How applicable is the USDA Thrifty Food Plan for the average college student?

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Abstract

Background: Eating balanced meals and meeting the dietary guidelines has become a major problem among college students, significantly affecting their academic performance and overall health. The USDA Thrifty Food Plan (TFP), designed to help consumers obtain the necessary nutrient needs within a budget, may also be adopted by college students. Financial limitations and time management are some barriers that prevent college students from meeting dietary recommendations and the guidelines recommended by TFP.

Objective: This study aims to determine the applicability of the USDA Thrifty Food Plan to college students by assessing how well college students are meeting recommendations for food spending, dietary intake, and food security according to the TFP. In addition to examining whether food insecurity affects nutritional adequacy within budgetary limits.

Methods: A cross-sectional study of (n=171) college students at a midwestern university participated in an online survey. The survey collected data on demographic information, grocery habits, food security status, and dietary intake. Students were asked to provide information about their knowledge of the USDA Thrifty Food Plan and if they follow a budget-friendly food plan. Descriptive analysis was used to calculate students' monthly food spending, percentage of meeting the dietary guidelines, and level of food insecurity against the Thrifty Food Plan allowance.

Results: Most students (96%) never attempted to follow the USDA Thrifty Food Plan. The Monthly food spending for students who didn’t purchase a meal plan ranged from $139 - $240, which is below the TFP recommended budget of $241.40-$309.90. Food insecurity affected a small portion of students who reported experiencing occasional food insecurity and stating they could not afford nutritious food regularly. In addition, only a few (6.4%) of

respondents met MyPlate dietary recommendations for the five food groups. The gap between student food spending and the TFP allowance, and food insecurity, created barriers for students to achieve nutritional balance.

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Chapter 1 - Introduction

Young adults between the ages of 18 and 25 who start living independently make decisions that affect their overall health. The Centers for Disease Control and Prevention (CDC) shows fewer than 1 out of 10 young adults meet their daily fruit and vegetable recommendations (CDC, 2024). Lower intake of essential nutrients, such as vitamins A, C, and E, and dietary fiber may affect overall health and lead to chronic diseases. Moreover, young adults tend to eat energy-dense but nutrient-poor food items, such as fast foods and sugar-sweetened beverages, leading to a higher risk of obesity (Powell, 2019). Most of the transition from family to independent living resulted in irregular meals, skipped meals, and greater dependence on convenience foods. The National Center for Health Statistics found that 36.6% of young adults are obese (CDC, 202).

For students, dietary habits have effects in terms of all dimensions: physical, mental, emotional, and intelligence. Proper nutrition supports the brain, promotes cognitive functions, and enhances concentration, which is all important in academics. According to a systematic review by Burrows et al. (2017), college students' nutritional intake and academic achievement are positively correlated. Higher GPAs and enhanced cognitive function have been associated with regular meal intake and adhering to intake requirements. Preventing fatigue and sluggishness enhances focus and active participation in learning and activities. (Burrows et al., 2017).

A healthy diet that supports immunity and wellness helps prevent students from missing school. In addition to both mood and mental wellness, it may help students with academic and social stress. Data collected by Puente-Hidalgo et al. (2024), supports the theory that meals with

omega-3 fatty acids, antioxidants, and vitamins decrease depression risks and are associated with enhanced stress resilience and better well-being (Puente-Hidalgo et al., 2024).

College students face many challenges in eating healthy meals, such as busy schedules, limited budgets, and rising living costs. According to Sogari (2018), “Common barriers to healthy eating were time constraints, unhealthy snacking, convenience high-calorie food, stress, high prices of healthy food, and easy access to junk food” (Sogari, 2018). This could result in facing more health complications in the future. Unhealthy eating choices can result in obesity and other diseases that reduce both students’ mental abilities and academic success (Florence et al., 2008). The relationship between diet quality and educational achievements is a direct positive correlation, meaning students who eat a nutritious diet tend to demonstrate better comprehension, focus, and ultimately achieve higher academic results (Wilder Foundation, 2014). Although most students recognize the importance of healthy nutrition and its impact on academic achievement, access to affordable and nutritious food remains a challenge. Students understand nutrition's value but still cannot buy affordable nutritious meals because they face difficulties (Baerren, 2023; Wilder Foundation, 2014). Common challenges include skipping meals, frequent snacking, and consuming high-calorie or fried foods, leading to nutrient deficiencies, low energy, and poor cognitive function (Yun, 2018).

The number of food-insecure college students keeps increasing. According to the USDA in 2025, food insecurity is the inability to consistently have enough food for an active and healthy life (Rabbitt, 2025). In the 2019-20 National Postsecondary Student Aid Study (NPSAS:20), food insecurity affected over 4 million (23%) students, exceeding the national average of 10.2% (McKibben, 2023). According to the Government Accountability Office (GAO, 2024) report, college students experience food insecurity because costs associated with

education, housing fees, and other living expenses have steadily increased. In addition, the report by GAO revealed that 40% of food-insecure college students may be eligible for Supplemental Nutrition Assistance Program (SNAP) services. However, they found that 59% of potentially eligible students did not report receiving benefits (GAO, 2024).

Meal planning is one of the solutions for college students to have affordable and nutritious meals. According to Meals in Motion organization, “Meal planning is a simple, effective tool that can be used to fight food insecurity, improve the budget, and minimize food waste” (Meals in Motion, 2023). Currently, the USDA provides four food plans: Thrifty ($273), Low-Cost ($282), Moderate-Cost ($349), and Liberal ($435), each customized toward meeting different budget requirements along with nutritional adequacy (Hanson, 2024). Each plan has a different budget to meet nutritional guidelines but at varying price points based on income levels and dietary preferences (USDA, 2024).

The history of food planning by USDA dates back to the early part of the 20th century during harsh economic times. The Dietary Guidelines for Americans added a scientific basis to the plans that brought them together with current health recommendations (Fleming, 2024). Initial plans were targeted specifically to provide low-cost, nutritionally adequate diets that would sustain households through difficult times.

There are two major components of the USDA Food Plans’ cost levels and market baskets. The cost levels assign a dollar value to each market basket based on average current food prices. The market baskets define weekly quantities of foods and beverages, in purchasable forms, that create a healthy and practical diet for various age-sex groups. The market baskets consist of seven food categories, each providing essential nutrients. The food groups are fruits,

vegetables, grains, protein, dairy, fats and oil, and other foods such as spices, condiments, and extras for flavor (USDA, 2024).

Chapter 2 - Literature Review

2.1. Introduction

College students in the United States are increasingly facing food insecurity, with limited or uncertain access to adequate food. Recent studies show that food insecurity is on the rise among college students in the United States (McKibben, 2023). For the 39% of low-income undergraduates, this challenge extends beyond simply living on a tight budget, it is a significant barrier to both academic and personal well-being (Thoelke, 2021). Factors such as rising tuition costs, expensive meal plans, inaccessible or unavailable food options, and the increasing number of non-traditional students contribute to the prevalence of food insecurity on college campuses. Additionally, the lack of awareness among college administrators about the extent of hunger among students exacerbates the issue (Thoelke, 2021). Without nutritious food, students face negative physical and emotional health outcomes, including lower academic performance, higher rates of depression, and poorer overall health.

The USDA food plans, including Thrifty, Low-Cost, Moderate-Cost, and Liberal plans, are guidelines for families and individuals and demonstrate how to obtain a nutritionally adequate diet while staying within varying budget levels. Of these, the most economical is the Thrifty Food Plan (TFP), which is the basis for calculating benefits under the Supplemental Nutrition Assistance Program (SNAP). Though the TFP was developed to support low-income people and families, there is an inadequate review of its relevance for specific populations such as college students (USDA, 2021).

This literature review explores the available research done on the USDA Thrifty Food Plan (TFP), issues of food insecurity among college students, and alignment or the lack of USDA Dietary Guidelines and MyPlate recommendations with dietary reality. By examining

recent studies and related policy discussions, this literature review will facilitate how to apply the TFP to college students and recommend potential reforms to serve this demographic.

2.2. Food Insecurity Among College Students

Food insecurity has become a significant issue facing many college students in the United States. The USDA defines food security as having access to enough food for an active, healthy life. It encompasses food safety, nutritional value, and availability in socially acceptable manners. It is characterized by the lack of reliance on emergency food assistance, scavenging, stealing, and related coping strategies when food is not available (Rabbit, 2025).

According to the results from the "Hope Center for College, New Federal Data Confirm that College Students Face Significant and Unacceptable Basic Needs Insecurity (2023)", “more than 4 million students in higher education are experiencing food insecurity, and 2.3 million more students have marginal food security” (McKibben, 2023). A person or household living with marginal food insecurity experiences food shortages that affect their food choices yet do not change the amount they eat or their habit of regular meals. This percentage, which is around 39-45%, significantly exceeded the national average food insecurity rate of the general population, which was estimated at 10.2% (Rabbitt, 2025). This national study involved nearly 167,000 college students from 227 institutions. Food insecurity was very high among students attending two-year community colleges, students of color, first-generation students, and students from low-income backgrounds (Nazmi et al., 2018).

Another study conducted by the Hope Center for College, Community, and Justice sampled a population of over 86,000 students from 123 U.S. institutions of higher education. Their results were that 41% of university students and 48% of two-year college students reported

food insecurity (Shulman, 2019). This article brings forth the fact that food insecurity has now become common on higher education campuses.

Martinez et al. (2018) collected data from a survey of students on several university campuses and found that students who experience food insecurity are more likely to demonstrate poor academic outcomes, such as low GPAs, and are also at risk of leaving school. They found that food insecurity overlaps with other insecurities such as housing instability, mental health issues, and campus support service availability. Similarly, the Hope Center (2019) found that compared to food-secure students, food-insecure students were skipping more meals, had smaller portion sizes, and relied on low-cost foods high in calories to extend their budgets (Baker-Smith et al., 2020).

The growing body of literature on food insecurity among college students calls on universities and policymakers to take action on this trend. Often college students, trying to be financially independent often comes with the risk of struggling with food insecurity. In some cases, this leads them to rely on family support, which undermines their independence. This may reduce their eligibility for federal food assistance programs like SNAP, while they can barely afford basic basics. Tuition, in addition to the money needed for living and food, forces many students to have to make a very difficult decision in how to allocate limited resources, many times choosing education over health and nutrition (Dubick, 2016).

