

UTILIZATION OF THE OUR DAILY BREAD FOOD
AND RESOURCE CENTER BY ADULTS
50 YEARS OF AGE AND OLDER

By

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Abstract: Food insecurity is of great concern for many in America, especially pre-seniors and seniors. Currently, five million older adults, age 60 or older are food insecure and have to choose between buying food and another necessities, which is a number that is expected to double by 2050. Rural areas have been shown to have the greatest need when addressing food insecurity. In particular, the state of Oklahoma indicates that one-in-six seniors are food insecure. Previously, three local food pantries in Stillwater, Oklahoma were combined to form Our Daily Bread Food and Resource Center. The purpose of this study was to survey food pantry guests at Our Daily Bread to evaluate their perception and utilization of the new food pantry since combining. In total, 211 individuals completed the survey, 104 were 50-64 years of age and 107 were 65 years of age and above. Some of the major findings from the study were that most participants utilized food pantries as their primary source of food assistance (72.7%), most participants ate less than the recommended MyPlate amounts, and most pre-senior participants made less than \$12,000, which is less than ideal because pre-seniors are already at an economic disadvantage with their ineligibility for retirement, social security and Medicare. In addition, a large percentage of participants indicated using food coping mechanisms and identified barriers including often skipping meals (40.1%), stretching meals (42.8%) and 33.8% indicated they sometimes had issues preparing meals. The survey results indicated participants felt Our Daily Bread addressed barriers from the previous food pantries by often providing more fresh fruit and vegetable choices (77.2%), more dairy choices (74.2%), and more fresh meat choices (73.5%). Meanwhile only 58.2 % felt Our Daily Bread provided more education opportunities. Based on this, it is clear that Our Daily Bread has provided a greater plethora of fresh food items, but increasing nutrition education would be the next step. Nutrition education can help food pantry guests better cope with food insecurity and utilize food assistance programs, especially for pre-seniors who are not eligible for as much government assistance.

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CHAPTER I

INTRODUCTION

Among the many health disparities facing the nation, food insecurity remains one of the greatest concerns, especially among seniors. Despite being a leader among developed countries, more than five million older adults, age 60 or older, are food insecure and have to choose between food and medicine on a monthly basis which is staggering (Feeding America [FA], 2018a). This number is expected to double by 2050 as the older adult population jumps from 18% to 26% of the population, as thousands of baby boomers reach 65 years of age (Move for Hunger, 2017). This means the nation has a great responsibility to acknowledge the issue of food insecurity and work to improve it.

Perhaps one of the greatest needs lies within more rural areas, like Oklahoma, which may not have as many resources available to them (Chang & Hickman, 2017). Similar to the statistics provided by Feeding America regarding food insecurity across the nation, the Regional Food Bank of Oklahoma indicates one in six seniors are food insecure, with 19% of these seniors being responsible for grandchildren in the home (Regional Food Bank of Oklahoma [RFBO], 2015). The idea that food insecurity of seniors could further extend to their families is concerning.

Food insecurity is described as the inability to access a sufficient amount of food on a consistent basis (FA, 2018b). If older adults are not able to obtain food as needed, then nutritional needs are not fulfilled which could cause greater health problems to an already vulnerable population (Homenko et al., 2010). The inability of seniors to meet basic needs could greatly affect their quality of life along with their ability to sustain their independence which is of great importance among this population (Rogers, 2015). Those living in food insecure households often have to seek a variety of ways to cope with the issue so that their basic needs can be met and health issues will not be exacerbated. Not being able to address the issue could lead to unnecessary healthcare cost. This can be accomplished by community food assistance programs like local food pantries and community meals, stretching their food dollar, starting their own gardens, obtaining free food from a variety of sources, or focusing on quantity versus quality of foods for the sake of getting full (Shanks, 2017). Additionally, many people depend on government food assistance programs like the Supplemental Nutrition Assistance Program (SNAP) to fill in the gap of food insecurity. Currently, 25% of Oklahomans receive SNAP benefits and many rely on community programs (RFBO, 2015).

For those who utilize food pantries, it is important to understand that it takes a vast amount of support and donations from organizations such as The Feeding America Network who has worked for more than 35 years to end nationwide hunger. These organizations raise awareness of the issue and work to help statewide food banks like Regional Foodbank of Oklahoma and the Community Food Bank of Eastern Oklahoma to flourish. Places like these allow for food to be both sufficiently and efficiently distributed

to local food pantries with the hope that they have enough to feed those in need. However, unfortunately for some places like Oklahoma, 18% of people are turned away because food runs out (RFBO, 2015). Hopefully, over time these numbers can be reduced as funding and awareness of the issue increases.

Having resources like food pantries is helpful, but many older adults may have other barriers to overcome to access these resources. It has been noted that some things keeping older adults from utilizing these resources are lack of transportation, especially in rural communities, lack of knowledge regarding resources, inflexibility with food choices, and spoilage (Shanks, 2017). While acknowledging these barriers is important, it is also essential that every food pantry takes the time to assess the potential barriers within their own local pantries so that health educators and organizations can work to solve any issues. By doing this, food insecurity statistics could improve not only for Oklahoma, but for the nation.

In addition to adults who are 65 years of age and older, those who are 50-64 years old, known as pre-seniors, are also at great risk of food insecurity. Pre-seniors may not have sufficient funds to get food because the money they have goes to other expenses. Pre-seniors are not able to collect from programs like Medicare and social security, which can result in higher poverty levels for pre-seniors (72%) compared to poverty rates of older seniors (64%). For example, approximately 58% of households with a person from this age group have unpaid medical bills compared to the 48% of households that have older seniors in their household (FA, 2018f).

Previously in Stillwater, Oklahoma three food pantries combined to create Our Daily Bread Food and Resource Center. Prior to combining, older adults, 65 years and older, who obtained food from one of the three food pantries were surveyed regarding benefits and barriers to utilizing food pantries, types of foods available, special dietary needs, and food and nutrition education interests (Robinson, 2014).

Purpose

Now that the three previous food pantries have combined, the purpose of this project was to re-evaluate the perception and utilization of the Our Daily Bread Food and Resource Center among guests, 50 years of age and above. This project assessed:

- a. Benefits and barriers to utilizing the Our Daily Bread Food and Resource Center;
- b. Types of foods available,
- c. Overall satisfaction with what is offered and ability to cater to special dietary needs,
- d. Food and nutrition educational interests,
- e. What could the food pantry do to better serve its clients,
- f. If there were differences between pre-seniors who are 50-64 years of age and seniors who are 65 years of age and older.

Assumptions

- a. Participants provided honest responses to survey questions.

Limitations

- a. The number of pre-senior and senior participants was limited.
- b. Participants do not represent the entire pre-senior and senior population of Oklahoma.
- c. There may be response bias in that participants may have answered survey questions based on what they felt was more appropriate.

Definitions

According to the United States Department of Agriculture (USDA), food insecurity can be broken down into four levels (USDA, 2017a).

- a. High food security - the household has no problems, or anxieties associated with obtaining food on a consistent basis.
- b. Marginal food security - the household has some problems obtaining adequate food sometimes; however, quality of the food, quantity, and variety of the food is not compromised.
- c. Low food security - the household has a considerable reduction in the quality of foods, variety, and desirability associated with diet choices. However, normal eating patterns and overall quantity of food remains unaffected.
- d. Very low food security - the household has one or more members with a significant decrease in food intake due to lack of food and financial resources needed to sustain a normal diet.

CHAPTER II

LITERATURE REVIEW

Food Insecurity by Definition

Food insecurity derives from a lack of consistent food that is required to maintain a healthy lifestyle. There are several levels of classification when it comes to this health issue. According to the United States Department of Agriculture (USDA), food insecurity can be broken down into four levels which includes very low food security, low food security, marginal food security and food security (USDA, 2017a). By definition, high food security relates to the idea that the household has no outright problems or anxieties with obtaining food on a consistent basis. Meanwhile, marginal food insecurity may have problems occasionally, but not to the point where variety, or quantity and quality of the food are compromised. Low food insecurity may be seen as the reduction in quality of foods, variety, and level of desirability with food choices, however, normal eating patterns and quantity of food remains-consistent. Lastly, very low food insecurity can be defined as a household having one or more members with a significant decrease in food intake for a variety of reasons including lack of food availability or lack of financial resources (USDA, 2017a).

Food Insecurity on a National and Local Level

On a national level, one in eight individuals struggles with hunger which equates to 41 million people being food insecure (FA, 2018c). While food insecurity is a nationwide issue, there is a greater prevalence of food insecurity among certain populations. Among all the different regions of the U.S., the food insecurity rate is the highest in the south at a rate of 13.5%, with 5.4% of these individuals falling in the very low food security category (USDA, 2017a). In addition to the south, rural areas, like Oklahoma, have a high prevalence of food insecurity with 15% of rural households suffering from hunger (FA, 2017e). This could be due to a variety of factors that characterize rural populations such as lack of resources, higher unemployment rates, and lower education levels (Kaiser & Hermsen, 2015). In particular, Oklahoma has an overall 16.2% rate of food insecurity with 51% of these individuals falling below the 130% poverty line (FA, 2015d).

Food Insecurity of Seniors on a National and Local Level

While older adults make up a large part of the population, the number is only expected to exponentially grow as the baby boomer generation reach their sixties which has the potential of having a negative effect on older adult food insecurity rates. In 2010, 8% of the older adult population, 60 years of age or above, were found to be food insecure on some level (Gundersen, 2013). More recently, it has been reported that five million seniors face hunger; however, 5.4 million admittedly struggled with affording food (FA, 2018e). Therefore, with the rising number of older adults on a national level, hunger among older adults will most likely be a more prevalent issue. Currently, in Oklahoma, one in six seniors are fighting hunger, and 19% of these seniors are caregivers to their

grandchildren (RFBO, 2015). This means food insecurity among older adults can have a more widespread impact on the overall population than expected.

While the senior group is heavily associated with food insecurity, it's also important to look at those who fall in the 50-64 age group. Currently, 62% of people served by Feeding America ~~clients~~ classify as pre-seniors because they are not able to retire and collect from programs like Medicare and social security. These groups often struggle with food insecurity but do not necessarily qualify for many government assistance programs. Due to these circumstances, many pre-seniors will obtain food from charitable sources. In addition, pre-seniors struggle to find and keep jobs because of ailing health, and if they do have a job they may not earn enough to sustain their needs (FA, 2018g).

Factors Contributing to Seniors Food Insecurity

In order to effectively assess factors influencing older adult food insecurity, it may be helpful to utilize the social-ecological model that assesses the intrapersonal, interpersonal, organizational, community or policy levels. Intrapersonal factors include factors like knowledge, attitudes, behavior, race, gender, skills, income, and abilities. An interpersonal factor revolves around family, friends, and social networks. On the other hand, organizational refers to factors related to organizations, and social institutions while community level factors refer to a person's relationship among organizations. Lastly, public policy relates to any national, state, or local laws (ACHA, 2018). In 2014, a study was published that looked at how the constructs within the social-ecological model can serve as predictors of food insecurity among older adults (Goldberg & Mawn,

2014). On an intrapersonal level, it was shown that certain minorities, such as Hispanics, had an 18% risk of food insecurity compared to the 5% found in non-Hispanic whites. Also, there was a high prevalence of food insecurity among those who suffered from some sort of depression, or individuals with low education levels (Goldberg & Mawn, 2014). Among the other levels of the social-ecological model the lack of financial support from families, lack of private insurance, and participation in federally funded programs like SNAP were strong indicators of food insecurity as well. With lack of family support on an interpersonal level, less accessibility of organizational or community level support in regard to accessibility of resource, along with low participation in federally funded programs for assistance, risk factors of hunger are naturally going to increase (Goldberg & Hawn, 2014).

A study published in 2010 aimed to explore the relationship between obesity and limited mobility among older adults in Georgia who were food insecure and participated in the Older Americans Act (OAA) congregate meal program (Brewer et al., 2010). The study found food insecurity was significantly associated with obesity and limited physical function which interfered with the older adults' ability to perform activities of daily living. They also found being African-American was a strong indicator of food insecurity because they were often subjected to social isolation and had lower incomes and fewer resources available to them. Beyond race, many other studies found other risk factors for food insecurity including living alone, living with grandchildren, participation in food assistance programs, and lower education levels (Brewer, et al., 2010). Another important risk factor for older adult food insecurity is that many of them have chronic health

conditions which increases out-of-pocket expenses. A study published in 2018 stated approximately 75% of older adults have more than two concurrent chronic health conditions (Jane et al., 2018). This solidifies the idea that medical expenses may affect an older adult's ability to obtain food on a consistent basis. If some of these risk factors are addressed, it may help bridge the gap and reduce levels of food insecurity among older adults. Additionally, the article suggested that if older adults are not aware of food assistance programs, or other resources, clinicians can play a major role in solving the issue because they can encourage older adults to meet with social workers and facilitate the process (Jane et al., 2018). These social workers can inadvertently work as advocates for the older adult population.

It is easy to think that financial instability is the most problematic, but realistically food insecurity is much more affected by short-term income rather than long-term income, thus making it hard for many older adults who have limited assets or no substantial source of income (Huang et al., 2010). Hence, why food insecurity is so prevalent in those who are in and out of the hospital, or have a disability to account for because it often leads to an increase in healthcare costs (Huang et al., 2010).

Effects of Food Insecurity Among Seniors

In 2002, a study was conducted to look at the relationship between food insecurity and dietary intake. In general, they found those who had a lower income also had a lower energy intake compared to those individuals who had more income (Guthrie & Lin, 2002). They discovered that those who were food insecure ate far fewer servings of

certain food groups compared to the daily recommendations at the time. In terms of meal patterns, the authors found breakfast was the most common meal consumed; however, the low income group tended to skip both lunch and dinner. In addition to eating fewer meals, the lower income group did not have snacking as a part of their regular eating pattern. All in all, the food insecure older adults tended to have a lower intake of fruits, vegetables, dairy, protein, and certain micronutrients (Guthrie & Lin, 2002).

Considering food is such an integral part of life, it's no surprise that an insufficient intake of nutrients has negative effects on an individual's health status. Many older adults who are food insecure not only struggle with acquisition of food, but also struggle to consume more nutrient dense foods compared to the processed foods that may be more accessible. This could lead to a higher hospitalization rate because they are not consuming healthy foods, or they are not able to eat what they need to in order to maintain an existing health condition (Gunderson, 2013). According to a study conducted across 12 states, 35% of adults suffering from hunger were obese, and those who were food insecure were 32% more likely to be classified as obese (Pan et al., 2012). High obesity rates have a negative effect on health, and increase the chance of suffering from chronic illness (Gundersen, 2013). Food insecure adults are 47% more likely to suffer from diabetes, 70% more likely to suffer from high blood pressure, and 53% more likely to suffer from heart attacks, which could prove to be fatal (FA, 2018a). As older adults work to solve their chronic health issues, it causes a greater financial burden because there are increased amounts of prescriptions, hospital stays, and doctor visits. Therefore, it becomes a vicious cycle because they are often having to choose food over medical bills, or vice versa, and that

choice has a direct effect on their health and financial status. This combination of reduced food intake and chronic disease has the potential to increase the frailty of older adults and affect the ability of an individual to maintain independence (Perez-Zepeda et al., 2016).

In a study published in 2001, looking at nutritional and health consequences of food insecurity it was found that roughly 60% of food insecure older adults were functionally impaired (Lee & Fronzillo, 2001). Of those individuals, 48% of those individuals were not able to perform any activities of daily living and the remaining percentage were not able to complete any activities needed for independent living. This was compared to a similar study that found 47% were functionally impaired with 30% impaired from living independently and 21.9% impaired from completing basic skills for living (Lee & Fronzillo, 2001). These impaired individuals were found to have low skinfold thickness and inadequate eating habits which could serve as an indication that food insecurity has a negative effect on the body's ability to function properly. Therefore, there is a high correlation between food intake and the strength of the older adult to remain independent.

Beyond chronic illness related to food, those who are food insecure tend to suffer from mental illness. According to the Senior Hunger Fact Sheet published by Feeding America, 60% of older adults who are food insecure suffer from depression (FA, 2018a). The anxiety and stress associated with food insecurity both have a profound effect on the ability of the individual to function. Not to mention, a decrease in nutrient intake is linked to greater cognitive issues (Hadley & Crooks, 2012).

Coping Mechanisms for Food Insecure Seniors

With a lack of resources, or access to food on a consistent basis, older adults have to find ways to cope with food insecurity. One of the most common ways to cope is through shopping patterns that involve buying in bulk and withholding from nutrient dense foods while stocking up the cart with processed foods that are higher in sugar and fat (Yousefian et al., 2011). This may prove to be especially true in rural areas, like Oklahoma, that are surrounded by food deserts and have less access to stores that sell healthier options even if they wanted to purchase them. In addition to buying unhealthy foods, many will take it a step further by diluting beverages they bought, and cutting portion sizes so that what they bought can be utilized for a longer period of time. A study conducted in 2015 discovered that many cope by utilizing self-sufficient strategies such as hunting/fishing, and gardening, which gives them a dependable resource for certain foods (Kaiser & Hermsen, 2015). In addition, 40% of people obtained food from relatives or family, and 20% of the participants received help from their friends. Beyond shopping patterns and support from social groups, many depend on food assistance programs and food pantries to help fill in the gaps (Yousefian et al., 2011).

In 2017, data was collected from older adults who utilized food pantries in the Stillwater area and it was determined that food insecure older adults use many coping strategies. Robinson (2017) found that among the older adults who were surveyed, 86% reported they coped by stretching meals and 79% eat smaller meals. While these are common coping mechanisms, it is important to make sure that individuals are still meeting caloric needs. In addition, a large majority reported they had received food from family, friends,

or the community. Meanwhile, some common coping strategies were not as prevalent, for example, 60% indicated they did not eat expired foods (Robison, 2017). With food insecurity may come altered eating patterns as well. Robinson (2017) found the meals older adults ate on a more regular basis were lunch and dinner with 79% of the participants saying those meals were prepared at home on most days (Robinson, 2017). This data is important because it allows for further research to have a greater understanding of the population to be researched.

Nutrition Assistance Programs

One of the biggest resources food resources for seniors is the Older Americans Act Nutrition Program. The purpose of the Older Americans Act (OAA), first enacted in 1965, is to provide older adults with resources that help them stay healthy and independent for as long as possible. One of the programs put into place was the OAA nutrition program, funded by the Administration of Aging, which aimed to reduce hunger and promote overall well-being in adults who are 60 years old and above (Administration for Community Living [ACL], 2017). One of the most beneficial components of this program is providing nutrition services in congregate settings because it helps maximize reach to older adults in need, and prevents additional medical expenses. Recent data indicates 58% of participants use the congregate services to provide one-half or more of daily food intake (ACL, 2017). For those who cannot travel, the OAA funds home delivered meals through programs like Meals On Wheels. Depending on need, these meals are delivered at breakfast and lunch on weekdays. Often times, these meals are freshly delivered, but can contain frozen or canned items as well. This program clearly

caters to the varying needs of older adults. While the nutrition program is one of the most intricate parts of the Older Americans Act, there are several other components like nutrition education and resources on aging that are available to older adults as well.

