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Food Insecurity and Mental Health Correlations and Barriers on a College Campus

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ABSTRACT

Food insecurity is defined by the U.S Department of Agriculture as “the uncertain or limited ability to get adequate food due to lack of financial resources” (Watson, Malan, Glik, & Martinez, 2017, p. 130). It tends to go unnoticed, and the size of the vulnerable population cannot be fully depicted because of stigma in seeking help. One study could only estimate from findings that 14% to 59% of students will be food insecure at some point throughout their college years (Henry, 2017). Food insecurity is affecting students’ social and mental health, diet choices, and physical well-being. Food insecurity is only one of many possible mediating factors on mental health and vice versa. There is an underwhelming amount of research on correlations between the two.

This study is a mixed methods exploratory survey study investigating a convenience sample of young adults attending Hardin-Simmons University (HSU) within the 2018-2019 school year. The research utilizes quantitative data to analyze the following: frequency for the desire for a food pantry, prevalence of food insecurity, levels of food insecurity on campus per individual, and symptoms of mental health. Qualitative data is used to examine various participants’ perspectives on food insecurity on campus from students’ perspective.

Descriptive statistics were done for main components of demographics, level of food insecurity, frequency, and correlations between mental health and food insecurity. Significant data were found between depression and the amount of times students were

food insecure over the semester. Qualitative interviews also were examined for multiple themes.

While there are limitations present within the study, specifically the self-evaluation and small sample size, implications for HSU were provided. The main recommendations for the study are using the responses as a guide to the possible creation of a student led food pantry, how to address specific target area needs for students that may have gone under the radar, and the size of the food insecure vulnerable population. HSU can decide further action to better address their student population needs, and university goals.

Food Insecurity and Mental Health Correlations and Barriers on a College Campus

A Thesis

Presented to

The Faculty of the School of Social Work

Abilene Christian University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science in Social Work

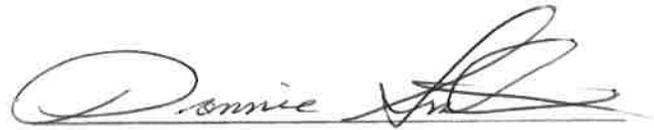
By

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This thesis, directed and approved by the committee for the thesis candidate Alexandria Bisson, has been accepted by the Office of Graduate Programs of Abilene Christian University in partial fulfillment of the requirements for the degree

Master of Science in Social Work



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This thesis is dedicated to my family and friends who encouraged me, believed in me, and prayed for me every step of the way. I could not have done this without you.

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CHAPTER I

INTRODUCTION

Educational institutions were established to enlighten enrolled students by creating a space to mold malleable minds and to prepare young people for success in a social, political, and economic system that depends on an educated public. As educational systems evolved, they focused on transmitting a broad array of knowledge and skills. Educational facilities have become centers for imparting social and life skills to young learners.

At another level, colleges and universities were created to provide a context where high school graduates could gain knowledge, experience, and career-related abilities. Graduate schools developed to expand on college education to prepare some for professional practices and to develop advanced thinkers who could contribute to society through research and innovation. Therefore, colleges and universities became centers where students not only gained academic instruction, but because college and university students tended to be developmentally impressionable, universities and colleges also became hubs for shaping ideologies and identities (Goodman, 2017).

Ideally, educational establishments need to address both physical and mental needs of their students because of the nature of residential life on campus. Universities and colleges are seeking to educate the minds of the future, but with the current policies and systems in place, they do not prioritize meeting those needs (Goodman, 2017).

Hence, colleges often cannot meet the holistic needs of their students and struggle to uphold the goals and mission that they are trying to keep in place.

Problem Statement

According to the literature, colleges are not fully able to address both physical and emotional needs of their entire student body. Food and basic needs insecurity is a growing problem on college campuses that continues to go unnoticed. It affects not only the physical body but a student's mental health. College and University Food Bank Alliance and three other campus-based organizations came together to survey college students on their food insecurity in 2016. In order to understand the problem at hand, it first needs to be defined. Food insecurity is "the uncertain or limited ability to get adequate food due to lack of financial resources" according to the U.S Department of Agriculture (Watson, Malan, Glik & Martinez, 2017, p. 130). In the study, 3,365 students who attended community colleges and four-year colleges and universities were sampled from 12 different states. It was found that from that sample, 48% of respondents reported food insecurity, and 22% of that number were struggling with such low levels of food security that they would be qualified as hungry (Dubick, Mathews & Cady, 2016). These numbers likely indicate a large problem within colleges across the nation, and the effects of college hunger are detrimental. Research shows that food insecurity negatively influences a student's academic performance, mental and social health, diet choices, and overall health. It causes stigma, shame, and a cycle of financial insecurity (Henry, 2017).

Food insecurity is a problem that not only affects mental health but also adds to the already present issues with mental health. In 2013, the National College Health Assessment surveyed full-time college freshman to better understand the mental health of

students in post-secondary education. About 59.6% of students reported feeling sad, 31.3% feeling depressed, and 51% suffering from anxiety. On top of that, 65.5% of the surveyed young adult freshman did not seek mental health care when experiencing symptoms of mental illness (Bohon, Cotter, Kravitz, Cello, Fernandez, & Garcia, 2016). Further, 15% of students enter postsecondary education with undiagnosed or untreated mental illnesses (Talebi, Matheson & Anisman, 2016). The mental health of college students is increasingly getting worse, and students are less likely to recognize their symptoms or seek help. When addressing the mental health and physical needs of college students, educational establishments need to look at the mediating factors and how they correlate. Food insecurity is leading to lower academics, but even poorer quality of life (Wattick, Hagedorn & Olfert, 2018).

Hardin-Simmons University (HSU) in Abilene, Texas, has a counseling center that is able to meet the mental health needs of the students that reach out to them but does not have the means to address the physical needs. There are many barriers to trying to meet the basic needs of students. Some of these include knowing the exact number of students who are in need, which resources are available, and how to go about feasibly meeting these students' needs. Other research questions that come up include: how can HSU address both areas of need at the same time, and what barriers are there to hinder students from reaching out for help, specifically in regards to a religious institution?

Research Gap

There is a lack of research about the connection between financial security and mental health (Eichelberger, Mattiolo & Foxhoven, 2017). Although previous studies have shown some evidence that relates financial insecurity and unmet basic needs to poor

mental health, the research has been minimal (Watson, Malan, Glik & Martinez, 2017). Little research has been done to look at the effects of poor mental health related to food insecurity and financial strain; studies frequently look at one area or the other. There is also a gap in the literature on feasible implementations to better address both mental health and basic needs for college-aged students and the influence on each other. Other research has been done on the effects of poverty on mental health for other age groups and its causal relationship, but strength is unknown and further study is needed (Yoshikawa, Aber & Beardslee, 2012).

CHAPTER II

LITERATURE REVIEW

In order to better understand what can be done within the sample population, research was analyzed through a thematic method of identifying research articles within scientific journals to address the research question on a larger scale. The Abilene Christian University (ACU) library database, specifically its OneSearch, with a full text database of peer-reviewed academic journals was used to look at the literature.

The specific qualifications within the search included: the year range 2008-2018 gap for relevance, English, peer-reviewed, full text, and published within academic journals. Research regarding college costs, policy, food insecurity, and mental health were sought out. The analyzed articles were found by the combination of different search terms within the Boolean search engine. These terms included “(mental health and college students),” “mental health on college campuses,” “food insecurity on college campuses,” “(poverty and mental health),” “Maslow’s hierarchy of needs and college students,” “financial insecurity and college students,” “mental health and food insecurity on college campuses,” “college cost,” and “college socioeconomics.” Relevant articles were obtained through sorting out titles, abstracts, and scan of introduction to determine if related to study question.