Food insecurity among students in colleges is a result of many contributing factors. Tuition has been on the rise, and this often leaves students with inadequate resources due to loans; besides, the costs of living are often too high in college towns. Apart from that, students often need to overcome other barriers, such as a lack of kitchen facilities, unpredictable schedules that complicate meal preparation on regular hours, and a general lack of food

knowledge which makes healthy choices hard to make within the budget (Peterson & Freidus, 2020).

A study by Gaines et al. (2014) found that students who reported food insecurity were more likely unemployed, had lower access to reliable transportation, and were in food deserts, meaning there was a general scarcity of stores or other outlets that provided affordable, healthy food options. In many instances, food-insecure students lacked either the skills or knowledge to guide them through complicated food assistance systems or the meal planning necessary to meet nutritional needs on the most limited budgets (Gaines et al. 2014).

Because food insecurity is interconnected with greater economic burdens college students face, food insecurity is best prevented through a multilayered process. While expanding eligibility and thus access to food assistance programs like SNAP would serve immediate relief for many students, it is equally important that longer-term efforts include those that would reduce the cost of higher education, improve affordable housing options, and offer financial literacy education in order to help students manage their limited resources better. Moreover, meal subsidies could be provided, more campus food pantries could be opened, and food waste policies could be put in place in dining halls (Baker-Smith et al., 2020). Food waste policies in the context of dining halls refer to strategies and regulations aimed at reducing the amount of food that is wasted on campus.

The academic and personal consequences of food insecurity are widely known. Many students experiencing food insecurity might struggle to concentrate on their schoolwork, which leads to lower grades and higher dropout rates, with reduced well-being overall. Food security is also associated with a variety of physical and mental health problems, including malnutrition, obesity, stress, anxiety, and depression (Martinez et al., 2018).

Martinez et al. (2018) conducted a case study on the impact of food insecurity on the academic performance of students in a public university in California. The results showed that food-insecure students are more likely to miss class, fail to complete assignments, and withdraw from courses because of health-related issues. The study also discussed some of the psychological consequences, as many students experience shame, anxiety, and hopelessness due to food insecurity. Food insecurity, as such, can create a vicious circle leading to poor academic results and increasing mental health problems of the students.

Implications of food insecurity among college students range from serious academic and health outcomes to important questions regarding the role of higher education institutions in contributing to solving the problems. This makes universities stand in a critical position to play in the mitigation of food insecurity. By implementing comprehensive support systems, including financial aid packages, institutions can better support students in managing the stress associated with food insecurity. These packages consider the real cost of living to affordable meal plans, and mental health services. Policymakers should also consider how students from larger families or those who support themselves through part-time employment might be able to receive support through food assistance programs (Martinez et al., 2018).

Students facing food insecurity commonly adopt many coping strategies, which include meal skipping, reduction of portion size, and purchasing inexpensive calorie-dense foods to make their budgets last. Supplemental support is sought by many students from campus food pantries, community food banks, or informal support networks. However, these coping strategies overwhelmingly fail to provide sufficient nutrition to prevent debilitating long-term health consequences (Martinez et al., 2018).

Goldrick-Rab et al. (2018) studied campus food pantries available for college students and reported that they can provide temporary and substitute measures, but resources usually remain unused due to either stigma or sheer ignorance. They also pointed out other aspects, such as that some students who started using food pantries continued to suffer from nutritional deficiencies since the amount of food distributed may not be enough for a healthy diet.

Although campus food pantries and community food banks play critical roles in the short-term in resolving food insecurity, they are not a long-term solution. Food insecure students commonly report being embarrassed or ashamed by the use of such facilities, which can then potentially decrease their tendency to utilize such resources. It puts them in that vicious circle where students have to use whatever food is available, regardless of nutritional value. Food insecurity among college students requires more than increasing access to food assistance programs; it requires an approach that also involves the empowerment of food literacy, and the reduction of the stigma associated with seeking help (Goldrick-Rab et al., 2018).

2.3. Dietary Guidelines and Eating Behaviors of College Students

Dietary Guidelines for Americans and MyPlate Recommendations

The Dietary Guidelines for Americans and the MyPlate recommendations serve as the basis for federal nutrition policy. These guidelines advocate for a diet high in fruits, vegetables, whole grains, protein, and dairy. In 2011, the MyPlate guide was released to depict how to apply balance at every meal through portion control and nutrient-dense foods (Anand, 2012).

Though the Dietary Guidelines and MyPlate are designed to be flexible enough to accommodate different individual lifestyles and budgets, research by Laska et al. (2010) suggests that the reality is many of the American public can't meet the recommendations easily. Low

dietary guideline adherence was observed in college students due to convenience foods, limited cooking repertoire, and limited time.

Results from the study conducted by Laska et al. in 2010 indicated that less than 30% of students met the daily recommended intake of fruits and vegetables. Many had diets high in processed foods, sugary drinks, and fast food-dietary components that do not align with MyPlate's suggestions. Students were also more likely to skip meals or rely on convenience foods due to the frenetic schedule and inadequate availability of affordable, healthy food.

In any case, low adherence to dietary guidelines among college students may raise some doubts concerning the applicability of the USDA recommendations to this category. While MyPlate is a very good guide and framework for healthy eating, for students without sufficient time or resources, or even knowledge in meal preparation, it may be quite unreal. In addition, fresh fruits and vegetables, whole grains, and lean proteins can be too expensive to be a feasible option for students working within a tight budget, who would then place greater emphasis on buying less healthy but cheaper alternatives. This inconsistency between USDA-recommended nutritional guidelines and the very reality faced by college students speaks volumes of the need for targeted interventions that may correct the unique challenges faced by college students (Gaines et al. 2014).

There are many barriers against college students who try to follow the Dietary Guidelines for Americans and MyPlate recommendations. Lack of time, money, and access to kitchen facilities make it a challenge to maintain a healthy diet. Moreover, most students are food illiterate and do not possess the knowledge to make appropriate choices about diet; therefore, many depend on fast foods or pre-packed meals that have a high caloric value but hold little nutritional value (Goldrick-Rab et al., 2018).

The study conducted by Goldrick-Rab et al. in 2018, demonstrated that students who lived in dorms or apartments that had no full kitchens used convenience foods more. However, it did not specifically address whether students living in dorms or apartments without full kitchens were required to have meal plans or if meal plans were optional. This same research identified the financial limitation factor in dietary decisions among students. Many of the students reported that they could not afford to buy fruits, vegetables, and lean protein frequently (Goldrick-Rab et al., 2018).

Barriers to adherence to dietary guidelines in college settings emphasize a need for problem-oriented interventions focusing on financial and logistical issues. This underlines a need for all universities to make on-campus, affordable, nutritious meal options available, including offering classes to improve food literacy, as well as expanding access to common kitchens across dorms. Policymakers should also press forward with expanding food assistance programs like SNAP to other students, especially those working part-time or independent of their families (Goldrick-Rab et al., 2018).

These eating behaviors among college students have important implications for long-term health. Diets heavy in processed foods, added sugars and unhealthy fats create a risk for obesity, diabetes, cardiovascular disease, and other serious health conditions. Reliance on inexpensive, calorie-dense foods may also lead to nutritional deficiencies, such as low intake of dietary fiber, vitamins, and minerals that are important for overall health maintenance (Leung et al., 2019).

In the study by Leung et al. (2019), food insecurity was related to diet quality in low-income adults, including college students. According to the findings, food-insecure people were more likely to consume large portions of refined grains, sugary beverages, and processed meats; their intake of fruits, vegetables, and whole grains was significantly lower. Also, food-insecure

students have higher risks of obesity or other health diseases compared to food-secure students since food-insecure students' consumption of foods is considered to be lower in dietary quality and cost but high in calories (Leung et al., 2019).

Poor dietary habits among the college student population may lead to serious health consequences and potential long-term outcomes for their health. These problems require a multifaceted approach: providing access to more affordable, healthy options; education regarding nutrition, meal planning, and other support services to help students overcome problems associated with food insecurity. Food guidelines can only be effective if universities and policymakers come together to provide enabling environments that boost healthy eating and reduce barriers to adherence to dietary guidelines (Leung et al., 2019).

2.4. Overview of USDA Food Plans

History and Development of USDA Food Plans

The USDA food plans were initiated in the early 20th century and had the noble purpose of enabling American households at every income level to meet their nutritional needs. The Thrifty Food Plan (TFP) was originally called the "Low-Cost Food Plan" and was established during the Great Depression to help families to be able to afford food. Over time, the USDA food plans were revised and expanded to reflect changes in food availability, prices, and nutritional guidelines. Today, the USDA maintains four food plans: the Thrifty, Low-Cost, Moderate-Cost, and Liberal plans. Each plan is based on the Dietary Guidelines for Americans and updated to account for inflation and changes in food consumption patterns (Carlson et al., 2007).

Based on the USDA Food Plans for November 2024, the estimated monthly costs for a family of four and a young adult are as follows:

Table 2.1 USDA Food Plans Estimated Monthly Cost

Food Plan	Family of Four	Young Adult (Male, 20-50)	Young Adult (Female, 20-50)
Thrifty	$1,016.00	$305.90	$270.50
Low-Cost	$1,320.00	$396.60	$351.20
Moderate-Cost	$1,654.00	$494.50	$437.60
Liberal	$1,980.00	$611.70	$540.50

Of these plans, the TFP is the most economical plan, which is based on the benefit level of the Supplemental Nutrition Assistance Program (SNAP). The SNAP program provides eligible low-income individuals and families with funds to purchase groceries, though restrictions limit purchases to unprepared foods, excluding items like ready-to-eat meals and hot foods from Delis (USDA, 2021). USDA periodically updates the TFP to reflect current food prices and changes in nutritional guidance, with the most recent revision in 2021 (USDA, 2021). Even with such revisions, the TFP has been criticized as impracticable for many families since it is difficult to find time to prepare food from scratch and fresh food available (Hartline-Grafton, n.d.).

Components and Assumptions of the Thrifty Food Plan

The Thrifty Food Plan is designed to meet nutritional needs at the lowest possible cost, assuming that individuals purchase raw ingredients, prepare meals from scratch, and engage in bulk purchasing to minimize costs (USDA,2021). The plan provides a weekly or monthly budget based on the cost of basic food items such as grains, fruits, vegetables, proteins, and dairy (Carlson et al., 2007). The TFP demands a very high level of food literacy, which requires knowledge of the techniques of cooking, planning meals, and storing food.