In addition to the nutrition program created by the Older Americans Act, the Supplemental Nutrition Assistance Program (SNAP), known as The Food Stamp program, operates under the United States Department of Agriculture (USDA): Food and Nutrition Service (FNS). It allows individuals to buy a variety of things including fresh, and processed foods. However, people cannot purchase non-food or premade items. While eligibility requirements can vary by state, typically gross income must fall at or below 130% poverty level and 100% below poverty level when looking at net monthly income (USDA, 2017b). If eligible, this program is accessible to college students, adults, and older adults. However, for a variety of reasons such as social stigma, lack of education, and mistrust in the process, many people do not apply (Kamp, 2010). For example, only 42% of eligible seniors are enrolled in the SNAP program (FA, 2018c). Furthermore, only 25% of those living in Oklahoma report being on SNAP and these individuals receive an average of \$121 per month (RBFO, 2015). While it does not seem like much, that is money that the older adult will not have to sacrifice in other areas.

Another program particularly for Native Americans is the Food Distribution Program on Indian Reservations. While this program is provided under the USDA, the terms of eligibility are slightly more restrictive. The program provides USDA foods such as canned goods, meat, dairy products, nuts juice, and pantry staples to low income families

who have at least one member who is registered to a Native American tribe (USDA, 2017c). It is important to note an individual cannot concurrently enroll in this program and SNAP.

The Seniors Farmers Market operates under the USDA and works to provide fresh foods, such as fruits, vegetables, honey and herbs to low income seniors who fall below the 185% poverty line. The difficulty is that some of these foods are only accessible during harvest season, so it makes it hard for seniors to access these foods on a regular basis (Kamp, 2010). Each individual on the program is estimated to receive close to \$25 worth of food on a yearly basis, so it's clear this program does not have a large impact on an individuals' overall dietary eating pattern (Kamp,2010).

The Commodity Supplemental Food Program operates under the USDA to help improve the health of low-income elderly who fall at or below the 130% poverty line with USDA foods. However, other eligibility requirements are determined on a local and state level (Kamp, 2010). One good thing about this program is that nutrition education may be provided on a local level, but a disadvantage is that education may not be mandated on a national level (Kamp, 2010).

Food banks essentially serve as the hub for food pantries because they serve as the distributors for the food pantries where many food insecure people go to help meet basic nutrient needs. One of the largest organizations dedicated to this cause is the Feeding America network which consists of 200 food banks and nearly 60,000 meal programs and

food pantries that work together to bridge the gap of food insecurity and provide training to food pantries. (FA, 2018f). Many use food banks as a long term resource because they cannot afford to buy food for themselves due to lack of resources, or because they have health restraints that effect their ability to provide for themselves (Holmes et al., 2018).

In Oklahoma, there are two food banks that are responsible for distributing to food pantries across the state, including the Regional Food Bank of Oklahoma along with the Community Food Bank of Eastern Oklahoma. These food banks operate in the same way; however, the Community Food Bank of Eastern Oklahoma only caters to 24 counties located in the eastern part of the state. As of 2017, they distributed more than 24.7 pounds of food, in which 32% was fresh produce (CFBEO, 2018). Meanwhile, as of 2017, the Regional Food Bank of Oklahoma distributed 52 million pounds of food across 1300 community based agencies within 53 central and western Oklahoma counties (RFBO, 2018).

Prior to 2017, Stillwater Oklahoma had four local food pantries including First United Methodist Church, Stillwater Church of Christ, Lost Creek United Methodist Church, and The Salvation Army which received food from the Regional Food Bank of Oklahoma. (Our view, 2016). However, Stillwater came to realize that it needed a central location. As a result, all the food pantries, with the exception of The Salvation Army, came together and created the Our Daily Bread Food & Resource Center, which can be utilized by those who meet the income eligibility requirements.

Barriers Associated with Food Pantries

While food pantries work to provide food for those in need, sometimes it may be hard for food pantries to do what they intend to because of the lack of space within the food pantry itself, or inability to obtain proper food storage areas. In addition, lack of consistent and efficient tools to keep track of participants utilizing the services makes it hard for those running the food pantry to assess the need (Johnson et al., 2018). If food pantries do not have the proper space or materials it makes it hard for them to fully serve the participants in need.

In addition to the barriers experienced by the food pantry, there are other barriers that participants may experience in utilizing food pantries. In Oklahoma, specifically Payne County, it has been reported that despite the availability of the Our Daily Bread Food and Resource Center, 52 % of participants did not feel they had what they needed to sustain a healthy diet on a regular basis. Beyond that, 10% of individuals who received food said they did not have proper food storage spaces, and 11% did not feel like they had the skills they needed to prepare the meals (Our Daily Bread, 2018).

In the study by Robinson (2017) that surveyed older adults in Stillwater, there were a variety of barriers that affected older adults' ability to fully utilize the food pantries. Of those surveyed, 69% indicated they received dented cans and 56% said they "often" or "sometimes" received expired foods (Robison, 2017). Obtaining dented cans or spoiled foods serves as a barrier and has a negative effect on food insecurity because it may discourage participants from using the food pantry in the future. While there were some

identified barriers, many of the older adults surveyed were satisfied with their ability to understand and navigate the food pantry being utilized (Robinson, 2017).

Food Pantries and Seniors

According to Hunger Free Colorado, older adults need to have a diet that is high in nutrient dense foods, and fiber while being low in fat, sugar, and sodium (Hunger Free Colorado, 2015). With that being said, one of the biggest issues among food pantries is the lack of food diversity because food pantries are limited to the foods distributed by the food banks or donated. In addition, many foods donated are often described as not being as nutrient dense as they could be and fail to serve as part of a healthy overall diet (Shanks, 2017). This makes it difficult for people, like the elderly, to maintain any diet necessary to manage a chronic disease. Not to mention, many of the food pantries, like Our Daily Bread Food and Resource Center, are staffed by volunteers who work to stock product and serve as a shopping assistants to participants, but they do not necessarily know proper nutrition needed to help the elderly make the right decisions (Our Daily Bread, 2018b). However, if proper nutrition education were to be provided it may help older adult individuals make healthier choices for the sake of their health.

Often times, due to physical limitations, the idea of visiting a food pantry can be a daunting task if it is filled with younger adults or children. So, it may be beneficial for food pantries to adopt some of the practices of Hunger Free Colorado including pantry scheduling which allows a designated time for older adults to visit the pantry so that the staff can best accommodate them, or scheduling a certain amount of staff so that they can

dedicate their time helping the older adults navigate the food pantry (Hunger Free Colorado, 2015).

A study published in 2003 looked at the perceived needs and wants of food pantry clients (Verpy et al., 2003). The study took a much needed look at the needs of seniors considering many have special dietary needs. The study found that many foods for older adults needed to be softer and cater to a variety of medical conditions, as well as any allergies that they may have. However, it is hard for food pantries to meet these needs because they can only give what they have been provided. Many of the older adults desired to have vegetarian options, fresh dairy products as opposed to powdered products, and more fresh fruits and vegetables of greater variety (Verpy et al., 2003). Similar results were found among Stillwater older adult food pantry participants. Robinson (2017) found that of the older adults surveyed, 88% wanted a greater variety of fresh fruit and vegetable choices. The survey also found 63% of participants wanted more grains, 83% wanted more dairy, and 88% wanted more fresh meat. If food pantries were able to provide these food choices, the hope would be that older adults would be able to maintain good health.

Food and Nutrition Education for Seniors Within Food Pantries

Along with provided foods, it is important to educate older adults on making healthy food choices. A study published in 2017 used constructs from the Theory of Planned Behavior to investigate the effectiveness of certain teaching strategies (Bird & McClelland, 2017). This particular theory indicates that behaviors are driven by intention which are

commonly affected by attitude toward the behavior, subjective norms, and perceived behavior control. With this knowledge, the study aimed to increase perceived ability to carry out activities related to food preparation, picking healthy foods, and shopping on a budget. The study found that once given these strategies, older adults were more willing to adopt behaviors needed for a healthier lifestyle (Bird & McClelland, 2017). This shows that if some older adults are taught certain strategies, they may be able to better utilize the foods they receive from the food pantries.

Education is an important component in serving older adults in a food pantry. When looking at the education interest of Stillwater food pantry users, the most desired topic was “how to stretch the food dollar” (Robison, 2017). This may be no surprise considering that food insecure populations struggle to have enough money to cover expenses, especially relating to food. In addition, 35% of participants were interested in learning about healthy eating with a particular interest in weight management, heart health, and maintaining healthy blood pressure. This invested interest in health by the older adults is important because it shows that there are people willing to learn if they are provided the right resources.

In summary, there has been substantial research on food insecurity and food pantry utilization, but there is not much research regarding food pantries among pre-seniors and seniors. Therefore, this research serves as a way to assess satisfaction and barriers associated with older adult utilization of the Our Daily Bread Food and Resource Center within Payne County. The goal of this research is to gain an insight into how pre-seniors

and seniors view the Our Daily Bread Food and Resource Center and what steps can be taken to improve both the food pantry, and the lives of food insecure older adults living in Payne County.

CHAPTER III

METHODS

Prior to the combining of the local food pantries in Stillwater Oklahoma, a sample of 129 older adults, 65 years of age and older, who obtained food from one of the local food pantries, completed a survey regarding their food pantry utilization (Robinson, 2017). The purpose of this study was to re-evaluate the perception and utilization of the Our Daily Bread Food and Resource Center among older adult guests, 50 years of age and above. This project will assess:

- a. Benefits and barriers to utilizing the Our Daily Bread Food and Resource Center;
- b. Types of foods available,
- c. Overall satisfaction with what is offered and ability to cater to special dietary needs,
- d. Food and nutrition education interests,
- e. What could the food pantry do to better serve its clients.
- f. If there are differences between pre-seniors who are 50-64 years of age and seniors who are 65 years of age and older.

Survey Development

In order to assess satisfaction with the Our Daily Bread Food and Resource Center, the research team modified the previously developed survey used at the local food pantries (Robinson, 2017). The modified survey included portions on demographics, health status, food security, food pantry concerns/barriers, dietary intake, along with desired food and nutrition education interests. The demographics portion of the survey included age, gender, race, ethnicity, education level, current living situation, income, participation in food assistance programs, and employment status. The health status portion included questions on self-perceived overall health, self-reported height and weight, recent changes in food intake and weight, current health conditions, physical activity level, fluid intake, and whether participants eat and prepare meals alone or with others.

In order to assess food security, the food security portion of the survey included the USDA Economic Research Service six-item food security short form questions (USDA ERS, 2017). Concerns and barriers related to the food pantry were assessed with questions pertaining to shopping for food at the pantry and ability to store, prepare and eat the food provided. The dietary portion included questions about current food intake related to variety, serving size and special dietary needs. Lastly, the nutrition and education interest portion explored topics they may be interested in learning about as participants of the food pantry. Some nutrition education topics included stretching your food dollar, reading food labels, proper diets for certain disease states, reducing food waste, and food and drug interactions.

Due to the fact that the population being surveyed was a low income older population, the goal was to create a survey using a large easy to read font and written at a third grade level. The survey used 14-point Calibri font and was at a 3.4 reading level. Also, the research teams made it a point to bold, underline and compartmentalize parts of the survey to make it easier for older adults to follow (Chambers et al., 2004). Expert face validity of the survey was assessed by a panel of three experts in the Department of Nutrition and Sciences and the Department of Public Health. The survey was revised based on recommendations provided by the panel of experts. Afterwards, indigenous face validity of the survey was assessed by a panel of five food pantry participants who were 50-64 years of age and five food pantry participants who were 65 years of age and above. No revisions were recommended based on indigenous face validity.

Oklahoma State University Institutional Review Board for Human Subjects

Before collecting data, the survey (Appendix A), solicitation-script (Appendix B), participant information form (Appendix C), and study procedure were submitted and approved by the Oklahoma State University Institutional Review Board for Human Subjects (Appendix D).

Participants

Prior to administering the survey, permission was obtained from the Our Daily Bread director to conduct the survey. The participants were a sample of older adults who are 50 years of age and older who obtained food from the Our Daily Bread Food and Resource Center in Stillwater, Oklahoma.

Previously, the local food pantries in Stillwater, Oklahoma served approximately 500 households each month (Robinson, 2017). A survey conducted in 2016 reported 25% of Stillwater, Oklahoma food pantry participants were 65 years of age or above and 36% of participants were between 50-64 years of age. (McAdams, 2016). Currently, the Our Daily Bread Food and Resource Center is serving approximately 1,000 households each month. Therefore, the goal for this study was to survey 100 older adults, who fell in the 50-64 age range and 100 older adults who were 65 years of age and older, who obtain food from the Our Daily Bread Food and Resource Center in Stillwater, Oklahoma.

Procedures

As guests entered the Our Daily Bread Food and Resource Center, they were asked if they were 50 years of age or older. Guests who met the age requirement were read a solicitation script indicating the purpose of the survey and were asked if they would be interested in completing the survey. Adults who agreed to complete the survey were given the survey. The first page of the survey was the participant information form, which they were instructed to tear off and keep. Participants were asked to put their completed survey in a box provided. Participants were informed that if they needed any help completing the survey, researchers were available to assist them. Individuals were provided with \$20.00 compensation for completing the survey.

Data Analysis

Participants' food security status was assessed utilizing the USDA ERS six-item food security survey coding and raw score cutoffs (USDA ERS, 2017). The scoring is as

follows; a raw score of 0-1 is classified as a high or marginal food security, a raw score of 2-4 indicates low food security, and a raw score of 5-6 is indicative of very low food security.

Participants self-reported dietary intake was assessed using the lowest recommended intake range for each Healthy U.S. Style Eating Pattern food group, for adults 50 years of age and above, and across physical activity levels, (USDHHS and USDA, 2015). The estimated calorie needs for males, 65 year of age and above, across physical activity levels ranges from 2,000 to 2,600, whereas males in the 50-55 age group range from 2,000-2,800. For females, ages 50-60 the calorie needs ranges from 1,600-2,200, whereas females, 65 years of age and above, ranges from 1,600-2,000. Recommended intakes for each Healthy U.S. Style Eating Pattern food group based on calorie level are presented in Table 1.

Similar to food intake, participants' fluid intakes were compared to the Dietary Reference Intake for water (National Academy of Science, 2005). The adequate intake (AI) for total water, including water from food and beverages, is 3.7 liters per day for males, ages 51 years and above and 2.7 liters per day for females, ages 51 years of age and above. It is important to note that 80% of fluid intake derives from intake of water and beverages while the remaining 20% comes from food, resulting in fluid intake recommendations of 13 cups per day for males and 9 cups per day for females (National Academy of Sciences, 2005).

Table 1: Healthy U.S. Style Eating Patterns for Different Calorie Levels.*

<i>Calorie Levels</i>	1,600	1,800	2,000	2,200	2,400	2,600	2,800
<i>Food Groups</i>							
Grains (oz.)	5	6	6	7	8	9	10
Vegetables (cups)	2	2 ½	2 ½	3	3	3 ½	3 ½
Fruits (cups)	1 ½	1 ½	2	2	2	2	2 ½
Dairy (cups)	3	3	3	3	3	3	3
Protein foods oz.)	5	5	5 ½	6	6 ½	6 ½	7

*Healthy U.S. style eating pattern for difference calorie levels accessed at
<https://health.gov/dietaryguidelines/2015/guidelines/appendix-3/>

Body Mass Index (BMI) was calculated using participants self-reported height and weight. BMI is calculated by dividing a person's weight in kilograms by the square of the person's height in meters (weight kg/ height m²). Underweight is defined as a BMI less than 18.5 kg/m². Normal weight is defined as a BMI between 18.5 kg/m² and less than 25 kg/m², overweight is defined as a BMI between 25 kg/m² and less than 30 kg/m². Obesity is defined as a BMI greater than or equal to 30 kg/m² (Centers for Disease Control, 2017).

Survey data was reported and analyzed using the frequency and Chi-square procedures with PC SAS for Windows, Version 9.4 (SAS Institute, Cary, NC). results.

CHAPTER IV

RESULTS

Participant demographic characteristics are presented in Table 2. Two-hundred and eleven individuals completed the survey, 104 were 50-64 years of age and 107 were 65 years of age and above. The majority of participants were female (67.3%), White (71.6 %), and non-Hispanic (97.6%). There was a significant difference between age groups, with a higher percentage of seniors being White (79.4%) compared to pre-seniors (63.5%). A small percentage of participants (1.9%) reported their race as “other,” but did not specify what it was. Most participants indicated they lived in Stillwater, Oklahoma, (70.5%) and lived in an apartment, house, or mobile home (92.9%). A large percentage of participants had a high school level education (42.8%); however, (30.3%) had some college or an associate’s degree. Of those surveyed, the majority of participants were unemployed (87.6%), divorced, separated or widowed (57.1%) with an annual income of less than \$12,000 (58.9%). Although a higher percentage of participants 50-64 years of age had annual income less than \$12,000 (73.5 %) compared to those 65 years and above (44.8%), and a higher percentage of those 65 years of age and above had annual incomes of \$12,000 or more,

the chi-square test may not be valid due to an expected cell count warning. A significant difference was found in employment status between age groups ($p = 0.0028$) with a higher unemployment rate among participants 65 years of age and above (79.8%) compared to participants who were between the ages of 50-64 (95.3%). Food programs most readily utilized by participants were food pantries (72.7%), Supplemental Nutrition Assistance Program (SNAP) (42.1%), and community/faith-based meals (21.4%). A small percentage also indicated that they utilized “other” programs (1.9%), but the programs were not specified. A significant difference was observed in SNAP participation between age groups ($p < 0.0001$) with 55.8% of pre-seniors compared to only 28.6% seniors utilizing SNAP. Although a larger percentage of pre-seniors reported their health as poor compared to seniors and a higher percentage of seniors reported their health as good or very good compared to pre-seniors, the chi-square test may not be valid due to an expected cell count warning.