College Costs

The cost of secondary education in the United States often leads students, parents, and policy makers to argue that college has become unaffordable over the years.

The claim that the price of college today is too high can be traced through the historical context of its price and how it has changed over time (Thelin, 2015). When looking at tuition charges in the past, they were low even when indexed for inflation. For example, in 1910, the annual tuition at a prestigious, private East Coast university remained constant over two decades at the price of \$120 to \$150 per year. The equivalent of this to today, with inflation, would be \$3,000. The typical annual budget for an undergraduate who went to a private college in 1910 was \$350, or \$8,000 today. Those that came from a wealthy background, who often chose to live in private apartments, paid about \$500 for school and living annually. The wealthiest students' budgets were still substantially below the average \$50,000 annual price paid by a student today who attends an academically prestigious private university (Thelin, 2015).

Prices have continued to escalate substantially over time, distinctly since the Great Recession, and it is often impossible to cover entirely with government loans (Broton & Goldrick-Rab, 2016). Beginning in the 1950s, a time for economic boom, the federal government began to divide the responsibility with states for subsidizing college students to promote and give equal opportunity to attend college regardless of economic background. Unfortunately, it was discontinued. Traditionally, state funds that were given to post-secondary education were to help public institutions maintain low tuition for students and promote access equality. In the 1980s, there was a shift to Pell Grants and giving an allotment for larger subsidized loans. States are taking less responsibility to help pay for college, while tuition costs have continued to rise (Chen & St. John, 2011). The national report on higher education, *Measuring Up*, found that between 1982 and 2006, the cost of higher education in the U.S. rose by 439% (Kanter, 2011). It is an ever-

increasing problem. Another study found that 62% of all full-time students receive some form of financial aid and will seek out loan lenders that come with high interest to combat high prices. It is argued that need-based financial aid for students is not keeping up or helping with rising tuition nearly enough as prices continue to skyrocket (Webber & Boehmer, 2008).

Another study looked at accountability within educational institutions in their ability to produce quality education and keep costs low. A report from the Advisory Committee on Student Financial Assistance stated that financial obstacles will still prohibit nearly two million low- and middle-income qualified high school graduates from attending college at all (Webber & Boehmer, 2008). Colleges and universities have instead focused on helping those with little to no money attend college though. The government has succeeded in placing almost 10 million Pell Grant recipients into higher education but has missed addressing the conditions of poverty facing students as they pursue their degrees (Broton & Goldrick-Rab, 2016). Costs of college tuition have endangered college completion for many Americans (Conner & Rabovsky, 2011).

Literature recognizes that many students, specifically of low socioeconomic class status have a similar race and ethnic background, and struggle with the same issues when it comes to the college application process (Bergerson, 2009). Low socioeconomic students have shown to have limited access to information about the college process, less academic preparation, and less access to college planning resources (Bergerson, 2009). Some students from low socioeconomic families are unable to pay their full college costs without experiencing material hardship. They make sacrifices such as going hungry or living homeless to make ends meet, which hinders learning and discourages staying in

school. One study found that 90% of students during their first semester indicated that they were distressed or worried about not having enough money to pay for the commodities they need in order to attend college. On top of that, 78% stated that they found difficulty in paying their bills at all or on time. In regard to food security, 71% of students felt the need to change their food shopping or eating habits (Broton & Goldrick-Rab, 2016).

Policy

Literature within the past ten years has brought issues regarding the policy, affordability, and accountability of higher education to the forefront. State policymakers have spent more time and energy in response, seeking solutions that will refine both performance and cost-effectiveness of higher educational institutions. State governments have been faced with heightened pressures to fund competing programs, like Medicaid, and have had to deal with difficult recessions that led to tremendous declines in state revenues, and they are finding it difficult to maintain support for public institutions of higher learning. On top of that, colleges and universities have experienced large increases in operating costs, which has forced institutions to find other streams of revenue, including but not limited to private donations, research grants, and increased student tuition (Conner & Rabovsky, 2011).

These changes have demonstrated the importance of political factors that affect college and university spending and how the fiscal environment affects institutions and student outcomes (Conner & Rabovsky, 2011). Obama's administration attempted to create new policy to combat high prices by implementing the 2010 Health Care and Education Reconciliation Act. It implemented direct lending, saving more than \$68

billion dollars within the next decade by ending bank subsidies for student higher education loans. Obama also used \$36 billion for Pell Grants and doubled federal aid available to students (Kanter, 2011).

Another support system in place came about when college presidents, CEOs, and legislators came together to form the National Commission on Accountability in Higher Education (NCAHE) to engage in dialogue with various business and civic leaders, public officials throughout the nation, and educators to develop direction for accountability within postsecondary education. Some of these include:

Create statewide data systems across all levels of education to help inform policy and budgetary decisions that will close achievement gaps and promote greater equity in allocating resources . . . Establish goals based on broad state needs and priorities (in areas such as student participation and retention, achievement, workforce needs, economic development, and research productivity. . . [and] Monitor statewide and regional results, and focus policy and resources on public priorities while reducing detailed controls on institutional operations. (Webber & Boehmer, 2008 p. 87)

The Commission continues to make recommendations but still has to respect the boundaries among federal, state, and specific institutions, as well as within the political realm of policy and educational administration (Webber & Boehmer, 2008). Overall, the literature concludes that policy aimed at improving the rates for middle class and lower socioeconomic students going to college must incorporate a cultural wealth model that recognizes and rewards different kinds of finance (Bergerson, 2009).

Food Insecurity

According to the literature, food insecurity and mental health are issues on college campuses that are increasing in prevalence. Specifically, there are reports that range anywhere from 14% to 59% of students will be food insecure at some point throughout their college years (Henry, 2017). The U.S. Department of Agriculture (USDA) defines food security with a range of levels to accurately capture the variety of types within the population. The attributes of food insecurity include feeling hungry without eating, inadequate calorie intake, lack of access to healthy food, limited variety in diet, and losing weight due to inadequate calorie intake. The USDA states that even people who consume enough calories per day can still be food insecure if those calories are poor in nutrients (Henry, 2017). Even with the definitions and predicted numbers of students who are food insecure, many students that need help go unnoticed. A survey done at University of California, Los Angeles (UCLA) found that 54% of their participants were classified as food insecure, and within that, 32% experienced low food security, defined as reduced diet quality, variety, or desirability (Watson et al., 2017).

Research shows that students will have fear dealing with stigma and shame daily about their current food insecurity, and awkwardness with their friends that are food secure (Henry, 2017). Students have spoken out about food insecurity as an “invisible issue” on campuses, claiming that is not being openly discussed. They went further to say that they have a desire for a space to openly discuss food insecurity and other basic needs issues, such as housing and finances. A graduate student from the UCLA study even said that “food insecurity isn’t something that a lot of people are very willing to openly discuss” or even reach out help for (Watson et al., 2017, p. 135). A “broke college

student” who is struggling to get by is perceived as normal; There is a seriousness to making assumptions about the stereotype that reinforces a silent struggle. A student who was interviewed in the study stated, “I mean the faces of hunger—we are normal college students. No one talks about it. I don’t go up to my buddy and say oh man, I haven’t eaten today” (Henry, 2017, p. 11).