Approaching healthy eating in this manner is quite problematic for college students who do not have kitchen facilities, food storage possibilities, or hours to prepare food. Owning the notion of buying in bulk, cooking daily, and preparing healthy meals from scratch is simply not possible for students living in dormitories or off-campus residencies with limited kitchen access (Davis & You, 2010). Additionally, the differences in food prices in different states further complicate the practical application of the TFP, as students attending college in urban or high-cost areas may find it impossible to follow the plan's budget constraints (Hartline-Grafton, n.d.).

Comparison of Thrifty, Low-Cost, Moderate-Cost, and Liberal Plans

The USDA offers four food plans at different cost levels. All of these plans follow the same nutritional guidelines. The Low-Cost, Moderate-Cost, and Liberal plans have some flexibility that allows for more choices within categories and more opportunities to include convenience foods, such as pre-packaged foods, which are useful for busy people. In reality, the only differences between these plans and the TFP are in the level of restriction created by the budgetary limitations (USDA, 2021).

While the Low-Cost Plan allows for a little more variation in meal choices, the Moderate-Cost and Liberal Plans allow for even more flexibility, such as dining out and buying ready-made foods (Carlson et al., 2007). Of these three options, the other two are much more realistic for the typical college lifestyle; however, most students cannot afford to pay the additional cost without additional support.

The #RealCollege survey by the Government Accountability Office is an annual assessment of basic needs insecurity among college students, created by the Hope Center for College, Community, and Justice. According to the survey’s results, “Almost half of survey respondents

attending two-year institutions worried about running out of food (44%) or could not afford to eat balanced meals (45%), compared to 36% and 38% of respondents at four-year institutions, respectively" (Baker-Smith et al., 2020). Furthermore, the TFP's reliance on home-cooked meals and bulk buying may not be feasible for students with irregular schedules or those living in shared housing with limited kitchen access (Davis & You, 2010).

Updates and Revisions to the Food Plans

TFP is periodically updated by USDA as food costs and nutritional requirements change. The revised Thrifty Food Plan 2021 incorporates most of the updates from the Dietary Guidelines for Americans 2020-2025 and the cost estimates adjustment to reflect increased food prices and shifting consumer behavior. This is done by matching each Market Basket category such as eggs or dark-green vegetables to one or more Consumer Price Indexes (CPIs) and adjusting those costs based on the percentage change in the matched CPIs since June 2021. Categories that match a single CPI eggs are directly updated using the percentage change of that CPI, while categories that match multiple CPIs dark green vegetables, which may be fresh, frozen, or canned-use a weighted average of the changes for each of the relevant CPIs. The Bureau of Labor Statistics (BLS) is used to adjust the cost of the Thrifty Food Plan (TFP). The BLS' relative importance of CPI components is used to calculate the weighted average of percentage changes in the matched CPIs. After revisions, revised costs for all Market Basket categories are summed to compute the monthly revised Thrifty Food Plan cost for each age-sex group (USDA, 2021). Critics suggest, however, that the TFP continues to overlook other, hidden meal preparation costs incurred by the individual in terms of time to prepare and cook the meals,

kitchen equipment, and reduced ingredient access in a food desert or urban area (Davis & You, 2010).

Moreover, although the USDA has worked to make the TFP compatible with revised dietary recommendations, it however assumes a level of food availability and security that many people of low income, including college students, do not possess (Carlson et al., 2007). This has led some to call for further reforms, which would entail regional adjustments to capture food price variation and policy changes in order to more adequately capture populations with limited cooking facilities, such as students and the elderly (Gundersen et al., 2017).

Policy overview:

Meanwhile, the nutritional needs that the USDA has focused on meeting with budget-conscious food plans have failed to keep pace with realities for too many Americans. For college students, often struggling with food insecurity, who also don't qualify for SNAP benefits because of income thresholds, the TFP is an inappropriate tool to guide food spending. Policy advocates have advocated for reforms to the SNAP program, including expanding eligibility to more students, aside from revising the TFP to make a better representation of the specific needs of this population (Lewis et al, 2024). Additionally, in the case of the "American Rescue Plan Act of 2021", there was a temporary increase of 15% in SNAP benefits, recognizing that benefits at their current level are not enough (Kansas DCF, 2021).

In the article "Thrifty Food Plan 101 (Part 2)," Heather Hartline-Grafton and Ellen Vollinger elaborate on the weaknesses of the USDA's Thrifty Food Plan. Both senior leaders in the Food Research & Action Center (FRAC), Hartline-Grafton, and Vollinger, elaborate on the revision of the TFP in 2006, in practice, it fails to meet or come near meeting the real food needs of low-income households dependent on SNAP. Their review varies from an unfeasible quantity of food

to the inability of TFP to take into consideration the time, resources, and facilities that will be needed for the preparation of food in the urban setting. The dependence of TFP on invalid assumptions, restricted variety of food, and unrealistic cost constraints impair, according to these authors, its potential utility to foster food security and nutrition among those who need it most. One of the central weaknesses that the FRAC points out is the unrealistic nature of the market baskets. The TFP, defined in pounds of food per week for each of the categories, often provides small portions rather than realistic and practicable amounts with which real meals can be prepared. For example, 0.64 ounces per week of frozen or refrigerated entrees and 2.1 ounces per week of cheese allocated for a family of four equates to less than one serving of these items for the entire week. The absence of realistic shopping lists and menus further worsens these problems, making it very challenging for SNAP participants to successfully adhere to the TFP's recommendations.

Moreover, reliance on a few food categories by the TFP contradicts the federal dietary guidelines that recommend nutritional diversity and balance. The fruit and vegetables catalog are narrowly placed within apples, bananas, potatoes, and carrots, making diets less appealing. The variety requirement to ensure individual and family nutrition is not well catered for by the TFP. Besides that, TFP also makes an assumption that low-income families have the time, facilities, and resources to prepare meals, which most of the time is not correct.

2.5. Assessing the Applicability of the USDA Thrifty Food Plan for College Students

The TFP was designed to provide a nutritionally adequate diet given the limited budget. However, whether it would apply to college students remains questionable as the TFP assumes that any individual would have time available, with sufficient resources and knowledge, to

prepare food from scratch, and buy food in larger quantities. Yet, as demonstrated earlier, most college students lack kitchen spaces, cooking skills, and time to prepare food that the TFP would suggest (Carlson et al., 2007).

Davies & You (2010) also discussed the fact that the TFP relies too heavily upon homemaking meals and buying in bulk, which is quite unrealistic for those with little time or access to a kitchen. Other hidden ingredients in meal preparation, such as the time needed to prepare, clean up, and store food, as well as the cost of appliances themselves, were not recognized in the budgeting of the TFP (Davis & You, 2010).

The Thrifty Food Plan was designed for people who have regular access to a full kitchen, storage facilities, and time to prepare meals from scratch. While the TFP may be quite useful for those who have stable housing and kitchen access, it did not take into consideration the particular problems faced by students, especially those living in dormitories or shared housing. For many college students, these assumptions are not realistic. On-campus students often live in dorms or shared housing with limited access to kitchen facilities and often experience time constraints or may not have the equipment or skills to prepare healthy meals on a very tight budget (Davis & You, 2010). This is attributed to the finding by the USDA, wherein researchers estimated that those following TFP spent about 1 to 2 hours daily in meal preparation, which is a rather unrealistic expectation for busy college students. In addition, the investigation also revealed that followers of the TFP tended to buy in bulk and cook at home which are activities impossible to do without appropriate storage and/or cooking facilities (Carlson et al., 2007).

The issues with the application of TFP among the college population leave room for a more flexible approach toward meal planning and food budgeting. For students, a revised version of the TFP with more convenient, pre-packaged meals or ready-to-eat foods that meet the

recommendations of MyPlate but do not require extensive meal preparation will answer this purpose. Moreover, some researchers advocate for universities to support students with communal kitchens on campus, food preparation classes, and accessible nutritious options on campus (Davis & You, 2010).

While the Thrifty Food Plan has been one of the most studied food plans in relation to people with low incomes, it has rarely been studied in relation to college students. As such, most TFP studies are general population or low-income household analyses, with little consideration of issues that distinctively affect college students (Davis & You, 2010).

One of the few studies that have tried to research the TFP on a college campus, Gaines et al. (2014) found that students who attempted to follow the TFP were unable to meet both its nutritional and financial demands. The researchers noted that students lacked time, resources, and access to kitchens in which they might prepare meals from scratch. Moreover, many reported being confused and overwhelmed by the plan's emphasis on bulk buying and meal preparation (Gaines et al. 2014).

Policymakers should revisit the TFP to revise the guidelines in such a way that it would more appropriately capture the needs of populations with restricted kitchen access or time for meal preparation (Davis & You, 2010).

While the identified difficulties that college students have in following the Thrifty Food Plan seem valid, there could be other approaches and modifications. In this regard, adding more convenient foods to the list, ready-to-eat, with minimal preparation but meeting MyPlate recommendations, could be a modification. Second, regional differences in food prices would probably need to adjust the TFP, since urban students frequently experience higher costs for food items compared with rural students (USDA, 2021).

One study done by the Urban Institute brought out the regional differences needed for SNAP benefits. It found that the maximum SNAP benefit often fell far short of the actual cost of meals in many counties, especially in high-cost urban areas like New York and San Francisco. The study estimated that in 2020, when the Thrifty Food Plan was not revised, benefits were not enough to pay for meals in 96% of counties nationwide. Even with the 21% SNAP benefit increase, the shortfalls remained, with 21% of counties still experiencing the gaps, particularly in high-cost and urban areas (Waxman, 2021).

While not directly related to TFP, a report entitled "More Adequate SNAP Benefits Would Help Millions of Participants Better Afford Food" by Steven Carlson, stated that increasing SNAP benefits does a great deal in improving food security for low-income participants. It first addresses how the 2021 revisions in the Thrifty Food Plan, adding 21% to SNAP benefits, have aligned food assistance far more with contemporary food particularly in areas with a higher cost of living. It also documented that more adequate benefits would enhance the ability of millions of households to access healthier foods, reduce food insecurity, and foster better health outcomes (Carlson, 2021).