Table 2: Demographic Information.*

Demographics	All Participants n (%)	50-64 Years of Age n (%)	65+ Years of Age n (%)	(Chi square) p value
Gender				(1.3720) p=0.2415
Male	69 (32.7)	38 (36.5)	31 (29.0)	
Female	142 (67.3)	66 (63.5)	76 (71.0)	
Hispanic				(0.1581) p=0.6909
Yes	5 (2.4)	3 (2.9)	2 (2.0)	
No	200 (97.6)	102 (97.1)	98 (98.0)	
Race				
African American				(2.8721) p=0.0901
Yes	39 (18.5)	24 (23.1)	15 (14.0)	
No	172 (81.5)	80 (76.9)	92 (86.0)	

Table 2: Demographic Information. (continued).*

Demographics	All Participants n (%)	50-64 Years of Age n (%)	65+ Years of Age n (%)	(Chi square) p value
Race (continued)				
Asian				(0.5443) p=0.3677**
Yes	3 (1.4)	2 (1.9)	1 (0.93)	
No	208 (98.6)	102 (98.1)	106 (99.1)	
White				(6.6161) p=0.0101
Yes	151 (71.6)	66 (63.5)	85 (79.4)	
No	60 (28.4)	38 (36.5)	22 (20.6)	
Native American				(3.0577) p=0.0804
Yes	19 (9.0)	13 (12.5)	6 (5.6)	
No	192 (91.0)	91 (87.5)	101 (94.4)	
Other				(1.0783) p=0.2994**
Yes	4 (1.9)	3 (2.9)	1 (0.93)	
No	207 (98.1)	101 (97.1)	106 (99.1)	
Highest Education Level				(0.8058) p=0.8481
Some high school	37 (17.8)	16 (15.7)	21 (19.8)	
High School	89 (42.8)	44 (43.1)	45 (42.5)	
Some college / associates degree	63 (30.3)	33 (32.4)	30 (28.3)	
Bachelor's Degree or higher	19 (9.1)	9 (8.8)	10 (9.4)	
What City is Home?				(7.2001) p=0.3027**
Cushing	18 (8.6)	7 (6.8)	11 (10.3)	
Glencoe	4 (1.9)	1 (0.97)	3 (2.8)	
Perkins	24 (11.4)	8 (7.8)	16 (15.0)	
Ripley	6 (2.9)	2 (1.9)	4 (3.7)	
Stillwater	148 (70.5)	78 (75.7)	70 (65.4)	
Yale	7 (3.3)	5 (4.8)	2 (1.9)	
Other	3 (1.4)	2 (1.9)	1 (0.93)	
Would you consider yourself to live in				(5.4960) p=0.1389**
Rural area	40 (19.1)	20 (19.6)	20 (18.7)	
Small town	86 (41.2)	45 (44.1)	41 (38.3)	
Midsize city	74 (35.4)	30 (29.4)	44 (41.1)	
Suburban area	9 (4.3)	7 (6.9)	2 (1.9)	

Table 2: Demographic Information (continued).*

Demographics	All Participants n (%)	50-64 Years of Age n (%)	65+ Years of Age n (%)	(Chi square) p value
Marital Status				(1.6663) p=0.4347
Never married	38 (18.1)	21 (20.2)	17 (16.0)	
Married	52 (24.8)	22 (21.2)	30 (28.3)	
Divorced/Separated /widowed	120 (57.1)	61 (58.7)	59 (55.7)	
Income				(19.6967) p=0.0014**
Less than \$12,000	122 (58.9)	75 (73.5)	47 (44.8)	
\$12,000-\$16,000	49 (23.7)	18 (17.7)	31 (29.5)	
\$16,00-\$21,000	23 (11.1)	6 (5.8)	17 (16.2)	
\$21,001-25,000	10 (4.8)	3 (2.9)	7 (6.7)	
\$25,0001-\$29,000	2 (0.97)	0 (0.0)	2 (0.97)	
Over \$29,000	1 (0.48)	0 (0.0)	1 (0.48)	
Employment Status				(11.7429) p=0.0028
No	184 (87.6)	83 (79.8)	101 (95.3)	
Yes, part time	13 (6.2)	10 (9.6)	3 (2.8)	
Yes, full time	13 (6.2)	11 (10.6)	2 (1.9)	
Living Situation				(4.9972) p=0.2876**
Apartment/ House/ Mobile home	196 (92.9)	95 (90.5)	101 (95.3)	
Homeless	2 (1.00)	2 (1.9)	0 (0.0)	
Local Shelter	1 (0.5)	1 (1.00)	0 (0.0)	
Retirement Center	1 (0.5)	0 (0.0)	1 (0.9)	
Other	11 (5.2)	7 (6.7)	4 (3.8)	
Use of Food Assistance Programs				
Community/Church Meals				(1.1104) p=0.2920
Yes	44 (21.1)	25 (24.0)	19 (18.1)	
No	165 (79.0)	79 (76.0)	86 (81.9)	
Food Distribution Programs on Indian Reservations				(0.0005) p=0.9831
Yes	18 (8.6)	9 (8.7)	9 (8.6)	
No	191 (91.4)	95 (91.4)	96 (91.4)	
Food pantries				(0.0128) p=0.9101
Yes	152 (72.7)	76 (73.1)	76 (72.4)	
No	57 (27.3)	28 (27.0)	29 (27.6)	

Table 2: Demographic Information (continued).*

Demographics	All Participants n (%)	50-64 Years of Age n (%)	65+ Years of Age n (%)	(Chi square) p value
Use of Food Assistance Programs (continued)				
SNAP/Food Stamps				(15.8551) p<0.0001
Yes	88 (42.1)	58 (55.8)	30 (28.6)	
No	121 (58.0)	46 (44.2)	75 (71.4)	
Home delivered Meals				(0.0861) p=0.7692
Yes	11 (5.3)	5 (4.8)	6 (5.7)	
No	198 (94.7)	99 (95.2)	99 (94.3)	
Senior Farmers Market				(0.0861) p=0.7692
Yes	11 (5.3)	5 (4.8)	6 (5.7)	
No	198 (94.7)	99 (95.2)	99 (94.3)	
Senior Meals (Project Heart)				(0.5400) p=0.4624**
Yes	8 (3.8)	5 (4.8)	3 (2.7)	
No	201 (96.2)	99 (95.2)	102 (97.1)	
Other				(1.0391) p=0.3080
Yes	4 (1.91)	3 (2.9)	1 (0.95)	
No	205 (98.1)	101 (97.1)	104 (99.1)	
Would you say your health is..				(16.7472) p=0.0022**
Excellent	8 (4.0)	6 (5.9)	2 (2.0)	
Very Good	21 (10.6)	6 (5.9)	15 (15.5)	
Good	64 (32.2)	27 (26.5)	37 (38.1)	
Fair	75 (37.7)	39 (38.2)	36 (37.1)	
Poor	31 (15.6)	24 (23.5)	7 (7.2)	

*Columns may not add to 100 due to rounding.

**Chi-square test may not be valid due to an expected cell count warning.

When looking at participants' food pantry participation (Table 3), 61.2% of participants reported they utilized local food pantries before the Our Daily Bread Food and Resource Center opened and 97.0% reported the food pantry helped them continue to live at home. In terms of getting to the food pantry, most indicated they drove themselves to the food

pantry (67.7%) or rode with others (26.0%), while (6.4%) used other methods including walking and taking the bus to the facility. All participants who used more than one method were also included. There was a significant difference in how the different age groups got to the food pantry ($p= 0.0150$) with a higher percentage of seniors (76.5%) reporting they drove themselves compared to pre-seniors (58.8%). In regard to the amount of people that ate the food from the food pantry, 67.1% indicated one or two. This coincides with participants reporting that zero (45.1%) or one or two (45.5%) adults 18 years or older lived in the household. In addition, to other adults living in the household, (78.4%) of participants indicated they did not have any grandchildren younger than 18 years of age living in the home; however, 16.0% reported having one or two grandchildren living in the home and 5.7% reported having three or more grandchildren living in the home. This coincides with data that 87.3% of participants were not responsible for feeding grandchildren; however, 12.8% were responsible for feeding grandchildren. On that same note, most participants (77.0%) said they did not feed grandchildren meals during the week; however, 23.0% reported they were responsible for feeding grandchildren one or more meals per week. In addition, 15.0% of participants reported they missed meals so their grandchildren could be fed. There was a significant difference ($p=0.0165$) in missing meals so grandchildren could be fed between age groups with a larger percentage of pre-seniors missing meals (21.3%) compared to seniors (9.0%).

Table 3: Food Pantry Participation.*

Food Pantry Participation	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Does the food pantry food help you continue to live at home ?				(1.1809) p=0.5541**
Yes	202 (97.0)	101 (96.2)	101 (98.1)	
No	1 (0.48)	1 (1.0)	0 (0.0)	
Don't know	5 (2.4)	3 (2.9)	2 (1.9)	
Did you go to any local food pantries before Our Daily Bread opened?				(0.2313) p=0.6305
Yes	128 (61.2)	66 (62.9)	62 (59.6)	
No	81 (38.8)	39 (37.1)	42 (40.3)	
How do you get to the food pantry?¹				(8.400) p=0.0150
I drive myself	138 (67.7)	60 (58.8)	78 (76.5)	
Ride with others	53 (26.0)	32 (31.4)	21 (20.6)	
Other	13 (6.4)	10 (9.9)	3 (3.0)	
How many people eat the food from the food pantry?				(2.1108) p=0.3481
One or two	143 (67.1)	69 (65.1)	74 (69.2)	
Three or four	57 (26.8)	28 (26.4)	29 (27.1)	
5 or more	13 (6.1)	9 (8.5)	4 (3.8)	
Not including yourself, how many adults (18 years and older) live with you?				(2.0054) p=0.3669
Zero	96 (45.1)	45 (42.5)	51 (47.7)	
One or two	97 (45.5)	53 (50.0)	44 (41.1)	
Three or more	20 (9.4)	8 (7.6)	12 (11.2)	
How many grandchildren younger than 18 live with you?				(3.2888) p=0.1931
Zero	167 (78.4)	80 (75.5)	87 (81.3)	
One or two	34 (16.0)	17 (16.0)	17 (15.9)	
Three or more	12 (5.7)	9 (8.5)	3 (2.8)	
How many grandchildren are you responsible for feeding?				(0.4905) p=0.7825
Zero	186 (87.3)	94 (88.7)	92 (86.0)	
One to two	19 (9.0)	8 (7.6)	11 (10.3)	
Three or more	8 (3.8)	4 (3.8)	4 (3.8)	

Table 3: Food Pantry Participation (continued).*

Food Pantry Participation	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
How many meals a week are you responsible for feeding grandchildren?				(3.8930) p=0.2733
Zero	164 (77.0)	80 (75.5)	84 (78.5)	
One to seven	30 (14.1)	19 (17.9)	11 (10.3)	
Eight to fourteen	4 (1.9)	2 (1.9)	2 (1.9)	
Fifteen or more	15 (7.0)	5 (4.7)	10 (9.4)	
Do you miss any meals so your grandchild can be fed?				(5.7439) p=0.0165
Yes	29 (15.0)	20 (21.3)	9 (9.0)	
No	165 (85.1)	74 (78.7)	91 (91.0)	

*Columns may not add to 100 due to rounding.

**Chi-square test may not be valid due to an expected cell count warning.

Participants view of the food pantry is presented in the following table (Table 4). Most participants indicated the food from the pantry sometimes lasted until the next visit (52.8%) and the produce received from the pantry was sometimes too old (54.0%). Most food pantry guests indicated they did not think there were too many people at the food pantry (56.2%), they could often reach the food items on the shelves (81.1%), and there was enough space to get around the food pantry (86.7%). Fortunately, a majority of participants often like the food choices at the food pantry (70.9%), felt healthy food options were often offered (75.3%), and did not have a sense of embarrassment associated with using the food pantry (68.8%).

Table 4: Food Pantry Views.*

What do you think..	All Participants n(%)	50-64 Years of Age n(%)	65+Years of Age n(%)	(Chi Square) p value
Does the food you get from the food pantry last until your next visit?				(1.9591) p=0.3755
Yes, Often	34 (17.1)	15 (15.3)	19 (18.9)	
Yes, Sometimes	105 (52.8)	49 (46.7)	56 (53.3)	
No	60 (30.2)	34 (34.7)	26 (25.8)	
Is the produce you get from the food pantry too old?				(1.0895) p= 0.5800
Yes, Often	27 (13.6)	11 (11.0)	16 (16.0)	
Yes, Sometimes	108 (54.0)	56 (56.0)	52 (52.0)	
No	65 (32.5)	33 (33.0)	32 (32.0)	
Are there too many people at the food pantry?				(0.3905) p=0.8226
Yes, Often	31 (16.0)	16 (16.3)	15 (15.6)	
Yes, Sometimes	54 (27.9)	29 (29.6)	25 (26.0)	
No	109 (56.2)	53 (54.1)	56 (58.3)	
Can you reach the food items on the shelves at the food pantry?				(0.0033) p=0.9984**
Yes, Often	167 (81.1)	85 (90.0)	82 (81.2)	
Yes, Sometimes	37 (17.8)	19 (18.2)	18 (17.9)	
No	2 (0.98)	1 (0.98)	1 (1.0)	
Is there enough space for you to get around in the food pantry?				(0.1951) p=0.9071**
Yes, Often	176 (86.7)	88 (86.2)	88 (87.13)	
Yes, Sometimes	22 (10.9)	11 (10.8)	11 (10.8)	
No	5 (2.5)	3 (3.0)	2 (2.0)	
Do you like the food choices at the food pantry?				(2.7921) p=0.2476**
Yes, Often	146 (70.9)	69 (66.4)	77 (75.5)	
Yes, Sometimes	59 (28.7)	34 (32.7)	25 (24.5)	
No	1 (0.5)	1 (.97)	0 (0.0)	
Do you feel the food pantry has healthy food choices?				(1.9479) p=0.3776**
Yes, Often	152 (75.3)	77 (74.8)	75 (75.8)	
Yes, Sometimes	48 (23.8)	24 (23.3)	24 (24.4)	
No	2 (1.0)	2 (1.95)	0 (0.0)	
Do you ever feel embarrassed about going to the food pantry?				(4.5676) p=0.1009
Yes, Often	24 (11.7)	17 (16.4)	7 (7.0)	
Yes, Sometimes	40 (19.5)	18 (17.3)	22 (21.8)	
No	141 (68. 8)	69 (66.4)	72 (71.3)	

*Columns may not add to 100 due to rounding.

**Chi-square test may not be valid due to an expected cell count warning.

Participants' perception of food choices since the opening of Our Daily Bread compared to the previous local food pantries are reflected below (Table 5). Most participants expressed that they felt Our Daily Bread often provided more healthful food options (74.0%), and more low-fat food choices (60.1%). There was a significant difference in participants' perception of Our Daily Bread providing more low-fat food choices ($p=0.0438$) between age groups, with a higher percentage of seniors (69.4%) feeling this way compared to pre-seniors (51.1%). Most participants also indicate that Our Daily Bread often had more low-sugar (58.0%) and salt food options (51.3%), grain food choices (69.4%), canned fruit and vegetable choices (73.3%), fresh produce (77.2%), frozen fruit and vegetable choices (66.3%) and dairy choices (73.5%). There was a significant difference in participants' perception of Our Daily Bread providing more dairy choices ($p=0.0163$), with a higher percentage of seniors (83.7%) reporting this than pre-seniors (65.2%). According to food pantry guests, Our Daily Bread also often provided more fresh meat options (73.5%), canned meat (60.3%), and education opportunities (58.2%).

Table 5: Food Pantry Food Choices.*

Our Daily Bread provides..	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
More healthful food choices?				(0.5622) p=0.7549**
Yes, Often	131 (74.0)	65 (72.2)	66 (75.9)	
Yes, Sometimes	8 (4.5)	5 (5.6)	3 (3.5)	
No	38 (21.5)	20 (22.2)	18 (20.7)	

Table 5: Food Pantry Food Choices(continued).*

Our Daily Bread provides..	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
More low fat food choices?				(6.2567) p=0.0438
Yes, Often	104 (60.1)	45 (51.1)	59 (69.4)	
Yes, Sometimes	24 (13.9)	14 (15.9)	10 (11.8)	
No	45 (26.0)	29 (33.0)	16 (18.8)	
More low sugar food choices?				(0.2304) p=0.8912
Yes, Often	99 (58.0)	50 (56.2)	49 (59.8)	
Yes, Sometimes	28 (16.4)	15 (16.8)	13 (15.9)	
No	44 (25.7)	24 (27.0)	20 (24.4)	
More low salt food choices?				(4.0835) p=0.1298
Yes, Often	84 (51.3)	37 (44.1)	47 (59.5)	
Yes, Sometimes	32 (19.6)	20 (23.8)	12 (15.2)	
No	47 (28.8)	27 (32.1)	20 (25.3)	
More grain food choices? (bread, cereal, pasta, rice)?				(1.3217) p=0.5164
Yes, Often	125 (69.4)	63 (67.0)	62 (72.1)	
Yes, Sometimes	15 (8.3)	7 (7.5)	8 (9.3)	
No	40 (22.2)	24 (25.5)	16 (18.6)	
More canned fruit and vegetable choices				(4.6804) p=0.0963
Yes, Often	132 (73.3)	64 (68.1)	68 (79.1)	
Yes, Sometimes	13 (7.2)	6 (6.4)	7 (8.1)	
No	35 (19.4)	24 (25.50)	11 (12.8)	
More fresh fruit and vegetable choices?				(2.7762) p=0.2495
Yes, Often	139 (77.2)	68 (72.3)	71 (82.6)	
Yes, Sometimes	15 (8.3)	9 (9.6)	6 (7.0)	
No	26 (14.4)	17 (18.1)	9 (10.5)	
More frozen fruit and vegetable choices?				(3.7998) p=0.1496
Yes, Often	118 (66.3)	54 (60.0)	64 (72.7)	
Yes, Sometimes	21 (11.8)	14 (15.6)	7 (8.0)	
No	39 (22.0)	22 (24.4)	17 (19.3)	
More dairy food choices?				(8.2365) p=0.0163
Yes, Often	132 (74.2)	60 (65.2)	72 (83.7)	
Yes, Sometimes	20 (11.2)	13 (14.1)	7 (8.1)	
No	26 (14.6)	19 (20.7)	7 (8.1)	

Table 5: Food Pantry Food Choices(continued).*

Our Daily Bread provides..	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
More fresh meat choices?				(4.6994) p=0.0954
Yes, Often	130 (73.5)	63 (67.7)	67 (79.8)	
Yes, Sometimes	22 (12.4)	12 (12.9)	10 (11.9)	
No	25 (14.1)	18 (19.4)	7 (8.3)	
More canned meat choices?				(3.8760) p=0.1440
Yes, Often	105 (60.3)	48 (53.3)	57 (67.7)	
Yes, Sometimes	27 (15.5)	16 (17.8)	11 (13.1)	
No	42 (24.1)	26 (28.9)	16 (19.1)	
More health education opportunities				(1.1712) p=0.5568
Yes, Often	85 (58.2)	43 (54.4)	42 (63.0)	
Yes, Sometimes	25 (17.1)	14 (17.7)	11 (16.4)	
No	36 (24.7)	22 (27.9)	14 (21.0)	

*Columns may not add to 100 due to rounding.

**Chi-square test may not be valid due to an expected cell count warning.

Participants' responses to the USDA ERS six-item short form questions (USDA ERS,2017) are presented below (Table 6). Most participants (54.6%) reported that sometimes the food they bought did not last and they did not have money to buy more. In addition, 52.6% of participants reported they sometimes could not afford to eat balanced meals. Although not significant, a larger percentage of pre-seniors (39.2%) than seniors (25.2%) reported it was often true that they could not afford to eat balanced meals. Furthermore, 57.4% of participants reported they had to cut the size or skip meals due to lack of money and 48.2% reported this happened almost every month. A significant difference was observed in participants reporting they cut the size of their meals or skipped meals because there was not enough money for food between age groups (p=0.0081), with a higher percentage of this being reported by pre-seniors (67.0%) than seniors (48.6%). Additionally, 52.2% of participants indicated that they ate less than they

felt they should because there was not enough money for food. There was a significant difference in the percentage of participants reporting they ate less than they felt they should because there was not enough money for food by age group ($p=0.0091$), with a higher percentage of pre-seniors (61.4%) compared to seniors (43.0%) reporting this. Furthermore, 43.3% of participants reported they were hungry but did not eat because there was not enough money for food. There was also a significant difference in the percentage of participants reporting they were hungry but did not eat because there was not enough money for food by age group ($p=0.0003$), with a higher percentage of pre-seniors (56.1%) compared to seniors (31.1%) reporting this.