Food insecurity has a large list of negative impacts, including but not limited to: academic performance, mental and social health, dietary choices, and overall health status among adolescents and young adults (Henry, 2017). It is specifically linked to poor diet quality, obesity, diabetes, depression, and anxiety. Students with food insecurity also are more likely to have poorer health, express depressive symptoms, and exhibit lower academic performance compared to food secure peers (Watson et al., 2017). Bruening, Woerden, Todd and Laska (2018) found similar results in their study, entitled “Hungry to learn: The prevalence and effects of food insecurity on health behaviors and outcomes over time among a diverse sample of university freshmen.” They found significance between food insecurity and poor health and worse mental health outcomes within their sample population. It was also found that students are two times more likely to experience higher levels of stress and a depressed mood from their lack of food. Evidence has found a connection between food insecurity, and mental and emotional health to be bidirectional or have a reciprocity (Bruening et al., 2018). There is a gap, though, in fully understanding the relationship between food insecurity and mental health.

Mental Health

College is a time for prime developmental moments to equip students with skills both academically and mentally. However, colleges and universities are not fully

equipped to address the holistic needs of students, not only with food insecurity but mental health. It is a prevalent problem on college campuses with 86% of students with struggling mental health dropping out due to lack of support, financial barriers, and more (Goodman, 2017). Nine to 33% of students are experiencing depression and/or anxiety on campus, and 25-84% are not even seeking out help (Jenning et al., 2017). On top of that, 15% of students are entering into their college education with undiagnosed or untreated mental illnesses, which makes it more difficult to fully grasp how many students are struggling (Talebi et al., 2016). Out of those that do seek out support for a variety of issues, mental health establishments contain the highest number of visits per patient on college campuses (Turner & Keller, 2015).

The barriers for students to seek out resources to address their mental health needs include stigma, negative attitudes (Jennings et al., 2017), and not being able to recognize symptoms. College students' attitudes include not only negativity regarding seeking care, but ignorance about available treatment options and belief that formal care will not have an impact (Bohon et al., 2016). The students who have counseling services available to them and need them but do not utilize them were found to have more financial difficulties than their peers who do not need the services. These same students also struggle with higher stress levels, greater work demands, and fewer social connections (Nash, Sixbey, An, & Puig, 2017). However, the most significant barriers to students seeking help is the courage to do so (Talebi et al., 2016).

Maslow's Hierarchy of Needs

Within the literature, Maslow's hierarchy was searched, but there was no significant research to prove the theory with food insecurity and mental health. One study

explored Maslow's hypothesis, stating that need deprivation would predict psychopathology, specifically mania and depression. It postulated that if more basic needs were satisfied, then participants would have better psychological health. There was no support found for either hypothesis; Maslow's hypothesis that psychological health is associated with the level of satisfaction of the five basic needs could not be proven (Lester, 2013). Another study acknowledged Maslow's advocacy for the education system and how he understood society's barriers within his research on need. The study's aim was to assess the present level of needs of college students with respect to Maslow's hierarchy of needs to help understand students' needs and thus create an environment to enhance learning. The researchers came to the conclusion that current education is not meeting self-actualization needs globally but lacked to find a relationship of importance for schools and mental health/basic needs. Students within the study reported more of their lack of worry over money, food, and clothes versus hindrance to security (Gobin et. al., 2012).

Overlap

The influence and connection between food insecurity and mental health is present, but the strength of the association is unknown (Yoshikawa et al., 2012). Little attention has been given to those with economic disadvantages and economic barriers within mental health research (Foss-Kelly, Generali, & Kress, 2017). To understand the association more clearly, research is needed to examine connections between poverty, mental illness, and financial insecurity.

The first overlap comes between students with mental health problems and lower socioeconomic backgrounds enroll in colleges and universities. Such students are already

struggling to meet basic needs. Typically beginning long before college or university enrollment, economic stressors (e.g., unemployment, lack of affordable housing, insufficient funds for food) create an increased risk factor for poor mental health (Kuruvilla & Jacob, 2007). Adolescents who struggle with food insecurity and deal with family economic problems were associated with increased parental emotional distress, had poor quality parenting, and suffered from adjustment problems (Poole-Di Salvo, Silver, & Stein, 2016). As students, they continue to struggle with increased rates of depression and other mental illnesses. Researchers propose these mental illnesses are related to a lack of basic needs, the chronic effects of a lifetime of poverty, lower quality of life, poor social adjustment, and increased suicide risk (Yoshikawa et al., 2012). Suicidal ideation is found to be three times higher for those who have difficulty managing financial situations. A strong connection between depression and their personal debt is also well documented. Perceived worry and stress about personal debt can predict anxiety, but not financial burden in itself (Fitch, Hamilton, Bassett, & Davey, 2011).

The influence of perceived stress can expand the negative effects of financial tension on a student's psychological symptoms, their ability to achieve academically, and their ability to socially integrate into college (Adams, Meyers, & Beidas, 2016). Work is often required of students who are financially struggling or trying to support themselves through school. Because many students are at risk from their socioeconomic background, they must choose between education or addressing their basic needs, leading many students to drop out prematurely. In a study of college homelessness, low socioeconomic background students had similar struggles. It appears to be a common problem. Students try to join social service programs to afford basic resources to survive (Klitzman, 2018).

One study reported a story about a young student who stole from his work to make ends meet, but when caught, committed suicide to avoid consequences (e.g., federal charges, people's opinions about him, and other continuous struggles) (Schwitzer, & Vaughn, 2017).

Another particular study looked at the relationship between diet and mental health within young college students in Appalachia. It was found that dietary intake affects mental health on top of high rates of food insecurity and high stress. A strong relationship was found between nutrition and mental health; food-insecure students show a higher extent of depression and anxiety. Cheaper, unhealthy food intake with food insecurity lead an individual to an increase of mental health symptoms (Wattick et al., 2018). Food-insecure students are at risk for poorer physical health and worse mental health symptoms because of their lack of healthy food intake and less meal consumption (Bruening et al., 2018). There are many factors that affect the relationship between mental health and food insecurity, causing college students to suffer on both ends.

Literature Recommendations

The gap in literature on addressing the needs of college students, both mental and physical, led to many authors' recommendations on treating college with a holistic approach. Colleges should be able to find ways to meet all of their students' needs that will improve their college experience, and success in academics and personal growth (Goodman, 2017). A sociologist of Northeastern University in Boston, Massachusetts, wants faculty and staff to not just address an individual but the systems surrounding a person. She suggests faculty and staff integrate mental health conversations within curriculum, get familiar with campus student resources such as health/disability and

mental health advocacy groups, and go through educational trainings on how to handle crises, including information on FERPA and Title IX. Campuses should be proactive in engaging students and coming together to discuss development, oversight, and expansion of services to address the mental health needs and larger issues of college student well-being on campuses (Kelleher, 2017).

Another author shared a similar view, recommending that colleges focus on the ways in which student and professional identities shape experience in order to see the need for the importance of counseling center engagement with the campus community and increase their focus on preventative measures of risk management. There also should be diversity within counseling centers to better understand a wide variety of backgrounds. Author Richard P. Keeling (2014) refers to its importance in “An Ethic of Care in Higher Education: Well-Being and Learning,” stating that “advancing student success requires attention to students as whole people and to their individual and collective well-being” (Bonfiglio, 2016, p. 101).

Counseling centers can also improve themselves to better address the variety of student needs. There are not a lot of known counseling interventions that best address the social, emotional, and physical needs of those living in poverty. Counselors should take into consideration the different barriers that may come up with engaging with those of poor economic background, such as inferiority, that can lead to clients withholding information. Empowering those in poverty within counseling requires a focus on the realities of poverty, cultivating strong therapeutic relationships, helping to remove other barriers, and building upon that client’s strengths and resources (Foss-Kelly et al., 2017). Colleges should consider utilizing a food insecurity screening within their assessment

tools to better address a student's barriers and how to overcome them within counseling (Bruening et al., 2018).