Modifying the TFP would require an approach that was more flexible in the way in which it accommodated food budgeting and meal planning for college students (Davis & You, 2011; Carlson, 2021). The inclusion of more convenience foods, the allowance for regional price differences, and education related to meal planning and nutrition would be options through which the USDA might create a more realistic food plan for college students who have limited time and resources. Besides that, universities could contribute by making nutrition on campus more approachable and affordable, while providing financial literacy education to empower students to make better choices concerning their food budgets (Carlson, 2021).

2.6. Conclusions

Research on the USDA Thrifty Food Plan and food insecurity among college students has some gaps. While the TFP is able to be a nutritionally adequate diet within a very restricted budget, many college students do not have the ability or time to store, prepare, and cook foods. This makes food insecurity a widespread fear on college campuses, estimated to affect up to half of all students. Some studies look into the influences of food insecurity on academic performance and well-being, however, no studies have researched specific challenges students face when trying to maintain TFP. Most of the studies about TFP look at general populations or low-income families, while very few of them tend to focus on the needs of college students. These few studies that focus on students rely on self-reported data, which may be biased and unrepresentative. Furthermore, many of these studies are cross-sectional and don't capture changes in food insecurity status over time.

Longitudinal studies regarding food security and the eating habits of college students might be more helpful. Focusing on the consequences of food insecurity over time and not only what works in plans such as the TFP. Considering budgeting methods and regional differences in the cost of food that will impact food access. Future research is still needed to conclude the generalizability of the results from the TFP to college student populations. Researchers need to investigate some of the ways higher education institutions can assist students experiencing food insecurity together with evaluating their support service programs such as food pantries and meal subsidies.

The purpose of this study is to assess the applicability of the USDA Thrifty Food Plan as a guide for college students at a Midwestern university. The study aims to determine how well

the TFP aligns with dietary habits, financial constraints, and food security status among the students. This survey captures food habits determinants among college students such as monthly spending on food shopping and food insecurity status. The goal of this study is to determine if students can realistically align to TFP recommendations within their budgets and meet nutritional guidelines. The assessment compares average student spending frequencies against the TFP budget, particularly for food-insecure students, to determine the plan's effectiveness.

Chapter 3 - Methodology

3.1 Purpose:

The purpose of this study was to assess the applicability of the USDA Thrifty Food Plan as a guide for college students at a Midwestern university. The study aimed to determine how well the TFP aligns with dietary habits, financial constraints, and food security status among the students. This survey captured food habits determinants among college students such as monthly spending on food shopping and food insecurity status. The goal of this study was to determine if students can realistically align to TFP recommendations within their budgets and meet nutritional guidelines. The assessment compared student food spending frequencies against the TFP budget, particularly for food-insecure students, to determine the plan's effectiveness.

Research Questions:

How applicable is the USDA Thrifty Food Plan for the average college student?

Assessed via comparison of monthly spending on food, grocery shopping frequency, and the level of food insecurity against the TFP monthly allowance.

Are college students able to meet nutrition guidelines within their budget?

Assessed via comparison of grocery spending with the level of meeting MyPlate recommendations with food insecurity.

3.2 Study Design

A cross-sectional survey design was used to evaluate how well the USDA Thrifty Food Plan (TFP) aligns with college students' dietary habits, budgets, and food security status at a Midwestern university. Following instrument development and pilot testing, the survey was administered online via Qualtrics™ from mid-November 2024 until early December 2024. A copy of the survey may be found in Appendix D. Flyers were used to recruit participants and

were distributed on campus, by word of mouth, and through the K-State Today listserv (Appendix C).

The flyer design contained the study's objective, eligibility criteria, what is expected of participants, incentive, survey link, and contact information. A copy of the flyers may be found in Appendix C. The time estimated to complete the survey was ten minutes. Participants were informed that the study was voluntary and anonymous. Respondents had the choice to enter a drawing for a $15 gift card upon completion as an incentive. The survey asked about college students' current dietary habits, food purchasing behaviors, familiarity with the TFP, and food insecurity status (Appendix D).

Data was collected at a single point in time, which offered a valuable snapshot of college students' experiences and allowed for comparisons between self-reported habits and TFP recommendations. This study was approved by the Kansas State University Institutional Review Board (IRB-12310) (Appendix A).

3.3 Instrument Development

Instrument development began with finding a set of questions that aligned with the USDA Thrifty Food Plan (TFP) as well as representing the real economic and food needs college students face. The survey questions were chosen from existing validated surveys that were obtained from previous projects such as the FRUVED project, as well as questions modified from the National Cancer Institute (Barr et al., 2018; Erinosho et al., 2015). The main focus was to get data on demographics, living situations, grocery spending practices, food insecurity status, MyPlate awareness, and knowledge of budget-friendly sources. With input from faculty members who have experience in survey development and community research, the survey draft was developed. Questions that were unclear or overly general were refined to better strengthen

the entire instrument. Their suggestions led to wording changes in questions, more targeted response options, adding more questions, and, in some cases, deletion of items considered redundant or unlikely to grant useful information. For example, a question that asked students to describe "any experience with available resources " was broken into two questions, one asked for awareness of those specific resources, and the other asked for the actual use of the resources. In addition, some questions related to food insecurity were added at the end to collect data on the current situation of food insecurity. It resulted in 30 items that focused on the quantitative, multiple-choice, and Likert-scale questions along with quantitative perspectives to gather perspectives on student dietary behavior. All phases of this process were reviewed and approved by the Institutional Review Board-12310 from Kansas State University. Following edits based on feedback received, the survey was piloted among the target population of college students (n = 18). A copy of the pilot test feedback may be found in Appendix E.

3.3.1 Pilot Testing

A pilot test was conducted over two weeks in July 2024 to determine the clarity and length of the survey draft. There were few students on campus at that time, recruitment took place in local coffee shops near campus. Potential participants were approached and asked if they met the inclusion criteria of being eighteen years old or older and college students.

For more detailed feedback, participants were asked to complete the survey on their personal device or a laptop using the survey link. Ten of the pilot participants completed the entire 30-question survey, while an additional four worked through only the first 15 items and another four focused on the remaining items. The survey was divided into three pilot tests to collect detailed feedback about each survey section without overwhelming the participants. This step helped identify specific questions that took too long to answer or caused confusion. Since all

data collection occurred in person, participants were encouraged to take as much time as needed to finish and to note any confusing or unclear question numbers on a separate sheet of paper for further discussion.

A total of 18 valid pilot responses were collected, exceeding the initial recommendation of eight participants from the faculty advisor. No incentives were offered for the pilot test; however, participants were motivated to share their perspectives on improving the survey. The pilot feedback highlighted several areas for revision and clarity of some wording. A copy of the pilot test feedback may be found in Appendix E. For example, the option for bi-weekly grocery shopping frequency ("twice a week" versus "every other week") caused a lot of confusion. Another question was modified to specify whether "household income" referred to parents' income or personal income. Participants suggested adding a back button to improve navigation between survey questions.

Another comment was about re-wording some of the demographic questions including racial or ethnic background to better reflect diverse backgrounds, sex orientation, and living situations. Based on these observations, multiple survey items were refined. For example, the question "What is your major?" was changed to "What are you majoring in or studying?" for more clarity since some international students didn't know how to answer this question. Additional question options were introduced, such as a "no" or "I am not sure if I am eligible" category for questions about food assistance eligibility.

Overall, the pilot test showed that the survey took between three to seven minutes to complete. No technical issues were reported using the Qualtrics platform. After making the recommended changes to the survey questions, additional modifications to the protocol were

submitted. The updated survey received approval from the Kansas State University Institutional Review Board (IRB) (Appendix A).

3.4 Measures

The final version of the survey had 31 items organized to collect data on (1) demographic and socioeconomic factors, (2) dietary habits and MyPlate adherence, (3) grocery spending patterns, (4) food security status, (5) awareness and use of food assistance programs, and (6) familiarity with the USDA Thrifty Food Plan (TFP). Each of these domains was chosen based on the primary research questions of the study on the applicability of the TFP for college students (Appendix D).

3.4.1 Demographic and Socioeconomic Measures

The demographic data was used to assess how financial pressures and living conditions affect students' abilities to fall within the TFP guidelines. Data collections included age, year in school, academic major, employment status (including the number of hours worked per week), and family income. Students indicated whether they were currently living on campus or off campus and whether or not they purchased a university meal plan. These measures were used to assess the diverse economic challenges that students find themselves in, therefore addressing TFP alignment with student spending and the feasibility of meeting TFP within limited budgets.

3.4.2 Dietary Habits and MyPlate Adherence

Students’ dietary habits were analyzed through items addressing the frequency of consuming MyPlate food groups (fruits, vegetables, grains, proteins, and dairy), as well as the number of meals typically eaten per day. Participants provided information related to how closely they followed MyPlate recommendations and whether they had knowledge about MyPlate recommendations. The questions were based on students’ weekly intake of the food

groups instead of serving since there will be differences in how students will measure a serving. The resulting data provided a sense of how well students' current diets match standard dietary guidelines, an important component of the assessment of nutritional adequacy under TFP constraints.

3.4.3 Grocery Spending and Shopping Behaviors

This section includes questions about students' average spending on groceries per trip and their shopping frequency. Spending patterns were compared with the TFP monthly allowance in order to examine whether it was possible for students to realistically follow budgetary choices based on the recommendations set by the TFP. These responses were used to evaluate the relationship between TFP adherence and college students' food security status.

3.4.4 Food Security Status

Food security questions in this survey were taken from a set of validated questionnaires on food security assessing whether students, at times, had difficulty maintaining sufficient nutritious food. These questions were adapted from a widely used scale, The Food Insecurity Experience Scale by the Food and Agriculture Organization of the United Nations (FAO, 2025). Participants reported the frequency with which they were worried they would not have enough to eat or had to skip meals because of financial pressures. Students who reported always and often to the three questions were considered food insecure. This data on the level of food insecurity was compared against the TFP monthly allowance.

3.4.5 Awareness and Use of Food Assistance Programs

In addition to questions about income and budgeting habits, participants were asked about awareness and utilization of local or federal food support resources such as SNAP, and campus food pantries. Participants indicated whether they knew about these programs, had used

them, or were unsure about eligibility. These items helped in understanding how external support helps improve college students' dietary habits and financial stability.

3.4.6 Familiarity with the USDA Thrifty Food Plan

The survey also asked whether the participants had ever heard of the TFP or the other USDA Food Plans such as Low-Cost and Moderate-Cost. Students who heard of any of the plans indicated whether they had ever tried following the guidelines of the TFP and described the experience. Answers to these questions directly addressed the overall purpose of the study and whether and how the recommendations for TFP fit into the realities of college life.