Participants' responses to additional older adult food security questions (Wolf, Frongillo & Valois, 2003) are also presented in (Table 6). Only 35.0% of participants indicated they ate less than they felt they should because they could not get the food they needed even though they had the money for food. Although not significant, a larger percentage of pre-seniors (41.0%) reported this than seniors (29.1%). Similarly, 24.0% of participants indicated they ate less than they felt they should because they were unable to prepare the food they had in the house. There was a significant difference in the percentage of participants who reported they ate less than they felt they should because they were unable to prepare the food they had in the house ($p=0.0050$), with a higher percentage of pre-seniors (32.7%) compared to seniors (15.7%) reporting this. In addition, almost half of participants (49.5%) reported they ate less than they felt they should because they did not feel up to cooking.

Table 6: Food Security Status.*

	All Participants		50-64 Years of Age n(%)		65+ Years of Age n(%)		(Chi-square) p value
In the last 12 months...	N	(%)	N	(%)	N	(%)	p value
The food I bought just did not last, and I did not have money to buy more							(2.1331) p=0.3442
Often true	76	(38.4)	42	(42.4)	34	(34.3)	
Sometimes true	108	(54.6)	52	(52.5)	56	(56.6)	
Never true	14	(7.1)	5	(5.1)	9	(9.1)	
I could not afford to eat balanced meals							(5.2717) p=0.0717
Often true	63	(32.1)	38	(39.2)	25	(25.2)	
Sometimes true	103	(52.6)	48	(49.5)	55	(55.6)	
Never true	30	(15.3)	11	(11.3)	19	(19.2)	
Did you ever cut the size of your meals or skip meals because there was not enough money for food?							(7.0117) p=0.0081
Yes	116	(57.4)	65	(67.0)	51	(48.6)	
No	86	(42.6)	32	(33.0)	54	(51.4)	
In the last 12 months...	N	(%)	N	(%)	N	(%)	p value
If the previous question was answered “yes”...							
How often did this happen?							(3.6510) p= 0.1611
Almost every month	52	(48.2)	34	(54.8)	18	(39.1)	
Some months, but not every month	45	(41.7)	24	(38.7)	21	(45.7)	
Only 1 or 2 months	11	(10.2)	4	(6.5)	7	(15.2)	
In the last 12 months							
Did you ever eat less than you felt you should because there wasn’t enough money for food?							(6.8083) p= 0.0091
Yes	105	(52.2)	62	(61.4)	43	(43.0)	
No	96	(47.8)	39	(38.6)	57	(57.0)	
Were you ever hungry but didn’t eat because there wasn’t enough money for food?							(12.8412) p=0.0003
Yes	87	(43.3)	55	(56.1)	32	(31.1)	
No	114	(56.7)	43	(43.9)	71	(68.9)	
Did you ever eat less than you felt you should because you couldn’t get the food you needed even though you had money for food?							(3.1454) p=0.0761
Yes	71	(35.0)	41	(41.0)	30	(29.1)	
No	132	(65.0)	59	(59.0)	73	(70.1)	

Table 6: Food Security Status (continued).*

	All Participants	50-64 Years of Age n(%)		65+ Years of Age n(%)		(Chi-square) p value
Did you ever eat less than you felt you should because you were unable to prepare a meal even though you had food in the house?						(7.8881) p=0.0050
Yes	48	(24.0)	32	(32.7)	16	(15.7)
No	152	(76.0)	66	(67.4)	86	(84.3)
Did you ever eat less than you felt you should because you didn't feel up to cooking?						(0.0000) p=1.0000
Yes	100	(49.5)	50	(49.5)	50	(49.5)
No	102	(50.5)	51	(50.5)	51	(50.5)

*Columns may not add to 100 due to rounding.

**Chi-square test may not be valid due to an expected cell count warning.

Food security status by age group and gender are presented in Table 7. In regard to age group, food insecurity status was similar with 76.4% of pre-seniors and 75.7% seniors being classified as food insecure. When further evaluated by gender within age groups, 78.9% of pre-senior males and 64.5% of senior males were classified as food insecure. For females, there was a smaller difference with 84.9% of pre-senior females and 85.5% of senior females being classified as food insecure.

Table 7: Food Security Status by Age and Gender.*

Food Security Status	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
By Age Group				(0.0149) p=0.9028
Food Secure	51 (23.9)	25 (23.5)	26 (24.3)	
Food Insecure	162 (76.1)	81 (76.4)	81 (75.7)	
By Gender and By Age Group				
Males				(1.7819) p=0.1819
Food Secure	19 (27.5)	8 (21.1)	11 (35.5)	
Food Insecure	50 (72.5)	30 (78.9)	20 (64.5)	

Table 7: Food Security Status by Age and Gender (continued).*

Food Security Status	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Female				(0.0129) p=0.9096
Food Secure	21 (14.8)	10 (15.2)	11 (14.5)	
Food Insecure	121 (85.21)	56 (84.9)	65 (85.5)	

*Columns may not add to 100 due to rounding.

Participants responses to the DETERMINE survey questions which assess nutritional risk (National Center on Nutrition and Aging, 2018) are presented in Table 8. Fifty percent of participants indicated they had an illness or condition that changed the amount of food eaten. Eating fewer than 2 meals a day was reported by 43.9% of participants. There was a significant difference in the percentage of participants reporting eating fewer than two meals a day ($p=0.0403$), with a higher percentage of pre-seniors reporting this (51.0%) compared to seniors (36.7%). In addition, 54.6% of participants indicated they ate few fruits, vegetables, or milk products. A majority of participants indicated they did not have 3 or more alcoholic drinks per day (89.5%) and did not have any tooth or mouth issues making it hard to eat (57.4%). Furthermore, 69.5% of participants reported not having enough money to buy the food they needed. Although not significant, a higher percentage of pre-seniors reported this (75.3%) than seniors (63.5%). In addition, 50.5% reported eating alone most of the time and 67.2% reported taking three or more different prescribed drugs on a daily basis. There was a significant difference in participants reporting they took three or more prescription drugs on a daily basis by age group ($p=0.0471$), with a higher percentage of seniors (74.0%) compared to pre-seniors (60.6%). In addition, the majority of participants reported they had not lost or gained 10

pounds without wanting to (58.5%). There was a significant different in participants reporting they had lost or gained 10 pounds in the last six months by age group ($p=0.0024$), with a higher percentage of pre-seniors (52.0%) reporting this than seniors (30.5%). Furthermore, the majority of participants reported they did not have any problems cooking or feeding themselves (64.7%). There was a significant difference in the percentage of participants reporting they had problems cooking or feeding themselves by age group ($p=0.0137$), with a higher percentage of pre-seniors (43.8%) compared to seniors (26.8%) reporting they had problems.

Table 8: Determine Survey Questions.

Do you...	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Have an illness or condition that makes you change the kind/and or amount of food you eat				(2.6919) p=0.1009
Yes	90 (50.0)	52 (55.9)	41 (44.1)	
No	90 (50.0)	38 (43.7)	49 (56.3)	
Eat fewer than 2 meals a day				(4.2060) p=0.0403
Yes	86 (43.9)	51 (51.0)	35 (36.7)	
No	110 (56.1)	49 (49.0)	61 (63.5)	
Eat few fruits, vegetables, or milk products				(1.3478) p=0.2457
Yes	107 (54.6)	57 (58.7)	50 (50.5)	
No	89 (45.4)	40 (41.2)	49 (49.5)	
I have 3 or more drinks of beer, liquor, or wine almost every day				(0.0426) p=0.8365
Yes	21 (10.6)	11 (11.0)	10 (10.1)	
No	178 (89.5)	89 (89.0)	89 (89.9)	
I have tooth or mouth problems that make it hard for me to eat				(2.3488) p=0.1254
Yes	81 (42.6)	47 (48.0)	34 (37.0)	
No	109 (57.4)	51 (52.0)	58 (63.0)	
I do not always have enough money to buy the food I need				(3.1842) p=0.0744
Yes	137 (69.5)	76 (75.3)	61 (63.5)	
No	60 (30.5)	25 (24.8)	35 (36.5)	

Table 8: Determine Survey Questions (continued).

Do you...	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
I eat alone most of the time				(0.0842) p=0.7717
Yes	97 (50.5)	48 (49.5)	49 (51.6)	
No	95 (49.5)	49 (50.5)	46 (48.4)	
I take 3 or more different prescribed or over the counter drugs a day				(3.9409) p=0.0471
Yes	131 (67.2)	60 (60.6)	71 (74.0)	
No	64 (32.9)	39 (39.4)	25 (26.0)	
Without wanting to, I have lost or gained 10 pounds in the last 6 months				(9.2508) p=0.0024
Yes	81 (41.5)	52 (52.0)	29 (30.5)	
No	114 (58.5)	48 (48.0)	66 (69.5)	
I am not always physically able to shop cook or feed myself				(6.0717) p=0.0137
Yes	68 (35.2)	42 (43.8)	26 (26.8)	
No	125 (64.8)	54 (56.3)	71 (73.2)	

*Columns may not add to 100 due to rounding.

Participants' nutritional risk score assessed using the DETERMINE survey (Table 9) revealed the majority of participants were classified as being at high nutrition risk (57.3%). A significant difference was observed in nutritional risk by age group (p=0.0328) with a higher percentage of pre-seniors (66.0%) compared to seniors (48.6%) being classified at high nutritional risk.

Table 9: Nutrition Risk Score.*

Determine Survey	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Score				(6.8323) p=0.0328
Low Risk	73 (34.3)	28 (26.4)	45 (42.1)	
Moderate Risk	18 (8.5)	8 (7.6)	10 (9.4)	
High Risk	122 (57.3)	70 (66.0)	52 (48.6)	

*Columns may not add to 100 due to rounding.

In regard to coping mechanisms utilized by participants (Table 10), the majority of participants reported they sometimes ate smaller meals (41.8%) and skipped meals (38.2%). A significant difference was observed in both eating smaller meals and skipping meals by age group ($p=0.0002$ and $p=0.0001$, respectively). A higher percentage of pre-seniors (52.9%) compared to seniors (28.9%) reported they often ate smaller meals and a higher percentage of pre-seniors (37.3%) compared to seniors (13.7%) reported they often skipped meals. In addition, most participants reported they often stretched meals (42.8%).

However, the majority of participants reported they did not eat foods that may have been stored too long (53.2%), did not eat foods provided by local community groups (59.7%), did not get help with food from family or friends (43.8%), did not hunt, fish or garden to provide food (67.7%), did not have to choose between eating and paying rent or utilities (50.0%), did not have to choose between eating and buying medicine (51.2%), did not have to choose between eating and feeding a pet (69.2%), and did not have to sell or pawn items (56.1%). Although the majority of participants reported not doing these behaviors, there was a significant difference by age group in pre-seniors compared to senior participants reporting they ate foods that may have been stored too long (26.5% and 7.9%), got help with food from family or friends (30.1% and 9.5%), had to choose between eating and paying rent or utilities (28.0% and 12.3%), had to choose between eating and buying medicine (35.2% and 9.5%), had to choose between eating and feeding a pet (21.2% and 7.7%), and sold or pawned items (29.1% and 10.8%), with a larger percentage of pre-seniors reporting they engaged in these behaviors Lastly, the majority

of participants (55.7%) reported that they only had some family or friends living close by that could help them. With that said, 11.3% reported they had very few family or friends living close by that could help them.

Table 10: Coping Mechanisms of Food Pantry Guests.*

Coping Mechanisms	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
If you don't have enough food, do you ever...				
Eat smaller meals?				(16.9162) p= 0.0002
Yes, Often	85 (40.1)	55 (52.9)	30 (28.9)	
Yes, Sometimes	87 (41.8)	40 (38.5)	47 (45.2)	
No	36 (17.3)	9 (8.7)	27 (26.0)	
Skip meals?				(17.6687) p=0.0001
Yes, Often	52 (25.5)	38 (37.3)	14 (13.7)	
Yes, Sometimes	78 (38.2)	38 (37.3)	40 (39.2)	
No	74 (36.3)	26 (25.5)	48 (47.1)	
Stretch meals (make soups, or casseroles; add rice or noodles)				(3.0372) p=0.2190
Yes, Often	89 (42.8)	50 (47.6)	39 (37.9)	
Yes, Sometimes	81 (39.0)	40 (38.1)	41 (39.8)	
No	38 (18.3)	15 (14.3)	23 (22.3)	
Eat foods that may have been stored for too long				(25.2803) p <0.0001
Yes, Often	35 (17.2)	27 (26.5)	8 (7.9)	
Yes, Sometimes	60 (29.6)	38 (37.3)	22 (21.8)	
No	108 (53.2)	37 (36.3)	71 (70.3)	
Eat foods provided by local community groups				(5.5755) p=0.0616
Yes, Often	32 (15.5)	21 (20.8)	11 (10.5)	
Yes, Sometimes	51 (24.8)	27 (26.8)	24 (22.9)	
No	123 (59.7)	53 (52.5)	70 (66.7)	

Table 10: Coping Mechanisms of Food Pantry Guests (continued).*

Coping Mechanisms	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
If you don't have enough food, do you ever...				
Get help with food from family or friends?				(22.1415) p<0.0001
Yes, Often	41 (19.7)	31 (30.1)	10 (9.5)	
Yes, Sometimes	76 (36.5)	42 (40.8)	34 (32.4)	
No	91 (43.8)	30 (29.1)	61 (58.1)	
Hunt, fish, or garden to provide food				(5.4128) p=0.0668
Yes, Often	28 (13.7)	19 (18.6)	9 (8.8)	
Yes, Sometimes	38 (18.6)	21 (20.6)	17 (16.7)	
No	138 (67.7)	62 (60.8)	76 (74.5)	
Have to choose between eating and paying rent or utilities				(20.3848) p <0.0001
Yes, Often	41 (19.9)	28 (28.0)	13 (12.3)	
Yes, Sometimes	62 (30.1)	38 (38.0)	24 (22.6)	
No	103 (50.0)	34 (34.0)	69 (65.1)	
Have to choose between eating and buying medicine?				(23.5298) p <0.0001
Yes, Often	47 (22.5)	37 (35.2)	10 (9.5)	
Yes, Sometimes	55 (26.3)	29 (27.6)	26 (25.0)	
No	107 (51.2)	39 (37.1)	68 (65.4)	
Have to choose between eating and feeding a pet?				(7.8944) p=0.0193
Yes, Often	30 (14.4)	22 (21.2)	8 (7.7)	
Yes, Sometimes	34 (16.4)	17 (16.4)	17 (16.4)	
No	144 (69.2)	65 (62.5)	79 (76.0)	
Sell or pawn items?				(15.2351) p=0.0005
Yes, Often	41 (20.0)	30 (29.1)	11 (10.8)	
Yes, Sometimes	49 (23.9)	28 (27.1)	21 (20.6)	
No	115 (56.1)	45 (43.7)	70 (68.6)	
How many family members or friends do you have close by that can help				(0.3548) p=0.8374
Many	67 (33.0)	35 (35.0)	32 (31.1)	
Some	113 (55.7)	54 (54.0)	59 (57.3)	
Very few	23 (11.3)	11 (11.0)	12 (11.7)	

*Columns may not add to 100 due to rounding.

Table 11 presents participants' dietary patterns. The majority of participants reported on most days they ate lunch (54.7%), dinner (75.9%), prepared meals at home (76.0%), and

had the food they needed to make healthy meals (44.6%). There was a significant difference between age groups in having the food to make healthy meals ($p=0.0125$), with a larger percentage of seniors reported on most days they had the food to make healthy meals (52.6%) compared to pre-seniors (36.7%). In addition, a large percentage of participants reported on some days they ate breakfast (36.7%) and ate snacks (44.9%). There was also a significant difference between age groups in eating snacks ($p=0.00490$), with a larger percentage of seniors reporting they ate snacks on most days (39.6%) compared to pre-seniors (18.3%). However, the majority also reported they seldom ate fast food (50.5%), received help shopping for food from family or friends (52.8%), or received help preparing meals from family or friends (57.4%).

Table 11: Dietary Patterns of Food Pantry Guests.*

Dietary	All Participants n(%)	50-64 Years o.f Age n(%)	65+Years of Age n(%)	(Chi Square) p value
How often do you...				
Eat breakfast				(5.5443) $p=0.0625$
Seldom, if ever	55 (27.6)	32 (33.0)	23 (22.6)	
Some days	73 (36.7)	38 (39.2)	35 (34.3)	
Most days	71 (35.7)	27 (27.8)	44 (43.1)	
Eat lunch?				(4.9289) $p=0.0851$
Seldom, if ever	21 (10.5)	11 (11.2)	10 (9.7)	
Some days	70 (34.8)	41 (41.8)	29 (28.2)	
Most days	110 (54.7)	46 (47.0)	64 (62.1)	
Eat dinner?				(4.7627) $p=0.0924$
Seldom, if ever	14 (7.0)	5 (5.2)	9 (8.8)	
Some days	34 (17.1)	22 (22.7)	12 (11.8)	
Most days	151 (75.9)	70 (72.2)	81 (79.4)	

Table 11: Dietary Patterns of Food Pantry Guests (continued).*

Dietary	All Participants n(%)	50-64 Years of Age n(%)	65+Years of Age n(%)	(Chi Square) p value
How often do you...				
Eat snacks?				(10.6199) p=0.00490
Seldom, if ever	50 (25.8)	28 (30.1)	22 (21.8)	
Some days	87 (44.9)	48 (51.6)	39 (38.6)	
Most days	57 (29.4)	17 (18.3)	40 (39.6)	
Eat fast food				(2.8418) p=0.2415
Seldom, if ever	96 (50.5)	52 (55.3)	44 (45.8)	
Some days	64 (33.7)	31 (33.0)	33 (34.4)	
Most days	30 (15.8)	11 (11.7)	19 (19.8)	
Prepare meals at home				(2.4828) p=0.2890
Seldom, if ever	10 (5.2)	7 (7.3)	3 (3.1)	
Some days	36 (18.8)	20 (20.8)	16 (16.7)	
Most days	146 (76.0)	69 (71.9)	77 (80.2)	
Have the food you need to make healthy meals				(8.7718) p=0.0125
Seldom, if ever	24 (12.3)	18 (18.4)	6 (6.2)	
Some days	84 (43.1)	44 (44.9)	40 (41.2)	
Most days	87 (44.6)	36 (36.7)	51 (52.6)	
Get help shopping for food from family or friends				(0.5701) p=0.7520
Seldom, if ever	96 (52.8)	46 (51.1)	50 (54.4)	
Some days	52 (28.6)	28 (31.1)	24 (26.1)	
Most days	34 (18.7)	16 (17.8)	18 (19.6)	
Get help preparing meals from family or friends				(0.2938) p=0.8634
Seldom, if ever	105 (57.4)	51 (56.0)	54 (58.7)	
Some days	51 (27.9)	27 (29.7)	24 (26.1)	
Most days	27 (14.8)	13 (14.3)	14 (15.2)	

*Columns may not add to 100 due to rounding.

