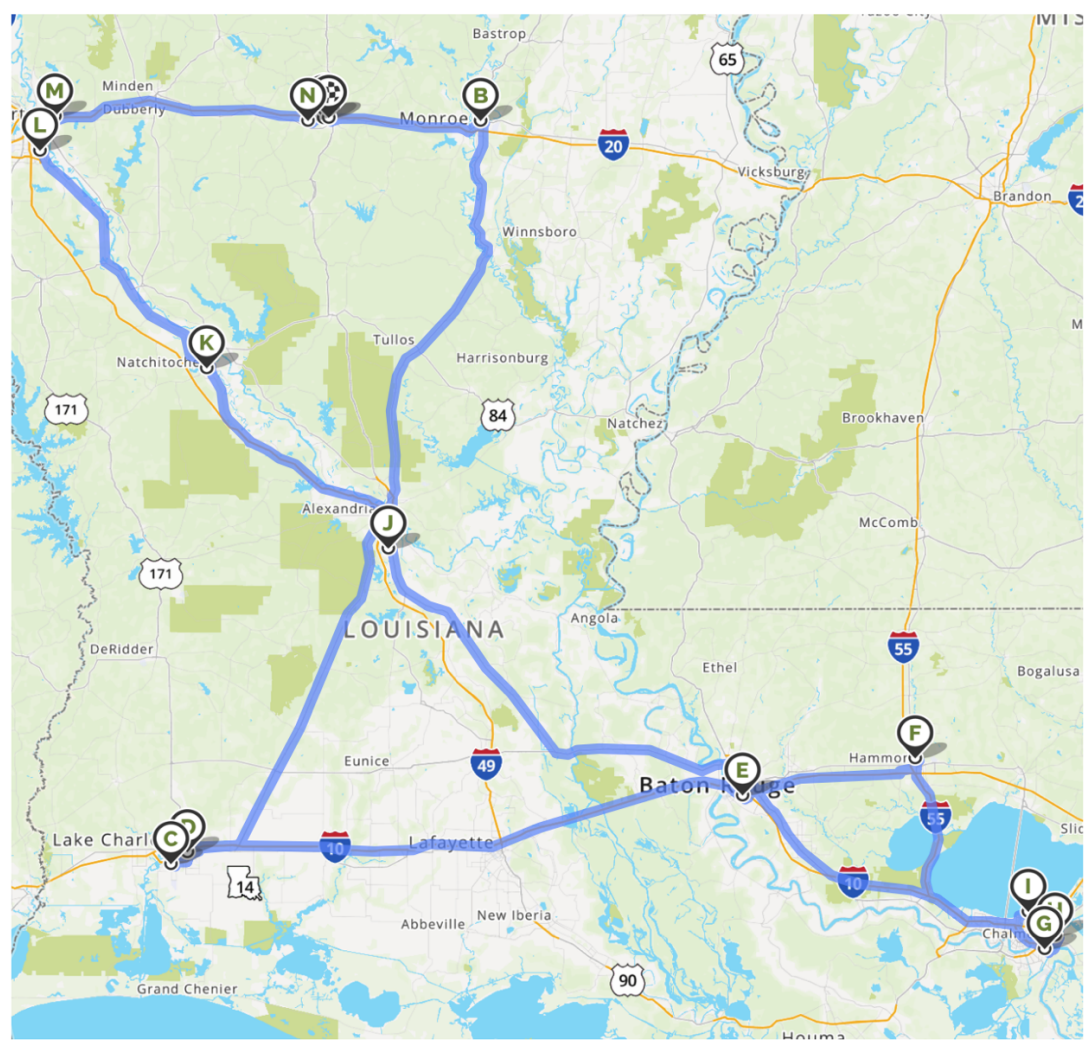
Total Route: **16 hr 7 min** - **870 miles**

Est. Fuel cost: **$64.50** - IRS Reimbursement: **$500.13**

Scan this QR code
for directions on
your mobile
device:

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