3.5 Participant Recruitment

Participants were recruited through on-campus flyers, word-of-mouth referrals, and a weekly electronic newsletter (K-State Today) sent to the university community. A copy of the recruitment messages may be found in Appendix B. To reach a wide range of students, physical flyers were handed out at high-traffic campus locations, such as the student union and library. In addition, digital announcements were also sent out via the K-State Today mailing list to ensure the flyer reached both the on-campus and off-campus students. Potential participants were invited to click on a survey link, where they could review a consent statement before beginning. A copy of the flyer may be found in Appendix C.

3.6 Data Analysis

A mixed methods approach was used in this study since the nature of the responses to the survey questions was complex and Microsoft Excel was used as a data analysis software. Descriptive analysis was done in the form of summarizing responses into categories: demographic variables, food security status, grocery frequency and spending, and dietary habits of college students. This study analyzed categorical responses regarding the status of food

security and food purchases compared with the Thrifty Food Plan standards of the USDA. Moreover, a summary was given for dietary intake habits regarding how frequently participants consume foods from fruit, vegetables, grain, protein, and dairy food groups. Quantitative data analysis focused on understanding how patterns and themes link together between student characteristics related to TFP, food security levels, and eating behaviors. All analyses were performed descriptively while focusing on understanding the dataset pattern.

Chapter 4 - Results

4.1 Demographic Characteristics of the Sample

The survey included 171 participants, with a majority identified as women (67.3%). Most respondents were White (64.3%), freshmen (27.5%), and with an in-state resident status (60.8%). Table 4.1 shows the demographic distribution by category.

Table 4.1 Demographics of participants

Demographic	Category	Count	Percentage
Age	18- 20	91	53.2%
	21-25	46	26.9%
	26-30	23	13.5%
	31-40	6	3.5%
	40+	5	2.9%
Gender	Women	115	67.3%
	Men	53	31%
	Non-binary/non-conforming	2	1.1%
	Other	1	0.6%
Ethnicity	White	110	64.3%
	Hispanic, Latino(a), or Spanish	20	11.7%
	Asian	18	10.5%
	Black or African American	10	5.9%
	Other	9	5.3%
	American Indian/Alaskan Native	4	2.3%
Year in	Freshman	47	27.5%
School	Graduate student	42	24.5%
	Senior	29	17%
	Sophomore	27	15.8%
	Junior	26	15.2%
	In-state student	104	60.8%

Resident	International student	37	21.6%
Status	Out-of-state student	30	17.5%
Meal Plan	Non-meal plan students	127	74%
Purchase	Meal plan students	44	26%

4.2 Summary of Key Variables

The study investigated several key variables such as grocery spending patterns, food insecurity levels, dietary habits, and awareness and use of budget-friendly food plans. The average monthly spending range for students who didn't purchase meal plans (n=127) ranged between $139 to $240. For students who purchased meal plans (n=44), monthly spending combined with the meal plan ranged between $635 to $678. Regarding food insecurity, the majority of participants reported not experiencing food insecurity in the past month and less than half of the participants were concerned about not having sufficient food to eat. According to MyPlate, adults among the age groups of this sample should consume 5.5 ounces of protein, 6 ounces of grains, 3 cups of dairy, 2.5 cups of vegetables, and 2 cups of fruit (USDA, 2024). In a broader scope, college students should be eating all food groups every day. Participants met the recommendation of eating from these groups daily as follows, proteins 67%, grains 62%, dairy 37%, vegetables 25%, and fruits 16%. This indicated moderate adherence to MyPlate eating guidelines. Finally, 94% of the participants were not familiar with any budget-friendly food plan resources.

4.3 The Thrifty Food Plan (TFP)

In this survey, the majority of students reported not being familiar with any budget-friendly food plan. Around 20% of participants were familiar with the USDA Food Plans. Only

4% (n=7) stated that they had attempted to follow the USDA Food Plans or similar budget-friendly, while 96% (n=163) indicated they had not tried similar plans. The participants who tried following these plans reported following the Low-Cost Food Plan (LCFP), and the Moderate-Cost Food Plan (MCFP). Only three participants, who followed USDA food plans, reported that the plans were helpful with their food budgets. Of these seven participants, none purchased a meal plan or reported facing food insecurity. Only one student met the dietary recommendations. Their monthly spending range was $243 to $410.

Table 4.2 Budget-friendly Food Plans Summary

Question	Response	Count	Percentage
Have you ever attempted to follow the USDA Food Plans or similar budget-friendly meal plans?	No	137	94%
	Yes	7	6%
If yes, which plan(s)?	MCFP (Medium Cost Food Plan)	3	2%
	LCFP (Low-Cost Food Plan)	2	1%
	Others	2	1%
	TFP (Thrifty Food Plan)	0	0%
	LFP (Liberal Food Plan)	0	0%
Was the plan helpful in managing the amount of money you spent on food?	Yes	3	2%
	No	2	1%

4.4 Food spending patterns

The food spending patterns based on survey output showed that the majority of students, (38%), shopped every other week. Around 11% reported shopping rarely. The average monthly spending range for students who didn't purchase meal plans (n=127) ranged between $139 to $240. For students who purchased meal plans (n=44), monthly spending combined with the meal plan ranged between $635 to $678.

Figure 1 Grocery Frequencies

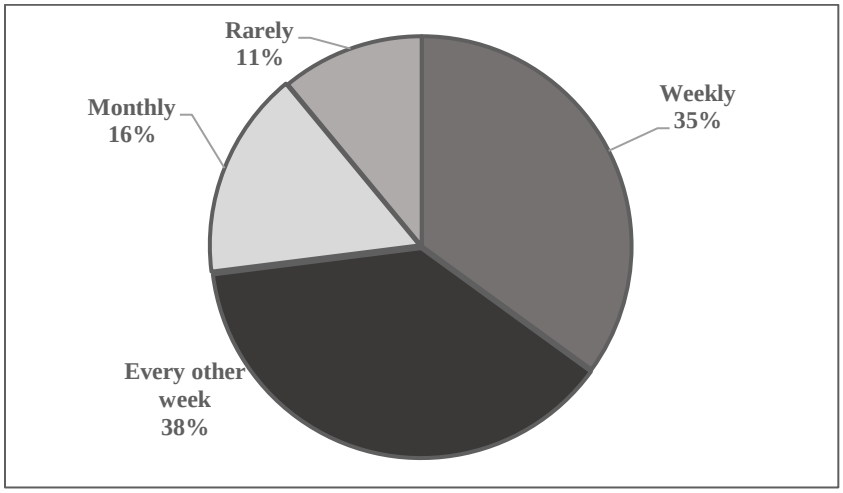
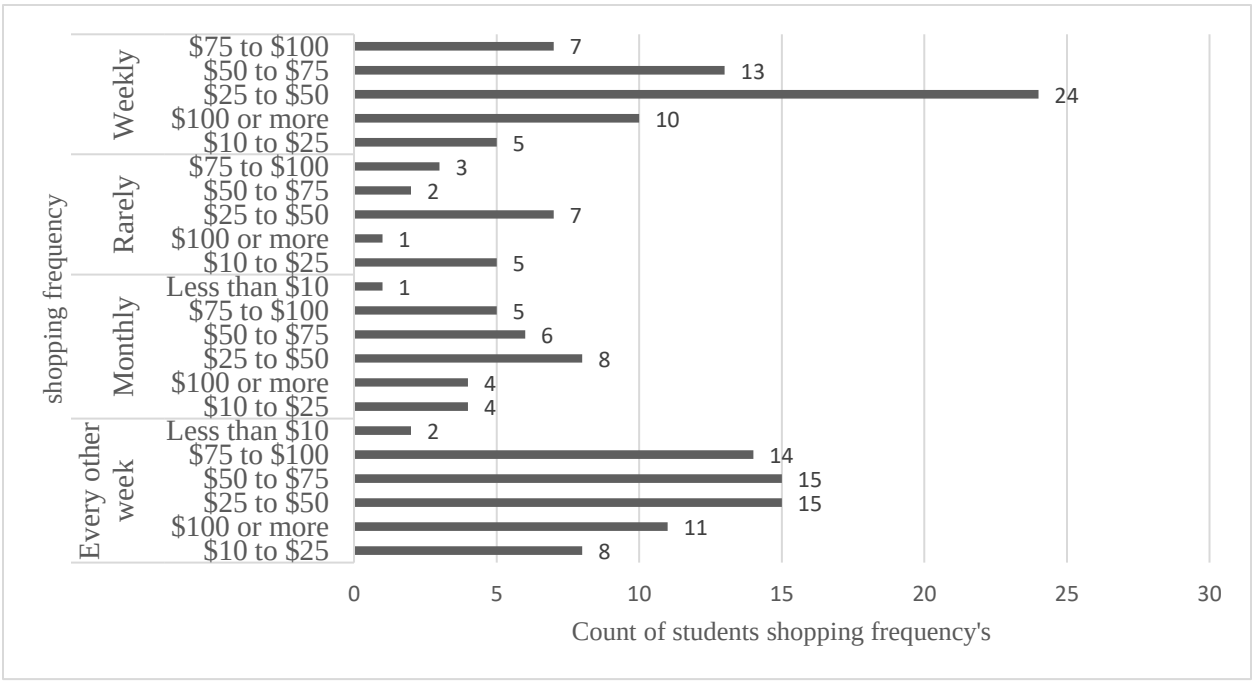


Figure 2 Grocery Spending Patterns by Frequency of Shopping among Students



The TFP recommended a monthly spending range of $241.40 to $309.90 (USDA, 2025). The monthly food spending in this study ranges from $139 to $678, which is higher than the recommended monthly allowance by the USDA Thrifty Food Plan. The cost range for residence hall dining plans contains expenses for both food preparation as well as overhead costs.

Overhead costs refer to the additional expenses that are necessary to run a service or operation, but that aren't directly related to the production of goods, in this case, food. For example, overhead costs may include labor costs, utilities maintenance, and facility costs for a residence hall meal plan. These overhead costs are included in the total cost of a residence hall meal plan, but they aren't part of the food-only budget defined by the USDA Thrifty Food Plan (TFP), which focuses solely on the cost of purchasing raw food ingredients. A direct cost comparison between meal plans and TFP food expenditures seems inappropriate because residence meal plans bundle food costs with infrastructure expenses and preparation fees.

