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ABSTRACT

Food insecurity amongst college students is a rising crisis. Students' inability to access nutritional food on a consistent basis can negatively impact student retention, academic success, mental and physical health, and social mobility, all of which are at an even greater risk due to the rise of the COVID-19 pandemic. Additionally, children and adolescents in primary and secondary school who experience food insecurity can experience developmental delays, which can impede their ability to obtain a postsecondary degree. Limited research has been conducted on the topic of food insecurity at private universities as well as identifying chronic food insecurity. The present study aims to describe the prevalence of food insecurity among college students as well as examine related factors in relation to food insecurity such as sociodemographic factors and prior experiences of food insecurity while in primary or secondary school. It utilized a cross-sectional survey for a convenience sample of 222 college students at a private university in Texas. A hierarchical multiple regression analysis revealed the statistically significant effect of the prior experiences of food insecurity on current food insecurity disappeared when other factors were additionally considered. The student's first-generational status was the only significant factor. The findings imply colleges and universities, particularly private universities should address areas in need of improvement, namely student supportive services. This study suggests further studies continue to verify identified findings in the study with a more representative and larger sample.

Food Security as a Basic Right for College Students: A Descriptive Study of the Factors
Associated with Food Insecurity and Higher Education Attainment

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

By

Shannon Beatrice Que

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This thesis, directed and approved by the committee for the thesis candidate Shannon Que, 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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CHAPTER I

INTRODUCTION

Food Insecurity on College Campuses

According to the United States Department of Agriculture (USDA) Food and Nutrition Service (FNS), *food insecurity* is defined as the “limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways” (United States Department of Agriculture, 2000, p. 6). *Chronic food insecurity* is the prolonged exposure to long-term inadequate diets due to the inability to acquire food (Belachew, et al., 2012; Nanama and Frongillo, 2012). Food insecurity is first and foremost a socioeconomic issue. In 2018, 11.1% of all United States (U.S.) households were recorded as experiencing food insecurity (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2019). Surprising to many, researchers are finding that college students are increasingly becoming the new face of food insecurity in the U.S. (Freudenberg, Goldrick-Rab, & Poppendieck, 2019). *College students* are defined as an individual enrolled in an institution of higher education (College Student Hunger Act, 2019). A recent study that surveyed nearly 86,000 college students across the nation found that approximately 48% of students at two-year postsecondary education institutions and 41% of students at four-year postsecondary education institutions experienced food insecurity during their undergraduate career (Goldrick-Rab, Baker-Smith, Coca, Looker, & Williams, 2019).

As awareness of the issue of food insecurity on college campuses grows, so do both on and off-campus initiatives. Initiatives range from individual benevolence of professors (Government Accountability Office, 2018) to the largest federal program combatting domestic hunger and food insecurity, the Supplemental Nutrition Assistance Program (SNAP). Innovation and awareness are also evident in the proposal of new bills seeking to increase SNAP availability to college students and increase available aid opportunities for students (College Student Hunger Act, 2019; Swipe Out Hunger, 2020) and the increase of on-campus food pantries (College and University Food Bank Alliance, 2020; Government Accountability Office, 2018). While awareness of the issue rises, so does the steadied introduction of sustainable solutions. Raising awareness has a potential for dismantling shame and stigma that often surrounds the conversation of food insecurity, allowing for student self-fulfillment and actualization, as well as a potential for increasing student empowerment by validating their experiences and providing resources. While food insecurity is a specific issue, its effects are varied and pervasive (Blumenthal & Chu, 2018; Broton, Goldrick-Rab, & Mohebbi, 2020; Food Research & Action Center, 2017; Freudenberg et al., 2019; Goldrick-Rab, Kelchen, Harris, & Benson, 2016; Government Accountability Office, 2018; Gregory & Coleman-Jensen, 2017; Gunderson & Ziliak, 2015; Herman, Afulani, Coleman-Jensen, & Harrison, 2015; Kyte, 2017; Maynard et al., 2018; Seligman, Laraia, & Kushel, 2011; Vaccaro & Huffman, 2017). Additionally, food insecurity is part of the larger narrative regarding inequities in securing basic human needs via income inequities and cyclical poverty (Broton, et al., 2020; Goldrick-Rab et al., 2016; Lenthe, Jansen, & Kamphuis, 2015). Ultimately, addressing food insecurity among college students requires the constant

awareness and participation of individuals and entities on all levels and in all sectors of civil society.

Research Gap

Researchers, practitioners, and college and governmental officials face significant challenges when researching the current climate of food insecurity on college campuses. Such obstacles include the presence of shame regarding the topic, which leads to a lower likelihood of self-identifying as experiencing food insecurity (Coleman-Jensen et al., 2019; Freudenberg et al., 2019; Goldrick-Rab, et al., 2019), as well as the unawareness of administrators regarding the prevalence of students lacking access to basic needs on their campus (Government Accountability Office, 2018). To combat such stigmas, awareness and data are key factors to unearthing this largely hidden crisis. As awareness grows and studies regarding college food insecurity increases, the focus of most are identifying the demographic factors associated with college student food insecurity (Coleman-Jensen et al., 2019; Freudenberg et al., 2019; Goldrick-Rab, et al., 2019; Government Accountability Office, 2018; Gunderson & Ziliak, 2015; Kyte, 2017; Ma, Gee, & Kushel, 2008; Maynard et al., 2018). However, few studies connect childhood or adolescent perceptions of food insecurity with college experiences of food insecurity. While this is a factor that is acknowledged by college officials (Government Accountability Office, 2018), few studies have reported on the potential chronicity of food insecurity and how early intervention at the primary and secondary education levels can divert the eventual consequences of poor overall health due to food insecurity while in college. The discussion of chronicity regarding food insecurity is often related to developing countries or in relation to populations experiencing famine. However, given that chronic food

insecurity is the prolonged experience of food insecurity (Belachew et al., 2012), many in the U.S. can and do experience chronic food insecurity. Additionally, few studies have examined the rates of food insecurity on the campuses of private, faith-based higher education institutions. Most studies have been conducted on public four-year higher colleges and universities as well as community colleges despite private nonprofit and for-profit universities enrolling approximately one in four students (Freudenberg et al., 2019).

Present Study

To bridge the research gap identified above, this research aims to study the potential of chronicity amongst college students by examining one's perceived history of food insecurity while in primary and secondary education in connection with their time in postsecondary education. In addition to this, this study aims to examine the current presence of food insecurity amongst undergraduate students at a private, faith-based, four-year higher education institution. The present study will focus specifically on identifying the current state of food insecurity among college students and ultimately seek to answer: what, if any, demographic factors are significantly related to the present experience of food insecurity? Additionally, this study will identify self-perceived chronicity of food insecurity from primary education to postsecondary education. The present study also serves to explore the current level of student awareness of on-campus services that can address food insecurity. Lastly, this study explores the impact of the COVID-19 pandemic on obtaining food on a consistent basis. The examination of these factors is intended to inform college officials and administrators of the prevalence of food insecurity on campuses, inform future initiatives both on and off campuses, as well as

serve to empower students and those who have experienced food insecurity by representing their experiences balancing the demands of obtaining a postsecondary degree.

CHAPTER II

LITERATURE REVIEW

Literature Search Strategy

The following literature review aims to examine past research on the presence of food insecurity on college campuses. Additionally, based on existing literature, the literature review informs data gathering and maximization of methods within the sample population. Supplementing literature regarding the effects of food insecurity amongst college students, the literature review examines its effects amongst children and adolescents as it pertains to cyclical poverty and one's college education attainment potential. To obtain full-text articles for this literature review, peer-reviewed articles published in academic journals between the years of 2002 and 2020 were included except for one article published in 1943 written by Abraham Maslow. Utilizing the Abilene Christian University (ACU) Brown Library Research Database and the EBSCO search engines were utilized. The articles selected were identified by the combination of different search terms within a Boolean search. The following search terms were used: "food insecurity and college," "food insecurity and higher education," "basic needs and college students," "food insecurity and mental health," "food insecurity and health," "food insecurity and low-income households," "food insecurity and homelessness," "hunger and homelessness," "McKinney-Vento Act," "Maslow's hierarchy of needs and college," "Maslow's hierarchy of needs and food insecurity," and "food insecurity and

college stigma.” In addition to the database, publications from the Hope Center for College, Community, and Justice, a leading research initiative through Temple University, were identified and utilized as well (The Hope Center for College, Community, and Justice, 2020).

Food Insecurity Versus Hunger

Despite what many may believe, *food insecurity* and *hunger* are not the same. In fact, using the two terms interchangeably can prove harmful as the misperception of the issue is perpetuated. According to a review conducted in 2006 by the Committee on National Statistics (CNSTAT) of the National Academies via the request of the USDA, labels utilized in their surveys to measure food insecurity and related publications should remove language of the term *hunger* in an effort to remain etymologically accurate. According to CNSTAT in conjunction with USDA, while *food insecurity* is “a household-level economic and social condition of limited or uncertain access to adequate food,” *hunger* is “an individual-level physiological condition that may result from food insecurity” (United States Department of Agriculture, 2019a). While CNSTAT includes the language of *food insecurity* stemming from a “household-level” (United States Department of Agriculture, 2019a), the FNS’s guidelines for measuring food security state the socioeconomic nature of food insecurity implies that if one member of a household experiences food insecurity, then all members do (United States Department of Agriculture, 2000). This is with the caveat that in comparison, hunger is a much more individualized sensation that varies from person to person as is congruent with the more recent CNSTAT report (United States Department of Agriculture, 2000; United States Department of Agriculture, 2019a). While the connection between households and food

insecurity remains, it is imperative to consider a college student's financial status and level of financial familial assistance. Though a household may not be experiencing food insecurity, a student who is required or volunteers to financially support themselves may have a vastly different experience.

Essentially, food insecurity is the result of one's socioeconomic status, which may result in a person experiencing hunger, though this is not always the case as outlined in the USDA's four ranges of food security: high food security, marginal food security, low food security, and very low food security (United States Department of Agriculture, 2019a). The latter two categories constitute food insecurity. Low food security encompasses an individual or household reducing the quality of their food with minimal change to quantity. Very low food security is the reduction in quality and quantity of food. As implied in the definitions, those who experience low food security may not experience hunger and may therefore not believe that they have or are experiencing food insecurity. These distinctions are important to make in order to accurately capture all levels of perceived food insecurity.

Maslow's Hierarchy of Needs and Food Insecurity

According to the work of Maslow (1943), humans are motivated by a tiered system of five needs, beginning with physiological needs, safety, love, esteem, and ending with self-actualization. Based on this theory, individuals cannot satisfy the latter four needs without first satisfying physiological needs, which includes satisfying hunger and thirst (Maslow, 1943). While Maslow's theory is widely accepted as foundational to human motivational theories, higher education institutions continue to prioritize performance measurements such as grade point averages (GPA), test scores, credits

earned, and degrees acquired as opposed to prioritizing the development of values, morals, and self-awareness (Gobin, Teeroovengadam, Becceea, & Teeroovengadam, 2012). Based on this system, students are conditioned to prioritize such metrics as opposed to personal growth or sustainable self-actualization (Gobin et al., 2012).

Based on Maslow's theory of human motivation (1943), self-actualization is the individual discovering and fulfilling their purpose. Maslow (1943) writes that even with all prepotent needs satisfied, individuals may experience that:

A new discontent and restlessness will soon develop, unless the individual is doing what he is fitted for. A musician must make music, an artist must paint, a poet must write, if he is to be ultimately happy. What a man can be, he must be.
(p. 382)

Therefore, if college is to maintain its colloquial reputation of being a time of self-discovery and self-actualization, students must first have their prepotent needs addressed. Given that the average individual simultaneously balances partially satisfied and unsatisfied basic needs (Maslow, 1943), sacrifices are made in an effort to pursue chosen needs. For instance, as unhealthy but economically advantageous foods become increasingly readily available, individuals seek to satisfy physiological needs through such options in their pursuit of self-actualization (Lenthe et al., 2015). However, this compromise is not sustainable. While economically savvy, such food typically offers low nutritional value, eventually rendering an individual's body seeking homeostasis. Homeostasis, according to Maslow, is the biological desire to maintain a normal state of blood stream based on components such as the water content of the blood, sugar content, fat content, and more (1943). A body that has not achieved homeostasis will develop a

craving or hunger for that food element (Maslow, 1943). Therefore, students who experience food insecurity are compromising their body's ability to achieve homeostasis and will likely experience the very hunger they attempted to avoid.

Individuals who cannot achieve self-actualization are consistently preoccupied with addressing prepotent needs. An individual in extreme and chronic hunger or thirst, attributes of physiological needs, will find their higher motivations obscured and will be unable to reach their full capacity (Maslow, 1943). In fact, Maslow states that individuals who experience chronic economic inequities may find their level of aspiration "permanently deadened or lowered" (Maslow, 1943, p. 386). For instance, an individual deprived of prepotent needs may continue to be satisfied if only physiological needs can be satisfied, essentially atrophying higher motivations, such as self-actualization. For college students experiencing food insecurity, this equates to a student's inability to consistently satisfy physiological needs of hunger due to low food insecurity or homeostasis-based hunger due to very low food security. Thus, leading to their inability to continue pursuing a college education due to their need to focus solely on addressing the most fundamental human needs.