An increase of social support can also be beneficial to helping both mental health and food insecurity. Lower socioeconomic status is a sign for greater risk of social isolation, and social support is found to be significantly associated with measures of mental health. Those with strong social support systems have a lower likelihood of anxiety, eating disorders, depression, and suicidal ideation (Hefner & Eisenberg, 2009). A college's ability to address a student holistically will further improve a student's well-being and their ability to succeed.

CHAPTER III

METHODOLOGY

Purpose

The main aim of this study is to explore the unknown barriers and population of students that are struggling with unmet basic needs, specifically food insecurity, and their mental health issues. The research conducted was used to inform HSU's counseling center and their care team (interdepartmental professionals addressing specific student needs that are flagged as in need) on how to proceed with students' issues and better reach them holistically. With the research results, the college will have a stronger grasp on how to evaluate their effectiveness and gaps in helping students and possible implementations in moving forward. HSU's mission statement is "to be a community dedicated to providing excellence in education enlightened by Christian faith and values" (Hardin-Simmons University, 2019). This study will help the university continue to provide excellence and instill Christian values by following Jesus' footsteps in serving students physically, spiritually, and mentally.

Research Design

An exploratory survey was used to address the basic research question (i.e., is there an association between food insecurity, mental illness, and academic success?). Demographic questions were used to help understand the sample population. A mixed methods design allowed the researcher to use a combination of quantitative and qualitative data to gain an in-depth understanding of participant issues. Qualitative

interviews were conducted after assessing the quantitative data for specific themes within specific students to further understand ties between mental health and food insecurity.

Participants

The study will be approved by NIH Institutional Review Board in accordance with the Abilene Christian University IRB Department of Health and Human Services and by the Hardin-Simmons University Institutional Review Board. All subjects gave informed consent for inclusion before participating.

The exploratory survey investigated a convenience sample of young adults attending a small, Abilene, Texas, university in Spring 2019. To be eligible, participants had to be currently enrolled at the university and at least 18 years of age. The sample included a minimum of 200 participants, with 700 surveys sent out to receive a minimum of 200 back.

Measures

The survey questionnaire was compiled of measurement instruments that included government approved surveys to test anxiety and depression, degree to seek help, and a food insecurity sample survey to determine need. The entire survey has 24 questions. The survey asked participants to self-report the following:

- Their demographics,
- Their behavioral health, utilizing the Behavioral Health Measure – 10 (BHM-10; see Appendix C),
- Their need for food, utilizing the College and Food Bank Alliance Sample Survey to Determine Need (See Appendix D), and

- Their propensity toward general help-seeking, utilizing the General Help-Seeking Questionnaire (GHSQ; see Appendix B).

Each tool is a validated measure to screen for mental health and food insecurity in young adults and asks respondents about their barriers and current state. Each part of the questionnaire holds a ratings scale to determine the sample's self-assessed results.

The strengths in incorporating these surveys was to have a shorter but valid assessment of a student's anxiousness or depression, two common mental disorders on a college campus whether they will seek out help, and their food security status. The surveys helped gain a better perspective on how big of a problem food insecurity is on the college campus and if those students have barriers to seeking out help.

Behavioral Health Measure – 10

The BHM-10 survey is open to public use. The survey was used to determine the sample population's depression, anxiety, and overall life functioning. It should not be used as a sole determinant for a person's clinical evaluation but a tool to aid in assessment. The questionnaire is a variance of a Likert scale with scores from 0-4. Example questions from the BHM-10 include utilizing a scale of 0 meaning "almost always" to 4 "never" to rate statements such as "not liking yourself," "low energy and motivation," "feeling hopeless about the future," "feeling nervous," and "heart pounding or racing."

The instructions to scoring the scale are to tally the ratings and see where they fall under four distress level categories. When tallying the scores for anxiety, a score between 16-11 falls under the category of normal range, 10-8 is mild distress, 7-6 is moderate distress, and 5-0 is severe distress. When tallying the scores for depression, a score

between 24-18 falls under the category of normal range, 17-13 is mild distress, 12-11 is moderate distress, and 10-0 is severe distress.

College and Food Bank Alliance Sample Survey to Determine Need

The College and Food Bank Alliance Sample Survey to Determine Need is to determine the sample population's level of food insecurity and opinion on a food pantry. It helps address and determine if establishing a food pantry will be pursued in the future. Example questions include: "While a student at HSU has there ever been a time when you did not have enough food for yourself or your household?," "How often has your food supply been inadequate?," and "If there was an occasion when you or other students didn't have enough food, in your opinion, would you or would other students use a food pantry if one were available on campus?"

General Help-Seeking Questionnaire

The General Help-Seeking Questionnaire (GHSQ) is a self-evaluation to determine help-seeking intentions and how likely the sample population will seek out the listed individuals. It uses a score between 1-7, 1 representing "Extremely Unlikely" to 7 representing "Extremely Likely." GHSQ examples questions include rating extremely unlikely to extremely likely on "if you were having a personal or emotional problem, how likely is it that you would seek help from the following people?" Options include intimate partner (e.g., girlfriend, boyfriend, husband, wife, de'facto), friend, (not related to you), parent, other relative, mental health professional (e.g., psychologist, social worker, counselor), phone helpline (e.g., Lifeline), religious leader (e.g., priest, rabbi, chaplain), and more.

Procedure

Undergraduate and graduate students attending HSU in Abilene, Texas, during the school year of 2018-2019 were sought out. The study used the university's list of students, who were emailed directly for the participants to read the informed consent page and sent an online survey link to a google form. If the informed consent is accepted, participants will have clicked on a link to complete the survey. Students who deny consent will not take the survey, and exit from the page.

Once the participants opened the survey, they were directed to demographic questions, the Sample Survey to Determine Need, BHM-10 and then the GHSQ. The participants that were willing to be interviewed after the process clicked on a link that led them to a secure system to a HIPAA-compliant computer program, Titanium, to record identifying information. Those that gave their contact information, were then emailed about interview date and times to answer food insecurity, demographic, and mental health related questions.

After collection of the data from the surveys, the analysis conducted used appropriate statistical software and software for qualitative data analysis. The analysis was written with summarized findings, as well as any patterns that may have been found, such as connections between demographics and mental health, demographics and food insecurity, mental health and food insecurity.

CHAPTER IV

FINDINGS

Participants

There were a total of 66 surveys completed for the study and five interviews that were conducted to be included in the data set. Table 1 outlines the demographic characteristics of the students, faculty, and staff that completed the survey. All of the participants were either currently enrolled or working at HSU. The descriptive statistics below show the variations of race/ethnicity, age, whether they were student or faculty, school classification, their current residence, and employment.

Fifty-one of the participants (77.3%) were female and 15 (22.7%) male, and 63 (95.5%) participants out of the sample size were students. The participants identified predominantly as Caucasian (72.7%) and fell between the ages of 18 and 20 years old (51.5%) and 21 and 24 years old (31.8%). The majority of the participants who were students stated that they were also employed (77.3%). Student respondents were primarily juniors (30.3%), followed by freshmen (25.8%). Out of the student sample 37 also identified as living on campus (56.1%) while 27 (40.9%) of them live off of campus.

Food Insecurity

Participants were asked about their level of food insecurity and how often it has occurred within their time as an HSU student. Only 24 (36.4%) of the 66 participants stated that they had dealt with food insecurity at least once while a student, and 40 (60.6%) of the participants said no. Then when asked regarding the frequency, out of the

63 participants that answered this question that have been food insecure, 14 (21.2%) responded with at least 1-2 times per semester, seven (10.6%) with 3-4 times per semester, and five (7.6%) were insecure 5 or more times.