**Chi-square test may not be valid due to an expected cell count warning.

Food choices of participants are reflected in Table 12. The most popular fruits among participants were apples (74.9%) and bananas (78.2%). A small percentage of participants (15.6 %) indicated that they also enjoyed “other” fruit such as mango,

cherries, watermelon, kiwi and cantaloupe. Meanwhile, the most popular grains were bread (91.0%), cereal (82.5%), and crackers (73.9%). A small percentage of participants (9.5%) indicated “other” grains such as pita bread, oats, cream of wheat, and thin breads from the pantry. Most participants enjoyed getting potatoes (86.7%) and corn (78.2%). A small percentage of participants indicated “other” (12.8%) also enjoyed tomatoes, cabbage, sweet potato, okra, green beans and zucchini from the food pantry. The most popular dairy items among participants were cheese (88.6%) and milk (83.9%) with a small percentage (12.8%) also enjoy getting “other” dairy items such as ice cream, butter, condensed milk, buttermilk and cottage cheese from the food pantry. The most popular protein choices were chicken (86.7%) and eggs (82.4%). Meanwhile, some participants (9.0%) also indicated “other” protein sources they enjoyed including tofu, turkey, peanut butter, tuna, and chorizo from the food pantry. The most desired form of fruit from the food pantry was fresh (76.8%), along with fresh vegetables (82.0%).

Among all the food choices in the food pantry, a significant difference between age groups was only found for tortillas ($p= 0.0329$) and leafy greens ($p= 0.0327$). A larger percentage of the pre-senior group liked getting tortillas (58.5%) compared to seniors (43.8%). The same-was found for the leafy greens with a larger percentage of pre-seniors enjoying leafy greens (56.6%) compared to seniors (41.9%). In regard to form of food received from the food pantry, there was a significant difference in dried fruit ($p=0.0429$) and dried vegetables ($p=0.0138$). A larger percentage of seniors liked to get dried fruit (46.7%) and vegetables (37.1%) compared to pre-seniors (33.0% and 21.7%, respectively).

Table 12: Food Choices.

Food Choices	All Participants n(%)	50-64 Years of Age n(%)	65+Years of Age n(%)	(Chi Square) p value
What type of fruits do you like to get from the food pantry?				
Apple				(0.5682) p=0.4510
Yes	158 (74.9)	77 (72.6)	81 (77.1)	
No	53 (25.1)	29 (27.4)	24 (22.9)	
Bananas				(0.4946) p=0.4819
Yes	165 (78.2)	85 (80.2)	80 (76.2)	
No	46 (21.8)	21 (19.8)	25 (23.8)	
Grapes				(0.9957) p=0.3184
Yes	146 (69.2)	70 (66.0)	76 (72.4)	
No	65 (30.8)	36 (34.0)	29 (27.6)	
Melons				(0.7963) p=0.3722
Yes	113 (53.6)	60 (56.6)	53 (50.5)	
No	98 (46.5)	46 (43.4)	52 (49.5)	
Oranges				(2.8432) p=0.0918
Yes	146 (69.2)	79 (74.5)	67 (63.8)	
No	65 (30.8)	27 (25.5)	38 (36.2)	
Peaches				(0.6265) p=0.4287
Yes	146 (69.2)	76 (71.7)	70 (66.7)	
No	65 (30.8)	30 (28.3)	35 (33.3)	
Pears				(0.2332) p=0.6291
Yes	107 (50.7)	52 (49.1)	55 (52.4)	
No	104 (49.3)	54 (50.9)	50 (47.6)	
Berries				(0.1245) p=0.7242
Yes	116 (55.0)	57 (53.8)	59 (56.2)	
No	95 (45.0)	49 (46.2)	46 (43.8)	
Other				(0.8427) p=0.3586
Yes	33 (15.6)	19 (17.9)	14 (13.3)	
No	178 (84.4)	87 (82.1)	91 (86.7)	

Table 12: Food Choices (continued).

Food Choices	All Participants n(%)	50-64 Years of Age n(%)	65+Years of Age n(%)	(Chi Square) p value
What type of grains do you like to get from the food pantry?				
Bread				(0.0479) p=0.8268
Yes	192 (91.0)	96 (90.6)	96 (91.4)	
No	19 (9.0)	10 (9.4)	9 (8.6)	
Cereal				(0.2615) p=0.6091
Yes	174 (82.5)	86 (81.1)	88 (83.8)	
No	37 (17.5)	20 (18.9)	17 (16.2)	
Cracker				(2.8364) p=0.0922
Yes	156 (73.9)	73 (68.9)	83 (79.1)	
No	55 (26.1)	33 (31.1)	22 (20.1)	
Pasta				(0.5808) p=0.4460
Yes	130 (61.6)	68 (64.2)	62 (59.1)	
No	81 (38.4)	38 (35.6)	43 (40.1)	
Rice				(0.0396) p=0.8423
Yes	120 (56.9)	61 (57.6)	59 (56.2)	
No	91 (43.1)	45 (42.5)	46 (43.8)	
Tortilla				(4.5502) p=0.0329
Yes	108 (51.2)	62 (58.5)	46 (43.8)	
No	103 (48.8)	44 (41.5)	59 (56.2)	
Other				(0.2005) p=0.6543
Yes	20 (9.5)	11 (10.4)	9 (8.6)	
No	191 (90.5)	95 (89.6)	96 (91.4)	
What types of vegetables do you like to get from the food pantry?				
Carrots				(0.2822) p=0.5952
Yes	139 (65.9)	68 (64.2)	71 (67.6)	
No	72 (34.1)	38 (35.9)	34 (32.4)	
Corn				(0.4946) p=0.4819
Yes	165 (78.2)	85 (80.2)	80 (76.2)	
No	46 (21.8)	21 (19.8)	25 (23.8)	

Table 12: Food Choices (continued).

Food Choices	All Participants n(%)	50-64 Years of Age n(%)	65+Years of Age n(%)	(Chi Square) p value
What types of vegetables do you like to get from the food pantry?				
Broccoli				(0.0122) p=0.9120
Yes	152 (72.0)	76 (71.7)	76 (72.4)	
No	59 (28.0)	30 (28.3)	29 (27.6)	
Green Beans				(1.9835) p=0.1590
Yes	160 (75.8)	76 (71.7)	84 (80.0)	
No	51 (24.2)	30 (28.3)	21 (20.0)	
Leafy Greens				(4.5597) p=0.0327
Yes	104 (49.3)	60 (56.6)	44 (41.9)	
No	107 (50.7)	46 (43.4)	61 (58.1)	
Peas				(0.5805) p=0.4461
Yes	111 (52.6)	53 (50.0)	58 (55.2)	
No	100 (47.4)	53 (50.0)	47 (44.8)	
Squash				(1.0623) p=0.3027
Yes	110 (52.1)	59 (55.6)	51 (48.6)	
No	101 (47.9)	47 (44.3)	54 (51.4)	
Peppers				(0.4073) p=0.5233
Yes	122 (57.8)	59 (55.7)	63 (60.0)	
No	89 (42.2)	47 (44.3)	42 (40.0)	
Potatoes				(0.7033) p=0.4017
Yes	183 (86.7)	94 (88.7)	89 (84.8)	
No	28 (13.3)	12 (11.3)	16 (15.2)	
Onions				(0.7105) p=0.3993
Yes	160 (75.8)	83 (78.3)	77 (73.3)	
No	51 (24.2)	23 (21.7)	28 (26.7)	
Other				(0.0323) p=0.8574
Yes	27 (12.8)	14 (13.2)	13 (12.4)	
No	184 (87.2)	92 (86.8)	92 (87.6)	

Table 12: Food Choices (continued).

Food Choices	All Participants n(%)	50-64 Years of Age n(%)	65+Years of Age n(%)	(Chi Square) p value
What types of dairy do you like to get from the food pantry?				
Milk (whole/low fat)				(0.5167) p= 0.4722
Yes	177 (83.9)	87 (82.1)	90 (85.7)	(0.7101) p= 0.3994
No	34 (16.1)	19 (17.9)	15 (14.3)	
Cheese				(0.7101) p= 0.3994
Yes	187 (88.6)	92 (86.8)	95 (90.5)	(1.0636) p= 0.3024
No	24 (11.4)	14 (13.2)	10 (9.5)	
Yogurt				(1.0636) p= 0.3024
Yes	108 (51.2)	58 (54.7)	50 (47.6)	(0.3503) p= 0.5539
No	103 (48.8)	48 (45.3)	55 (52.4)	
Other				(0.3503) p= 0.5539
Yes	27 (12.8)	15 (14.2)	12 (11.4)	(0.0026) p=0.9596
No	184 (87.2)	91 (85.9)	93 (88.6)	
What types of protein foods do you like to get from the food pantry?				
Beans				(0.0026) p=0.9596
Yes	137 (64.9)	69 (65.1)	68 (64.8)	(0.1063) p=0.7444
No	74 (35.1)	37 (34.9)	37 (35.2)	
Beef				(0.1063) p=0.7444
Yes	173 (82.0)	86 (81.1)	87 (82.9)	(0.1436) p=0.7047
No	38 (18.0)	20 (18.9)	18 (17.1)	
Chicken				(0.1436) p=0.7047
Yes	183 (86.7)	91 (85.9)	92 (87.6)	(0.1121) p=0.7378
No	28 (13.3)	15 (14.2)	13 (12.4)	
Eggs				(0.1121) p=0.7378
Yes	175 (82.9)	87 (82.1)	88 (83.8)	(0.6448) p=0.4220
No	36 (17.1)	19 (17.9)	17 (16.2)	
Fish				(0.6448) p=0.4220
Yes	133 (63.0)	64 (60.4)	69 (65.7)	(0.6448) p=0.4220
No	78 (37.0)	42 (39.6)	36 (34.3)	

Table 12: Food Choices (continued).

Food Choices	All Participants n(%)	50-64 Years of Age n(%)	65+Years of Age n(%)	(Chi Square) p value
What types of protein foods do you like to get from the food pantry				
Pork				
Yes	146 (69.2)	73 (68.9)	73 (69.5)	(0.0106) p=0.9178
No	65 (30.8)	33 (31.1)	32 (30.5)	
Other				(0.0687) p=0.7932
Yes	19 (9.0)	9 (8.5)	10 (9.5)	
No	192 (91.0)	97 (91.5)	95 (90.5)	
In what form do you like to get fruit from the food pantry?				
Canned				(2.8364) p= 0.0922
Yes	156 (73.9)	73 (68.9)	83 (79.1)	
No	55 (26.1)	33 (31.1)	22 (21.0)	
Dried				(4.1003) p=0.0429
Yes	84 (39.8)	35 (33.0)	49 (46.7)	
No	127 (60.2)	71 (67.0)	56 (53.3)	
Fresh				(0.2777) p=0.5982
Yes	162 (76.8)	83 (78.3)	79 (75.2)	
No	49 (23.2)	23 (21.7)	26 (24.8)	
Frozen				(0.0021) p=0.9638
Yes	147 (69.7)	74 (69.8)	73 (69.5)	
No	64 (30.3)	32 (30.2)	32 (30.5)	
Juice				(0.0388) p=0.8439
Yes	126 (59.7)	64 (60.4)	62 (59.1)	
No	85 (40.3)	42 (39.6)	43 (41.0)	
In what form do you like to get vegetables from the food pantry				
Canned				(0.2194) p=0.6395
Yes	166 (78.7)	82 (77.4)	84 (80.0)	
No	45 (21.3)	24 (22.6)	21 (20.0)	
Dried				(6.0640) p=0.0138
Yes	62 (29.4)	23 (21.7)	39 (37.1)	
No	149 (70.6)	83 (78.3)	66 (62.9)	

Table 12: Food Choices (continued).

Food Choices	All Participants n(%)	50-64 Years of Age n(%)	65+Years of Age n(%)	(Chi Square) p value
In what form do you like to get vegetables from the food pantry				
Fresh				(2.1477) p= 0.1428
Yes	173 (82.0)	91 (85.9)	82 (78.1)	
No	38 (18.0)	15 (14.2)	23 (21.9)	
Frozen				(0.3489) p= 0.5547
Yes	157 (74.4)	77 (72.6)	80 (76.2)	
No	54 (25.6)	29 (27.4)	25 (23.8)	
Juice				(1.7100) p= 0.1910
Yes	95 (45.0)	43 (40.6)	52 (49.5)	
No	116 (55.0)	63 (59.4)	53 (50.5)	

Table 13 reflects dietary intake for male participants. A large majority of male participants consumed less than the lowest recommended amounts of fruit (65.2%), vegetables (88.4%), grains (92.8%), protein (69.6%) and dairy (72.5%). In addition, most males were not meeting their recommended 13 cups of fluid a day (89.9%). There was a difference found in ounces of grain by age group ($p=0.0360$), with a larger percent of seniors not consuming recommended amounts (100%) compared to pre-seniors (86.8%); however, the chi-square test may not be valid due to an expected cell count warning. Furthermore, there was a significant difference found in ounces of protein ($p=0.0163$), with a larger percentage of pre-seniors not consuming recommended amounts (54.8%) compared to seniors (81.6%).

Table 14 reflects dietary intake for female participants. Similar to males, women were eating less than the lowest recommended amounts of fruit (73.9%), vegetables (59.9%), grains (90.9%), protein (85.9%), dairy (81.0%), and below the 9 cups of fluid (74.7%). Although not significant ($p=0.0594$), a larger percentage of the senior group consumed recommended amounts of vegetables (47.4%) compared to the pre-senior group (31.8%)

Table 13: Dietary Intake for Male Participants.*

Dietary..	All Male Participants n(%)	Men s 50-64 Years of Age n(%)	Men 65+Years of Age n(%)	(Chi Square) p value
How much..				
Cups of fruit do you eat in a normal day?				(0.5362) p= 0.5366
< 2 cups	45 (65.2)	26 (68.4)	19 (61.3)	
> 2 cups	24 (34.8)	12 (31.6)	12 (38.7)	
Cups of vegetables do you eat in a normal day?				(1.1293) p= 0.2879**
< 2.5 cups	61 (88.4)	35 (92.1)	26 (83.9)	
> 2.5 cups	8 (11.6)	3 (7.9)	5 (16.1)	
Ounces of grain do you eat in a normal day?				(4.3976) p= 0.0360**
< 6 ounces	64 (92.8)	33 (86.8)	31 (100.0)	
> 6 ounces	5 (7.0)	5 (13.2)	0 (0.0)	
Ounces of protein do you eat in a normal day?				(5.7659) p= 0.0163
< 5.5 ounces	48 (69.6)	31 (81.6)	17 (54.8)	
> 5.5 ounces	21 (30.4)	7 (18.4)	14 (45.2)	
Cups of dairy do you eat in a normal day				(0.0631) p= 0.8016
< 3 cups	50 (72.5)	28 (73.7)	22 (71.0)	
> 3 cups	19 (27.5)	10 (26.3)	9 (29.0)	
How many cups of fluid (water, juice, coffee, tea, soda) do you drink in a normal day?				(04698) p=0.4931
< 13 cups	62(89.9)	35 (92.1)	27 (87.1)	
> 13 cups	7 (10.1)	3 (7.9)	4 (12.9)	

*Columns may not add to 100 due to rounding.

Table 14: Dietary Intake for Female Participants.*

Dietary..	All Female Participants n(%)	Women 50-64 Years of Age n(%)	Women 65+Years of Age n(%)	(Chi Square) p value
How much..				
Cups of fruit do you eat in a normal day?				(0.7093) p=0.3997
< 1.5 cups	105 (73.9)	51 (77.3)	54 (71.1)	
> 1.5 cups	37 (26.1)	15 (22.7)	22 (28.9)	
Cups of vegetables do you eat in a normal day?				(3.5549) p=0.0594
< 2 cups	85 (59.9)	45 (68.2)	40 (52.6)	
> 2 cups	57 (40.1)	21 (31.8)	36 (47.4)	
Ounces of grain do you eat in a normal day?				(0.3122) p=0.5777
< 5 ounces	129 (90.9)	59 (89.4)	70 (92.1)	
> 5 ounces	13 (9.2)	7 (10.6)	6 (7.9)	
Ounces of protein do you eat in a normal day?				(0.1.2330) p=0.2668
< 5 ounces	122 (85.9)	59 (89.4)	63 (82.9)	
> 5 ounces	20 (14.1)	7 (10.6)	13 (17.1)	
Cups of dairy do you eat in a normal day				(0.0373) p=0.8468
< 3 cups	115 (81.0)	53 (80.3)	62 (81.6)	
> 3 cups	27 (19.0)	13 (19.7)	14 (18.4)	
How many cups of fluid (water, juice, coffee, tea, soda) do you drink in a normal day?				(0.2404) p=0.6239
< 9 cups	106 (74.7)	48 (72.7)	58 (76.3)	
> 9 cups	36 (25.4)	18 (27.3)	18 (23.7)	

*Columns may not add to 100 due to rounding.

Self-reported appetite and weight change are shown in Table 15. Approximately half of all participants reported that both their food intake and weight had decreased over the past three months (47.8% and 50.6%, respectively). A significant difference was observed in both food intake ($p=0.009$) and weight change ($p=0.0007$) by age groups. A greater percentage of seniors reported decreased food intake within the last three months (62.0%) compared to pre-seniors (33.3%). Similarly, a greater percentage of seniors

indicated decreased weight in the last three months (63.7%) compared to pre-seniors (36.8%).

Table 15: Self-Reported Appetite and Weight Change.*

Without wanting to...	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Has your food intake changed over the past 3 months				(16.4070) p=0.0009
Yes, Decreased	87 (47.8)	30 (33.3)	57 (62.0)	
Yes, Increased	73 (40.0)	44 (48.9)	29 (31.5)	
No	22 (12.1)	16 (17.8)	6 (6.5)	
Has your weight changed over the past 3 months				(14.5462) p=0.0007
Yes, Decreased	90 (50.6)	32 (36.8)	58 (63.7)	
Yes, Increased	68 (38.2)	40 (46.0)	28 (30.8)	
No	20 (11.2)	15 (17.2)	5 (5.5)	

*Columns may not add to 100 due to rounding.

Participants self-reported activity level is reported below (Table 16). The majority of participants reported low activity level (56.1%). There was a significant difference between age groups and activity level ($p=0.0132$). A lower percentage of seniors engaged in vigorous physical activity (3.1%) compared pre-seniors (15.2%).

Table 16: Self-Reported Activity Level.*

Would you consider your activity level to be	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Activity Level				(8.6554) p=0.0132
Low	110 (56.1)	53 (53.5)	57 (58.8)	
Moderate	68 (34.7)	31 (31.3)	37 (38.1)	
Vigorous	18 (9.2)	15 (15.2)	3 (3.1)	

*Columns may not add to 100 due to rounding.