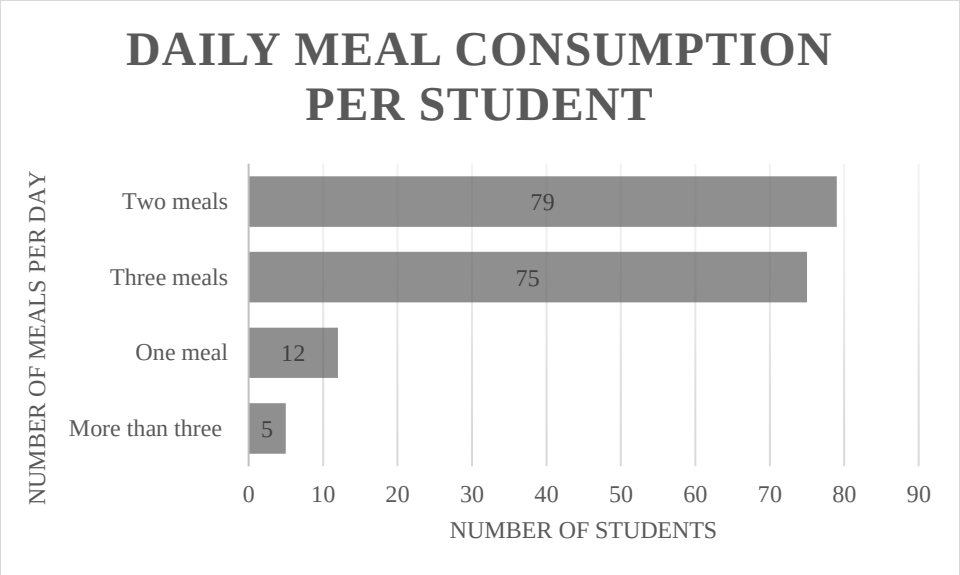
Table 4.3 Summary of Comparison of The Cost

	min	max
Meal Plan	$635	$678
No Meal Plan	$139	$240
TFP	$241.40	$309.90

4.5 Dietary habits

To determine their dietary habits and eating patterns, students were asked to report how many meals they ate per day and how many days per week they ate each food group. Forty-six percent of students reported eating two meals a day while 44% reported eating three meals daily.

Figure 3 Number of meals on a typical day



To meet the dietary recommendations, participants had to eat from all food groups daily, meaning more than six days per week. For the protein category, 67% of participants met the dietary recommendation. Half of the participants (51.4%) met the dietary grain recommendation. In addition, regarding the dairy, only 37% met the recommendations. For vegetable intake, only 25% met the recommendation. For fruit intake, 16% met the dietary recommendations.

Table 4.4 Dietary Habits Summary

Food	6+ days per week		3-5 days per week		0-2 days per week	
Group	Count	Percentage	Count	Percentage	Count	Percentage
Protein	115	67%	45	26%	11	6%
Grains	105	51.4%	51	30%	15	8.70%
Dairy	64	37%	73	43%	34	20%
Vegetable	43	25%	65	38%	63	37%
Fruit	28	16%	80	47%	63	37%

Only 11 (6.4%) participants met the recommendation for all five food groups. Half of them reported eating two meals per day while the other half ate three meals daily. None of the participants reported facing food insecurity. Their monthly spending range was $220 to $277. Only one out of the eleven participants reported following the Low-Cost Food Plan (LCFP) and stated that it wasn't helpful.

4.6 Food insecurity

The survey data represented levels of food insecurity among college students. The food insecurity survey questions were based on the past 30 days, asking about three points.

The first question asked about being worried about not having enough food due to lack of money or other resources. Most students (51%) reported never experiencing worrying about not having enough food, while around 19% reported rarely worrying about this problem.

The second question asked about their inability to eat healthy and nutritious food because of a lack of money or resources. A minority (21%) reported sometimes being worried about not being able to eat healthily. In addition, 43% of the participants reported never facing this issue, and 23% reported facing this problem rarely.

The third question asked about skipping meals because of a lack of money or resources. Most participants (56%) reported never skipping a meal, and 23% rarely because of a lack of money. However, 18% at times skipped meals, and a small group (3%) always or often went without food because of limited resources.

Table 4.5 Food insecurity percentage

In the last 30 days:	Never	Rarely	Sometimes	Often	Always
How often were you worried that you would not have enough food to eat due to a lack of money or other resources?	87 (51%)	33 (19%)	35 (21%)	10 (6%)	5 (3%)

How often were you unable to eat healthy and nutritious food because of a lack of money or resources?	73 (43%)	39 (23%)	36 (21%)	17 (10%)	5 (3%)
How often did you have to skip a meal because you lacked the resources to buy food?	96 (56%)	39 (23%)	30 (18%)	3 (2%)	2 (1%)

Table 4.6 below breaks down the responses of the food insecurity questions based on the number of meals students typically consume and their food spending.

Table 4.6 Food Insecurity Breakdown by Number of Meals and Spending

Food insecurity questions	Participants*		# meals per participant				Spending
	Count	%	1	2	3	+3	Range
Q1: In the last 30 days, how often were you worried that you would not have enough food to eat due to lack of money or other resources?	15	9%	2	8	4	1	$139 - $240
Q2: In the last 30 days, how often were you unable to eat healthy and nutritious food because of a lack of money or resources?	22	13%	3	12	6	1	$124 - $214

Q3: In the last 30 days, how often did you have to skip a meal because you lacked the resources to buy food?	5	3%	2	3	0	0	$214 - $370
Total			7	23	10	2	NA

* The participants accounted for in this table are those who answered "often" or "always" to the food insecurity (FI) questions.

Table 4.7 represents an overview of student food group consumption based on their food insecurity responses. Higher food insecurity resulted in students reporting a reduced intake of dietary food categories including fruits, vegetables, protein, grains, and dairy.

Table 4.7 Dietary Intake Breakdown by Food Group

	fruit			Vegetable			Protein			Grain			Dairy		
	0-2	3-5	6+	0-2	3-5	6+	0-2	3-5	6+	0-2	3-5	6+	0-2	3-5	6+
Q1*	5	8	2	11	3	1	2	6	7	1	7	7	4	9	2
Q2**	10	11	1	12	7	3	2	9	11	2	10	10	3	14	5
Q3***	4	1	0	4	1	0	0	3	2	0	3	2	1	2	2
Total	19	20	3	27	11	4	4	18	20	3	20	19	8	25	9

* Q1: In the last 30 days, how often were you worried that you would not have enough food to eat due to lack of money or other resources?
** Q2: In the last 30 days, how often were you unable to eat healthy and nutritious food because of a lack of money or resources?
*** Q3: In the last 30 days, how often did you have to skip a meal because you lacked the resources to buy food?

Only 4 participants responded with 'often' or 'always' to all three questions. The demographics of these four were as follows: white, in-state students, and sophomore students. None of them reported purchasing a meal plan or attempting to follow USDA food plans. Their monthly spending average range was $62 to $100. Finally, none of them met the dietary recommendations.

Chapter 5 - Discussion

The purpose of this study was to assess the applicability of the USDA Thrifty Food Plan as a guide for college students at a Midwestern university. The study aimed to determine how well the TFP aligns with dietary habits, financial constraints, and food security status among the students. This survey captured food habits determinants among college students such as monthly spending on grocery shopping and food insecurity status. The goal of this study was to determine if students can realistically align to TFP recommendations within their budgets and meet nutritional guidelines. The assessment compares the average range of students' food spending against the TFP budget to determine the plan's effectiveness.

5.1 Demographic Characteristics of the Sample

The research sample included 171 participants consisting of a majority of females (67.3%) and (64.3%) White college students. The population's demographics represented a composition of typical students spread among a midwestern university but failed to reflect the actual situations of minority students, including first-generation college students, and international students (Shulman, 2019). The data collected had more freshmen students, aged 18-20, along with in-state students. The Hope Center found that food insecurity is significantly high among younger students, especially those in their first years of college (McKibben, 2023). However, in this study, participants who reported food insecurity were white, sophomore, and in-state students. Younger students, including freshmen, have issues with eating healthy options, where they tend to eat convenient meals because of food preparation time (Laska et al., 2010). In addition, the first year at college can be challenging and most freshmen need 6 months to one year to adjust to the culture shock (Bishop, 2023). In addition, freshmen living in the dorms at this midwestern university are required to purchase a meal plan as part of their on-campus

housing arrangement (Housing and Dining Services, n.d.). New students at college face the challenges of transitioning into independent life and usually consume fast food with processed convenience foods because of their busy schedules. This keeps them from meeting recommended dietary guidelines (Goldrick-Rab et al., 2018).

5.2 How applicable is the USDA Thrifty Food Plan for the average college student?

The study results revealed that few students were familiar with budget-friendly food plans, particularly the Thrifty Food Plan. A small group (6%) of all respondents reported following USDA food plans. The low level of awareness about the TFP and similar cost-efficient plans indicated issues since research pointed out that such programs should get better exposure to help students achieve their nutritional needs (USDA, 2021). Gaines et al. (2014), together with Davis and You (2010), research demonstrated that TFP cannot work properly as a food plan tool for students. As it requires kitchen facilities and cooking skills, along with free preparation time, which most students lack. The basic approach of TFP combined with cooking from scratch and bulk purchasing is incompatible with standard college student needs such as price range and lifestyle (Carlson et al., 2007). Based on the data, most students (73%) report going grocery shopping either weekly or every other week. This could mean that students are unable to purchase in bulk due to limitations in storage space and budget. College students, particularly those in dorms or shared housing, often lack kitchen access and time to follow such guidelines. As such, the TFP may not be realistic for them (Carlson et al., 2007). Additionally, the hidden costs of meal preparation, such as time, storage, and kitchen equipment, are not addressed by the TFP (Davis & You, 2010).