Table 1

Demographics of the Sample (N=66)

Variable	Category or Range	N	%
Ethnicity	African American	5	7.6
	Asian	1	1.5
	Hispanic or Latino Origin	5	7.6
	Caucasian	48	72.7
Gender	Female	51	77.3
	Male	15	22.7
Age	Under 18	1	1.5
	18-20	34	51.5
	21-24	21	31.8
	24-30	4	6.1
	Above 30	6	9.1
Classification	Student	63	95.5
	Faculty	3	4.5
School Year	Freshman	17	25.8
	Sophomore	10	15.2
	Junior	20	30.3
	Senior	8	12.1
	Graduate Student	9	13.6
Residence	On Campus	37	56.1
	Off Campus	27	40.9
Employment	Off Campus	22	33.3
	On Campus	27	40.9
	Both	10	15.2

When asked if participants knew of other students that were insecure, 28 (42.4%) responded yes, and 36 (54.5%) clicked no. There is a limitation due to the number of responses that said they knew were insecure x amount of times exceeds the number that said they were food insecure. Only 28 participants responded yes, 22 (33.3%) students

estimated that they knew of someone food insecure 1-2 times per semester, 13 (19.7%) said 3-4 times per semester, and 6 (9.1%) said 5 or more times per semester. It should be noted that participants were only allowed to choose one frequency. The total number, 41, that responded to this question exceeds the number that stated yes, they knew someone who has been food insecure.

Overall, see Table 2, when participants were asked for their level of agreement “A student food pantry is needed at HSU,” a majority of participants at 42.4% agreed, followed by 33.3% of participants undecided.

Table 2

State your level of agreement with this statement: A student food pantry is needed at HSU (N=66)

Category or Range	N	%
Strongly Disagree	2	3.0
Disagree	8	12.1
Undecided	22	33.3
Agree	28	42.4
Strongly Agree	4	6.1
Missing	2	3.0

The participants were also asked about how frequent they would go to a food pantry if there was one on campus, and if they were in need. Of those that answered, five (7.6%) said never use, eight (12.1%) almost never use, 30 (45.5%) occasionally/sometimes, 13 (19.7%) almost every time, and eight (12.1%) frequently use. Two (3%) of the surveys were missing this data.

Faculty and Staff

In the faculty and staff portion of the survey, HSU employees were asked about their knowledge of food insecurity on campus, awareness of specific students, level of

agreement that a food pantry is needed, and questions on their willingness to take part in the process of a food pantry on campus.

There were limited responses to the faculty and staff section. An average of seven faculty and staff responses were recorded out of the 66 participants. Specifically, there were eight responses to “Are you aware of a situation or have personal knowledge of a student having an inadequate supply of food?” Five faculty responded no, and the other three stated yes. Following up, they were asked, “In your opinion, to what degree is food insecurity a problem among the HSU student population?” Seven responses were given. Four participants stated minor problem, two stated moderate problem, and one said not at all a problem. When asked their level of agreement to “A student food pantry is needed at HSU,” two participants agreed, one stated disagreed, and four were undecided.

Participation in Student Food Pantry

All 66 participants were asked various questions on their level of willingness to participate in a student food pantry at HSU. Students and faculty were asked in separate sections of the survey. Students were asked “For a food pantry to operate efficiently it would need a group of committed volunteers. Would you be willing to work on occasion in the pantry?” There were 34 (51.5%) students that responded with yes, seven (10.6%) responded no, and 23 (34.8%) responded maybe. Two responses were recorded as missing.

Faculty were asked similar questions. Theirs asked, “Do you advise a club/organization whose members would be willing to volunteer to work on occasion at a food pantry if one was established?” Out of the seven responses recorded, four stated no and three stated yes. Faculty and staff were also asked if that same club/organization

would help raise funds. Four participants responded with yes, three said maybe, and no one responded with no. The follow-up question asked if the faculty and staff would be interested in volunteering. Five responses chose a pre-determined role, and only two did not want to at this time.

Mental Health

The 66 participants were asked about depression, anxiety, life functioning, and their willingness to seek out help from specified individuals. Descriptive frequency statistics tests were done to analyze the severity of anxiety and depression. The BHM10 has a key for ranking depression and anxiety symptoms. To rank depression, scores of 18-24 equals normal range, mild distress is 13-17, moderate distress is 11-12, and severe distress is 0-10. Anxiety ranks are under a similar range with 11-16 equaling normal range, 8-10 for mild distress, 6-7 for moderate distress, and 0-5 for severe distress.

The most frequent level of depression, whose ranked symptoms scored between 18-24, was normal range. 32 (48.5%) participants fell under this category. The next largest category was mild, with 17 (25.8%) participants. Severe distress was the last category with double digit number of 11 participants (16.7%). Moderate was the least frequent category with five (7.6%). Anxiety followed a similar pattern in frequency with normal range as the most frequent with 30 (45.5%), followed by severe with 14 (21.2%), and then Mild with 13 (19.7%). Again, moderate was the least frequent category with eight (12.1%).

The GHSQ measures the help-seeking intentions of the participants when they were having a personal/emotional problem or suicidal thoughts, on the range of how unlikely to likely would they reach out to the categories of people listed. The mode of

each category seen in Table 3 demonstrates the majority of each, and the median represents the average likeliness for participants to seek help.

Table 3

Help-Seeking Intentions for Emotional/Personal Problem

Category or Range	Mean	Mode
Intimate partner (e.g., girlfriend, boyfriend, husband, wife)	5.59	7
Friend (not related to you)	5.08	7
Parent	4.56	7
Other relative/family member	3.62	1
Mental health professional (e.g. psychologist, social worker, counselor)	4.11	5
Phone helpline (e.g., Lifeline)	2.11	1
Doctor/GP	2.86	1
Minister or religious leader (e.g., priest, rabbi, chaplain)	3.58	1
I would not seek help from anyone	2.46	1
I would seek help from another not listed above	2.63	1

Participants were most likely to seek out their intimate partner to help with emotional or personal problems. Specifically, 39.4% indicated they would be “extremely likely” to seek help from their intimate partner, then 19.7% ranked 6 and 18.2% ranked 5, indicating they would be likely to seek out their partner for. As seen in the chart, Friend and Parent had the next highest mean and mode in seeking out help for an emotional problem. Participants were less likely to seek out a mental professional in regards to this category with a mean of 4.11 and a common rating of 5 “likely” rather than “extremely likely.”

Participants responded to who they were willing to seek help from if they had suicidal thoughts in a similar manner. About 37.9% of participants chose 7 “extremely likely,” then 18.2% ranking 6, followed by 5 “likely” with 21.2% when it comes to their intimate partner. As seen in Table 4, friend had the next highest mean and mode.

Participants were then more likely to seek out a mental professional next when it came to suicidal thoughts, with a mean of 5.08 and a mode of 7 “extremely likely.”

Table 4

Help-Seeking Intentions

Category or Range	Mean	Mode
Intimate partner (e.g., girlfriend, boyfriend, husband, wife)	5.51	7
Friend (not related to you)	5.18	7
Parent	4.37	7
Other relative/family member	3.37	1
Mental health professional (e.g., psychologist, social worker, counselor)	5.08	7
Phone helpline (e.g., Lifeline)	2.98	1
Doctor/GP	3.13	1
Minister or religious leader (e.g., priest, rabbi, chaplain)	3.92	1
I would not seek help from anyone	2.05	1
I would seek help from another not listed above	2.21	1

Overlap

Descriptive statistics were used; specifically, an independent sample *t*-test, one-way ANOVA and post hoc tests were used to explore and analyze possible correlations between food insecurity and mental health. In the independent samples *t*-test, the answers to the question “While a student at HSU, has there ever been a time when you did not have enough food for yourself or your household?” answers were compared to the mental health questionnaire sums. Crosstabulation statistics were also performed to look separately at the grouping’s freshmen and sophomores, and juniors and seniors with the severity of depression and anxiety. These categories were separated because full-time, residential students that are freshmen and sophomores are required to have full meal plans, while juniors and seniors would be more at risk because they lack that requirement.