Factors influencing participants' dietary intake are presented in Table 17. A large percentage of participants often felt comfortable reading and understanding food labels (78.7%), planning menus (72.7%), writing a shopping list (72.1%), and selecting healthy foods at grocery store (70.2%). In addition, a large percentage of participants indicated that they often or sometimes had problems grocery shopping (60.4%), and preparing meals (54.4); however, the majority indicated they did not have problems eating (63.6%) or with taste or smell (72.3%). In addition, 68.8% of participants indicated they often had a car; however, only 32.7% indicated they often had enough money for gas and car insurance. There was a significance difference between age groups regarding having a car and having enough money for gas and car insurance ($p=0.0323$, and $p=0.0276$, respectively), with a larger percentage of pre-seniors not having money for gas or car insurance (45.1%) and having a car (30.8%) compared to seniors (27.2% and 16.4%, respectively). Lastly, 83.1% indicated they did have electricity.

Table 17: Factors Influencing Dietary Intake.*

Do you..	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Feel comfortable reading and understanding food labels?				(4.2366) $p=0.1202$
Yes, Often	166 (78.7)	86 (81.1)	80 (76.2)	
Yes, Sometimes	41 (19.4)	20 (18.9)	21 (20.0)	
No	4 (1.9)	0 (0.0)	4 (3.8)	
Feel comfortable planning menus?				(4.7103) $p=0.0949$
Yes, Often	152 (72.7)	78 (74.3)	74 (71.2)	
Yes, Sometimes	41 (19.6)	23 (21.9)	18 (17.3)	
No	16 (7.7)	4 (3.8)	12 (11.5)	

Table 17: Factors Influencing Dietary Intake (continued).*

Do you..	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Feel comfortable writing a shopping list?				(5.5054) p=0.0638
Yes, Often	145 (72.1)	73 (74.5)	72 (69.9)	
Yes, Sometimes	41 (20.4)	22 (22.5)	19 (18.5)	
No	15 (7.5)	3 (3.1)	12 (11.7)	
Feel comfortable selecting healthy foods at the grocery store?				(0.1495) p=0.9280
Yes, Often	144 (70.2)	74 (70.5)	70 (70.0)	
Yes, Sometimes	48 (23.4)	25 (23.8)	23 (23.0)	
No	13 (6.3)	6 (5.7)	7 (7.0)	
Have problems grocery shopping (energy, driving, seeing, walking, and carrying groceries)?				(1.3714) p=0.50337
Yes, Often	61 (29.5)	27 (26.5)	34 (32.4)	
Yes, Sometimes	64 (30.9)	35 (34.3)	29 (27.6)	
No	82 (39.7)	40 (39.2)	42 (40.0)	
Have problems preparing meals (energy, seeing, standing, walking, strength, and using your hands)?				(0.6643) p=0.7174
Yes, Often	42 (20.6)	19 (18.6)	23 (22.6)	
Yes, Sometimes	69 (33.8)	34 (33.3)	35 (34.3)	
No	93 (45.6)	49 (48.0)	44 (43.1)	
Have problems eating (chewing, swallowing, using your hands)?				(1.2028) p=0.5480
Yes, Often	25 (12.0)	15 (14.4)	10 (9.5)	
Yes, Sometimes	51 (24.4)	25 (24.04)	26 (24.8)	
No	133 (63.6)	64 (61.5)	69 (65.7)	
Have problems with taste or smell?				(1.0446) p=0.5932
Yes, Often	22 (10.7)	12 (11.5)	10 (9.8)	
Yes, Sometimes	35 (17.0)	20 (19.2)	15 (14.7)	
No	149 (72.3)	72 (69.2)	77 (75.5)	
Have a car?				(6.8628) p=0.0323
Yes, Often	143 (68.8)	63 (60.6)	80 (76.9)	
Yes, Sometimes	16 (7.7)	9 (8.7)	7 (6.7)	
No	49 (23.6)	32 (30.8)	17 (16.4)	
Have enough money for gas and car insurance?				(7.1796) p=0.0276
Yes, Often	67 (32.7)	28 (27.5)	39 (37.9)	
Yes, Sometimes	64 (31.2)	28 (27.5)	36 (35.0)	
No	74 (36.1)	46 (45.1)	28 (27.2)	

Table 17: Factors Influencing Dietary Intake (continued).*

Do you..	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Have electricity?				(0.8947) p=0.6393
Yes, Often	172 (83.1)	84 (80.8)	88 (85.4)	
Yes, Sometimes	31 (15.0)	18 (17.3)	13 (12.6)	
No	4 (1.9)	2 (1.9)	2 (1.9)	

Columns may not add to 100 due to rounding.

Food preparation resources utilized by participants are shown in Table 18. Almost all participants had running water (98.6%), a refrigerator (97.6%), a freezer (79.4%), an oven (94.3%), a microwave (94.7%), a crockpot (82.8%), and the right tools and cooking skills to prepare meals (98.6% and 97.6%, respectively). There was a difference by age group in having a refrigerator, 100% of seniors and 95% of pre-seniors; however, the chi-square test may not be valid due to an expected cell count warning. There was a significant difference between age groups for those with a range with an oven ($p=0.0174$). The senior age group had greater access to a range with oven (98.1%) compared to pre-seniors (90.5%).

A lower percentage of participants had an electric skillet (49.5%) and a hot plate (32.7%). Although not significant ($p=0.0514$), a larger percentage of seniors reported having a crock pot (88%) compared to pre-seniors (77.7%). In addition, the majority of participants had space to store frozen food (90.8%), refrigerated food (96.1%), and dry food (95.6%).

Table 18: Food Preparation Resources.*

Do you have...	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Running water?				(0.3286) p=0.5665**
Yes	208 (98.6)	104 (98.1)	104 (99.1)	
No	3 (1.4)	2 (1.9)	1 (.1.0)	
A range with an oven?				(5.6566) p=0.0174
Yes	198 (94.3)	95 (90.5)	103 (98.1)	
No	12 (5.7)	10 (9.5)	2 (1.9)	
A refrigerator?				(5.1718) p=0.0230**
Yes	204 (97.6)	99 (95.2)	105 (100)	
No	5 (2.4)	5 (4.8)	0 (0.0)	
A freezer?				(0.0756) p=0.7833
Yes	162 (79.4)	81 (78.6)	81 (80.2)	
No	42 (20.6)	22 (21.4)	20 (19.8)	
A microwave?				(0.7753) p=0.3786
Yes	198 (94.7)	99 (93.4)	99 (96.1)	
No	11 (5.3)	7 (6.6)	4 (3.9)	
A crock pot?				(3.7946) p=0.0514
Yes	168 (82.8)	80 (77.7)	88 (88.0)	
No	35 (17.2)	23 (22.3)	12 (12.0)	
An electric skillet?				(2.4124) p=0.1204
Yes	99 (49.5)	45 (44.1)	54 (55.1)	
No	101 (50.5)	57 (55.9)	44 (44.9)	
A hot plate?				(0.0967) p=0.7558
Yes	64 (32.7)	34 (33.7)	30 (31.6)	
No	132 (67.4)	67 (66.3)	65 (66.4)	
Enough space to store frozen food?				(0.5218) p=0.4701
Yes	187 (90.8)	95 (92.2)	92 (89.3)	
No	19 (9.2)	8 (7.8)	11 (10.7)	
Enough space to store refrigerated food?				(2.0404) p=0.1532**
Yes	199 (96.1)	98 (94.2)	101 (98.1)	
No	8 (3.9)	6 (5.8)	2 (1.9)	

Table 18: Food Preparation Resources (continued).*

Do you have...	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Enough space to store dry food?				(3.1679) p=0.0751**
Yes	196 (95.6)	103 (98.1)	93 (93.0)	
No	9 (4.4)	2 (1.9)	7 (7.0)	
The right tools to prepare meals at home?				(3.1030) p=0.0781**
Yes	205 (98.6)	100 (97.1)	105 (100.0)	
No	3 (1.4)	3 (2.9)	0 (0.0)	
The cooking skills to prepare meals at home?				(1.7273) p=0.1888**
Yes	199 (97.6)	100 (96.2)	99 (99.0)	
No	5 (2.5)	4 (3.9)	1 (1.0)	

*Columns may not add to 100 due to rounding.

**Chi-square test may not be valid due to an expected cell count warning.

Participants Body Mass Index calculated from self-reported height and weight is presented below (Table 19). A large percentage of participants were categorized as obese (42.3%) and 24.4% were classified as normal weight. There was no significant difference in Body Mass Index by age group.

Table 19: Body Mass Index of Food Pantry Guests.*

Body Mass Index	All Participants n(%)	50-64 Years of Age n(%)	65 Years of Age n(%)	(Chi Square) p value
Body Mass Index Category				(1.6929) p= 0.6385
Underweight (>18.5)	20 (9.4)	10 (9.4)	10 (9.4)	
Normal (18.5 - 24.9)	52 (24.4)	23 (21.7)	29 (27.1)	
Overweight (25 - 29.9)	51 (24.0)	29 (27.4)	22 (20.6)	
Obese (> 30)	90 (42.3)	44 (41.5)	46 (43.0)	

*Columns may not add to 100 due to rounding.

Self-reported health conditions are presented in Table 20. The majority of participants suffered from arthritis (63.9%) and high blood pressure (62.4%). Some significant

differences were found between age groups and certain health conditions including arthritis ($p= 0.0171$), depression ($p= 0.0037$), and high blood pressure ($p= 0.0122$). A lower percentage of participants with arthritis was found among pre-seniors (55.9%) compared to seniors (72.0%). On the contrary, a higher percentage of pre-seniors (50.0%) suffered from depression compared to seniors (30.0%). Furthermore, a higher percentage of seniors had high blood pressure (71.0%) compared to pre-seniors (53.9%). There was no significant difference observed between age groups in regard to diabetes, fatigue, heart disease, or osteoporosis.

Table 20: Self-Reported Health Conditions by Food Pantry Guests.

Do you have any of the following conditions?	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
Illness				
Arthritis				(5.6838) p=0.0171
Yes	129 (63.9)	57 (55.9)	72 (72.0)	
No	73 (36.1)	45 (44.1)	28 (28.0)	
Depression				(8.4089) p=0.0037
Yes	81 (40.1)	51 (50.0)	30 (30.0)	
No	121 (59.9)	51 (50.0)	70 (70.0)	
Diabetes				(1.0066) p=0.3157
Yes	64 (31.7)	29 (48.4)	35 (35.0)	
No	138 (68.3)	73 (71.6)	65 (65.0)	
Fatigue				(0.2087) p=0.6478
Yes	82 (40.6)	43 (42.2)	39 (39.0)	
No	120 (59.4)	59 (57.8)	61 (61.0)	
Heart Disease				(0.0604) p=0.8058
Yes	61 (30.2)	30 (29.4)	31 (31.0)	
No	141 (69.8)	72 (70.6)	69 (69.0)	

Table 20: Self-Reported Health Conditions by Food Pantry Guests (continued).

Do you have any of the following conditions?	All Participants n(%)	50-64 Years of Age n(%)	65+ Years of Age n(%)	(Chi Square) p value
High blood pressure				(6.2757) p=0.0122
Yes	126 (62.4)	55 (53.9)	71 (71.0)	
No	76 (37.6)	47 (46.1)	29 (29.0)	
Osteoporosis				(0.3871) p=0.5338
Yes	35 (17.3)	16 (15.7)	19 (19.0)	
No	167 (82.7)	86 (84.3)	81 (81.0)	

*Columns may not add to 100 due to rounding.

Participants' nutrition education interests are shown below (Table 21). The topics participants showed the most interest in learning about were healthy eating (46.7%), lowering blood pressure (40.0%), stretching your food dollar (39.5%) and weight management (37.6%). There were no significant differences between age groups in nutrition education interests.

Table 21: Nutrition Education Interests.*

Education Interest	All Participants n(%)	50-64 Years of Age n(%)	65+Years of Age n(%)	(Chi Square) p value
Would you like to learn about..				
Healthy eating				(0.3061) p=0.5801
Yes	98 (46.67)	51 (48.6)	47 (44.8)	
No	112 (53.3)	54 (51.4)	58 (55.2)	
Disease prevention				(0.1190) p=0.7301
Yes	42 (20.0)	20 (19.0)	22 (21.0)	
No	168 (80.0)	85 (81.0)	83 (79.1)	

Table 21: Nutrition Education Interests (continued).*

Education Interest	All Participants n(%)	50-64 Years of Age n(%)	65+Years of Age n(%)	(Chi Square) p value
Diabetes management				(0.8766) p=0.3491
Yes	56 (26.7)	25 (23.8)	31 (29.5)	
No	154 (73.3)	80 (76.2)	74 (70.5)	
Weight management				(1.6436) p=0.1998
Yes	79 (37.6)	35 (33.3)	44 (41.9)	
No	131 (62.4)	70 (66.7)	61 (58.1)	
Lowering blood pressure				(0.0000) p=1.0000
Yes	84 (40.0)	42 (40.0)	42.0 (40.0)	
No	126 (60.0)	63 (60.0)	63 (60.0)	
Heart health				(0.0000) p=1.0000
Yes	76 (36.2)	38 (36.2)	38 (36.2)	
No	134 (63.8)	67 (63.8)	67 (63.8)	
Food and medicine interactions				(0.8974) p=0.3435
Yes	54 (25.7)	30 (28.6)	24 (22.9)	
No	156 (74.3)	75 (71.4)	81 (77.1)	
Dietary supplements				(0.0360) p=0.8496
Yes	33 (15.7)	16 (15.2)	17 (16.2)	
No	177 (84.3)	89 (84.8)	88 (83.8)	
Reading food labels				(3.0108) p=0.0827
Yes	24 (11.4)	8 (7.6)	16 (15.2)	
No	186 (88.6)	97 (92.4)	89 (84.8)	
Meal planning				(0.2167) p=0.6416
Yes	57 (27.1)	30 (28.6)	27 (25.7)	
No	153 (72.9)	75 (71.4)	78 (74.3)	
Stretching your food dollar				(0.4981) p=0.4804
Yes	83 (39.5)	44 (41.9)	39 (37.1)	
No	127 (60.5)	61 (58.1)	66 (62.9)	

Table 21: Nutrition Education Interests (continued).*

Education Interest	All Participants n(%)	50-64 Years of Age n(%)	65+Years of Age n(%)	(Chi Square) p value
How to reduce food waste				(0.0785) p=0.7793
Yes	52 (24.9)	25 (24.0)	27 (25.7)	
No	157 (75.1)	79 (76.0)	78 (74.3)	
Food package dates				(0.5172) p=0.4720
Yes	34 (16.3)	15 (14.4)	19 (18.1)	
No	175 (83.7)	89 (85.6)	86 (81.9)	
Cooking foods you get from the pantry				(0.0000) p=1.0000
Yes	40 (19.1)	20 (19.1)	20 (19.1)	
No	170 (81.0)	85 (81.0)	85 (81.0)	
Cooking with less fat				(1.9953) p=0.1578
Yes	55 (26.2)	23 (22.0)	32 (30.5)	
No	155 (73.8)	82 (78.1)	73 (69.5)	
Cooking with less salt				(0.2217) p=0.6377
Yes	55 (26.2)	26 (24.8)	29 (27.6)	
No	155 (73.8)	79 (75.2)	76 (72.4)	
Cooking with less sugar				(1.6358) p=0.2009
Yes	52 (24.8)	22 (21.0)	30 (28.6)	
No	158 (75.2)	83 (79.1)	75 (71.4)	
Cooking for one or two				(0.9005) p=0.3426
Yes	48 (23.0)	21 (20.2)	27 (25.7)	
No	161 (77.0)	83 (79.8)	78 (74.3)	
Recipes using food from the food pantry				(1.4141) p=0.2344
Yes	66 (31.4)	29 (27.6)	37 (35.2)	
No	144 (68.6)	76 (72.4)	68 (64.8)	

*Columns may not add to 100 due to rounding.

CHAPTER V

DISCUSSION

This research aimed to identify perceptions of adults, 50 years of age and older, who utilize the current food pantry now that three of the four previous food pantries have combined to form the Our Daily Bread Food and Resource Center in Stillwater, Oklahoma. Differences in perceptions between pre-seniors and seniors were closely examined throughout the results. The following section will present some of the insights found in the survey results and how they relate to the literature. While, there is plenty of literature discussing population food insecurity and food pantry utilization, literature specifically related to pre-seniors or seniors is limited. With that said, often times, literature reflecting all ages is referenced.

Demographics

When looking at the demographic data, the majority of participants were female (67.3%), which may be because women typically are responsible for food related activities such as shopping and cooking. Women have been described as food managers of the household and are known to

sacrifice food to feed others, and alternate between restricting food when necessary and binge eating when food security is not an issue (Hanson, Sobal, & Frongillo, 2007). In addition, the majority of participants (57.7%) were divorced, separated, or widowed. Little is known about the association of marriage and food security, but one study found approximately 20% of women entered the low income bracket the same year their marriage ended and most of those individuals remained in that bracket for more than a year (Gadalla, 2008). This follows the general idea that cohabiting with someone greatly increases family income and provides an increasing amount of social support that would help a women cope in times of financial hardship (Hanson, Sobal, & Frongillo, 2007).

Participants' ethnic and racial demographics were as follows; 2.4% were Hispanic, 71.6% White, 18.5% African American, 9.0% Native American, 1.4% Asian and 1.9% other. In 2017, the Payne county ethic and racial breakdown was 4.7% Hispanic, 80.5% White, 4.0% African American, 5.3% Native American, 4.7% Asian, and 5.5% other (United States Census, 2017). When comparing participants to the overall population in Payne county it is fairly similar; however, it is important to notice that among participants there was a greater percentage of certain minorities compared to the overall Payne county population. Larger percentages of minority participants may be normal considering associations have been made between minority groups and food insecurity. According to Cooper (2018), 22.5% of African American households and 18.5% of Hispanic homes are food insecure. These rates are higher than the national average (12.3%). Research shows minorities may struggle more with food insecurity because of lack of education, greater poverty rates, and less participation in government programs (Cooper, 2018).

The majority of participants reported having a high school level education (42.8%), being unemployed (87.6%) and having annual incomes of less than \$12,000 (58.9%). The high rates of low income and unemployment observed among these participants can be directly linked to each other and to food insecurity, and may be influenced by the participants' age and lower education level (Cooper, 2018; Goldberg & Mawn, 2014). With a lower education level, it may be harder to find a good paying job thus directly affecting income and the ability to purchase food to sustain the family. A significantly higher percentage of those 50 to 64 years had incomes less than \$12,000 (73.53%) compared to those 65 years of age and older (44.8%). The fact that pre-seniors are not eligible for certain government assistance and assets compared to seniors, who may have retirement funds and social security, may contribute to the higher percentage of pre-seniors having annual incomes less than \$12,000. In addition, those 65 years and above had a significantly lower-unemployment rate (79.8%) compared to those 50-64 years of age (95.3%). The fact that there was higher unemployment among the senior age group could be greatly influenced by age related retirement (Goldberg & Mawn, 2014).

Beyond demographics, participants were asked about their families and how many people were eating the food received from the pantry. The survey results indicated 67.1% of participants reported one or two people ate the food they received from the food pantry and 32.9% reported three or more people ate the food received. Approximately 55% of participants reported they had one or more adults living with them and 21.7% of participants had one or more grandchildren living in the home. Of those who had grandchildren living in the home, 12.8% were responsible for feeding their grandchildren.

with 15.0% of participants reporting they missed meals so their grandchild could eat. This comes as no surprise considering 19% of seniors fighting hunger are caregivers to their grandchildren (RFBO, 2015).