The TFP recommended a monthly spending range of $241.40 to $309.90 (USDA, 2025). The food expenses of students without a meal plan (ranged from $139 to $240) were close by $1 to the lowest budget levels suggested by the USDA Thrifty Food Plan (TFP). These students failed to achieve adequate nutrition due to limitations in their budgets even though they spent an amount similar to the lower end of the USDA Thrifty Food Plan. TFP budgetary guidelines fall short of representing actual student finance realities (Gaines et al., 2014; McKibben, 2023). On the other hand, the total monthly spending for students who purchased a meal plan ranged between $635 and $678 when including the meal plan costs. Although students with meal plans spend more money than the TFP guideline suggests, this expense includes much more than just food costs, such as preparation, labor, and overhead. Furthermore, while students with meal plans may have some restrictions regarding the quality and variety of their meals, it's important to note that the dining centers do offer a range of food options, though these options may not always meet the preferences or dietary needs of every student. Dining hall restrictions stem from their pre-planned fixed menu service structure that provides meals in set portions while grocery shoppers maintain total control of their meal preparation. This is based on the low percentage of students who met the dietary guidelines from the students who participated in this study (n=11, 6.4%). This indicates that TFP's budget fails to adequately meet students' full nutritional needs in both meal plan scenarios. The spending limit from the TFP shows an inadequate match with students' nutritional needs and dietary balance because both groups struggle to meet the dietary guidelines despite the budget changes. To fully meet their nutritional needs and budgetary constraints, these spending levels suggest that most students may not have enough funds. The gap between students' spending and the recommended spending by TFP may result in students prioritizing minimizing the cost over diet quality. This results in relying on inexpensive,

less nutritious options (Loofbourrow, 2023). TFP provided a useful guide on meal planning on a tight budget, however, the feasibility for the average college student who participated in this study may be limited, as for those experiencing food insecurity. In addition, students who reported following the USDA food plan or budget-friendly meal plan didn't report facing food insecurity. Their spending range of $243 to $410 fell within the range recommended by the TFP, however, only one student met the dietary recommendations. TFP offers affordable food purchasing but cannot guarantee students get all their essential nutrients because of their time challenges and cooking disadvantages. Students face obstacles in achieving dietary recommendations due to the challenge of balancing food expenses with nutritional needs. Policymakers have been urged to revisit the TFP and revise its guidelines to better accommodate students' unique needs, such as including more convenient food options and considering regional price differences (Carlson et al., 2021).

5.3 Food Spending Findings

For the students who didn't purchase a meal plan, their monthly spending ranged from $139 to $240, which falls within the normal spending range among college students at a midwestern university (Hanson, 2024). Combined with the cost of meal plans, total monthly spending ranged between $635 and $678. To fully meet their nutritional needs and budgetary constraints, these spending levels suggest that most students may not have enough funds.
The students who purchased a meal plan spent more money on meal plans that includes other non-food costs than suggested by the USDA Thrifty Food Plan, however, they fail to meet the dietary guidelines with their meal choices. The reason behind that might be that they select inexpensive calorie-dense foods that fail to provide the diet requirements (Martinez et al., 2018).

In their study, Gaines et al. (2014) discuss how the high costs of the student meal plan along with financial restrictions limit students' access to affordable, varied nutritious food options. Students who use meal plans experience limited dietary options because these programs choose convenience options over food variety options, despite spending more money for their food needs (Gaines et al. 2014).

Food insecurity due to limited financial resources is becoming a common issue among university students (Gaines et al., 2014; McKibben, 2023). From the result of this study, the food spending range of students who reported food insecurity on the three questions was $159 to $275. This fell within the lower range of the TFP allowance, indicating that it didn't support a balanced diet. Furthermore, students who try to follow the TFP may find it difficult to meet its budgetary constraints due to their financial situation and the costs of food in their area (Gaines et al., 2014).

5.4 Are college students able to meet nutrition guidelines within their budget?

This research found that most students followed the MyPlate protein limits (67%) and grain standards (51.4%) but failed to meet vegetable (25%) and fruit requirements (16%). The survey question didn't ask about the quality of food purchasing, but focused on the types of food students eat. Previous studies confirmed that college students deal with time and budget constraints while facing other barriers to obtaining healthy food. This prevented them from meeting their dietary requirements (Laska et al., 2010; Goldrick-Rab et al., 2018). The study by Gaines et al. (2014) found that students who tried to follow the TFP were unable to meet both its nutritional and financial demands. This suggests that students may struggle to adhere to the TFP's budget while also meeting the required nutrition guidelines. Food-insecure students tend to substitute nutritious fruits and vegetables with cheap but calorie-dense food items (Martinez et al., 2018). Food insecurity among college students increased their tendency to purchase

affordable high-calorie food according to data collected by the Hope Center (2019). Improving the students' intake of fruits and vegetables is important to benefit their health and dietary quality.

5.5 Food Insecurity

Participants showed low food insecurity levels as most individuals did not report food insecurity during the previous month. The study revealed that 18% of students sometimes skipped meals because of inadequate resources, which is lower than the national average ranging between 23% and 38% of students experiencing food insecurity or skipping meals for similar reasons (GAO, 2020). This matched previous national research about higher food insecurity among college students versus general population statistics (Rabbitt, 2025; McKibben, 2023). Food insecurity impacted many students, however, it affected four students of the total college population in this study. The four study participants were white, in-state, and sophomores. Their demographic composition implies that food insecurity disparities exist between different student subgroups. The literature supports how food insecurity impacts academic performance, and the mental and physical well-being of students (Martinez et al., 2018; Baker-Smith et al., 2020). Universities need to establish support programs targeting food-insecure students since research shows that it affects the overall studying experience (Goldrick-Rab et al., 2018).

5.6 Limitations:

This study had several limitations that influenced the findings. One limitation of this study is the use of self-reported data, which might be biased compared to actual spending habits or food security status. Additionally, many studies on the TFP and food insecurity among students are based on cross-sectional self-reported surveys, which do not capture the long-term impact of food insecurity or how students' food security status may change over time (Gaines et

al., 2014). The research sample was not fully representative of all student demographics, as most participants were white, female students residing within the state. The study should aim to achieve more balanced demographics. The study was also done at one university, so generalizing the results to other universities or states might not be accurate. Universities should collect data from participants of various demographic backgrounds and develop longitudinal design research to better assess the evolution of food security levels and dietary choices (Rabbitt 2025). Finally, the study didn't include the reasons for students' spending decisions, which could have added more context to how food security affected purchasing and eating habits.

Conclusions

In conclusion, the objective of this research was to determine whether the USDA Thrifty Food Plan (TFP) is applicable for college students. The TFP may not be fully applicable to college students due to financial resources, and lack of time. However, since only a small group of students in this study attempted to follow a budget-friendly meal plan, the results suggest that the TFP may not be a practical solution for most students. The students in this study had difficulty meeting their nutritional requirements with special challenges in consuming fruit and vegetables recommendations. While most students in this study reported maintaining food security, a significant number failed to meet their recommended fruit and vegetable consumption, highlighting the student's inability to maintain a balanced diet.

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Appendix A - IRB Approval

KANSAS STATE UNIVERSITY | Office of Research Integrity, Compliance and Security

TO: Priscilla Brenes
Food, Nutrtn, Dietetics & Hlth

FROM: Lisa Rubin, Chair
Committee on Research Involving Human Subjects

DATE: 11/04/2024

RE: Proposal #IRB-12310, entitled "How applicable is the USDA Thrifty Food plan for the average college student?."

MODIFICATION OF IRB PROTOCOL #IRB-12310, ENTITLED, "How applicable is the USDA Thrifty Food plan for the average college student?"

EXPIRATION DATE: Exempt

The Committee on Research Involving Human Subjects (IRB) has reviewed and approved the request identified above as a modification of a previously approved protocol. **Please note that the original expiration remains the same.**

All approved IRB protocols are subject to continuing review at least annually, which may include the examination of records connected with the project. Announced in-progress reviews may also be performed during the course of this approval period by a member of the University Research Compliance Office staff. Unanticipated adverse events involving risk to subjects or to others must be reported immediately to the Chair of the IRB, and / or the URCO

It is important that your human subjects activity is consistent with submissions to funding / contract entities. It is your responsibility to initiate notification procedures to any funding / contract entity of any changes in your activity that affects the use of human subjects.

Electronically signed by Lisa Rubin on 11/04/2024 4:38 PM ET

203 Fairchild Hall, 1601 Vattier St., Manhattan, KS 66506 | 785-532-3224 | fax: 785-532-3278 | comply@k-state.edu

Appendix B - Recruitment Message

Email Title: Invitation to Participate in a Research Study on food budget

Dear Participants,

This is a friendly invitation to participate in a research study conducted by Malak Alsaati, graduate research assistant Mlkalsaati@ksu.edu, under the guidance of advisors: Kelly Whitehair at stirtz@k-state.edu and Priscilla Brenes at pbrenes@ksu.edu

You are invited to participate in a research study to understand how college students manage their food budget and dietary habits.

All college students who are 18 years or older, attending and currently enrolled as a student are welcome to participate. The survey should take approximately 10 minutes.

Participation is voluntary, and you may withdraw from the study at any time. The study is completely confidential. Eligible participants have the option to be included in the drawing to win $15 Amazon gift cards by providing an email address at the end of the survey. If you have already participated, thank you! If not, we kindly encourage you to do so. If you know any other students who would be interested in this study, feel free to extend this invitation.

We truly appreciate your time and contribution to this important research! The researcher can be contacted at Mlkalsaati@ksu.edu.

Please use the following link or scan the QR to access the survey:
https://kstate.qualtrics.com/jfe/form/SV_1B1bLmY7Aeq4Nq6

Appendix C - Flyer

Help Us Understand College Students' Dietary Habits!!!

OBJECTIVE

To understand how college students manage their food budget

ELIGIBILITY

- 18 years and older
- Currently enrolled as a student

WHAT IS EXPECTED OF YOU

- Take 5-10 minutes anonymous online survey
- Answer questions about your
- Dietary Habits, and Food Purchasing Behaviors.
- Voluntary participation
- You can withdraw at any time
- All responses are confidential, and no identifiable information will be shared

Access the Survey Link or scan the QR:

https://kstate.qualtrics.com/jfe/form/SV_1B1bLmY7Aeq4Nq6

As a thank you for your participation, you will have the option to enter a drawing for a chance to win a $15 gift card

Contact Information

Malak Alsaati, graduate research assistant
Mlkalsaati@ksu.edu

This study has been approved by Kansas State University Institutional Review Board (#IRB-12310)

Appendix D - Final Instrument Version

Project title: How applicable is the USDA Thrifty Food plan for the average college student?

For your participation, you will be entered into a drawing to win a **$15** Amazon gift card.