Table 5 below shows the results of the tests that were performed. The table indicates that those who stated yes, they had experienced food insecurity, scored significantly different, $t(23) = -2.99$; $p = .004$, from those who marked that they had not experienced food insecurity. Lower scores indicate higher depression and anxiety. No statistically significant differences were observed on the anxiety scale or on the help seeking measurement.

Table 5

Independent Samples T-Test for “Has There Ever Been a Time When You Did Not Have Enough Food?”

		<i>N</i>	Mean	SD	SE	<i>t</i>	<i>p</i>
Depression Sum	Yes	23	16.35	4.25	0.89	-2.99	.004
	No	40	19.58	4.06	0.64		
Anxiety Sum	Yes	23	13.00	4.41	0.92	-.784	.436
	No	40	13.88	4.18	0.66		
Help-Seeking Sum	Yes	23	67.70	19.87	4.14	-1.38	.173
	No	40	75.08	20.75	3.28		

A One-Way ANOVA analysis of variance was done to see how often the students were food insecure was dependent on the mental health questionnaire sums. It was found that sum of recorded depression items between group differences, $p = 0.5$ sig = .045, had significance. There was no significance though, between the sum of recorded anxiety items or help seeking sum.

Post-hoc statistical test was done to look at which categories a statistical difference existed. It compared x number of times students were food insecure, from 0 times to semester to 1-2 times a semester. There was a difference in the depression sums. The P value of .045 indicates a statistically significant difference for the overall model; a post-hoc test was run to using the least significant difference method to indicate that

those that had food insecurity 1-2 times per semester had higher depression ratings than those that were food insecure 0 times. Those that were food insecure 3-4 times a semester were more depressed than those that had been food insecure 0 times.

Another test, crosstabulation statistics, were done to more accurately analyze the food insecurity and mental health significance on HSU’s campus. As seen in Table 6, severity of depression was recoded into two separate categories. These categories included: 0 = no depression and mild depression; 1 = moderate and severe depression. A crosstabulation was performed to test whether lower (i.e., freshmen or sophomore) classification would result in a significant ($p < .05$) relationship between food insecurity and severity of depression. A similar crosstabulation was performed to test whether upper (i.e., junior, senior, and graduate) classification would result in a significant ($p < .05$) relationship between food insecurity and severity of depression. Chi-square statistics were generated along with a Fisher’s Exact Test. Results indicated that there was not a statistically significant ($p < .05$) relationship between upper- and lower-class status and moderate to severe depression.

Table 6

Crosstabulation: Freshman and Sophomore Food Insecurity by Moderate or Severe Depression

		Moderate or Severe Depression	
		No	Yes
Food Insecure	No	12	3
	Yes	8	4
	Total	20	7

Note: Fishers Exact Probability = .662

Table 7

Crosstabulation: Junior and Higher Food Insecurity by Moderate or Severe Depression

		Moderate or Severe Depression	
		No	Yes
Food Insecure	No	21	4
	Yes	6	5
	Total	27	9

Note: Fisher's Exact Probability = .096

Interviews

Ten different students gave their contact information to be a part of interviews to further discuss food insecurity on a college campus and mental health. Once contacted about dates and times, only five students were available to interview. Participants were interviewed separately with questions that ranged from the participants' demographic/background, opinions on food insecurity with college age students, if HSU needs a food pantry, and how they see mental health playing a part in food insecurity.

All four participants were male, and four of the five were Caucasian between the ages of 18 and 22. The non-Caucasian student was an international student that brought diverse perspective. A few themes were prevalent throughout the interviews. One included that unknown size of population of students that are food insecure. All four students stated that they do not see a food insecurity problem on the HSU campus but that a food pantry could be helpful if the population could be identified. All participants agreed that the at-risk population needs to be identified first before taking action. Another reoccurring theme is the lack of direct connection between mental health and food insecurity. Only one student stated that his personal experience with poor mental health affected his food income, and another stated that he believes that financial stress affects

mental health leading to poorer food choices. Only one of the four students had dealt with food insecurity or knew of anyone that had struggled with food insecurity.

CHAPTER V

DISCUSSION

The study sought out to examine correlations between food insecurity and mental health among college students at a small, Christian university. Food insecurity was explored and evaluated through frequency of responses to the idea of an HSU student food pantry, whether participants have been food insecure, and demographic information that can affect responses. Mental health was analyzed through validated measurement tools to understand the state of anxiety, depression, and likeliness to seek out help. The summarized state of mental health were found through frequency descriptive statistics. Correlations between food insecurity and mental health were analyzed from statistical tests such as Independent t-test, one-way ANOVA, and post hoc test. Qualitative interviews helped add perspective to the overall data sample to understand the food insecurity need on the HSU campus, and how students see mental health role in connection to food insecurity.

Implications for Practice

Food Insecurity

In order to understand the population size for food insecurity, the data went through descriptive statistics frequency test to explore the size of need. Participants were majority students, and 36.4% of them stated that they had dealt with food insecurity at least once while a student, and for some up to five times a semester. Within that percentage, 21.2% of those students were insecure one to two times a semester. When

these same participants were asked if they knew someone who was food insecure, 42.4% stated yes. These numbers indicate that there is a population size within the HSU student body that is going without food. The university can take this information to further study the at-risk population that may be going under the radar, and who are hesitant to seek help. New solutions can be put into place to lower prices of food, aid in meal plans, or work with food bank and pantry.

There was also a majority agreement with the statement “A student food pantry is needed at HSU.” There were 42.4% of participants that agreed that a food pantry would be beneficial, but 33.3% of participants that stated undecided may be attributed to the unknown population. Collectively though, 51 participants agreed that they would use a food pantry if made available. Specifically, 30 participants stated “occasionally/sometimes,” 13 “almost every time,” and eight “frequently.” This data helps contribute to HSU’s practices in determining what population would use the pantry, and if it would be worth setting up. This data matches the reoccurring theme within the interviews that a pantry would be beneficial but uncertainty with the need at HSU, which helps draw the conclusion that a population size should be established before pouring resources into a pantry.

Mental Health

The mental health symptoms of the sample population measured were almost half and half on the rating scales. An estimate of 48.5% of the participants fell under the normal range for depression, while the other 51.5% ranged between mild and severe. Anxiety was similar with 45.5% falling under the normal range, and the other 54.5% falling under mild to severe distress. These numbers indicate a larger mental health

problem at hand and can contribute to knowledge of the possible severity of the vulnerable population at HSU. The Office of Counseling Services can utilize these numbers to help better understand the possible majority diagnoses of the population.

The GHSQ also contributes to HSU's Office of Counseling Services practice because it adds to the knowledge base regarding from whom students are willing to seek help. Major findings included intimate partner for both a personal problem and suicidal thoughts. Both emotional problems and suicidal thoughts were followed with majority seeking help from friends after intimate partner. The severity responses changed with suicidal thoughts. Participants were more likely to seek professional help in that case compared to just an emotional problem, where students would seek out a parent. HSU can apply this to their possible marketing and educating students on the importance of who to reach out to in crisis or needs, and why.