Trivialization of College Food Insecurity

It is currently accepted and even expected that part of the college experience includes the staple meals of instant noodles and dollar menu items at the closest fast food restaurant (Maynard, Meyer, Perlman, & Kirkpatrick, 2018). While this may be a reality for many students, the joking manner in which this subject is handled can prevent students from recognizing the seriousness of the issue. Maslow states, "people who have never experienced chronic hunger are apt to underestimate its effects and to look upon

food as a rather unimportant thing” (1943, p. 387). For those who have experienced food insecurity or chronic food insecurity but are currently dominated by a higher need, that higher need will be viewed as the most important need of all (Maslow, 1943).

The altogether too lighthearted jargon with which the issue of food insecurity is handled can also prevent students from seeking or accepting assistance. This stereotype can mask the dangerous reality that many students are nutritionally deficient and compromising their health to financially accommodate other responsibilities (Cady, Dubick, & Matthews, 2016). Similarly, the use of the term *hunger* in place for *food insecurity* acts as a normalizing agent to a significant issue that must be addressed (Cady et al., 2016; Maynard et al., 2018). The veneer of humor and colloquialisms can thus harm students’ health and academic performance, especially as college campuses become increasingly diversified.

The Current State of Food Insecurity on College Campuses

In 2011-12, approximately 75% of all college students were classified as non-traditional (Cady et al., 2016; National Center for Education Statistics, 2015).

Researchers are largely in consensus that a college student is classified as non-traditional if they meet one of the following characteristics: they attend college part-time, they are financially independent, they do not have a traditional high school diploma, they have one or more dependents, they are a single caregiver, they attend college part time, and/or they are employed full time (Brock, 2010). Such statistics indicate that non-traditional students are becoming the norm or the new-traditional. In fact, in 2016, a fifth of all undergraduate students had dependents, 14% were single parents, the average student age was 26 years old, and the average age of first enrollment was age 21 (Government

Accountability Office, 2018). As the demographic landscape of college students changes, it is also imperative to analyze the state of colleges in terms of cost.

In addition to the changes in student demographics, college tuition prices are changing as well. Between 1989 and 2016, the price of four-year undergraduate degree doubled (National Center for Education Statistics, 2019). Additionally, between the “2005–2006 and 2015–2016 school years, prices for undergraduate education at public institutions rose 34% and at private nonprofit institutions by 26%, after adjustment for inflation” (Freudenberg et al., 2019, p. 1653). Amidst the rise in educational costs, the cost of living continues to rise as well (Social Security Administration, 2019). In efforts to offset rising expenses, many students work in addition to their collegiate commitments. In 2016, approximately half of all students were considered financially independent, 64% of college students were employed part time, and 25% worked full time (Government Accountability Office, 2018). While students are attempting to balance the responsibilities of being an employee in addition to being a student, many require federal financial assistance in the form of loans in large part due to the devaluation of the minimum wage (Freudenberg et al., 2019). According to the 2018 report published by the Government Accountability Office (GAO), the percentage of students receiving a Pell Grant between 1999–2000 and 2015–2016 nearly doubled from 23% to 40% (Government Accountability Office, 2018). However, financial aid, such as in the form of Pell Grants, has significantly reduced in purchasing power, requiring students to seek alternative methods for obtaining financial assistance in the form of higher loans, generosity of others, and working longer hours in efforts to offset the disparity

(Freudenberg et al., 2019; Government Accountability Office, 2018; Maynard et al., 2018).

The combination of the change in demographics with the rise of college tuition categorizes college students as a particularly vulnerable population. In a survey to measure basic needs insecurities amongst college students conducted by the Hope Center for College, Community, and Justice in 2018, approximately 48% of the nearly 86,000 student respondents at two-year higher education institutions and 41% of student respondents at four-year higher education institutions experienced food insecurity within the month preceding the survey (Goldrick-Rab, et al., 2019). Ultimately, student financial stability and the price of a postsecondary education are currently juxtaposing forces requiring students to choose which basic needs to fulfill and which to sacrifice. This is particularly concerning for students attending community colleges, as students who attend two-year higher education institutions are at a higher risk of experiencing food insecurity (Freudenberg et al., 2019; Government Accountability Office, 2018; Kyte, 2017).

In a rapidly changing job market, a majority of jobs no longer prefer but require a college education. By the end of 2020, it is projected that 65% of all jobs will require a college education and/or postsecondary degree (Carnevale, 2013; Kyte, 2017). While there are financial aid options for students to encourage college attendance, these are proving to be insufficient. Even federal grant aids that are available specifically for low-income students and households, such as the Pell Grant, are insufficient and may perpetuate economically detrimental cycles due to student debt (Goldrick-Rab et al., 2016). Many students who require federal financial assistance borrow the maximum

amount available, yet even this “does not cover all of the costs associated with attending college” (Government Accountability Office, 2018, p. 28). Considering that students who qualify for such grants come from low-income households, obtaining maximum loans does not promote thriving nor reduce anxiety securing basic needs.

COVID-19 and Basic Needs

Due to the coronavirus being a novel virus, limited research has been conducted regarding the effects of the pandemic on students’ ability to secure basic needs.

However, a study conducted by the Hope Center for College, Community, and Justice comprised of over 38,000 students across both two-year and four-year higher education institutions found that 58% of respondents experienced basic needs insecurity (Goldrick-Rab et al., 2020). Rates of food and housing insecurity increased during the time of the pandemic and rates of housing insecurity amongst students at four-year institutions were higher compared to students at two-year institutions (Goldrick-Rab et al., 2020).

Moreover, 38% of students at four-year higher education institutions reported experiencing food insecurity within the prior 30 days (Goldrick-Rab et al., 2020).

Approximately half of White student respondents experienced basic needs insecurity during the pandemic, while students of color suffered at higher rates (Goldrick-Rab et al., 2020). As opposed to their White counterparts, 71% of African American students and 65% of Latinx students reported experiencing basic needs insecurity during the pandemic (Goldrick-Rab et al., 2020). The study also found that of the many students who experienced job loss due to the pandemic, 70% experienced basic needs insecurity, and among those who experienced job insecurity or the reduction in hours or pay, 63% had similar experiences (Goldrick-Rab et al., 2020). As unemployment rates climb,

individuals aged 16-24 years old exceeded the national rate of unemployment (Kochhar, 2020). In May of 2020, 25.3% of 16- to 24-year-olds faced unemployment as many individuals work in the service industry, which was greatly impacted by government mandated shutdowns. The next highest rate of employment (13.1%) was amongst individuals aged 25-34 years old (Kochhar, 2020). However, almost half of the respondents from Goldrick-Rab et al.'s study who did not experience job loss or insecurity also experienced basic needs insecurity, indicating "that the causes of basic needs insecurity go beyond a temporary loss of income" (2020, p. 14).

Common Signs of Food Insecurity

To better comprehend the complexities of food insecurity and common reasons why students largely underreport experiences with food insecurity, it is beneficial to acknowledge patterns of psychological, socioeconomic, and demographic factors associated with experiencing food insecurity. Continued unawareness of such patterns results in an inability to adequately address the issue. Additionally, prior to discussing the effects of food insecurity, it is important to examine how food insecurity has remained undetected by many college officials.

Psychological Factors

Food insecurity's rising prevalence on college campuses is attributable to a variety of reasons, a major one being shame. Negative social stigma often shrouds the conversation regarding all aspects of food insecurity: experiencing food insecurity, requesting assistance, and/or being identified as one who experiences food insecurity (Goldrick-Rab, et al., 2019; Government Accountability Office, 2018; Maynard, et al., 2018). In addition to the negative social stigma, food insecurity is often the result of a

multitude of factors making it difficult to identify and/or prevent. It is here where the effects of overgeneralizations and stereotypes of the college diet have harmful effects (Cady, et al., 2016; Maynard, et al., 2018). Students who may feel inclined to share their situation with their peers or even some professors or faculty often receive a response along the lines of camaraderie in shared sentiment that inadvertently prevents further conversation or the acknowledgement of a lack of a basic need (Cady et al., 2016; Maynard et al., 2018).

Socioeconomic Factors

The 2018 report released by the GAO identifies the most common risk factor for college students experiencing food insecurity is income level. Additionally, first-generation college students, those receiving Supplemental Nutrition Assistance Program (SNAP) assistance, and single-parent students are at an increased risk (Government Accountability Office, 2018). Additionally, given the nature of food insecurity being rooted in a lack of socioeconomic resources, food insecurity is rarely a condition experienced in isolation. Food insecurity, housing insecurity, and lacking reliable transportation are three issues that are often experienced in tandem (Cady, et al., 2016; Goldrick-Rab, et al., 2019; Government Accountability Office, 2018). Therefore, the issue of students experiencing food insecurity can be broadened to an issue of students experiencing a lack of basic needs. Yet, compared to other gaps in basic needs, the prevalence of food insecurity remains largely hidden due to shame, stereotype, and lack of awareness regarding food security. Regarding budgeting and financial planning, many individuals consider food to be their most flexible expenditure when determining where to cut expenses (Blumenthal & Chu, 2018; Cady, et al., 2016; Lenthe et al., 2015). Such

a perception of food indicates that if a student is able to receive assistance obtaining food when needed, this may allow for greater flexibility affording other basic needs such as housing and transportation costs or allow for the purchasing of food items with greater nutritional value.

Students from low-income households, students who are financially independent, and students of ethnic minorities often face greater pressure to work and financially provide for themselves and their households (Kyte, 2017; Maynard, et al., 2018). Furthermore, the pressure to financially provide is not isolated to college years. Many students internalize such pressures during their younger years as well, leading to being employed from young ages (Kyte, 2017). However, for those who may have greater experience in employment as a result of such pressures, this does not mean that they are more prepared for college and beyond. Students who balance work and academics prior to college may imply that they are further behind in their academic success, as they did not have the ability to solely focus on academics. In fact, studies show that “over time, students from all backgrounds who work more than 15 hours weekly tend to fall behind in their academic progress, as well as their earnings, debt, and early career outcomes” (Kyte, 2017, p. 1). While students from all backgrounds may be negatively affected, first-generation and students who are financially disadvantaged disproportionately report working more than 15 hours per week (Kyte, 2017).

At-Risk Demographic Factors

In addition to psychological and socioeconomic factors, researchers have found specific demographic variables that are closely related to food insecurity. Such factors include those related to ethnicity, gender orientation, sexual orientation, foster care

status, and housing status. African-American or Black individuals are disproportionately affected. A report published in 2019 found “the overall rate of food insecurity among students identifying as African American or Black is 58 percent” compared with 39% of their Caucasian or White peers (Goldrick-Rab et al., 2019, p. 12). Almost half of all students who identify as Hispanic or Latinx and two fifths of students who identify as White or Caucasian experience food insecurity (Goldrick-Rab et al., 2019). The same 2019 report analyzing college student basic needs found that regarding gender orientation, students who identify as other than male or female are at a higher risk of experiencing food insecurity (Goldrick-Rab et al., 2019). Additionally, students who identify as bisexual are at the highest risk of experiencing food insecurity (Goldrick-Rab et al., 2019). Students who were a part of the foster care system are also more likely to experience food insecurity while in college (Goldrick-Rab et al., 2019; Government Accountability Office, 2018). Considering that food insecurity is the result of lower socioeconomic status, it is no surprise that housing insecurity and food insecurity are closely interrelated (Goldrick-Rab et al., 2019; Government Accountability Office, 2018).

Factors related to primary caregivers impact student food insecurity rates as well. Just under one third of students from households with primary caregivers who have a college education experience food insecurity (Goldrick-Rab et al., 2019). However, students who are first-generation college students are at the highest risk of experiencing food insecurity (Goldrick-Rab et al., 2019; Government Accountability Office, 2018). Additionally, the study found that older students between the ages of 26-30 years old at both two- and four-year higher education institutions experience food insecurity more

than any other age range; students ages 21-25 years old were second (Goldrick-Rab et al., 2019). Lastly, the GAO found that students who already receive SNAP are at an increased risk of experiencing food insecurity as well (Government Accountability Office, 2018). While this may appear counterintuitive on the surface, it is important to keep in mind that food insecurity is a result of socioeconomic factors. Taking into account the decreased value of the minimum wage and the rising cost of college, it is no surprise that “receiving SNAP can be considered a risk factor in that it may reduce, but not entirely eliminate, food insecurity” (Government Accountability Office, 2018, p. 15). Ultimately, demographic factors that comprise the current student population are the same factors that indicate food insecurity.