Purpose of the study: This survey will help gather key information about dietary habits, food purchasing behaviors, and awareness of the USDA Thrifty Food Plan among college students at a Midwestern university. Participation is voluntary and you can withdraw at any time without penalty. You can skip any questions that make you uncomfortable, and rest assured, all information will be kept private.

By clicking "**I consent"**, you will consent to participating in the survey.

This survey will take approximately **10 minutes** to complete.

Any identifiable information will be removed from the survey data before analysis.

The remaining data might be used for current and future research and reporting purposes.

Potential risks: The risks of harm anticipated in the proposed research are not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during answering a routine questionnaire.

Contact persons: If you wish to discuss aspects of the survey, please contact Malak Alsaati, graduate research assistant Mlkalsaati@ksu.edu or or advisors: Killy Whitehair at stirtz@k-state.edu, Or Priscilla Brenes at pbrenes@ksu.edu

If you wish to discuss any aspect of the research with an official of the university, you may contact Lisa Rubin, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224; Brad Woods, Associate Vice President for Research Compliance, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

If you consent, please click "I consent" next to start the survey:

Q1. What is your age?

Q2. Do you identify as (Check all that apply)

Men

Women

Transgender

Non-binary/non-conforming

Other, please specify if desired

Prefer not to respond

Q3. How would you define your current relationship status:

Single

In a committed relationship

Married

Divorced

Choose not to answer

Q4. Including yourself, how many people live in your household (Do not include your parent's household unless you are currently living with them while being a student)?

Q5. Do you currently have children under the age of 18 living in your household?

Yes

No

Q5.1. How many children under the age of 18?

Number of children under the age of 18:

Age(s):

Q6. Year in School: Select one:

Freshman

Sophomore

Junior

Senior

Graduate student

Choose not to answer

Q7. What is your major:

Q8. Do you identify yourself as (Check all that apply)

American Indian/ Alaskan Native

Asian (e.g., Japanese, Chinese, Korean)

Asian Indian

Black or African American

Hispanic, Latino(a), or Spanish

Pacific Islander

White

Other, please specify if desired

Prefer not to respond

Q9. What is your resident status:

In-state student

Out-of-state student

International student

Choose not to answer

Q9.1. How long have you been in the United States?

Q10. How many hours a week do you work for <u>pay</u> during the school year:

I do not work

1 to 9 hours

10 to 19 hours

20 to 29 hours

30 to 39 hours

40 hours

More than 40 hours

Choose not to answer

Q11. Yearly household income: Select one:

Less than $10,000

$10,000-$20,000

$20,000-$30,000

$30,000-$40,000

More than $80,000

Prefer not to say

Q12. Where do you currently reside:

Campus residence hall

Sorority or Fraternity

Jardine

Parent or guardian’s home

Off-campus

Other, please specify

Choose not to answer

Q12.1. Do you purchase a dining hall meal plan:

Yes

No

Q12.2. Which meal plan?

Residence Hall all access

Residence Hall weekly 12

Residence Hall upperclass 100

Jardine 50 Meals* Per Semester

Jardine 100 Meals* Per Semester

Jardine All Access

Off-Campus 50 Meals

Off-Campus 100 Meals

Off-Campus 150 Meals

Q13. How many meals do you typically eat in one day:

One meal

Two meals

Three meals

More than three meals

Q14. How often do you eat from the Fruit Group?

The Fruit Group includes any fruit (fresh, frozen, canned, dried) and 100% fruit juice.

0-2 days per week

3-5 days per week

6+ days per week

Q15. How often do you eat from the Vegetable Group?

Any vegetable or 100% vegetable juice counts as part of the Vegetable Group. Vegetables may be raw or cooked and can be fresh, frozen, canned, or dried. They can be whole, cutup, or mashed.

0-2 days per week

3-5 days per week

6+ days per week

Q16. How often do you eat from the Grains Group?

The Grains Group includes any food made from wheat, rice, oats, cornmeal, barley, or another cereal grain. Bread, pasta, breakfast cereals, grits, and tortillas are examples of grain products. Foods such as popcorn, rice, and oatmeal are also included in the Grains Group.

0-2 days per week

3-5 days per week

6+ days per week

Q17. How often do you eat from the Protein Foods Group?

The Protein Foods Group includes seafood; meat, poultry, and eggs; beans, peas, and lentils; and nuts, seeds, and soy products.

0-2 days per week

3-5 days per week

6+ days per week

Q18. How often do you eat from the Dairy Group?

The Dairy Group includes dairy milk and yogurt, cheese, lactose-free versions, and fortified

soy milk (soy beverage) and soy yogurt. Foods not in the Dairy Group: foods made from milk that have little to no calcium, such as cream cheese, sour cream, cream, and butter

0-2 days per week

3-5 days per week

6+ days per week

Q19. How frequently do you go grocery shopping?

Daily

Weekly

Every other week

Monthly

Rarely

Never

Q20. On average, how much do you spend during a typical grocery shopping trip?

Less than $10

$10 to $25

$25 to $50

$50 to $75

$75 to $100

$100 or more

Q21. How familiar are you with MyPlate, a visual guide to healthy eating?

Not familiar at all

Slightly familiar

Moderately familiar

Very familiar

Extremely familiar

Q22. Are you aware of the following support resources? Check all that apply:

Blessing Boxes

Cats' Cupboard

Common Table

Flint Hills Breadbasket

Food Pantries Outside Manhattan

Harvesters or other Mobile Food Distributions

Kansas Seniors Farmers Market Nutrition Program

Konza Student Table

Manhattan Emergency Shelter

Supplemental Nutrition Assistance Program (SNAP)

Women, Infant, Children Program (WIC)

School lunch/breakfast or feeding programs

Other food pantries or resources (please specify):

Q23. Do you get food from any of the following support resources? Check all that apply:

Family

Friends

Blessing Boxes

Cats' Cupboard

Common Table

Flint Hills Breadbasket

Food Pantries Outside Manhattan

Harvesters or other Mobile Food Distributions

Kansas Seniors Farmers Market Nutrition Program

Konza Student Table

Manhattan Emergency Shelter

Supplemental Nutrition Assistance Program (SNAP)

Women, Infant, Children Program (WIC)

School lunch/breakfast or feeding programs

Other food pantries or resources (please specify):

Q24. Are you or your family currently enrolled in any of the following Food assistance programs? Check all that apply:

Early Head Start or Head Start

Emergency Food Programs

Food Assistance Program (SNAP, Food Stamps)

Indian Reservation Foods (FDPIR)

School Meals (Child Nutrition)

Temporary Cash Assistance (TANF)

Women Infants and Children (WIC)

Other food assistance programs, please specify

Prefer not to respond

Q25. Are you familiar with any budget-friendly food plan resources?

If yes, please specify:

Yes

No

Q26. Are you familiar with the USDA Food Plans?

Yes

No

Q27. Have you ever attempted to follow the USDA Food Plans or similar budget-friendly meal plans?

Yes

No

Q27.1. If yes, which plan(s)?

Thrifty Food Plan (TF)

Low-Cost Food Plan (LCFP)

Moderate-Cost Food Plan (MCFP)

Liberal Food Plan (LFP)

Others:

Q27.2. Was the plan helpful in managing the amount of money you spent on food?

Q28. In the last 30 days, how often were you worried that you would not have enough food to eat due to lack of money or other resources?

Never

Rarely

Sometimes

Often

Always

Q29. In the last 30 days, how often were you unable to eat healthy and nutritious food because of a lack of money or resources?

Never

Rarely

Sometimes

Often

Always

Q30. In the last 30 days, how often did you have to skip a meal because you lacked the resources to buy food?

Never

Rarely

Sometimes

Often

Always

Q31. If you would like to be entered into a drawing for a $15 gift card, please provide us with your name and valid university email address via this link:

https://kstate.qualtrics.com/jfe/form/SV_9Ys7ZMELlHe84Xc

Appendix E - Pilot Test Feedback

Test #	Time	Comments
Test 1 (10 students)	7 min	- Add back button "some questions I understand it after I move to the next question." - Q.6. GTA for major. - Q10. Part- or full-time is better than hours. - Q19. Twice a week means Bi-weekly?? - Q22. Bold the word "Aware." I didn't realize the difference between Q22 and Q23 until I moved to the next question, and there was no back button. - Q23. Do you mean specifically for food or for money "Budget" - Q24. Add the option "Not eligible and why." - For the food group questions, does it include snacks? - Q27. If no, don't show Q.18.
	5:30 min	- Q2. For better wording, use "Identify as." - Q6. Change the question to "What are you majoring in or studying?". - Q10. She chose "work more than 40 hr." not based on pay. - Q19. For her, Bi-weekly means every 2 weeks. - Q22. "Check all apply"; instead of aware, use "Have you heard of." - Q23. Money support or food support? - Q24. Add option: not eligible and why? - Q25. What do you mean by budget-friendly food plans? - Q28. Yes or no, and explain.
	5:15	- Q8. Middle East or European. - Q10. More than 40 "not based on pay".

		- Q23. Money for food “in general money” - Q24. Add a “no” option. - Q24. “I am not enrolled but I am not sure I am eligible”
	3:15	- Q4. Specify which home. The one you are in now.
	5:50	- Q2. Use the word “Identity”. - Q24. Add the “N/A” option.
	2:50	- Q24. Add a “no” option.
	3:20	- Q10. More than 40 “not based on pay”. - Q24. Add a “no” option.
	4:20	- Q6. “What do you mean by major?” is not clear. - Q24. Add a “no” option.
	4:00	- Q24. Add a “no” option.
	3:50	- Q23 is not clear at first if it is money or food support, but after reading the options, it shows food support.
Test 2(4 students)	2:30	- Q25. My children or my brother? - Q11. Live with my parents, their income, or mine?
	2:07	- Q4. College home or parents’ home? - Q12.1. I work in the dining center but they pay for my meal plan. “I pay $0”.
	1:30	- No comments
	2:00	- Q11. For yearly households me or my parents?
Test 3 (4 students)	4:12	- Q19. Add a question about: Why do you go grocery shopping this often? “live close to a grocery store? - I am not aware if I am eligible, but my mom is eligible.
	2:37	- Q19. Bi-weekly it can be confusing, twice a week or every two weeks?
	2:18	- Q24. Add a “no” option. - Q28, add “if you use any plans” - I think it will be helpful to ask a question about where you often shop.

		For me, I don’t follow any plan, but I shop at ALDI because it's cheaper.
	3:24	Q20. Can you specify individual or household? I am married with kids.