Overlap

When looking at the various correlations between food insecurity and mental health, there are significant things to be gleaned from the data. The correlations present within food insecurity and mental health include the tie between whether they were food insecure or not, and their depression scores and the x amount of times students were insecure and their depression scores. Participants who had experienced food insecurity scored significantly different, from those who marked that they had not experienced food insecurity. Lower scores indicate higher depression and anxiety. There was significance in the number of participants that were food insecure 1-2 times with a lower depression score (higher depression) compared to those who were insecure 0 times. The same

significance happened with the group that were food insecure 3-4 times; they had lower depression scores than those who were only insecure 1-3 times a semester.

The data demonstrates the effects of food insecurity on depression and how it can escalate either the symptoms that are already present or be a catalyst to new symptoms. HSU can use this information to better equip their services to address food insecurity among students whose mental health, specifically with depression, could be improved through food security. HSU's Office of Counseling Services can use this data to enhance their knowledge on a client's intake and help match them with resources to address possibly fixable problems.

Implications for Policy

When looking at all three subjects of food insecurity, mental health, and their overlap, a few concepts can be taken away for policy practice. One concept is that a rough estimated size population of students at the university are going without food, some as little as 1-2 times a semester, and others as much as 5 times a semester. States like California have bills in place that are geared to ensure that low-income college students have reliable access to food, through their individual "CalFresh Program." They are partnering with the U.S. Department of Agriculture's Food and Nutrition Service take initiative and help enroll more students in federal food assistance programs (California State Senate Majority Caucus, 2019). California's governor Jerry Brown also included \$7.5 million in his budget to develop "hunger-free" college campuses throughout the state. HSU could take initiative to follow in these footsteps or even smaller ones in establishing a food pantry, which majority of the surveyed students were in support of or find other means to put new policies in place that would assist their students.

Texas has been taking similar steps in addressing the problem of food insecurity among its colleges through partnerships with food banks, creating scholarship funds, and searching out new interventions to implement. University of Houston (UH) together with Houston Food Bank's "Food for Change Initiative" is driven to offer support to students by promising students that they can pay for other school-related expenses, as the cost of their groceries will be covered. UH's goal and hope is that over the next few years the net of support will boost the students' academic performance and persistence to graduate (Fickman, 2018).

Another concept to take away for policy practice would be to reinforce the importance of mental health practitioners on campus. Over half of the participants from the survey were found to have some level of anxiety or depression. It ranged from mild to severe, and within that 16.7% were ranked severely depressed, and 21.2% had severe anxiety. Enough participants are struggling with mental health issues to support policies already in place at HSU and new ones that can be put in place to better enhance the OCS experience. Overall, there are prospective new policies that can be put in place at HSU and data that can support new changes for areas of need.

Implications for Research

The data from the survey conducted is a helpful tool in aiding current research on food insecurity, mental health, and fill the gaps on correlations between food insecurity and mental health. Specifically, it adds to the growing research on food insecurity in colleges for the nation and Texas. Studies are continuing to draw attention to the need on college campuses, and resources that can be utilized to address this problem. While there

are many limitations to the study, the information is beneficial to estimating the population size.

The mental health measurement scales contribute to the research base by looking at the overall symptoms of depression and anxiety on a college campus, even on a small scale. The data reflect the prevalence of anxiety and depression on campus, and that over 50% of students (relative to the study) are suffering from symptoms. The GHSQ also can add to a new knowledge base about students' willingness to seek help, and from whom they would seek it. Researchers can use this to determine how to better advertise importance of certified mental health practitioners, and use it as a basis to further study why students are more likely to seek out untrained professionals first.

The mental health correlations to food insecurity adds to the research in a significant way because there is a large research gap to the role mental health plays with food insecurity (Eichelberger, Mattiolo, & Foxhoven, 2017). Various studies look at one or the other, and others state that even though there is an effect, the significance is unknown (Yoshikawa, Aber, & Beardslee, 2012). This study is significant in evaluating the role and determining that food insecurity affects depression levels.

Limitations

There are multiple limitations to the study that should be noted. The first being the small sample size that cannot be generalized to the entire HSU population nor every small, private campus. There is also a large research gap within the literature on correlations between food insecurity and mental health, resulting in a limitation of framework when conducting the study. The self-evaluation surveys are also a limitation because of human error. Self-evaluation cannot be proven as completely accurate due to

the participant's judgement and external environmental factors that can affect the responses. Nonetheless, these results are useful for implication but must be interpreted with caution and the limitations should be kept in mind.

Recommendations

If the study were to be conducted again, some of these limitations could be addressed in future research. In regard to sample size and generalizability, a larger sample population would be advised. Whether increasing incentive, more reminder emails, or more time to collect data. Moving forward, the self-evaluations are viable but more specific questions on their mental health state, such as "What symptoms did you experience during the time you were food insecure?" or "Did you see a noticeable difference between your mental health state when you were food insecure compared to a time when you were not?" would help explore the correlations more. These recommendations would be important to include if the study were to be replicated.

CHAPTER VI

CONCLUSION

Within recent decades, colleges have had substantial cuts in state appropriations for higher education and more occurrence of privatization. Colleges are making students pay for their education and putting more of a focus on loans instead of grants (Webber & Boehmer, 2008). The costs continue to increase and even though students are able to make it to college, they are facing economic distress while trying to finish college. Food insecurity and mental health are problems on college campuses, and exploring their correlates is helpful in addressing the holistic needs of those students. The study's goal was to understand the correlations, add to the research base, and address research gaps. There was significance between depression symptoms and food insecurity/the amount of times a student was food insecure. Due to the study's limitations, further research is still needed. HSU now has a starting point to better understand the size of the vulnerable population at hand and possible implementations to address their needs. The qualitative and quantitative data also contributed to giving the study body a voice on the topic, and how they see food insecurity as a problem.

The Office of Counseling Services can also use the mental health measurement data to guide further implementation and contribute to the knowledge on the population's struggles with depression, anxiety, and seeking help. Knowing the effects of food insecurity on mental health will further help the counselors work with their clients.

Despite the limitations and research gap, HSU can use the recommendations and implications of the study to further examine and try to address the unmet student's needs on campus, whether as a whole or on an individual level.

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APPENDIX A

IRB Approval Letter

ABILENE CHRISTIAN UNIVERSITY

Educating Students for Christian Service and Leadership Throughout the World

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885



Dear Alex,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled

was approved by expedited review (Category 7) on 1/18/2019 (IRB # 18-126). Upon completion of this study, please submit the Inactivation Request Form within 30 days of study completion.

If you wish to make any changes to this study, including but not limited to changes in study personnel, number of participants recruited, changes to the consent form or process, and/or changes in overall methodology, please complete the Study Amendment Request Form.

If any problems develop with the study, including any unanticipated events that may change the risk profile of your study or if there were any unapproved changes in your protocol, please inform the Office of Research and Sponsored Programs and the IRB promptly using the Unanticipated Events/Noncompliance Form.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs

APPENDIX B

General Help-Seeking Questionnaire – Original Version (GHSQ)

Question 1 = Personal or emotional problems

Question 2 = Suicidal ideation

Note: In all questions, items a-j measure **help-seeking intentions**.

Help sources should be modified to match the target population.

1. If you were having a personal or emotional problem, how likely is it that you would seek help from the following people?

Please indicate your response by putting a line through the number that best describes your intention to seek help from each help source that is listed.