Effects of Food Insecurity

Food insecurity can lead to a host of both short- and long-term effects. The impact that food insecurity can have on an individual is significant and must be thoroughly considered in any conversation regarding student retention and college students’ ability to thrive and graduate.

Short-Term Effects

Short-term effects are generally those that are easier for others, such as college officials, to identify. These effects may be more easily tracked as college officials are aware of students only while enrolled and are not able to track long-term health measures as identified as long-term effects.

Social isolation. Short-term effects include a variety of negative physical, mental, and social effects. This is only heightened considering the social isolation that students facing food insecurity frequently encounter. For all individuals, food serves as

an expression of privilege, as one's ability to join a social gathering centered around a meal corresponds with one's ability to financially afford access into such social interactions (Alleman & Allen, 2019; Lenthe et al., 2015; Maynard et al., 2018). Maynard et al. (2018) found that "students felt pressured to spend money on food in social settings, such as eating out at restaurants or going to bars, and described feeling excluded because they could not afford to participate in these types of activities" (p. 136). Social isolation and psychological factors, such as shame regarding food insecurity, are perpetuated as students do not know who to turn to for assistance nor that assistance exists (Maynard et al., 2018).

Decreased academic performance. In addition to social isolation, students may face a decrease in GPA (Government Accountability Office, 2018; Kyte, 2017; Maynard et al., 2018). More than half of all college students are a part of the workforce, and approximately 25% of students work full time (Government Accountability Office, 2018). Splitting focus and attention to various responsibilities, especially if such individuals have dependents as well, can lead to a decrease in one's GPA. In fact, Kyte (2017) found that those who "worked more than 15 hours each week stand out as having statistically lower GPAs than higher-income students who do not work" (p. 7). Arguably, individuals from lower socioeconomic households cannot afford obtaining a lower GPA yet are at the greatest risk of doing so.

Students who may not work, have dependents, or have any other significant risk factor yet experience food insecurity can also experience a negative academic performance. Maynard et al. (2018) stated that "food insecurity was perceived as affecting academic performance, including focusing in class, studying, and completing

assignments and exams,” thereby negatively impacting overall GPA (p. 138). The constant preoccupation and anxiety related to obtaining food can impact any individual, regardless of education level obtained or employment status.

Delayed graduation. As students must prioritize and select which basic needs to secure, the perception that food is the most flexible expenditure can cause students to make decisions that impact their well-being and overall academic performance. For example, one common choice students from lower socioeconomic households must face is between obtaining food or costly required class materials, such as textbooks. A student who chooses to buy groceries for a week or month in place of a required class text may secure a basic need, yet they suffer academically by not completing assignments or being prepared for class. With many employers reluctant to extend flexibility to those in college, and due to an increasingly competitive work force, students must choose between missing class, dropping out, or losing income (Freudenberg et al., 2019; Maynard et al., 2018). This can lead to students postponing their projected graduation date in efforts to obtain greater financial security to avoid tunneling deeper into debt with loans. Students who work and/or have a child must balance academic, employment, and childcare schedules.

Colleges are beginning to recognize food insecurity’s effect on college degree completion and retention. As students must choose which basic needs to meet, many are likely to prioritize work over academics for financial security. Unfortunately, while the payoff of a higher education degree may be greater in the long run, many cannot wait two to four years for that realization. This is especially true for students who have dependents and/or come from low-income homes that may expect or desire financial support.

Students whose GPAs are affected may lead to a loss in scholarship eligibility and therefore are forced to seek employment or extend their work hours in attempts to close the financial gap (Maynard et al., 2018). In fact, students who work more than 15 hours each week report that their jobs limit their class schedule, report that they take fewer classes in a given semester, and believe that their grades suffer because of their work (Government Accountability Office, 2018; Kyte, 2017; Maynard et al., 2018).

Furthermore, students who work more than 15 hours each week or adjust their academic load “to increase their work hours are less likely to complete their degree or educational program” (Government Accountability Office, 2018, p. 39). The necessity to secure basic needs does not change once an individual enters college. It can be argued that attending college may lead to more challenges securing such needs compared to an individual’s time in primary or secondary education as college may be one of the first times that an individual is either granted or mandated independence, including financial independence. As higher education institutions diversify, a diversified response must follow to adequately address support students.

Long-Term Effects

In addition to various short-term effects, food insecurity can have long-lasting effects as well. While these effects may be more difficult for others to notice compared to short-term effects, these are equally, if not more, impactful on an individual’s life.

Chronic diseases. Researchers including those from the Food Research & Action Center (2017) and Maynard et al. (2018) have found that food insecurity is a catalyst for various chronic diseases. Such chronic diseases and conditions include diabetes, hypertension, lung diseases, and are in the highest percentile of obesity categories (Food

Research & Action Center, 2017; Seligman et al., 2011; Vaccaro & Huffman, 2017). Individuals of minority populations who experience food insecurity are also cited as being at a higher risk of having a chronic disease (Food Research & Action Center, 2017). Approximately one third of all adults who have a chronic illness are not able to afford medicine, food, or in some cases neither medication nor food (Berkowitz, Seligman, & Choudhry, 2014). Researchers have found that the identification of the presence of food insecurity can be utilized as a risk factor of cost-related medication underuse, implying that food insecurity is indicative of the inability purchase medications and poor health (Herman et al., 2015).

While socioeconomic disparities are a significant factor in one's ability to access affordable healthcare, the presence of food insecurity may be a more significant risk factor. In an Economic Research Report, Gregory and Coleman-Jensen (2017) researched the association between food insecurity and ten diseases amongst the general population that the Centers for Disease Control (CDC) have marked notable due to their prevalence, morbidity, and preventability: "hypertension, coronary heart disease (CHD), hepatitis, stroke, cancer, asthma, diabetes, arthritis, chronic obstructive pulmonary disease (COPD), and kidney disease" (p. 5). The report ultimately found that "income is significantly associated with just three of the ten diseases examined in [their] report, while food insecurity is associated with all ten" (Gregory & Coleman-Jensen, 2017, p. 3). While the CDC findings were not specific to college students, it does indicate the long-term health effects of food insecurity that impact individuals even after college. Considering that there is an increase of students of minority populations and students from low-income households, the growing presence of food insecurity on college

campuses has far-reaching implications for students while enrolled in higher education and long after.

Mental health issues. An individual's physical health is not the only aspect of health that can be greatly affected by food insecurity. Students who experience food insecurity often suffer from increased symptoms of depression, anxiety, suicidal ideation, and poor overall mental health (Bruening, Argo, Payne-Sturges, & Laska, 2017; Government Accountability Office, 2018; Gunderson & Ziliak, 2015). Individuals who are food insecure may experience an impaired ability to concentrate, inability to maintain composure, and more due to the compounded constant anxiety of strategizing how to obtain a meal (Maynard et al., 2018). While there is no direct link between food insecurity as a predictor of intellectual or developmental disabilities (IDD), "young adults with IDD are more likely to live in food insecure households than other young adults" (Brucker & Nord, 2016, p. 527). Brucker and Nord utilized *IDD* as an umbrella term to include "attention-deficit/hyperactivity disorders (ADHD), autism spectrum disorders, epilepsy/seizures, genetic disorders, learning disabilities, intellectual disability, other developmental disabilities (e.g., cerebral palsy), and stammering/stuttering" and found that food insecurity is a concern for approximately one third of young adults who have an IDD (2016, p. 523). Ultimately, regardless of a formal diagnosis such as those related to anxiety, depression, or an IDD, food insecurity and the pressures of securing basic needs negatively impacts students' mental health and impedes their ability to succeed in school (Alleman & Allen, 2019; Brock, 2010; Cady et al., 2016; Government Accountability Office, 2018; Maynard et al., 2018).

Limited social mobility. Food insecurity is an economic and social condition that, like others, can perpetuate vicious cycles of inequality (Goldrick-Rab et al., 2016). Students who are most at risk of experiencing food insecurity, such as students from low-income households, first generation students, and students of minority populations, are also at an increased risk of experiencing poverty and socioeconomic inequality (Broton, et al., 2020; Goldrick-Rab et al., 2016). Students who experience food insecurity are also likely to require loans to assist paying for their higher education due to a lack of financial security. Students of a low socioeconomic status (SES) “are more likely to drop out of college for financial reasons, such as not having the funds to cover costly living expenses” (Blumenthal & Chu, 2018, p. 1). Students at community colleges and four-year colleges and universities see similar behaviors. In the GAO’s report, it is noted that college officials found students of lower SES turned to federal loans to help them pay for basic living expenses despite it not being the most financially sound decision (2018). An increase in student loans and the subsequent outstanding federal student debt, upwards of \$1.5 trillion (Miller, Campbell, Cohen, & Hancock, 2019), feeds the cycle of poverty as students from low-income households are those more likely to experience food insecurity, not complete their degree, obtain the most financial debt, and continue to find themselves unable to break the cycle.

Moreover, unemployment rates amidst the COVID-19 pandemic more greatly impacted individuals who did not have a bachelor’s degree (Kochhar, 2020). While individuals with a bachelor’s degree experienced an unemployment rate of 7.2% in May 2020, individuals who had a high school diploma experienced a rate of 15.0% in the same month (Kochhar, 2020). Despite such figures being unrepresentative of unemployment

rates when not undergoing a pandemic, the underlying inequities and employment preferences are increasingly revealed.

The short- and long-term effects of food insecurity are complex and can be harmful well beyond being a college student. While short-term effects of food insecurity are typically easier to identify, addressing the catalysts of both short- and long-term effects are necessary for the well-being of students and student retention. While the COVID-19 pandemic is unprecedented and many students as well as colleges and universities were unprepared for such abrupt changes, colleges and universities are forced to confront gaps in services and inadequacies regarding student supportive services in anticipation of the return of their student bodies.

Similarities in Children or Adolescents

Similarities between school-age children and students pursuing their postsecondary degree regarding food insecurity include both at-risk demographics as well as its effects. It is important to examine the effects of food insecurity on children and adolescents to further recognize the importance of addressing food insecurity early on in an individual's life. Additionally, recognizing the impacts of food insecurity experiences as a child or adolescent can allow college officials to plan for inclusive student services as recruitment efforts and student bodies continues to diversify.

Connection to housing insecurity. Seeing as food insecurity is the result of insufficient socioeconomic means, housing and food insecurity are two factors that are often regarded as inextricably linked. Moreover, the GAO's report found that college officials note a direct link between students from low-income households who received free or reduced priced school meals as those who would most likely benefit from similar

services while in postsecondary higher education (2018). Particularly for children, government and other sectors of civil society are largely in agreement that housing and food insecurity are inextricably linked. For students in kindergarten through high school who are considered homeless, students are mandated to receive free meals at school under the McKinney-Vento Act (United States Department of Education, 2004). According to the United States Department of education, a student is classified as homeless if they “lack a fixed, regular, and adequate nighttime residence” (McKinney-Vento Act, 2002). Through the McKinney-Vento Act, the United States Department of Education (2004) formally recognized the link between housing insecurity, food insecurity, lacking reliable transportation, and facing social stigma. It can also be assumed that the perception that food is one of the most flexible expenditures is reinforced in the child’s household considering that of those who received assistance from various assistance programs, in 2010-2011, only a third utilized free or reduced school meals (Coleman-Jensen, McFall, & Nord, 2013). Ultimately, the effects of food insecurity amongst children are just as, if not more, drastic as those amongst college students.

Primary caregiver impact. The acknowledgement of food insecurity amongst children would be incomplete without the examination of the role of the primary caregivers of the household. Over half of all households with children who experience food insecurity include an adult who obtained education beyond high school with many having completed at least some college as well (Coleman-Jensen et al., 2013). Some households openly discuss their food insecurity status and the possible need to reduce quantity or quality of food to save money. On the other hand, many households do not

explicitly tell children. While it is only natural for caregivers to shield children from uncomfortable realities, children are intuitive and observant. In fact, despite primary caregivers stating that children are shielded from the effects of food insecurity, children reported substantial worry (Coleman-Jensen et al., 2013; Fran et al., 2011). Even though children may not be directly handling the budget, they are cognitively, emotionally, and physically aware of the socioeconomic effects on their food security status (Fran et al., 2011). Aware of some disruption in the home, children resort to making independent decisions to reduce their food intake, opt for cheaper food items, or instruct their siblings/other children in the home to do the same (Fran et al., 2011).

Poor health. The effects of food insecurity can also derail the healthy development of a child. Such effects mirror those seen amongst college students and, if severe enough, can even prevent students from being able to pursue a postsecondary education. In fact, Ma et al. found that housing and food insecurity should be considered “predisposing factors for poor health care access and increased use of acute care in children, as they are in adults” (2008, p. 55). Food insecurity amongst children has been found to result in compromised physical and mental health (Coleman-Jensen et al., 2013; Gunderson & Ziliak, 2015). In a report published in 2015, Gunderson and Ziliak found that children who experience food insecurity are at an increased risk of lower nutrient intake, cognitive delays, and aggression. Similarly, Coleman-Jensen et al. (2013) found statistically significant findings in association of food insecurity and impaired development of non-cognitive abilities, insecure attachment and reduced mental proficiencies, poorer psychosocial functioning and development, as well as higher rates of chronic health conditions.