Many people who struggle with hunger turn to food assistance programs to meet their needs and fill in the gaps. According to the study, the majority (72.7%) reported using food pantries, followed by 42.1% who used the Supplemental Nutrition Assistance Programs (SNAP), and 21.4% who reported using community/faith based meals. Results indicated a larger percentage of pre-seniors (55.8%) used SNAP compared to 28.6% of seniors. Low use of SNAP by seniors is reflected in the literature. It has been reported that due to social stigma and mistrust of the process, only 42% of eligible seniors utilize the SNAP program (FA, 2018c). Gabor (2002) reported low older adult participation in SNAP was due to many older adult participants feeling what they would receive was not the fair share of food assistance they deserved and the complexity of the application process was not worth the effort. It is possible the pre-senior-group may be more willing and able to go through the application process.

Food Insecurity

Participant responses related to the USDA ERS six item short form indicated most participants (54.6%) sometimes bought food that did not last and they did not have money to buy more. Also, 52.6% reported sometimes they could not afford to eat balanced meals. Although not significant, a larger percentage of pre-seniors (39.2%) compared to seniors (25.2%) often had this issue. This is consistent with the results

indicating more pre-seniors missed meals than older adults to feed their grandchild. Along with that, many pre-seniors are at greater risk for food insecurity because they may have more people living with them that they have to feed and do not have other resources that seniors have available to them such as Medicare and social security, which leaves them deeper in poverty (FA, 2018f). This is further validated by results indicating a significantly larger percentage of pre-seniors (67.0%) reporting they skipped meals because there was not enough money for food compared to seniors (48.6%). In addition, a significantly higher percentage of pre-seniors (61.45) compared to seniors (43.0%) reporting they ate less than they felt they should because there was not enough money for food. Lastly, a significantly higher percentage of pre-seniors (56.1%) than seniors (31.1%) reporting they were hungry, but did not eat because there was not enough money for food.

On a positive note, only 35% indicated that they ate less than they felt they should because they could not get food even though they had the money to get it and only 24% of participants indicated they ate less than they felt they should due to an inability to prepare food. These are positive indicators that participants felt they had the ability to access and prepare food as desired. However, 49.5% indicated they ate less than they felt they should because they did not feel up to cooking. This shows that although they have food and the ability to cook, there are a variety of factors that may affect the motivation of pre-seniors and seniors to eat. (Lee & Fronollo, 2001).

When looking at food security status of participants by age group, food insecurity was similar among pre-seniors (76.4%) and seniors (75.7%). However, when further looking at food insecurity by gender within age group, a larger percentage of pre-senior females (84.9%) and senior females (85.5%) were classified as food insecure compared to pre-senior males (78.9%) and senior males (54.5%). Research shows women have a greater risk for food insecurity due to gender gaps regarding lower levels of education, lower income levels and less developmental opportunities to learn from (Sinclair et al., 2017). Hopefully, over time the gender gaps will improve.

Participants and the Our Daily Bread Food and Resource Center

When looking at participation of individuals at the food pantry 97% of participants indicated, the food pantry helped them to continue to live at home. This coincides with the benefit of utilizing food assistance programs and having access to adequate food can help maintain independence (Homenko et al., 2010). A significantly greater percentage of seniors were able to drive themselves (76.5%) compared to the 58.8% of pre-seniors who drive themselves. This could again be related to pre-seniors' low income which could affect their ability to afford a car (Gabor, 2002). A large percentage (52.8%) indicated the food from the food pantry sometimes lasts until the next visit and 54% reported sometimes the produce they received from the pantry was too old. However, most participants reported they often liked what was offered at the food pantry (70.9%), often felt they had access to healthy options (75.3%) and were not embarrassed-utilizing the food pantry (68.8%). This is good because the opportunity for healthy options can be scarce for those getting food from food pantries. However, a study by Simmet et al.

(2017), indicated many who receive food from food pantries get insufficient amounts of many micronutrients. Many facilities are dependent on donations, which often result in getting nonperishables that are not nutrient dense (Shanks, 2017). A goal would be to provide more fresh produce, but that is easier said than done. Not to mention, many food pantries may have perishable items, but not everyone gets access to them because the food pantry only has so much that they get and it gets picked through quickly. Research has shown that some participants understand that what they get from the food pantry is meant to help participants meet basic nutrient needs, not necessarily provide the most nutritious meals (Arriola, 2015). On the contrary, another study reported most participants found food pantry foods to be nutritious despite the fact that they carried a wide variety of nonperishable and processed foods (Jackelen, 2013). This contrast shows how food pantry participants have different, and sometimes skewed, perceptions of food pantry foods. This is why it is important to provide nutrition education to food pantry guests so that, although some-items may not always be the most nutritious, healthier decisions can be made. While not every food pantry has the same food items, most participants at Our Daily Bread felt the pantry often provided more healthful food options (74.0%), more grain options (69.4%), more fresh produce (77.2%), more dairy food choices (74.2%), and more fresh meat (73.5%) to name a few compared to the previous food pantries in Stillwater, Oklahoma, thus making healthy food choices more accessible. This speaks to why the combining of food pantries and subsequent opening of Our Daily Bread is so beneficial to the community. By having one bigger facility, the food pantry is able to provide greater quantities of food and better quality of food to participants because all resources are being focused into one place.

When looking at food choices of food pantry guests, it is hard to say how accurate the results were since many participants checked most items within each category. The most popular fruits among participants were apples (74.9%) and bananas (78.2%). Meanwhile the most popular grains were bread (91.0%), cereal (82.5%), and crackers (73.9%), while most participants enjoyed getting potatoes (86.7%) and corn (78.2%). Lastly, the most popular dairy foods among participants were cheese (88.6%) and milk (83.9%) and the most popular protein choices were chicken (86.7%) and eggs (82.4%). The most desired form to get fruits and vegetables was fresh (76.8% and 82.0% respectively). Fresh produce is likely the favorite because it tastes better and may be harder for the food pantry guests to get otherwise. There was a significant difference between age groups for leafy greens and tortillas with a larger percentage of pre-seniors liking leafy greens and tortillas (56.6% and 58.5%, respectively) compared to seniors (41.9% and 43.8%, respectively). In regard to the form of food received, a significant difference was observed in seniors liking dried fruit and vegetables (46.7% and 37.1%, respectively) compared to pre-seniors (33.0% and 21.7%, respectively). This is a surprise considering many older adults have conditions making it harder to chew something so hard and texturized. (Hunger Free Colorado, 2015). With that said, dried fruit is a nutrient dense option that can help older adults reach their nutritional needs (USDA,2017). In order to better serve seniors, it would be ideal to encourage older adults to consume more fresh produce, whole grains and lean meats (Move for Hunger,2018). In addition, Verpy et al. (2017) reported older adults may need foods that are softer and cater to medical conditions, including allergies, they may have (Verpy et al., 2003).

Dietary

In addition to participants' reporting food choices, dietary patterns were also assessed. The majority of participants reported on most days they ate lunch (54.7%) and dinner (75.9%); however, the majority reported on some days they ate breakfast (36.7%) and ate snacks (44.9%). In fact, 27.6% reported they seldom ate breakfast (27.6%), with a larger percentage of pre-seniors reporting this (33.0%) than seniors (22.6%) and 25.8% reported they seldom ate snacks, with a larger percentage of pre-seniors reporting this (30.1%) compared to seniors (21.8%). Based on the results, participants generally are eating less breakfast than any other meal and not snacking. This could be for a variety of reasons, but it could be due to participants trying to stretch their food dollar. The majority reported on most days they prepared meals at home (76.0%) and seldom ate fast food (50.5%). This could be an indication that participants know eating at home may be more economical, but it is contrary to other studies indicating many food insecure people depend on calorie dense foods like fast food because they believe it is cheaper and more convenient (Tester, Lang & Laraia, 2017). On that same note, only 44.6% reported that on most days they had the food needed to make healthy meals, with a larger percentage of seniors (52.6%) reporting this than pre-seniors (36.7%).

Furthermore, a larger percentage of participants reported they seldom received help shopping for food from family or friends (52.8%) or received help preparing meals from family or friends (57.4%). There may be many reasons for the lack of support, but not having social support could be detrimental for those who are food insecure. Social

support often provides additional ways for people to get food, learn more about ways to obtain food and cope with food insecurity (Sharifi, et al., 2017).

When looking at dietary intake by gender, the majority of males consumed less than the lowest recommended amount of fruits (65.2%), vegetables (88.4%), grains (92.8%), protein (69.6%), dairy (72.5%) and fluid (89.9%). A significantly smaller percentage of pre-senior males did not consume the lowest recommended amounts of protein (81.6%) compared to seniors (54.8%), and although not significant, a higher percentage of seniors did not consume the lowest recommended amounts of grains (100%) compared to pre-seniors (86.8%). Similar to males, most females also consumed less than the lowest recommended amounts of fruit (73.9%), vegetables (59.9%), grains (90.9%), protein (85.9%), dairy (81.0%), and fluid (74.7%). Although not significant, a larger percentage of senior females consumed the lowest recommended amounts of vegetables (47.4%) compared to pre-senior females (31.8%). This coincides with research that those who are food insecure tend to consume significantly fewer calories, fewer servings of recommended food groups, along with most nutrients (Guthrie & Lin, 2002).

In order to cope with food insecurity and maximize dietary intake participants utilized various coping strategies. A large percentage of participants reported they often stretched meals (42.8%) and sometimes ate smaller meals (41.8%), skipped meals (38.2%). This is consistent with Robinson (2017) who reported 79% of food pantry participants ate smaller meals. This is also consistent with a study where older adults admitted that both stretching and skipping meals were the easiest coping mechanisms to follow and the least

unusual because many of them endured worse during the great depression (Wolfe et al., 1996). Both eating smaller meals and skipping meals often was significantly more common among pre-seniors (52.9% and 37.3%, respectively) compared to seniors (28.9% and 13.7%, respectively). In addition, most participants indicated they did not have to eat food stored for too long (53.2%), did not eat community meals (59.7%), get food from family or friends (43.8%), did not hunt, fish or garden to provide food (67.7%), did not have to choose between eating and paying rent or utilities (50.0%), did not have to choose between eating and buying medicine (51.2%), did not have to choose between eating and feeding a pet (69.2%), and did not have to sell or pawn items (56.1%). Although the majority reported they did not participate in these activities, a significantly higher percentage of pre-seniors compared to seniors reported often eating food that may have been stored too long (26.5% and 7.9%, respectively), getting help from family or friends (30.1% and 9.5%, respectively), choosing between eating and paying rent or utilities (28.0% and 12.3%, respectively), choosing between eating and buying medication (35.2% and 9.5%, respectively), choosing between eating and feeding a pet (29.1% and 7.7%, respectively), and selling or pawning items (29.1% and 10.8%, respectively). Food coping strategies may be a necessity among pre-seniors due to the higher percentage of pre-seniors with annual incomes less than \$12,000 and ineligibility for assistance such as social security and Medicare.

According to a report, 80% of food banks are implementing some form of nutrition education, but the fact that many unhealthful coping behaviors are being utilized may be an indication that the focus of nutrition education needs to be expanded (Rivera &

Medrow, 2015). If participants are educated on effective coping behaviors such as budgeting and food resource management, it may help positively affect their food insecurity status.

With that said, there may be some factors that affect dietary intake regardless of education or coping strategies Participants reported they often felt comfortable reading and understanding food labels (78.7%), planning menus (72.7%), writing a shopping list (72.1%), and selecting healthy foods at the grocery store (70.2%). These high percentages are a good indication that participants feel they are capable of making healthy choices if given the right tools. However, the majority of participants indicated they often or sometimes had problems grocery shopping (60.4%) and preparing meals (54.4%). One study reported 60% of food insecure people were functionally impaired and almost half of those individuals were unable to perform daily activities of living (Lee & Frongillo, 2001). This could be exacerbated by age and the inability of this population to meet their nutrition needs, which ultimately has a negative effect on overall health.

Unfortunately, 23.6% of participants indicated they did not have a car and 36.1% indicated they did not have enough money for gas or car insurance. In addition, there was a significance difference between age groups regarding having a car and having enough money for gas and car insurance ($p=0.0323$, and $p=0.0276$, respectively), with a larger percentage of pre-seniors not having money for gas or car insurance (45.1%) and having a car (30.8%) compared to seniors (27.2% and 16.4%, respectively). These factors influencing food intake could be affecting pre-seniors more due to their inability to cover

all of their expenses and inability to receive the government help that many seniors receive (Gabor, 2002). The AARP reports despite their inability to cover all their expenses, the pre-seniors have to spend more than 10% of their family income on healthcare. Many pre-seniors may not qualify for benefits offered by employers, and even if they are the premiums could be significantly higher than they can afford making it hard to cover the costs (Smolka, Multack, Figueiredo, 2012).

It is important to note that having insufficient access to food preparation could also serve as a factor influencing dietary intake. On that note, almost all participants had running water (98.6%), a refrigerator (97.6%), a freezer (79.4%), an oven (94.3%), a microwave (94.7%), a crockpot (82.8%), and the right tools and cooking skills to prepare meals (98.6% and 97.6%, respectively). In addition, food storage was not an issue with most participants having the necessary space to store frozen food (90.8%), refrigerate food (96.1%), and store dry food (95.6%). Among all resources, the seniors had significantly greater access to a range with oven (98.1%) compared to pre-seniors (90.5%). All in all, the majority of participants' had access to resources to cook and store food; however, it is important to note that 20.6% did not have access to a freezer which is important for those who need to keep whatever food they have for as long as they can since it is not readily accessible to them.

Knowing that these factors could have a negative impact on health, it became important to collect self-reported changes in weight and food intake. When analyzing self-reported change in food intake and weight change over the past three months, nearly half of

participants reported both their food intake and weight had decreased (47.8% and 50.6%, respectively). Weight loss could be connected to a decrease in dietary intake, but many studies often associate weight gain with food insecurity because often times those who are food insecure are eating calorie dense food (Pan et al., 2012). Increased weight may also be linked to overeating as a result of emotional stress associated with food insecurity, and other life stressors.

A greater percentage of seniors reported decreased food intake within the last three months (62.0%) compared to pre-seniors (33.3%). Similarly, a greater percentage of seniors indicated decreased weight in the last three months (63.7%) compared to pre-seniors (36.8%). A decreased in weight and food intake for seniors could be explained with the idea that seniors have ailing health that may result in decreased appetite, decreased ability to cook, along with chewing or swallowing issues (Pilgrim, 2015). This is concerning because if seniors do not meet their nutrition needs, they may become more ill and weaker overall creating poor health outcomes and increased risk of mortality (Pilgrim et al., 2015). A large majority of these issues are greatly impacted by age and associated physiological changes resulting in changes to the digestive system, hormonal changes, chronic illness, changes in sense of smell or taste, and decreased need for energy (Pilgrim, 2015).

Based on the answers to the DETERMINE survey questions, most participants (57.3%) were at high nutrition risk with a significantly larger percentage of pre-seniors being at high nutritional risk (66.0%) compared to seniors (48.6%). A significantly larger

percentage of pre-seniors than seniors reported they ate fewer than two meals a day (51.0% and 36.7%, respectively), had lost or gained 10 pounds over the last 6 months (52.0% and 30.5%, respectively), and were not always physically able to shop, cook, and feed themselves (43.8% and 26.8%, respectively). In addition, although not significant, a larger percentage of pre-seniors compared to seniors reported they had an illness or condition that made it change the kind, and or among of food they ate (55.9% and 44.1%, respectively), ate fewer fruits, vegetables or milk products (58.7% and 50.5%, respectively), had tooth or mouth problems that made it hard to eat (48.0% and 37.0%, respectively), and did not always have enough money to buy the food needed (75.3% and 63.5%, respectively). The higher percentage of pre-seniors reporting these behaviors again could be due to pre-seniors having lower annual incomes and more children and grandchildren in the home leaving less resources for food and health care compared to seniors (FA, 2018; Gabor, 2002). However, the percentage taking more than three prescribed medications was understandably significantly higher in seniors (74.0%) compared to pre-seniors (60.6%). This is consistent with literature stating that individuals are more likely to suffer from illnesses as they age (Gundersen, 2013).

Health

Self-reported height and weight allowed for calculation of participants' body mass index. The majority of participants were categorized as obese (42.3%) and only 24.4% were normal weight. This coincides with literature showing a correlation between food insecurity and obesity. According to a study published in 2012, those who were food insecure were 32% more likely to be classified as obese (Pan et al., 2012). This could be

due to a variety of factors including lack of physical activity and consumption of less expensive calorie dense foods over nutrient dense foods (Gunderson, 2013). Beyond an exercise standpoint, many older adults who are obese tend to have limited mobility which could decrease their movement and increase the chances for more weight gain (Brewer et al., 2010).

Regarding health conditions, the majority of participants suffered from arthritis (63.9%) and high blood pressure (62.4%). A significant difference was found between age groups and certain health conditions including arthritis, depression and high blood pressure. A lower percentage of pre-seniors had arthritis and high blood pressure (55.9% and 53.9%), respectively compared to seniors (72.0% and 71%). On the contrary, a higher percentage of pre-seniors (50.0%) suffered from depression compared to seniors (30.0%). Seniors having a greater incidence of arthritis and blood pressure is not surprising since the incidence of these conditions increase with age. Similarly, depression may be prevalent among pre-seniors because they are not happy with where they are at in life and the stresses of dealing with food insecurity (Goldberg & Mawn, 2014). According to NHANES those who are food insecure are 60% more likely to suffer from depression, often coupled with anxiety, which has the potential to decrease quality of life (FA, 2018b).

The majority of participants (56.1%) reported low levels of physical activity which may be an additional factor contributing to the high incidence of obesity. A low activity level may be indicative of a busy schedule, lack of resources, lack of energy, and reduced

intake of nutrient dense foods that would provide energy (Quyen et al., 2014). A significant difference was observed in physical activity level between age groups, with a lower percentage of seniors engaging in vigorous physical activity (3.1%) compared to pre-seniors (15.2%). This could be due to an age related increase in health issues and decreased mobility (Gundersen, 2013). As mentioned, a significantly higher percentage of seniors reported having arthritis and high blood pressure (72.0% and 71.0%, respectively) compared to pre-seniors (55.9% and 53.9%, respectively).

Although getting older can have an immense effect on someone; however, a larger percentage of seniors rated their health as excellent, very good or good (55.6%) compared to pre-seniors (38.7%) and a larger percentage of pre-seniors rated their health as poor (23.5%) compared to seniors (7.2%). Often times, pre-seniors are vulnerable to losing their job resulting in early retirement before they are eligible for retirement benefits leaving them no way to pay for medical expenses (Lee et al., 2018), which may be reflective of the larger percentage of pre-seniors reporting annual incomes less than \$12,000 (73.5%).