1 = Extremely Unlikely 3 = Unlikely 5 = Likely 7 = Extremely Likely

- | | |
|---|---------------|
| a. Intimate partner (e.g., girlfriend, boyfriend, husband, wife, de' facto) | 1 2 3 4 5 6 7 |
| b. Friend (not related to you) | 1 2 3 4 5 6 7 |
| c. Parent | 1 2 3 4 5 6 7 |
| d. Other relative/family member | 1 2 3 4 5 6 7 |
| e. Mental health professional (e.g. psychologist, social worker, counsellor) | 1 2 3 4 5 6 7 |
| f. Phone helpline (e.g. Lifeline) | 1 2 3 4 5 6 7 |
| g. Doctor/GP | 1 2 3 4 5 6 7 |
| h. Minister or religious leader (e.g. Priest, Rabbi, Chaplain) | 1 2 3 4 5 6 7 |
| i. I would not seek help from anyone. | |
| j. I would seek help from another not listed above (please list in the space provided, (e.g., work colleague. If no, leave blank) | 1 2 3 4 5 6 7 |

2. If you were experiencing suicidal thoughts, how likely is it that you would seek help from the following people?

Please indicate your response by putting a line through the number that best describes your intention to seek help from each help source that is listed.

1 = Extremely Unlikely 3 = Unlikely 5 = Likely 7 = Extremely Likely

- | | | | | | | | | |
|----|--|---|---|---|---|---|---|---|
| a. | Intimate partner (e.g., girlfriend, boyfriend, husband, wife, de' facto) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | Friend (not related to you) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | Parent | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | Other relative/family member | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e. | Mental health professional (e.g. psychologist, social worker, counsellor) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| f. | Phone helpline (e.g. Lifeline) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| g. | Doctor/GP | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| h. | Minister or religious leader (e.g. Priest, Rabbi, Chaplain) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| i. | I would not seek help from anyone. | | | | | | | |
| j. | I would seek help from another not listed above (please list in the space provided, (e.g., work colleague. If no, leave blank) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

APPENDIX C

Behavioral Health Measure-10® (BHM-10®)

Behavioral Health Measure-10® (BHM-10®)

Name _____ Date _____

In the past 2 weeks, how much have you been distressed by:					
	Almost always 0	Often 1	Sometimes 2	A little bit 3	Never 4
Depression					
Not liking yourself	<input type="checkbox"/>				
Difficulty concentrating	<input type="checkbox"/>				
Low energy and motivation	<input type="checkbox"/>				
Feeling sad most of the time	<input type="checkbox"/>				
<i>THOUGHTS OF ENDING YOUR LIFE</i>					
Feeling hopeless about the future	<input type="checkbox"/>				
Anxiety					
Feeling nervous	<input type="checkbox"/>				
Heart pounding or racing	<input type="checkbox"/>				
Feeling fearful, scared	<input type="checkbox"/>				
Afraid of/avoiding certain normal situations	<input type="checkbox"/>				
Life Functioning					
	Terrible	Poorly	Average	Well	Very Well
If you responded with a "2" or lower on any of the above items, then please indicate how you are getting along with your overall functioning in these areas: relationships with others, work/school performance, and life enjoyment?	<input type="checkbox"/>				

Terms of Use: The BHM-10 measure can be reproduced and used as an assessment tool without license fee or royalty, only if reproduced on paper and used in its entirety without modification, including a clearly legible version of the terms of use statement, copyright and web site reference for printing additional copies. Any electronic use or transformation of the BHM-10 is strictly prohibited.

Web Reference: Copies of the BHM-10 are available for printing from the following web site, along with further information on other CelestHealth on-line measures.
www.pointnclick.com/BHM-10

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BHM-10
Depression and Anxiety Questionnaire
Instructions for Use and Scoring

The BHM-10 assesses the patient's depression, anxiety, and overall life functioning. Evaluation decisions about the patient should not be based solely on this instrument, but should also include—at the least—information obtained from a clinical interview with the patient. Based on the clinician's judgment, this questionnaire may be given at every visit or intermittently. Item # 5 is in capital, italic lettering because of the importance of suicidality.

Scoring the questionnaire is as follows. Total the patient's ratings for the Depression and Anxiety items. Use the below cut-off scores for the four distress levels.

Scale	Normal Range	Mild Distress	Moderate Distress	Severe Distress
Anxiety	16 - 11	10 - 8	7 - 6	5 - 0
Depression	24 - 18	17 - 13	12 - 11	10 - 0

APPENDIX D

Sample Survey to Determine Need

The purpose of the food pantry would be to address food insecurity that may exist among the student population. The United States Department of Agriculture defines food insecurity as meaning: "Consistent access to adequate food is limited by a lack of money and other resources at times during the year."

Completing this survey is voluntary and your participation can be Withdrawn at any time. Your answers are completely anonymous. No identifying information is requested.

However, your participation is extremely important, as the results of this survey, in part, will be used to determine if establishing a student food pantry will be pursued in the very near future. The time required to complete the survey is about 5 minutes or less.

Which of the following best describes you? (Select one)

1. Student
2. Faculty
3. Staff
4. Administrator

STUDENT QUESTIONS:

While a student at [COLLEGE OR UNIVERSITY] has there ever been a time when you did not have enough food for yourself or your household?

1. Yes
2. No

How often has your food supply been inadequate?

1. 0 - times per semester
2. 1-2 times per semester
3. 3-4 times per semester
4. 5 or more time per semester

While a student at [COLLEGE OR UNIVERSITY] has there ever been a time when you were aware of another student (not yourself) that did not have enough food for themselves or their household?

1. Yes
2. No

How often would you estimate the food supply for other students (not yourself) has been inadequate?

1. 0 - times per semester
2. 1-2 times per semester
3. 3-4 times per semester
4. 5 or more time per semester

If there was an occasion when you or other students didn't have enough food, in your opinion,

would you or would other students use a food pantry if one were available on campus?

1. Never Use
2. Almost Never Use

3. Occasionally/Sometimes
4. Almost Every Time
5. Frequently Use

If you were in need and considered using a food pantry, what type of pantry would you prefer?

1. A pre-packaged box of food that can be picked up.
2. A shopping style pantry where each student can select food needed.

For a food pantry to operate efficiently it would need a group of committed volunteers.

Would you be willing to volunteer to work on occasion in the pantry?

1. Yes
2. No
3. Maybe

State your level of agreement with the following statement. A student food pantry is needed at [COLLEGE OR UNIVERSITY].

1. Strongly Disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly Agree

How are you classified?

1. Freshman
2. Sophomore
3. Junior

4. Senior
5. Graduate Student
6. Other (Please Specify)

Where do you live?

1. On-campus
2. Off campus

Counting yourself, dependent children, spouse or significant other, how many people are currently in your household?

1. 1
2. 2
3. 3
4. 4
5. 5 or more

Finally, what questions, comments, concerns, or suggestions do you have about establishing a student food pantry at [COLLEGE OR UNIVERSITY]?

FACULTY, STAFF, ADMINISTRATION QUESTIONS:

Are you aware of a situation or have personal knowledge of a student having an inadequate supply of food?

1. Yes
2. No

In your opinion, to what degree is food insecurity a problem among the [COLLEGE OR UNIVERSITY] student population?

1. Not at all a problem

2. Minor problem
3. Moderate problem
4. Serious problem
5. Don't Know

For a food pantry to operate efficiently it would need a group of committed volunteers.

Do you advise a club/organization whose members would be willing to volunteer to work on occasion at a food pantry if one was established?

1. Yes
2. No

The food pantry would need to raise start-up funds and would conduct food drives on occasion to stock the pantry. Would you and or the members of a club/organization you advise be willing to donate to the pantry?

1. 1. Yes
2. No
3. Maybe

Would you be interested in volunteering in one or more of the following roles? (Check all that apply)

1. Not interested at this time
2. Donor
3. Advisory Council Member
4. Other