Similar to the effects of food insecurity amongst college students, multiple studies conclude that food insecurity leads to overall poorer academic performance and health, increased rates of anxiety, depressive disorders, behavioral problems and suicidal ideation amongst school-aged children and adolescents (Alaimo, Olson, & Frongillo, 2002; Coleman-Jensen et al., 2013; Gunderson & Ziliak, 2015; Slack & Yoo, 2004). Given this, food insecurity can serve as a preexisting condition for a wide spectrum of both immediate and long-lasting impacts.

Unlike conclusions drawn regarding food insecurity amongst young adults, the literature indicates a gap in research regarding the connection between food insecurity and attention-deficit hyperactivity disorder (ADHD). While researchers have yet to determine whether food insecurity is a predictor of ADHD, through a systematic review, Lu, Perez, Leslein, and Hatsu established that “the presence of food insecurity during early child development may also influence. . . behavioral problems such as hyperactivity and impulsivity into adolescence and adulthood” (2019, p. 659). Regardless of the presence of an ADHD diagnosis, food insecurity negatively impacts development of mood dysregulation and issues related to interpersonal skills in children (Lu et al., 2019).

Due to food insecurity’s foundation of low or unstable SES, food insecurity can indicate insurance status and ethnicity, as all share overlapping demographic characteristics related to cyclical poverty. Additionally, children and adolescents from lower SES households may be face familial expectations to work and financially contribute to the household income. However, students who must work and attend school prior to college are at a higher risk of obtaining lower GPAs than students who do

not work, overall limiting their higher education options as well as scholarships (Goldrick-Rab et al., 2019).

Chronic Food Insecurity

Given the danger that cyclical poverty perpetuates economic disparities such as food insecurity, it is important to compare the characteristics of students who are experiencing food insecurity with the greater public and especially children. While college students make the decision to sacrifice quality and/or quantity of food, it is the heads of households who must also make difficult decisions including sacrificing adequately nutritious food for the household due to finances. Individuals with higher incomes often have higher levels of education, and individuals with higher levels of education typically achieve self-actualization and are more likely to consume healthier, nutrient-dense food (Lenthe et al., 2015). Given that a household's low socioeconomic status is a risk factor for experiencing food insecurity (Coleman-Jensen et al., 2013), the ability to identify and address food insecurity in sustainable ways during an individual's primary and secondary school years may be a form of preventative care, the effects of which may include improving the health of children or adolescents and reducing the rising number of college students experiencing food insecurity.

According to a report by the Economic Research Service (ERS), in 2018 all households with children; with children under the age of six; headed by a single primary caregiver; with Black, non-Hispanic and Hispanic heads of household; or those with incomes at or below 185% of the poverty threshold experienced rates of food insecurity higher than the national average (Coleman-Jensen et al., 2019). The similarities in demographic characteristics of those who experience food insecurity at the highest rates,

namely regarding SES and race and ethnicity, indicate perpetuated cycles of poverty that disproportionately impact individuals of color and of lower SES.

Current Initiatives Addressing Food Insecurity

Given the complexity of the nature of food insecurity among college students, it is imperative that a variety of student assistance options are provided as well. Seeing as food insecurity can have a long-lasting impact on individuals, it is imperative to utilize a multifaceted response effort comprised of various sectors of civil society. The following sections address measures currently taken at the federal, state, and higher education campus levels addressing the issue of food insecurity among college students.

SNAP

The main combatant of domestic food insecurity is the Supplemental Nutrition Assistance Program or SNAP, formerly known as food stamps. SNAP is a government assistance program that supplements an individual's or household's income in an effort to purchase nutritious food (Food and Nutrition Service, 2019b). While many perceive forms of governmental assistance being applicable to demographics that generally exclude college students, the USDA Food and Nutrition Service (USDA – FNS) outlines eligibility requirements for students as well. Students who are enrolled in college or other institutions of higher education must first confirm eligibility by income and asset criteria as required by all SNAP recipients. With the increase of non-traditional and financially independent students, the number of students eligible based on income and asset criteria should increase as well. Additionally, students may be eligible to receive SNAP benefits if they:

Get public assistance benefits under a Title IV-A program; take part in a state or federally financed work study program; work at least 20 hours a week; are taking care of a dependent household member under the age of six; are taking care of a dependent household member over the age of five but under 12 and do not have adequate childcare to enable them to attend school and work a minimum of 20 hours, or to take part in a state or federally financed work study program; or are assigned to or placed in a college or certain other schools through: a program under the Workforce Investment Act of 1998; a program under Section 236 of the Trade Act of 1974; an employment and training program under the Food Stamp Act; or an employment and training program operated by a state or local government. Also, a single parent enrolled full time in college and taking care of a dependent household member under the age of 12 can get SNAP benefits if otherwise eligible. (Food and Nutrition Service, 2019b)

Despite FNS specifying eligibility requirements at the federal level for students, there has been a markedly low take up rate. In fact, the GAO reported that over 3 million students were eligible to receive SNAP benefits; however, less than half received benefits (Government Accountability Office, 2018). Seeing as the funding has been dedicated to assisting individuals such as college students bridge financial gaps, many are unaware of their ability to apply for benefits; are confused by variations of eligibility requirements between federal, state, and local requirements; or are ashamed to apply for and receive such benefits (Freudenberg et al., 2019; Government Accountability Office, 2018). For many, one of the most common reasons that students report a lack of desire to apply for SNAP benefits is due to negative social stigma (Freudenberg et al., 2019; Government

Accountability Office, 2018; Maynard et al., 2018). More recently, lawmakers are acknowledging the growing issue of food insecurity on college campuses and the low take-up rate. In response to this, Senator Elizabeth Warren and Representative Al Lawson introduced the College Student Hunger Act of 2019. The act, S. 2143, has four major goals: to increase low-income students' ability to receive SNAP benefits; increase outreach to eligible students; create a SNAP student hunger pilot program; and increase awareness of student eligibility for SNAP (Warren, 2019). While the act has yet to be voted on and passed, the mere introduction of it in the Senate is proof that this issue is one that is being raised to federal awareness.

At the state governmental level, many states have adopted and sponsored the "Hunger-Free Campus Designation" bill. What started in California as Senate Bill 85 has been copied and utilized in Maryland (H.B. 1175), Pennsylvania (H.B. 2205), and New Jersey (A4702) (Swipe Out Hunger, 2020). The "Hunger-Free Campus Designation" bill granted more than \$2 million across all 23 universities in the California State University circuit. Funding for the universities in California, Maryland, Pennsylvania, and New Jersey are intended to address student hunger in a more sustainable manner, raise awareness of services to address basic needs of students, and to develop formal practices and procedures including strategic partnerships within the community (California Legislative Information, 2017; The California State University, n.d.). As government strives to address food insecurity and basic needs of students, it is imperative that colleges and universities work to address the basic needs of their students as well.

On-Campus Initiatives

Colleges and universities are uniquely positioned to assist students amongst their peers and in a location where they are housed, or at the very least, frequent. Maslow also stressed the importance of a person's environment; theorizing that if an environment prohibited the satisfaction of prepotent needs, then development could not occur (Maslow, 1943). Therefore, according to Gobin et al., many higher education institutions are recognizing the need to address primary needs of students (2012). Without addressing such needs, students would lack the motivation to pursue higher levels such as self-actualization (Gobin et al., 2012). One way that colleges and universities are aiming to combat student food insecurity, improve retention and completion rates, as well as loan repayment rates is through on-campus initiatives such as food pantries (Government Accountability Office, 2018). While food banks and pantries are available throughout communities, campus food pantries do not require students to secure transportation, provides a sense of autonomy for students, and many are low barrier by not requiring proof of financial need or other items proving legitimacy of need. The College and University Food Bank Alliance (CUFBA) is the largest network of college food pantries. In 2012, there were only 88 registered CUFBA members with CUFBA (Goldrick-Rab, Cady, & Coca, 2018). According to CUFBA, the number of pantries on college campuses continues to rapidly increase with over 700 (College and University Food Bank Alliance, 2020). Noted barriers to the sustainability of campus food pantries include unreliable food supply and funding as well as a heavy reliance on student and staff volunteers (Goldrick-Rab et al., 2018).

In addition to food pantries, colleges and universities are adopting other initiatives to address food insecurity. One method is through a meal donation or voucher program. Swipe Out Hunger (SOH) is a meal donation program which empowers students to give back to their community by donating unused meal swipes to a pooled fund that is later distributed to students in need (Swipe Out Hunger, 2020). SOH has been adopted in over 100 campuses nationwide (Swipe Out Hunger, 2020). In conjunction with promoting SNAP and training SOH representatives on eligibility requirements of SNAP, this allows a level of discrepancy that a food pantry does not. SOH and similar programs such as Bunker Hill's Meal Voucher Program (MVP), seeks to provide assistance to students by enabling them to access on-campus food options anonymous to their peers (Broton et al., 2020; Swipe Out Hunger, 2020). MVP takes a slightly different approach than SOH by providing eligible students with an allotment of funds distributed via a card similar to an Electronic Benefit Card utilized by SNAP (Broton et al., 2020). These programs and others like it intentionally seek to side steps the barrier of shame and stigma that prevent many students from seeking or accepting assistance obtaining basic needs. Programs such as these are growing in popularity among campuses. Over the 2018-2019 school year, SOH campus partners grew by 82% and expanded to eight new states (Swipe Out Hunger, 2020). The growth and development of programs such as these support the severity of this crisis and the need for higher education institutions to address food security issues.

Lastly, college officials are combatting food insecurity in informal ways as well. Professors and other college officials are often the first to recognize symptoms of food insecurity and aim to address the issue through individual benevolence (Government

Accountability Office, 2018). In addition to relying on the actions of individuals, many higher education institutions seek to offer on-campus centralized offices providing information regarding both on and off-campus services that may be available to them (Broton et al., 2020; Government Accountability Office, 2018; Swipe Out Hunger, 2020). As higher education institutions have displayed innovation and commitment to students, such efforts are slowly gaining national traction. It is evident that food insecurity is a larger issue than many initially perceived. What was once often inappropriately misplaced with the term *hunger*, food insecurity is a matter of social inequity with individual to larger implications.

Conclusion of Literature Review

This literature review examined the current national trends of food insecurity and identified major demographic characteristics of those most likely to experience food insecurity primarily for undergraduate students in the United States. This literature review also investigated the trends and factors of childhood food insecurity in its relation to chronicity. Through this, several key demographic characteristics were identified as being at a higher risk of experiencing food insecurity, such as first-generation student status, non-traditional student status, and ethnicity. As noted in the literature, some governmental and college officials believe there is a connection between childhood participation in free or reduced meals while in primary and secondary education and current experience of food insecurity during postsecondary education (Government Accountability Office, 2018). As noted in the literature, food insecurity has both short- and long-term effects on one's health and academic performance. Additionally, food insecurity is the multifaceted issue that requires a multifaceted analysis. Therefore, the

present study will focus specifically on first identifying the current state of food insecurity on the university's campus compared to national statistics and additional reports. Second, this study will identify the significance between demographic characteristics and the presence of food insecurity. Third, this study will identify self-perceived chronicity of food insecurity from primary education to postsecondary education.

Based on literature review findings, the purpose of this study is to:

- Explore the prevalence of food insecurity among college students at a private, faith-based, nonprofit higher education institution. The results will be compared with the prevalence statistics in different settings, which were found in the literature review.
- Identify which, if any, of the following factors are significantly related to experiencing food insecurity: being a non-traditional student, international student, first-generation student, White versus students of color, and prior participation in free or reduced meals while in primary or secondary education.
- Explore the level of student awareness regarding on-campus student resources to that address food security.
- Explore the impact of the COVID-19 pandemic on a student's ability to obtain food on a consistent basis.

CHAPTER III
METHODOLOGY

Research Design

The purpose of this study is to identify the presence of food insecurity at a faith-based university located in Texas among undergraduate students and to explore factors that may indicate or affect the presence of food insecurity. This research utilized quantitative and qualitative methods in the form of an online survey to examine undergraduate student experience with food insecurity. Although the survey respondents were asked to provide information regarding past experiences such as during their time in primary or secondary school, this is considered as a cross-sectional study because data was collected at one time point.

Instruments

To examine food insecurity and to explore its factors, this study measured the following information.

Food Security – Current

The questions in the survey included those from the ERS-USDA's U.S. Adult Food Security Survey Module: Three-Stage Design (2012). This survey module was selected, as such modules are the most widely recognized and respected measures of food insecurity on a national basis. The U.S. Adult Food Security Survey Module was selected above the Household Survey Module due to reduced respondent burden (United States Department of Agriculture, 2019b) and does not include questions regarding

dependent's (younger than 18 years old) experience with food security. Given that the survey focuses on understanding current undergraduate student's experience with food insecurity and personal perceived childhood and adolescent experiences with food insecurity, questions regarding dependents of students is irrelevant.