Lastly, the nutrition education topics participants were most interested in were healthy eating (46.7%), lowering blood pressure (40.0%), stretching your food dollar (39.5%), and weight management (37.6%). These interests make sense in regard to the participants' food insecurity. The fact the participants want to gain a better understanding of healthy eating, lowering blood pressure, and weight management is a positive indication that participants can learn to cope with food insecurity in a positive way. It was

not surprising that participants were interested in learning how to stretch their food dollar given that it is one of the main ways to cope with food insecurity. By learning to stretch a food dollar, participants should be able to get more food for their money. These results were consistent with a study conducted last year, at the three Stillwater food pantries before they combined, which found stretching your food dollar and weight management were the educational topics food pantry participants were most interested in receiving (Robinson, 2017). Research has shown that other popular education interests were how to cook for their health condition whether that be diabetes or high blood pressure. Other studies have mentioned the importance of educating volunteers, as well as food pantry guests so that they can seek information if they needed it (Dave et al., 2016).

CHAPTER VI

CONCLUSION

Based on the results of this study, it is clear that many pre-seniors and seniors are food insecure which affects their ability to obtain food as desired. For those who are food insecure, obtaining food may be difficult in itself, but it may be even harder to get nutrient dense foods. So, the focus of food pantries should be to provide plentiful nutritious food to its food pantry guests. While Our Daily Bread has done a good job of providing an increasing level and variety of fresh produce-for guests, the goal would be to continue to strive for a greater increase, so those who go are encouraged to eat more fresh fruits, vegetables, and whole grains with less processed foods. Since the food pantries rely so heavily on donations, one way to do this would be to set up donation boxes at local farmer's markets or grocery stores (Community Commons, 2018). By setting up donation stations in these locations and educating donors on the impact of these healthier food items, the food choices offered to food pantry guests could be vastly improved. From there, it would be important to educate food pantry participants on how to cook, store, and utilize the foods they get from the pantry. From the survey, it was clear food pantry participants had a yearning to learn, so it is important for the pantry to take that

information and make it happen. It could be something as simple as showing clients how to store their fresh produce, or something more complex like a cooking demonstration.

From the pantry guest's standpoint, it is clear many of them are grateful for what is provided at the facility, and the food pantry is one of their primary sources for their food. While Our Daily Bread is a great resource it is important for these pre-seniors and seniors to maximize their food resource management skills and to utilize other food assistance programs like SNAP to fill in the gaps, given the survey reported only 42% of participants utilized the SNAP program. Many of those who are food insecure may associate the use of government food assistance programs and food pantries as shameful because they could not provide for their families; however, it is important that these facilities and educators breakdown this mindset (Perry et al., 2014).

While there are a variety of factors that set apart pre-seniors and seniors in terms of availability to government resources like Medicare and social security, the fight against food insecurity is equally important. Having food is a basic human need everyone should have the opportunity to obtain, regardless of circumstance. Often times, food insecurity is associated with seniors; however, the results of the study show that pre-seniors may be more affected than seniors. Although there was not a significant difference in food security status between the age groups in this study, a significantly larger percentage of pre-seniors compared to seniors made less than \$12000 a year, missed meals to feed their grandchildren, were at high nutritional risk, and reported often eating smaller meals, skipping meals, eating foods that may have been stored too long, and having to choose

between eating and paying rent or buying medicine among other things. This indicates that many pre-seniors may be at equal or greater risk for food insecurity than seniors.

Acknowledging all the factors leading to food insecurity on an intrapersonal, interpersonal, institutional, community, and policy level is an important part of building up the resources to help those who are food insecure (Goldberg & Mawn, 2014). By doing so, health educators know where to shift their focus and align their resources.

In terms of future research, it may be helpful to compare pre-senior and senior populations from a rural area like Stillwater to a more urban area where food pantry guests may have access to more resources whether that be educational opportunities, transportation options, or greater amounts of foods.

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APPENDICES

APPENDIX A

Survey of Food Pantry Guests, 65 Years of Age and Older

Survey of Food Pantry Guests, 50 Years of Age and Older

I. Food Pantry:

- | | |
|---|---|
| 1. Do you think the food pantry food helps you to continue to live at home? | 3. How many people eat the food you get from the food pantry? _____ |
| <input type="checkbox"/> Yes | |
| <input type="checkbox"/> No | |
| <input type="checkbox"/> Do not know | |
| 2. How do you get to the food pantry? | |
| <input type="checkbox"/> I drive myself | <input type="checkbox"/> Yes |
| <input type="checkbox"/> I ride with others | <input type="checkbox"/> No |
| <input type="checkbox"/> Other _____ | |

5. What do you think...	Yes, Often	Yes, Sometimes	No
Does the food you get from the food pantry last until your next visit?			
Is the produce you get from the food pantry too old?			
Are there too many people at the food pantry?			
Can you reach the food items on the shelves at the food pantry?			
Is there enough space for you to get around in the food pantry?			
Do you like the food choices at the food pantry?			
Do you feel the food pantry has healthy food choices?			
Do you ever feel embarrassed about going to the food pantry?			

6. If you went to a local food pantry before the <i>Our Daily Bread</i> food pantry opened, do you feel <i>Our Daily Bread</i> provides...	Yes	No	About the Same	Do Not Know
More healthful food choices?				
More low fat food choices?				
More low sugar food choices?				
More low salt food choices?				
More grain food choices? (bread, cereal, pasta, rice)				
More canned fruit and vegetable choices				
More fresh fruit and vegetable choices?				
More frozen fruit and vegetable choices?				
More dairy food choices?				
More fresh meat choices?				
More canned meat choices?				
More health education opportunities?				

II. Food Pantry Foods:

1. What types of fruits do you like to get from the food pantry [Check all]

- Apples
- Bananas
- Grapes
- Melons
- Oranges
- Peaches
- Pears
- Berries
- Other _____

2. What types of grains do you like to get from the food pantry? [Check all]

- Bread
- Cereal
- Crackers
- Pasta
- Rice
- Tortillas
- Other _____

3. What types of vegetables do you like to get from the food pantry? [Check all]

- Carrots
- Corn
- Broccoli
- Green beans
- Leafy greens
- Peas
- Squash
- Peppers
- Potatoes
- Onions
- Other _____

4. What types of dairy products do you like to get from the food pantry? [Check all]

- Milk (Whole/low fat)
- Cheese
- Yogurt
- Other _____

5. What types of protein foods do you like to get from the food pantry? [Check all]

- Beans
- Beef
- Chicken
- Eggs
- Fish
- Pork
- Other _____

6. In what form do you like to get fruits from the food pantry. [Check all]

- Canned
- Dried
- Fresh
- Frozen
- Juice
- Other _____

7. In what form do you like to get vegetables do you like to get from the food pantry? [Check all]

- Canned
- Dried
- Fresh
- Frozen
- Juice
- Other _____

III. Shopping, Cooking, Eating and Storing Food:

1. Do you...	Yes, Often	Yes, Sometime s	No
Feel comfortable reading and understanding food labels?			
Feel comfortable planning menus?			
Feel comfortable writing a shopping list?			
Feel comfortable selecting healthy foods at the grocery store?			
Have problems grocery shopping (energy, driving, seeing, walking, and carrying groceries)?			
Have problems preparing meals (energy, seeing, standing, walking, strength, and using your hands)?			
Have problems eating (chewing, swallowing, using your hands)?			
Have problems with taste or smell?			
Have a car?			
Have enough money for gas and car insurance?			
Have electricity?			

2. Do you have...	Yes	No
Running water?		
A refrigerator?		
A freezer?		
A range with an oven?		
A microwave?		
A crock pot?		
An electric skillet?		
A hot plate?		
Enough space to store frozen food?		
Enough space to store refrigerated food?		
Enough space to store dry food?		
The right tools to prepare meals at home?		
The cooking skills to prepare meals at home?		

IV. Food Security: Mark what best describes you.

In the last 12 months...	Often True	Sometimes True	Never True	Do Not Know
1. The food I bought just didn't last, and I didn't have money to get more.				
2. I couldn't afford to eat balanced meals.				

IV. Food Security: Mark what best describes you.			
---	--	--	--

In the last 12 months...	Yes (answer question 4)	No (skip question 4)
3. Did you ever cut the size of your meals or skip meals because there wasn't enough money for food?		
Answer question 4, if you answered Yes on question 3.	Almost Every Month	Some Months, but Not Every Month
4. How often did this happen?	Only 1 or 2 Months	Do Not Know

In the last 12 months...	Yes	No	Do Not Know
5. Did you ever <i>eat less than you felt you should</i> because there wasn't enough money for food?			
6. Did you ever <i>eat less than you felt you should</i> because you couldn't get the food you needed even though you had money for food?			
7. Did you ever <i>eat less than you felt you should</i> because you were unable to prepare a meal even though you had food in the house?			
8. Did you ever <i>eat less than you felt you should</i> because you didn't feel up to cooking?			
9. Were you ever <i>hungry but didn't eat</i> because there wasn't enough money for food?			

10. If you do not have enough food, do you ever...	Yes, Often	Yes, Sometimes	No
Eat smaller meals?			
Skip meals?			
Stretch meals? (make soups or casseroles; add rice or noodles)			
Eat foods that may have been stored too long?			
Eat meals provided by local community groups?			
Get help with food from family or friends?			
Hunt, fish, or garden to provide food			
Have to choose between eating and paying rent or utilities			
Have to choose between eating and buying medicine?			
Have to choose between eating and feeding a pet?			
Sell or pawn items?			
Other topics (Please list):			

V. Food and Nutrition Education Interests: Check the topics you would most like to learn about

- | | |
|---|--|
| <input type="checkbox"/> Healthy eating | <input type="checkbox"/> Meal planning |
| <input type="checkbox"/> Disease prevention | <input type="checkbox"/> Stretching your food dollar |
| <input type="checkbox"/> Diabetes management | <input type="checkbox"/> How to reduce food waste |
| <input type="checkbox"/> Weight management | <input type="checkbox"/> Food package dates (use by/sell by) |
| <input type="checkbox"/> Lowering blood pressure | <input type="checkbox"/> Cooking foods you get from the pantry |
| <input type="checkbox"/> Heart health | <input type="checkbox"/> Cooking with less fat |
| <input type="checkbox"/> Food and medicine interactions | <input type="checkbox"/> Cooking with less salt |
| <input type="checkbox"/> Dietary supplements | <input type="checkbox"/> Cooking with less sugar |
| <input type="checkbox"/> Reading food labels | <input type="checkbox"/> Cooking for one or two |
| <input type="checkbox"/> Other topics (please list): | <input type="checkbox"/> Recipes using food from the food pantry |

VI. Dietary:

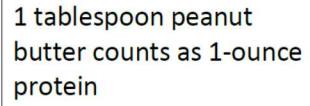
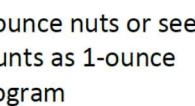
1. How often do you...	Seldom, If Ever	Some Days	Most Days	Do Not Know
Eat breakfast?				
Eat lunch?				
Eat dinner?				
Eat snacks?				
Eat fast food?				
Prepare meals at home?				
Have the food you need to make healthy meals?				

2. What food assistance programs do you use? [Check all]

- Community/Church Meals
- Food Distribution Program on Indian Reservations
- Food Pantries
- Food Stamps/ SNAP
- Home Delivered Meals
- Senior Farmers Market
- Senior Meals (Project Heart)
- Other _____

VI. Dietary:

2. How many....

Cups of fruit do you eat in a normal day? _____	1 cup of raw or cooked fruit counts as 1 cup fruit 	1 cup of 100% fruit juice counts as 1 cup juice 	$\frac{1}{2}$ cup dried fruit counts as 1 cup fruit 
Cups of vegetables do you eat in a normal day? _____	1 cup of raw or cooked vegetable counts as 1 cup vegetable. 	2 cups raw leafy vegetable counts as 1 cup vegetable 	1 cup of vegetable juice counts as 1 cup vegetable 
Ounces of grain do you eat in a normal day? _____	1 slice of bread counts as 1 ounce of grain 	1 cup of ready-to-eat cereal counts as 1-ounce grain 	$\frac{1}{2}$ cup cooked pasta, rice or cereal counts as 1-ounce grain 
Ounces of protein do you eat in a normal day? _____	3 ounces of meat, fish, chicken or pork counts as 3 ounces' protein (about the size of deck of cards) 	1 egg counts as 1-ounce protein. 1 tablespoon peanut butter counts as 1-ounce protein  	$\frac{1}{4}$ cup cooked beans counts as 1-ounce protein  $\frac{1}{2}$ ounce nuts or seeds counts as 1-ounce protein 
Cups of dairy do you eat in normal day? _____	1 cup milk, yogurt or soymilk counts as 1 cup of dairy 	1 $\frac{1}{2}$ ounces of natural cheese counts as 1 cup dairy 	2 ounces of processed cheese counts as 1 cup dairy 

VII. Health status: Mark what best describes you.

1. Would you say your health is...

- Excellent
- Very good
- Good
- Fair
- Poor
- Do not know

2. What is your height? _____

3. What is your weight? _____

4. Without wanting to...	No	Yes, Decreased	Yes, Increased	Do Not Know
Has your food intake changed over the past 3 months?				
Has your weight changed over the past 3 months?				

5. Do you have any of these conditions [Check all]?

- Arthritis
- Depression
- Diabetes
- Fatigue
- Heart Disease
- High blood pressure
- Osteoporosis

6. How many cups of fluid (water, juice, coffee, tea, soda) do you drink in a normal day? _____

7. Would you consider your activity level to be:

- Low (Walking slowly, sitting using computer, fishing, cooking, etc.)
- Moderate (150 minutes/brisk walking, dancing, mowing, etc.)
- Vigorous (75 minutes/week of rigorous sport activity, hiking, jogging, etc.)

8. How often do you...	Seldom, If Ever	Some Days	Most Days	Do Not Know
Eat meals alone?				
Eat meals with others?				
Get help shopping for food from family or friends?				
Get help preparing meals from family or friends?				

VIII. Demographics: Mark what best describes you.

1. What is your age? _____
2. What is your gender?
 Male
 Female
3. Are you Hispanic?
 Yes
 No
4. What is your race? [Check all]
 African American (Black)
 Asian
 Caucasian (White)
 Native American
 Other _____
5. What is your highest level of education?
 Some high school
 High school graduate
 Some college/associates degree
 Bachelor's degree
 Some graduate school or higher
6. Are you currently employed?
 No
 Yes, part time
 Yes, full time
7. What city do you consider your home?
 Cushing
 Glencoe
 Perkins
 Ripley
 Stillwater
 Yale
 Other _____
8. Would you consider yourself to live in a:
 Rural area
 Small town
 Midsize city
 Suburban area
9. What is your marital status?
 Never married
 Married
 Divorced/Separated/Widowed
10. What is your current living situation?
 Apartment /House / Mobile home
 Homeless
 Local shelter
 Retirement center
 Other _____
11. Not including yourself, how many adults (18 years or older) live with you? _____
12. How many grandchildren (younger than 18 years) live with you? _____
13. How many grandchildren are you responsible for feeding?
14. How many meals a week are you responsible for feeding grandchildren? _____
15. Do you miss any meals so your grandchildren can be fed?
 Yes
 No
16. How many family members or friends do you have nearby that can help you?
 None
 Very few
 Many
17. What is your annual household income?
 Less than \$12,000
 \$12,000 - \$16,000
 \$16,001 - \$21,000
 \$21,001 - \$25,000
 \$25,001 - \$29,000
 Over \$29,000

APPENDIX B

Introduction Script

Introduction Script

Hello, my name is Jessica and I am a dietetic intern graduate student in the Public Health program at Oklahoma State University. With me is Janice Hermann, a professor at Oklahoma State University.

We would like to get your help with a project focusing on food pantry guests who are 50 years of age and older. We would like to find out what issues need to be addressed to better serve older adults who use food pantries.

We believe with this information, food pantries will be able to bridge the gap between food insecurity on both a local and global level.

If you would like to participate, we will ask you to complete a survey [hold up survey]. We would like to point out the a few things:

- Participation is voluntary.
- You do not put your name on the survey.
- The survey should take thirty minutes to complete.
- There are no risks involved in completing the survey.
- By placing your completed survey in the box you [point to box] are showing your willingness to participate.
- Those who complete the survey will receive \$20.

If you would like to take part in this project, please head over to (point to area) where we can further help you complete the survey.

APPENDIX C

Participant Information Form



Public Health

PARTICIPANT INFORMATION FORM

Use of the Our Daily Bread Food and Resource Center by Adults, 50 Years of Age and Older

You are invited to be in a research project looking at food pantry use among adults who are 50 years of age and older. This project is being conducted by Jessica Gibson, a Public Health graduate student at Oklahoma State under the direction of Janice Hermann, Department of Nutritional Sciences. Your participation in this study is voluntary. There is no penalty for not wanting to participate. You are free to stop participating in this project at any time.

If you agree to be in this study, we would ask you to do the following: Fill out the survey provided and return it in the box provided.

Compensation You will receive \$20 cash for completing the survey.

Confidentiality: The information you give in the study will be anonymous. This means your name will not be collected or linked to the data in any way. The researchers will not be able to remove your data from the dataset once your participation is complete. The data will be stored in a secure area so that confidentiality relating to the data will not be compromised.

Contacts and Questions: If you have questions about the study itself, please contact the principal investigator Jessica Gibson at 214-477-9437, jessica.gibson10@okstate.edu. If you have questions about your rights as a research volunteer, please contact the OSU IRB at (405) 744-3377 or irb@okstate.edu.

If you agree to participate in this research, please tear off this page for your record.

APPENDIX D

Oklahoma State University Institutional Review Board for Human Subjects Approval



Oklahoma State University Institutional Review Board

Date: 05/22/2018
Application Number: ED-18-69
Proposal Title: Utilization of The Our Daily Bread Food and Resource Center By Adults 50 Years of Age and Older

Principal Investigator: Jessica Gibson
Co-Investigator(s):
Faculty Adviser: JANICE HERMANN
Project Coordinator:
Research Assistant(s):

Processed as: Exempt

Status Recommended by Reviewer(s): Approved

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any recruitment, consent and assent documents bearing the IRB approval stamp are available for download from IRBManager. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be approved by the IRB. Protocol modifications requiring approval may include changes to the title, PI, adviser, other research personnel, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any unanticipated and/or adverse events to the IRB Office promptly.
4. Notify the IRB office when your research project is complete or when you are no longer affiliated with Oklahoma State University.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact the IRB Office at 223 Scott Hall (phone: 405-744-3377, irb@okstate.edu).

VITA

Jessica Gibson

Candidate for the Degree of

Master of Public Health

Thesis: UTILIZATION OF THE OUR DAILY BREAD FOOD AND RESOURCE CENTER BY ADULTS 50 YEARS OF AGE AND OLDER

Major Field: Public Health

Biographical:

Education:

Completed the requirements for the Master of Public Health at Oklahoma State University, Stillwater, Oklahoma in July, 2019.

Completed the requirements for the Bachelor of Science in Nutrition at Texas Woman's University, Denton, Texas in 2017.

Completed the requirements for Associates of Science at Collin County Community College, Frisco, Texas in 2015

Experience:

Graduate Research Assistant, Department of Nutritional Sciences, Oklahoma State University, Stillwater, Oklahoma, 74075 from June 2018-May 2019

Professional Memberships:

Member of the Academy of Nutrition and Dietetics