The original U.S. Adult Food Security Survey asked participants to respond based on their experiences in the past 12 months. However, asking participants to reflect on the past 12 months included summer months when students were not on campus.

Additionally, for current freshmen, the past 12 months would include a duration of time while they were enrolled in high school. Therefore, to accommodate for this, the participants were asked to recall a 30-day time frame instead, as permitted by the USDA (Appendix D). To further accommodate for current events, participants were asked to recall the previous 30 days prior to the COVID-19 pandemic surge. The U.S. Adult Food Security Survey coding guidelines can be found in Appendix E; coding adjustments to accommodate for the utilization of a 30-day time frame is included in Appendix E. The coding converts string data to numerical data scores with the highest possible score being 10. The higher the score, the more food insecure the individual is. The two ranges that indicate food insecurity are from three to five, which indicates low food security, and six to ten, which indicates very low food security.

Food Security – Past

Additionally, questions regarding child food security statuses were adapted and added to capture self-perceived food insecurity of participants if or when they attended primary or secondary education. The adapted questions were included to identify the level of chronic food insecurity through an individual's time of educational attainment.

As the literature noted, a child's perception of food insecurity may differ than the primary caregiver's perception (Coleman-Jensen et al., 2013; Fran et al., 2011). By asking participants to reflect on personal experiences while in primary or secondary education, this allows a more accurate depiction of food insecurity experience compared to asking primary caregivers through the U.S. Household Food Security Module: Three Stage Design (Economic Research Service, 2012b). Additionally, given that participants are guaranteed anonymity as shame and stigma often prevent individuals from responding truthfully, requesting primary caregiver information would result in an ethical dilemma and a potentially reduced response rate. A survey method rather than interviews or qualitative studies was selected considering the literature's findings regarding the shame and social stigma that prevents many individuals from feeling comfortable sharing their experiences.

On-Campus Resources for Food Assistance

The following set of questions asks participants if they are aware of or have engaged with any on-campus resources. Resources include speaking to faculty or staff, sharing concerns, or seeking assistance. Additional questions in this section include if the participant has had to adjust their academic schedule or experienced changes in their weight due to financial constraints. Questions also include the participant's perception of the impact of struggling to obtain consistent or balanced meals and one's mental health.

Further questions are multiple choice followed by an optional free-response question, attempt to capture students' beliefs connecting spirituality and securing basic needs as a student of a faith-based higher education institution. Follow-up questions include inquiring about the participant's perceptions of challenges that higher education

institutions may face when aiming to help meet the basic needs of their students. Such questions are intended to measure student perceptions of the level of responsibility that a faith-based higher education institution should have due to their faith-based status.

COVID-19 Accommodation

Based on the timing of the study, questions regarding the COVID-19 pandemic were included to capture if the public health crisis has changed the participant's ability to obtain food on a consistent basis. For a more comprehensive understanding of college student food insecurity while an undergraduate student, participants were asked if any of the experiences pertaining to current food security status were also experienced as an undergraduate outside of the 30-days prior to the COVID-19 pandemic timeframe.

Demographic Information

Demographic questions were formed based on the literature review to identify correlations between demographics associated with food insecurity. Demographic questions regarding age, sexual orientation, and gender identity are based on those developed by the U.S. Census Bureau (Ellis, Virgile, Holzberg, Edgar, & Phipps, 2018; Howden & Meyer, 2011;). Additional demographic questions include college classification, Division-1 student athlete status, major, and an indicator of academic performance through GPA. Additional questions seek to identify the factor of shame and social stigma regarding seeking assistance in obtaining food. Final questions of the survey are free response to allow participants to share additional information that they felt was not comprehensively captured.

Sample

The study population is undergraduate students in the US. The most desirable sampling frame for this study would have been a list of all undergraduate students. Because no such list is available, a convenience sampling method was utilized by surveying students in a university located in Texas. Individuals met the criteria for the present study if they were a currently enrolled undergraduate student at this institution and a minimum of 18 years of age. Alternatively, the researcher invited students to participate via an e-mail sent to their professors and staff in respective departments. A total of 111 faculty and staff members were sent the e-mail (Appendix C) and blind carbon copy (bcc) was utilized to maintain anonymity among faculty and staff members as well. The sample include the respondents who are 18 years of age and older enrolled during the spring semester of 2020 at a faith-based university in Texas.

Ethical Considerations

The privacy and confidentiality of the participants was maintained by obtaining participants' informed consent prior to completing the survey as indicated in the e-mail (Appendix C). All participants were informed of the voluntary nature of their participation and of their ability and right to end their participation with the survey at any time prior to accessing the survey. Participants were made aware that they will not be offered any incentives and that the survey is in no way linked to their classes and therefore will not impact their grades. Additionally, all information is confidential and remained anonymous to the points of contact, the researcher, and the thesis chair. The data was only accessed by the principal investigator and the thesis chair. Additional steps

taken to ensure the protection of information includes securing the data in a secure location such as a USB drive or password-protected Google Drive file.

There are various ethical considerations to have when working with undergraduate students. Individuals who are under 18 years of age were not eligible to participate. This action was taken in order to protect the vulnerable population of individuals who are still considered to be a child and would therefore require forfeiting anonymity to obtain an additional consent form or the approval of their primary caregiver.

Data Collection

This is a quantitative study with data which was gathered via a survey. After obtaining approval of the study from the Institutional Review Board of the university (Appendix A) data were collected. The survey was electronically sent to personnel representing all undergraduate student departments at the university who distributed the SurveyMonkey link to students enrolled in their courses. Other department representatives were contacted based on attendance of an on-campus presentation that was open to all faculty and staff discussing the presence of food insecurity on college. The study had minimal level of research interference, as participants had no interaction with the researcher. Once participants accessed the email, they were informed of the purpose of the study and given the opportunity to agree or disagree to the terms outlined. If they agree will then participate in the survey. Additionally, graduate students were not asked to participate in this study, as existing literature consistently proved to separate the two populations. The survey was kept open for eight days.

Data Analysis

The present study seeks to examine if there is a significance between demographic characteristics and food insecurity as well as identifying chronicity of food insecurity among undergraduate students at a private, faith-based university located in Texas. The data were analyzed utilizing the SPSS, a statistical software. Descriptive statistics were utilized for all demographic characteristics of the sample and the distribution of the major variables. Descriptive statistical analyses were conducted to describe current and past experiences regarding food insecurity. Regression analyses were conducted to examine which factors have statistically significant association with food insecurity. Additionally, open-ended questions were analyzed for common themes. Further discussion and conclusions were drawn from these statistical results.

CHAPTER IV

FINDINGS

Participants

A totally of 313 students responded to the survey. Of the 313 respondents, 222 were valid due to adequate completion of the survey to be considered in the data set. Table 1 outlines the demographic characteristics of the participants. The study participants were undergraduate students who were all 18 years old or older (mean = 21.22; $SD = 4.02$). Descriptive statistics showed the following: 133 (59.9%) participants were female (59.9%), 38 male (17.1%), one person (0.5%) reported not caring to disclose, and 50 respondents did not respond (22.5%); a majority identified as White (56.3%); and a majority of respondents identified as heterosexual (67.1%). Of the respondents who indicated their classification at the time of participation, 40 students were freshmen (23.7%), 46 were sophomores (26.6%), 46 were juniors (26.6%), and 40 were seniors (23.1%). Regarding housing status, 91 students indicated they were living on-campus (52.6%), while 18 indicated they were living off-campus with family (10.4%), and 64 indicated living off-campus with others such as roommates (37.0%). Additionally, most participants were not international (76.1%) nor first-generation (64.9%) students.

Table 1

Characteristics of the Sample (N =222)

Variable	Category or Range	<i>N</i> or <i>M</i>	% or <i>SD</i>
Age	19 through 53	21.22	4.02
Race	African American/Black	10	4.5
	Asian/Asian American/Pacific Islander/Native Hawaiian	6	2.7
	Hispanic or Latinx	18	8.1
	Native American/Indigenous Peoples/Alaska Native	2	0.9
	Other	3	1.4
	Prefer not to answer	3	1.4
	Two or more races	6	2.7
	White	125	56.3
	Did not respond	49	22.1
	Gender	Female	133
I do not care to disclose		1	0.5
Male		38	17.1
Did not respond		50	22.5
Sexual Orientation	Bisexual	11	5.0
	Gay or Lesbian	3	1.4
	Other	3	1.4
	Prefer not to answer	7	3.2
	Straight	149	67.1
	Did not respond	49	22.1
International Student	No	169	76.1
	Yes	4	1.8
	Did not respond	49	22.1
First-Generation	No	144	64.9
	Yes	29	13.1
	Did not respond	49	22.1

Descriptive Statistics of Major Variables

The following tables identify college students' past and current experiences with food insecurity. Through raw and summative scores, food insecurity status as well as perceived prior experiences of food insecurity during primary or secondary school are examined.

Current Food Insecurity

Tables 2 and 3 measured student experiences with food insecurity. Table 2 measured current experiences of food insecurity through slight modifications of the USDA Adult Food Security Survey Module (Economic Research Service, United States Department of Agriculture, 2012b). Participant responses provide a raw score that is then utilized to determine level of food insecurity in an inverse fashion. Raw scores that result in high or marginal food security statuses can be viewed as very low or low food insecurity statuses, respectively. Similarly, raw scores of low and very low food security statuses indicate marginal and high food insecurity statuses. A raw score of a zero indicates a high level of food security, meaning there is no indicated presence of food insecurity. A raw score range of one to two indicates a marginal level of food security. The following two ranges indicate the two recognized levels of food insecurity: a raw score range from three to five indicates low food security, while a raw score range of six to 10 indicates very low food security. Therefore, as indicated in Table 2, 110 (49.5%) respondents indicated a high level of food security. Additionally, 50 (22.5%) respondents indicated a marginal level of food security. While 62 (27.9%) students were considered food insecure with raw score ranges from three to 10. Of those considered food insecure, 20 (9.0%) students reported experiences of the highest level of food insecurity and very low food security with raw score ranges of six to 10.

Table 2

Current Food Insecurity: Sum of Affirmative Answers (N =222)

Category	<i>N</i>	%	Level of food insecurity*	<i>N</i>	%
0	110	49.5	Very low	110	49.5
1	34	15.3	Low	50	22.5
2	16	7.2			
3	18	8.1	Marginal	42	18.9
4	14	6.3			
5	10	4.5			
6	8	3.6	High	20	9.0
7	3	1.4			
8	5	2.3			
9	2	0.9			
10	2	0.9			

*Inversed the level of food security criteria set by the USDA Adult Food Security Survey Module (Economic Research Service, United States Department of Agriculture, 2012b).

Past Food Insecurity

Because there is no existing index to measure the food insecurity for the past, selected questions based on the USDA Adult Food Security Survey Module (Economic Research Service, United States Department of Agriculture, 2012b) were adapted accordingly. The researcher provides more detailed information of answers to each question and the sum score in the tables below. The bolded answers indicate answers that suggest one's past experiences with food insecurity. As exhibited in Table 3, 57 (25.7%) students recalled a reliance on low-cost food due to financial restrictions; 40 (18.0%) stated this was sometimes true, and 17 (7.7%) stated this was often true. Additionally, 60 (27.0%) students stated they were aware of assistance or student support programs that would assist them in obtaining food while they were in middle or high school, while 133 (59.9%) stated they were not aware of such resources. A majority (74.8%) of

respondents did not participate in a free or reduced meal program while in middle or high school; however, 31 (14.0%) students did participate in such programs. Respondents largely (55.9%) indicated that they did not skip meals or eat less food without their primary caregiver’s knowledge during middle or high school. However, 69 (31.1%) respondents answered affirmatively.

Table 3

Past Food Insecurity (N = 222)

Questions	Category	N	%
To your best recollection, did you rely on low-cost food because you were/your household was running out of money?	Don't know or Refuse	4	1.8
	I did not attend middle or high school	2	0.9
	Never true	137	61.7
	Often true	17	7.7
	Sometimes true	40	18.0
	Did not respond	22	9.9
Were you aware of any assistance or student support programs that would assist you in obtaining food?	Don't know or Refuse	7	3.2
	No	133	59.9
	Yes	60	27.0
	Did not respond	22	9.9
Did you participate in a free or reduced meal program while you were a student in middle or high school?	Don't know or Refuse	3	1.4
	No	166	74.8
	Yes	31	14.0
	Did not respond	22	9.9
During your time in middle or high school did you ever skip meals or eat less food without your primary caregiver’s knowledge?	Don't know or Refuse	6	2.7
	I did not attend middle or high school	1	0.5
	No	124	55.9
	Yes	69	31.1
	Did not respond	22	9.9

Overall, a sum score was calculated based on affirmative answers. The greater the sum of affirmative answers, the more likely the individual experienced food insecurity as a middle or high school student. As shown in Table 4, 36 (16.2%) respondents did not respond affirmatively to any of the questions. However, 96 (43.2%)

respondents responded affirmatively to one of the four questions; 56 (25.2%) responded affirmatively to two of the questions; 30 (13.5%) responded affirmatively to three; and four (1.8%) of respondents answered affirmatively to all four of the questions related to past experiences of food insecurity.

Table 4

Past Food Insecurity: Sum of Affirmative Answers

Category	<i>N</i>	%
0	36	16.2
1	96	43.2
2	56	25.2
3	30	13.5
4	4	1.8

An Exploration of Factors on Current Food Insecurity

A hierarchical multiple regression analysis was conducted to explore the influence of food insecurity experiences during primary or secondary school on current experiences of food insecurity along with some sociodemographic factors considering the complicated relationships among the variables. Table 5 shows the results of regressions for the outcome variable (current experiences of food insecurity). Model 1 shows that the level of food insecurity in the past had a statistically significant association with the level of food insecurity in college ($t=3.105, p=.002$). When sociodemographic factors were added to the regression model into Model 2, this factor become no longer significant ($t=1.955, p=.052$). Out of the factors included in Model 2, only one factor (first-generation student) had a statistically significant association with current food insecurity. First-generation students had a higher level of food insecurity than their counter-part ($t=2.364, p=.019$).

Table 5

Hierarchical Multiple Linear Regression Model of Current Food Insecurity

Category	Predictors	Model 1		Model 2	
		<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
Past experience	Past Food Insecurity Sum	3.105	0.002	1.955	0.052
Sociodemographic	Age (19~53)			-1.224	0.223
	Female (0/1)			-0.560	0.576
	Athlete (0/1)			0.521	0.603
	First-Generation (0/1)			2.364	0.019
	White (0/1)			-1.494	0.137

Qualitative Responses

Participants who reported having skipped meals or ate less food without their primary caregiver’s knowledge during middle or high school were asked to share their motivations for doing so in a free response format ($n=65$). Many respondents (41.5%) cited mental health or eating disorder-related reasons for this. Additionally, 15 (23.1%) respondents cited acknowledging perceived familial financial struggles as their reasoning. While 18 respondents cited either not being hungry or due to other school-related commitments (27.7%), and six (9.2%) respondents responded did not share a reason. One respondent stated, “I felt that I ate too much, and my two brothers were growing. They needed it more than I did.” Another student said:

My dad would give me \$1.50 for lunch which didn’t even cover half. But that’s all he could spare. I ended up waiting until after school was out to go get a .99 cent McChicken sandwich almost every day without my parent knowing for a long time. I knew it wasn’t their fault and I knew that asking for more money would just make my dad feel bad.

Additionally, participants were also asked to share what school programs specific to addressing food insecurity they believed would have been beneficial for them during primary or secondary school. Answers ranged from establishing a universal meal program for all students, regardless of eligibility status; extending family support; offering healthier food items; and increasing education amongst students regarding eating disorders and health.

The researcher provided a free response question, asking participants if they have experienced any of the symptoms asked in the USDA Adult Food Security Survey Module outside of the timeframe specified (Economic Research Service, United States Department of Agriculture, 2012b) ($n=34$). Responses varied from no experiences outside of the timeframe (33.3%), explicitly citing financial concerns or struggles (27.8%), fear of running out of resources (30.6%) as well as suffering from eating disorders and struggling to adjust their diets after no longer having a meal plan.

Students were asked if their financial situation has caused them to change or adjust their academic schedule, such as drop a class to accommodate an employment schedule; extend their anticipated graduation date; or unenroll for a duration of time in order to work during their undergraduate career ($n=176$). Most students, 148 (84.1%), did not modify their academic schedule due to financial pressures, while 28 students (15.9%) stated that they have. Furthermore, students were qualitatively asked if their weight has changed during their time as a college student due to the amount or quality of food they were able to financially afford ($n=103$). Students who did experience an unintended change ($n=58$) cited more convenient, yet less nutritional food as a reason, as well as limited resources, not having a comprehensive meal plan, on-campus dining

service hours not being conducive to schedules, and other unspecified reasons.

Additionally, the researcher asked participants if they believe their mental health has been negatively impacted if they have struggled obtaining consistent or balanced meals during their undergraduate career ($n=176$). While many respondents stated that the question was not applicable to them (47.7%) and 17 respondents (9.7%) did not know or refused to answer, 37 (21.0%) students said no and 38 (21.6%) stated yes, they do believe that their mental health was negatively impacted.

University Resources

Respondents were asked if they were aware of on-campus assistance services that can address food insecurity ($n=176$). A majority of respondents, 133 (75.5%) stated that they were not aware of such available assistance, while 43 (24.4%) respondents stated that they were aware of resources. Participants were asked if they have sought assistance securing food from any faculty or member as an undergraduate student. Most respondents, 137 (77.84%), stated that they have not; 36 (20.45%) stated that the question was not applicable to them; and only three (1.7%) respondents stated that they have. A qualitative question was posed to participants who answered “No” in an effort to capture underlying motivations. Of the students who provided a response ($n=65$), 44 (67.9%) stated that they did not need such services due to financial stability or aid elsewhere. 15 (23.1%) respondents stated that they did not view faculty or staff as an available resource to share such concerns, oftentimes due to not wanting to burden others or use resources that others might have a great need for. Additionally, six (9.23%) respondents stated that they were unaware of resources available to them and did not know who to

speak to. Lastly, five (7.96%) respondents explicitly cited embarrassment or discomfort as their rationale for not asking university faculty or staff for assistance securing food.

Due to the university being a faith-based institution, participants were asked if they believe there are spiritual or religious obligations for faith-based institutions to address the basic needs of individuals in their care ($n=176$). For clarification, the researcher clarified “basic needs” as including securing stable housing, adequate food and nutrition, hygiene care, and other everyday essentials. While 42 (23.9%) respondents did not believe so or selected “don’t know or refuse,” 134 (76.1%) respondents believed there are spiritual or religious obligations for faith-based institutions. Participants who answered, “Yes” were then asked how they believe the faith-based university can better address students’ basic needs ($n=111$). Of the 111 respondents who responded affirmatively, 13 students believed that the university’s response is currently sufficient or wrote, “not applicable.” However, 39 (35.14%) respondents suggested increasing student awareness of resources as well as university awareness of student experiences; 19 (17.1%) suggested providing other student assistance such as providing hygiene care items; and 11 (9.9%) suggested distributing surveys that ask students to share their needs and concerns. Other suggestions included increasing student education regarding health and fiscal literacy and increasing mental health services.

Students were asked if they believe there are challenges that may hinder higher education institutions from assisting students obtain basic needs ($n=176$). Of the 176 who responded, 84 (47.7%) believe that there are challenges, 34 (19.3%) respondents do not believe there are challenges, and 58 (37.0%) respondents do not know or refused to answer. Students who believed there are challenges were asked to qualitatively elaborate

on their response. Of the responses ($n=75$), 33 (44.0%) cited financial restrictions as a predominant challenge, 25 (33.3%) believed this is due to the institution's lack of awareness of student need, and 13 (17.3%) believed this is due to leadership not prioritizing assisting students with obtaining basic needs. Additionally, students felt that university intervention may offend students (2.7%) or that institutions may assist students who are taking advantage of such systems or are not in need (8.0%).

Lastly, participants were asked if they would like to include additional information or sentiments regarding food security during their time as an undergraduate student in a free response format ($n=48$). Students shared personal experiences and expressed concern for themselves and their peers. Respondents cited skipping meals due to academic or employment responsibilities despite having a meal plan. Others believed there was a lack of acknowledgement from higher education administration and officials regarding students' basic needs. Additionally, students discussed the costs of grocery shopping and eating while accommodating for dietary restrictions. Participants shared a desire for resources that could educate students on budgeting, cooking, or grocery shopping skills. Moreover, students also noted that individuals may feel embarrassed and therefore do not seek assistance.

COVID-19 Impact

Given that the survey was disseminated during the COVID-19 pandemic, participants were asked how the pandemic has affected their ability to obtain food on a consistent basis ($n=176$). Half (50.0%) of all respondents reported no difficulty consistently obtaining food, 60 (34.1%) reported some difficulties consistently obtaining food with limited worries or concerns, 23 reported some difficulties with worries or

concerns, and five (02.8%) reported experiencing significant difficulties consistently obtaining food. The researcher provided a follow-up question in the form of free response to capture the impact of COVID-19 on the participant's ability to obtain food on a consistent basis ($n=84$). Of the respondents who shared, 26 (31.0%) respondents reported limited stock at grocery as a major hinderance, 26 (31.0%) respondents stated a lack of personal resources as a reason, and 14 (16.7%) reported fear of contracting the virus while in public spaces as another hinderance. One respondent noting:

I live in an apartment by myself and it's been difficult especially [now] that my only source of income is on hold due to the pandemic. It's been difficult to find food and save money for gas when I need it the most.

CHAPTER V

DISCUSSION

The present study sought to examine the prevalence of food insecurity among college students and what, if any, factors are significantly related to the experiences of food insecurity at a private, faith-based, four-year higher education institution. Such factors include: student's demographic factors, self-perceived history of food insecurity, and awareness of resources. Additionally, this study aimed to address the research gap identified by surveying students at a faith-based higher education institution.

Furthermore, this study sought to examine the impact of the COVID-19 pandemic on students' ability to obtain food on a consistent basis. The findings of the present study informed the implications drawn for postsecondary higher education institutions, primary or secondary schools, and regarding policy.

Discussion of Major Findings

Data analysis required a descriptive analysis to identify the presence of food insecurity amongst respondents. Additionally, a multiple regression analysis and hierarchical multiple regression were run to explore the demographic factors associated with food insecurity as well as the impact of perceived past experiences of food insecurity on current experiences.

Food Insecurity Prevalence

Descriptive analyses indicated the current prevalence of food insecurity within a time period of the 30 days preceding COVID-19. As acknowledged in the literature

approximately 48% of students experienced food insecurity at four-year higher education institutions surveyed in the fall of 2018 (Goldrick-Rab, et al., 2019). The respondents of the present study found that a majority of students did not report experiences of food insecurity. However, less than a third of students did report experiences of food insecurity. Moreover, of the respondents who qualify as food insecure, almost a tenth indicated a very low level of food security, indicating sacrificing both quantity and quality of food due to socioeconomic constraints. Although there is a slight incongruence with Goldrick-Rab et al.'s findings (2019), it must be acknowledged that there is a gap in the literature regarding surveying private, faith-based higher education institutions. Additionally, the limitations of the study are also a significant consideration in that the sample is not representative of the overall student body.

Significant Factors Associated with Current Food Insecurity

Tables 3 and 4 examine the respondents' past perceptions of food insecurity experiences while they were in primary or secondary school. Approximately one third of respondents stated that they have skipped a meal or eaten less food without their primary caregivers' knowledge. As qualitative free responses examine, many students reported having an eating disorder or related symptoms as their motivation for doing making such decisions. Often, children are aware of struggles within the home despite their primary caregivers attempting to shield them from such hardships and subsequently make decisions to reduce food costs without their caregivers' knowledge (Coleman-Jensen et al., 2013; Fran et al., 2011). Table 4 examines the sum of raw scores shown in Table 3 to better understand how severe the level of food insecurity was according to the respondent's perspective. As displayed in Table 4, a limited number of students did not

respond affirmatively to any of the questions, indicating that a majority of students have experienced at least one potential effect of food insecurity during their time in primary or secondary school.

Table 5 displays the results of the multiple regression analysis exploring the influence of potential factors associated with experiences of food insecurity. As shown in Table 5, the findings of this study are affirmed by findings in the literature as the only significant factor found is first-generation status. First-generation college students are at the highest risk of experiencing food insecurity, as indicated in the literature (Goldrick-Rab et al., 2019; Government Accountability Office, 2018). Table 5 also explores the influence of past experiences of food insecurity during primary or secondary school using a hierarchical multiple regression analysis. Without the added consideration of sociodemographic factors, the respondents' past experiences of food insecurity were statistically significant, indicating that further research is needed in this area. Such results may, in large part, be linked to socioeconomic status or financial difficulties. Therefore, the predictor that is more directly related to the outcome of current food insecurity may be compound with sociodemographic variables such as first-generation student status or past experiences of food insecurity.

Awareness of Resources

Based on qualitative responses, students who did not seek assistance obtaining food from college officials also cited embarrassment or discomfort as a rationale. Negative social stigma has been repeatedly cited as a primary reason why students do not seek or accept assistance regarding obtaining food (Goldrick-Rab, et al., 2019; Government Accountability Office, 2018; Maynard, et al., 2018). Additionally, a

majority of respondents reported being unaware of resources available to them. Three main ways colleges and universities are implementing on-campus resources are through establishing on-campus food pantries, developing a meal voucher program or meal plan payment alternatives, and training college officials on the resources available to students on campus and in the community. A qualitative question that asked respondents what resources they believe would be most beneficial for students revealed a congruence with the literature's findings as well as respondents expressing a desire for resources that educated students on skills such as budgeting or grocery shopping, acknowledgement from college officials, and more ways to communicate the student experience with administration.

COVID-19 Pandemic

As the coronavirus is a novel virus, there is currently limited existing literature published examining its effects on food insecurity amongst college students. Half of all respondents indicated that the pandemic has had some effect on their ability to consistently obtain food to varying degrees which is congruent with findings from the literature. A survey conducted in May 2020 by the Office of Admissions at the university featured in the present study found that amongst incoming freshmen ($n = 564$), 43% of their household's financial situations had significantly changed since the beginning of March (Simpson, 2020). Respondents from the present study reported suffering from limited resources as well as fear of contracting the virus and being particularly mindful of vulnerable loved ones who may be more susceptible. Lastly, there was no significance between students who were not identified as food insecure prior to the pandemic and those who reported experiencing difficulty consistently obtaining food during the

pandemic. As the literature supports, a temporary loss of income or shift in employment may not significantly impact one's ability to secure basic needs (Goldrick-Rab et al., 2020).

Implications of Findings

The presence of food insecurity on college campuses, even private, faith-based colleges, is prevalent and continues to rise. The findings of the present study present implications for colleges and universities, policy, and future research. However, a limited sample size inhibits the significance to limited factors. A larger sample size and a sample representative of the student body may have led to more substantial observations of the relationships between sociodemographic factors and food insecurity as well as a more thorough understanding of respondents' experiences in primary and secondary school. While these implications are informed by specific items that were measured and explored in the present study as well as by the researcher's experience of prior research on the topic, further implications cannot be generalized due to several limitations within the study.

Implications for Colleges and Universities

College officials must address student food insecurity through diversifying student resources to adequately address the presence of food insecurity and student desire for greater resources as identified in this study. The present study found that 27.9% of respondents are food insecure and that most students were unaware of the available resources or of how to contact such resources. Both quantitative and qualitative responses affirm the trends of initiatives being implemented nationally on university and college campuses such as the growth of over 600 new on-campus food pantries over an

eight-year period (College and University Food Bank Alliance, 2020). As the present study found a presence of food insecurity and a desire for issues regarding obtaining basic needs to be addressed amongst the student body, it is imperative to address the issue before food insecurity and its negative consequences persists. Additionally, as noted in the literature, addressing food insecurity amongst students can also improve retention and completion rates, rates of loan repayment (Government Accountability Office, 2018), and encourage students' ability to reach self-actualization (Gobin et al., 2012).

Initiatives that may have a higher likelihood of success are those previously established by other postsecondary higher education campuses or what can be considered as evidenced-based initiatives as well as those suggested and supported by students. Due to previous initiatives struggling with unsustainable models (Goldrick-Rab et al., 2018), including student voices and opinions in decisions regarding addressing student food insecurity may aid in the sustainability of programs and promote higher student take-up rates by recognizing student voices amidst a topic heavily burdened with stigma and shame (Coleman-Jensen et al., 2019; Freudenberg et al., 2019; Goldrick-Rab, et al., 2019). Moreover, student input is invaluable as individual campuses have differing campus cultures and thus may have varying degrees of on-campus student activity as well as needs and available resources.

Based on responses from the present study, potential initiatives that meet both criteria, being evidenced based as well as student supported, include establishing an on-campus food pantry (College and University Food Bank Alliance, 2020; Goldrick-Rab, Cady, & Coca, 2018; Government Accountability Office, 2018), a meal voucher or meal plan assistance program (Broton et al., 2020; Swipe Out Hunger, 2020), as well as

distributing surveys to students measuring current or potential needs (Broton et al., 2020; Goldrick-Rab, et al., 2019; Government Accountability Office, 2018; Swipe Out Hunger, 2020). Enforcing a criterion that initiatives must be evidenced-based, will allow college officials and administrators to refer to published resources outlining necessary steps of implementation. The selection of evidence-based models may also increase the potential efficacy of university and college officials' program implementation and maintenance as well as a consolidation of resources.

Faith-based higher education institutions should especially take interest in such initiatives, considering a majority of respondents believe that faith-based institutions have a spiritual obligation to address the basic needs of students, however, a majority are also unaware of any available on-campus resources indicating a gap in services. Either, student supportive services are nonexistent, or services are available yet are not advertised well. Therefore, faith-based colleges and universities must address this gap and consistently seek to be aware of changing student needs, particularly as student bodies continue to diversify.

As colleges and universities prepare for the student body's arrival since their unexpected and hasty departure in the spring due to the COVID-19 pandemic, student aid is particularly crucial. In addition to stressors outlined in this study as well as the literature, the added uncertainty of life amidst and after a global pandemic contributes to the real or potential fear of being unable to obtain a college degree. As the job market shifts and the country experiences the largest rates of unemployment since the Great Recession, rising higher in three months of the pandemic than in two years of the Great Recession (Kochhar, 2020), students may not be able to return or begin their

postsecondary education without the assistance of their university or college in the form of emergency aid, and/or assistance securing basic needs. This emphasizes the need for informed staff being readily able and equipped to assist students. Such staff must be competently trained in available resources both on and off campus. As noted in the GAO report (2018), college officials largely feel underprepared to assist students in addressing the issue such as food insecurity. Staff or a department dedicated to assisting students secure basic needs may be centralized in one office or dispersed among various departments so long as on-campus advertisement is clearly and readily shared, as highlighted throughout respondent feedback. Furthermore, the quantity staff must be sufficiently maintained to competently address all student needs and referrals obtained. Awareness of such services cannot be limited to students. As individual faculty and staff are typically the first individuals to identify a student in need (Government Accountability Office, 2018), it is imperative that both students and college officials are aware of available services and the process of self-reporting and submitting referrals.

While implications for policy will be further outlined below, the intersectionality of responsibilities between college and government officials is must also be acknowledged. As SNAP is the largest governmental program combatting domestic hunger, college officials may reach out to SNAP officials for trainings or to develop a partnership with for the betterment of students. By being more educated in available resources in the community, college officials are able to construct a network of both on and off-campus resources for students to be able to access. Furthermore, college officials who initiate conversation with government representatives ensure communication with the appropriate higher educational department or personnel. Moreover, this initiative is

pertinent for colleges and universities with programs that specifically work with first-generation students as this study identified first-generation students as significantly vulnerable to experiencing food insecurity.

Implications for Primary or Secondary Schools

As previously noted, addressing food insecurity when individuals are in primary or secondary school can serve as a preventative measure and prevent long-lasting effects. Students in primary or secondary school are aware of sacrifices made by their primary caregivers and make sacrifices of their own (Coleman-Jensen et al., 2013; Fran et al., 2011) as highlighted in the quantitative and qualitative results of this study. Therefore, policies that would provide free or reduced meals for all students would reduce the burden on both caregivers and students and may improve the physical, mental, and emotional health of the students. Additionally, providing free or reduced meals for all individuals regardless of eligibility requirements may combat the negative social stigma caregivers may feel when having to apply for assistance and students may feel when given a different meal due to insufficient funds. Therefore, programs such as the Community Eligibility Provision (CEP) program would prove beneficial for many school districts. The CEP program would provide free breakfasts and lunches to all students within schools or districts that are considered high poverty (Food and Nutrition Services, 2019a). Any school with a minimum of 40% Identified Student Percentage is eligible to apply; an *identified student* is a student certified for free meals if the household receives SNAP, TANF, or Food Distribution Program on Indian Reservations (FDPIR) benefits, or the student receives Medicaid or is enrolled in foster care or the McKinney-Vento program (The Center for Public Policy Priorities, 2019). Furthermore, securing the CEP

program for an entire district or individual schools will reduce administrative burden by ceasing meal application management for individual students (Neuberger & Riddle, 2015).

Even with the implementation of the CEP, personnel equipped to identify and assist students and their households secure basic needs, such as social workers, can prevent individual students from falling through the cracks. In Texas, the introduction of H.B. 239 alerted many districts of the urgent need for the presence of social workers in public schools. Although the bill died in the chamber (LegiScan, 2019), the presence of the bill encouraged the hiring of social workers across the state. As of May 2019, Texas was one of the top five states with the highest employment levels for social workers (U.S. Bureau of Labor Statistics, 2019). Furthermore, it is projected that the presence of social workers in Texas from 2019-2021 will only continue to grow though growth is anticipated to be slow based on the positive, yet low projected percent change (Projections Central, 2020). While the projected slow growth of employment may be contributed to the uncertain economic future due to the effects of the COVID-19 pandemic, the need for educated personnel is even more pertinent as households experience significant fiscal changes.

Personnel at the primary or secondary school level who have contact with students and households uniquely positioned to contribute to food insecurity prevention as well. As the results of this study found an association between past (during primary or secondary school) experiences of food insecurity with current (during college) experiences of food insecurity, it may prove beneficial to educate and inform students and their caregivers of resources that may be available to them when enrolled as a college

student. School social workers, counselors, and individuals associated with programs intended to assist students apply for and attend a postsecondary higher education institution who educate students and caregivers of such resources may better equip students to transition into college and assist in student retention rates. Additionally, such personnel may have established rapport and a relationship with the student or caregivers and may be able to share information regarding food insecurity and available resources with minimal negative stigma. Awareness of available resources may begin with collaborations with college officials as well as governmental officials such as SNAP representatives. Collaborations and information regarding available resources may assist students in selecting a college that is best equipped to support them and address their needs. Furthermore, personnel from primary or secondary schools who are a part of such collaborations will thus be able to provide more individualized guidance, particularly for students who will be a first-generation college student as the present study found first-generation students are at an increased risk of experiencing food insecurity.

Policy Implications

Due to food insecurity being rooted in socioeconomic disparities, action beyond the physical and temporal limitations of providing on-campus assistance is necessary on the state and federal level. Moreover, policies that address this crisis of food insecurity must address the socioeconomic inequities in order to address the catalyst of the issue as opposed to narrowly offering assistance solely based on specific demographic characteristics. The “Hunger-Free Campus Designation” bill could be adopted on the state level. Currently, the state of Texas has not sponsored the bill. While previous iterations of the bill adopted in states such as California and New Jersey solely apply to

public university institutions, amendments regarding the inclusion of private universities or the ability to opt in may be added. If amended and adopted, the bill would allocate funds dedicated to implement sustainable measures of addressing food insecurity, further awareness of services for students, and encourage community partnerships and coalitions that would serve to develop a network of services for students in need (California Legislative Information, 2017; The California State University, n.d.). Respondents' qualitatively and quantitatively recorded sentiments from this study support the mission of the bill. University support for statewide legislation may ensure sustainable measures for holding all campuses accountable and the statewide funding assistance would assist colleges and universities that are more financially restricted than others. In the meantime, colleges and universities may address the gap by hiring and/or equipping on-campus personnel to secure basic needs and address related student crises.

A program that combats domestic food insecurity is SNAP. As SNAP is an established federal program with low take-up rates, it does not require explicit support from colleges and universities or state government. However, formal support from such entities would be beneficial in establishing solidarity and conveying the prioritization of securing students' basic needs. Based on the findings of the present study, the identified lack of awareness or acknowledgement of SNAP or federal resources amongst respondents is supported by the literature as a primary reason for such low take-up rates (Freudenberg et al., 2019; Government Accountability Office, 2018). Therefore, educating college officials and administrators on the eligibility requirements and application procedure for SNAP may prove beneficial for the surveyed university. Additionally, as respondents expressed a desire for resources to be advertised more,

postsecondary higher education systems and all levels of government may invest in personnel with backgrounds or experience assisting individuals in applying for basic needs assistance, such as social workers. At present, the College Student Hunger Act of 2019, which has four goals which incorporates SNAP and outreach initiatives, has only been introduced to Congress. However, additional and continued support of postsecondary higher education systems may still prove beneficial.

Yet SNAP in the context of the COVID-19 pandemic currently proves insufficient. At present, 29 states and the District of Columbia submitted requests to the Food and Nutrition Services seeking to waive certain eligibility requirements in SNAP in an effort to better assist college students during the COVID-19 pandemic (Goldrick-Rab & Welton, 2020). The requests concerning college students largely centered around removing eligibility requirements that pertained to employment. All requests were denied as of April 2020 (Shahin, 2020). As many college students and young adults face unemployment at unprecedented rates (Kochher, 2020), a lack of adjustment to fit current circumstances deliberately excludes individuals from receiving assistance. At present, as government fails to adjust requirements, thereby perpetuating low take-up rates and exacerbating socioeconomic disparities, the role of higher education institutions is even more crucial. Therefore, it would prove beneficial for government and higher education institutions to collectively attempt to ensure students receive aid they are eligible for. Such a collaboration may take the form of explicitly allowing financial aid offices and entities to share information regarding student eligibility for public benefits and assistance with their colleges' student support services (Goldrick-Rab et al., 2020). Increased communication between or federal government and colleges and universities in

addition to more informed college officials may provide a more substantial foundation for student support and alleviate burden on any one entity.

Limitations of this Study and Implications for Further Research

While this study sought to capture a participant's experience with food insecurity at various points in their life, there are notable limitations. First, survey data were collected during the COVID-19 pandemic. Traditional wording of the survey includes asking the participants to recall their experiences over the last 12 months or the last 30 days. However, to best account for the unusual circumstances due to COVID-19 the survey was adapted to ask students to reflect on the 30 days prior to the COVID-19 pandemic. This change was made in hopes of identifying the presence of food insecurity while on a college campus however, many individuals may report skewed self-perceptions and report inaccurate participant memory. While a faulty memory in times of distress is in line with human nature (Abadie & Camos, 2019; Shields et al., 2017), such factors could impact the study and therefore cannot accurately capture students' experiences under more traditional circumstances. Second, the sample population was selected through convenience sampling and is not a representative sample of the entire undergraduate student body at the surveyed university. Third, the study was conducted at a faith-based private university. While such factors do not invalidate the legitimacy of student experiences, it is worth noting that this does hinder generalizability. Fourth, the question asking participants, "During your time in middle or high school did you ever skip meals or eat less food without your primary caregiver's knowledge?" did not acknowledge eating disorders. Future studies should make this distinction. As the distinction between hunger and food insecurity is made, so should eating disorders and

food insecurity. Lastly, no incentives were offered to students. Incentives would most likely have increased response rates in the study. However, due to the COVID-19 pandemic, sponsorship and incentive opportunities were withheld or canceled due to irrelevance.

The sample population was selected through convenience sampling and is not representative sample of the entire undergraduate student body of the surveyed university. Descriptive statistics indicate an incongruence between respondents and the overall student body. According to a diversity profile conducted by the university's Chief Diversity Officer, in November of 2019, 63.3% of students were female and 36.7% male. Additionally, regarding race and ethnicity, 58% of students identified as White, 17.7% Hispanic, 13.3% Black or African American, 2.0% American Indian or Alaska Native, and 7.2% other (Office of Diversity, Equity, and Inclusion, 2019). Based on figures from a program that works exclusively with first-generation students, there were 408 identified first-generation students in Spring 2020 (J. W. Jones, personal communication, May 13, 2020), which equates to the student body being 11.6% first generation.

The researcher suggests further research be conducted to explore the presence of food insecurity amongst college students, particularly those attending private, faith-based institutions due to the identified research gap. Additionally, future research may provide incentives to achieve a higher response rate. Furthermore, questions regarding socioeconomic status or Pell Grant recipient status would explore the direct association between food insecurity and sociodemographic and economic factors as well as provide a more comprehensive perspective of student bodies at such higher education institutions.

Moreover, future studies that examine the influence of socioeconomic status and financial hardships will allow practitioners to focus their attention to the actual targets. In further research, it would be beneficial to mandate sociodemographic questions, such as first-generational status or socioeconomic-related questions, as the present study identified such factors as indicators of increased vulnerability for experiencing food insecurity. Similarly, the addition of questions regarding diagnosed mental health disorders of intellectual disability disorders (IDDs) may address the research gap regarding the connection between food insecurity and IDDs amongst college students. Regarding questions pertaining to housing, the present study did not provide an option for being housing insecure or homeless. In future studies, it may prove beneficial to include such options. Lastly, it may also prove beneficial to ask questions regarding citizenship status if surveys are to be kept confidential as well as questions regarding having been in the foster care system. Both questions would allow college officials to better understand what services their student body may have access to and therefore, what services to advertise or assist students in obtaining.

Conclusion

The presence of food insecurity amongst college students, significant factors associated with experiencing food insecurity, the impact of the COVID-19 pandemic on one's ability to consistently obtain food, and the examination of student awareness of resources were explored in this study. Further research is needed to bridge the research gaps identified and limitations must be addressed before claiming generalizability. The greatest limitation for this study is the unrepresentative sample of the student body surveyed and the lack of questions associated with socioeconomic status. Despite the

limitations, preliminary findings were ultimately supported by the literature and implications for colleges and universities as well as state and federal policies were drawn. The implementations of recommendations and implications must be seriously considered to best care for students as colleges and universities continue to pursue diversifying their student bodies. Moreover, the same is true for faith-based postsecondary higher education institutions that commit to pursuing diversity, in addition to the spiritual implications of being aware of student needs and providing adequate assistance. By implementing recommendations in primary or secondary schools, colleges and universities, as well as through policies, officials will increasingly be made aware of student needs and conversely, students will be more aware of both on and off-campus resources available to them.

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APPENDIX A

Institutional Review Board 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



April 3, 2020

Shannon Que
Department of Social Work
Box 27866
Abilene Christian University

Dear Shannon,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled "Food Security Status on College Campuses",

(IRB#20-028) is exempt from review under Federal Policy for the Protection of Human Subjects.

If at any time the details of this project change, please resubmit to the IRB so the committee can determine whether or not the exempt status is still applicable.

I wish you well with your work.

Sincerely,

Megan Roth

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

APPENDIX B

Institutional Review Board Consent Form

Introduction: Food Security Status

If you are at least 18 years old you are able to take part in a research study. This form provides important information about that study, including the risks and benefits to you as a potential participant. Please read this form carefully and ask the researcher any questions that you may have about the study. You can ask about research activities and any risks or benefits you may experience. Your participation in this research is entirely voluntary. You may refuse to participate or stop your participation at any time and for any reason without any penalty or loss of benefits to which you are otherwise entitled.

PURPOSE AND DESCRIPTION:

You are invited to participate in this study that explores the presence of food security on campus. You will be presented a series of questions that ask you to reflect on your experience with food security during your time as a college student at ACU as well as your time in middle or high school. This study is designed to see if one's status of food security is associated with demographic factors and any prior experience with food insecurity.

If you consent to participate in this study, you will be asked to complete an online survey that should take approximately 10-15 minutes. The survey contains questions related to your experience obtaining food while enrolled at ACU as well as during your time in middle or high school.

RISKS & BENEFITS:

There are minimal risks involved with participating in this research study. The researchers have taken steps to minimize the risks associated with this study. We will not be collecting any personal identification data during the survey. Questions related to mental health topic and basic needs attainment may trigger stress responses and discomfort. Some survey questions may cause mild emotional distress. If anxious symptoms increase, please seek assistance from a qualified medical professional.

There are potential benefits to participating in this study, including a better understanding of food security amongst undergraduate students. The researcher hopes that the information learned from this study will help higher education institutions gain a more

thorough understanding of their student body as well as identify potential needs. Additional benefits may include an increased awareness of food insecurity issues as well as available campus resources.

PRIVACY & CONFIDENTIALITY:

Any information you provide will be confidential to the extent allowable by law. Participant personal identity will not be requested. Additional confidentiality will be protected by anonymous data collection and data being stored on a flash drive or a password protected document.

Since this study will be conducted online using Survey Monkey, the primary risk with this study is a breach of confidentiality. However, we have taken steps to minimize this risk. Survey Monkey may collect information from your computer. You may read their privacy statements here: <https://www.surveymonkey.com/mp/policy/privacy-policy/>.

CONTACTS: If you have questions about the research study, the Principal Investigator is: Shannon Que, MSSW Candidate
sbq14a@acu.edu
ACU Box 27866, Abilene, TX, 79699

If you are unable to reach the lead researcher, or wish to speak to someone other than the Principal Investigator, you may contact the faculty supervisor:

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If you have concerns about this study, believe you may have been injured because of this study, or have general questions about your rights as a research participant, you may contact ACU's Chair of the Institutional Review Board and Executive Director of Research, Megan Roth, Ph.D. Dr. Roth may be reached at

(325) 674-2885
megan.roth@acu.edu
320 Hardin Administration Bldg, ACU Box 29103
Abilene, TX 79699

Please click the link below if you are 18 years old or older and voluntarily agree to participate in this study. Click only after you have read all of the information provided and your questions have been answered to your satisfaction. If you wish to have a copy of

this consent form, you may print it now. You do not waive any legal rights by consenting to this study. Your participation in this research is entirely voluntary. You may decline to participate and withdraw from the study at any time with no penalty or adverse effects.

Clicking the link below indicates your consent to participate in this survey:

-SurveyMonkey link-

APPENDIX C

Recruitment E-mail

Subject: Food Security Survey

Hello [department point person],

My name is Shannon Que and I am graduate student of social work (MSSW) here at ACU. For my thesis, I am looking to identify ACU students' experience with food insecurity via a survey. After speaking at the Adams Center in February and through various conversations with faculty and staff, I am encouraged by your support and interest in this issue! With your help, I would like for this survey to be disseminated to as many students as possible. I understand that this time is filled with changes and unknowns and the last thing I want to do is add one more thing to your plate... but I am. I am asking on behalf of students who are food insecure and fly under the radar and for faculty who have offered assistance on an individual level but know there is more to be done. Your assistance disseminating this survey is perhaps more meaningful now than it would have been before this pandemic. This is another opportunity to hear from our students and let them know their ACU family wants to listen.

If you are willing, please copy and paste the message below the dotted line and send to your classes. A feature through SurveyMonkey will prevent students from participating multiple times from the same device, so please do not worry about potentially sending it to students multiple times. I ask that you forward the message to student groups and/or classes you are involved with beginning by forwarding the e-mail body beginning after the dotted line below. If you feel so inclined to spare some of your class time for this while zooming, I would greatly appreciate it as well! While this work is for my thesis, I intend for this to potentially be utilized as a launching point for exciting initiatives and at the very least important conversations. This survey has been IRB approved as well. Please let me know if you have any questions or concerns.

Hello!

I hope you're doing well and staying safe and healthy!

If you are **18 years old or older**, you are eligible and invited to participate in a survey (link provided below) about the needs of trends of food security on Abilene Christian University's campus. All information will be collected anonymously. I

understand that this may not be the most convenient time nor something I ideally would send in the middle of a pandemic, but below is more information regarding consent and a link for a survey which should take approximately 10-15 minutes.

Please note that you are **NOT** required to participate. Survey responses will remain confidential as it will be stored in secure computer files. You are free to withdraw and end participation of the survey at any time without any adverse effects. If you have any questions or concerns, please feel free to contact the principal investigator below:

Shannon Que, MSSW Candidate
sbq14a@acu.edu

If you are unable to reach the lead researcher, or wish to speak to someone other than the Principal Investigator, you may contact the faculty supervisor:

Kyeonghee Jang, PhD, LMSW
(325)674-6428
khj15a@acu.edu

Best wishes,
Shannon Que

APPENDIX D

30-Day Adjustment

(4) 30-Day Reference Period: The questionnaire items may be modified to a 30-day reference period by changing the "last 12-month" references to "last 30 days." In this case, items AD1a and AD5a must be changed to read as follows:

AD1a/AD5a. [IF YES ABOVE, ASK] In the last 30 days, how many days did this happen?

_____ days

DK

Responses of 3 days or more are coded as "affirmative" responses.

APPENDIX E

USDA Adult Food Security Survey Module Coding

END OF ADULT FOOD SECURITY MODULE

User Notes

(1) Coding Responses and Assessing Household Adult Food Security Status:

Following is a brief overview of how to code responses and assess household food security status based on the Adult Food Security Scale. For detailed information on these procedures, refer to the *Guide to Measuring Household Food Security, Revised 2000*, available through the ERS Food Security in the United States Briefing Room.

Responses of “yes,” “often,” “sometimes,” “almost every month,” and “some months but not every month” are coded as affirmative. The sum of affirmative responses to the 10 questions in the Adult Food Security Scale is the household’s raw score on the scale.

Food security status is assigned as follows:

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

For some reporting purposes, the food security status of the first two categories in combination is described as food secure and the latter two as food insecure.

(2) Response Options: For interviewer-administered surveys, DK (“don’t know”) and “Refused” are blind responses—that is, they are not presented as response options but marked if volunteered. For self-administered surveys, “don’t know” is presented as a response option.

(3) Screening: The two levels of screening for adult-referenced questions are provided for surveys in which it is considered important to reduce respondent burden. In pilot surveys intended to validate the module in a new cultural, linguistic, or survey context, screening should be avoided if possible and all questions should be administered to all respondents.

To further reduce burden for higher income respondents, a preliminary screener may be constructed using question HH1 along with a household income measure. Households with income above twice the poverty threshold AND who respond <1> to question HH1 may be skipped to the end of the module and classified as food secure. Using this preliminary screener reduces total burden in a survey with many higher income households, and the cost, in terms of accuracy in identifying food-insecure households, is not great. However, research has shown that a small proportion of the higher income households screened out by this procedure will register food insecurity if administered the full module. If question HH1 is not needed for research purposes, a preferred strategy is to omit HH1 and administer Adult Stage 1 of the module to all households.