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The Role of Self-Efficacy in Increasing Food Security Among Participants of a New Food Pantry Model in Hartford, CT

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The Role of Self-Efficacy in Increasing Food Security Among Participants of a New Food Pantry Model in Hartford, CT

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B.S., Trinity College, 2011

A Thesis
Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Public Health at the University of Connecticut 2013
The Role of Self-Efficacy in Increasing Food Security Among Participants of a New Food Pantry Model in Hartford, CT

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Abstract

**Background:** Food insecurity is defined as not having the resources to obtain enough safe, nutritionally adequate food in socially acceptable ways to support an active, healthy life. A new approach to emergency food assistance is needed, and researchers have encouraged the exploration of empowerment, self-efficacy, and goal setting as a means of better understanding and preventing food insecurity. **Objective:** The study aim is to examine the association between food insecurity and self-efficacy, and evaluate the ability of a new food pantry model (Freshplace) to increase the food security and self-efficacy of members. **Methods:** A randomized control trial comparing Freshplace to a control group was completed. The survey instrument used for the evaluation included a new self-efficacy for food security scale and the USDA Food Security Module. **Results:** Cronbach α tests demonstrated that the self-efficacy scale was reliable. There was a significant positive association between self-efficacy and food security at baseline ($P = .004$) and at 3 months ($P = .02$). A positive relationship between Freshplace participation and not reporting very low food security was observed at 3 months ($P = .05$). There was a significant association between study group and self-efficacy status at 6 months ($P = .001$). **Conclusion:** The results of this study reveal an opportunity to further refine the Freshplace program to more effectively promote food security and help food pantry members become more self-sufficient. This study suggests that methods to increase self-efficacy will be an essential component of the evidence-based food pantry model resulting from this research.
Introduction

Food insecurity, or not having the resources to obtain enough safe, nutritionally adequate food in socially acceptable ways to support an active, healthy life, is a serious and significant national public health issue in the United States. In 2011, almost 15 percent of American households experienced food insecurity at some point during that year. Food insecurity and hunger are not simply caused by a lack of sufficient amounts of food to eat. The underlying causes of food insecurity include poverty, homelessness, unemployment, low levels of income and education, high housing and heating costs, lack of access to transportation, poor mental health and low social capital. Although the United States Department of Agriculture’s (USDA) Food and Nutrition Service offers fifteen different domestic food assistance programs, primarily the Supplemental Nutrition Assistance Program (SNAP), the National School Lunch Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), food insecure households chronically depend on community emergency food assistance programs. The private emergency food system, comprised of food banks, food pantries, and emergency or soup kitchens, has become institutionalized over time and currently provides a vital source of assistance in the midst of underutilized, ineffective, or inadequate public benefits.

A range of negative health outcomes result from food insecurity, which affect individuals at every life stage. Food insecurity is associated with the poor physical health of infants, low educational achievement among children, mental
health issues among adolescents and adults, and nutrient deficiencies. The dietary behaviors and coping strategies of food insecure individuals and families increase the risk for chronic health conditions, including obesity, diabetes, heart disease, high blood pressure and high cholesterol.

In order to prevent the public health consequences of food insecurity, a new approach to private emergency food assistance is needed. A food pantry that is able to address the root causes of food insecurity; prevent the negative physical and mental health consequences of food insecurity; and help clients achieve long-term food security and self-sufficiency could provide a model for more effectively promoting community food security across the country. Researchers have encouraged the exploration of empowerment, self-efficacy, and goal setting as a means of better understanding, and developing interventions to prevent, food insecurity. The purpose of this study is to explore the relationship between self-efficacy and food security, and evaluate the ability of a new food pantry model to increase the self-efficacy of individuals in need of food assistance.
Background

I. Food Security

   a. Definition & Measures

   In the United States, it is a national public health goal to create a society in which everyone lives long, healthy lives; however, this vision cannot be realized when many U.S. citizens do not have access to basic food supplies. Access to food is a basic need for humans to survive and is considered a fundamental right by many. Accordingly, the Universal Declaration of Human Rights states, “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food.” In order for a population to be healthy and well-nourished, food security, or “access by all people at all times to enough food for an active, healthy life,” must be achieved.

   To monitor trends of food security, the Economic Research Service of the USDA collects data on household food security through a supplement to the Current Population Survey (CPS). This measure was developed in response to the National Nutrition Monitoring and Related Research Act of 1990. Following a thorough review of relevant literature, consultation with academic and research experts, and rigorous testing, the food security questionnaire was first offered as a supplement to the CPS in 1995. Since then, the Food Security Supplement has been offered annually. The food security measure was reviewed again between 2003 and 2006 by the Committee on National Statistics to ensure that it is scientifically sound, relevant, and useful to policy officials. As a result the USDA refined its distinction between hunger and food insecurity, replacing the label
“hunger” with very low food security, but the original eighteen questions of the questionnaire have largely remained the same, allowing for data to be compared over time.

The questions in the Food Security Supplement are designed to ask about the conditions and behaviors that typify a household having difficulty obtaining basic, sufficient food supplies due to lack of money or other resources, not because of fasting or dieting to lose weight. The supplement is comprised of eighteen questions, with three about household food conditions, seven about adult food conditions, and eight questions about the food conditions of any children that may live in the household (Figure 1). The household is classified as food secure if it reports two or less food-insecure conditions.

Based on answers to the questions in the food security questionnaire, households are placed in one of four categories – high food security, marginal food security, low food security, and very low food security. Households that are categorized as having high or marginal food security are considered to be food secure, report little to no anxieties about accessing food, and there is little to no indication of changes in eating patterns or food intake. Households categorized as having low or very low food security are considered to be food insecure because they report indications of reduced quality, variety, desirability and/or quantity of foods. Some defining characteristics of households with very low food security include: worrying about food running out before money is available to buy more; food purchased does not last and there is no money available to buy more; household members can’t afford to eat balanced meals;
adults cut the size of their meals or skip meals due to lack of money to buy food; household members lose weight due to inadequate food consumption; and hunger. ¹¹ For many households with low food security, these symptoms occur during three or more months of the year.
1. "We worried whether our food would run out before we got money to buy more." Was that often, sometimes, or never true for you in the last 12 months?

2. "The food that we bought just didn't last and we didn't have money to get more." Was that often, sometimes, or never true for you in the last 12 months?

3. "We couldn't afford to eat balanced meals." Was that often, sometimes, or never true for you in the last 12 months?

4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food? (Yes/No)

5. (If yes to question 4) How often did this happen--almost every month, some months but not every month, or in only 1 or 2 months?

6. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food? (Yes/No)

7. In the last 12 months, were you ever hungry, but didn't eat, because there wasn't enough money for food? (Yes/No)

8. In the last 12 months, did you lose weight because there wasn't enough money for food? (Yes/No)

9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food? (Yes/No)

10. (If yes to question 9) How often did this happen--almost every month, some months but not every month, or in only 1 or 2 months?

(Questions 11-18 were asked only if the household included children age 0-17)

11. "We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food." Was that often, sometimes, or never true for you in the last 12 months?

12. "We couldn't feed our children a balanced meal, because we couldn't afford that." Was that often, sometimes, or never true for you in the last 12 months?

13. "The children were not eating enough because we just couldn't afford enough food." Was that often, sometimes, or never true for you in the last 12 months?

14. In the last 12 months, did you ever cut the size of any of the children's meals because there wasn't enough money for food? (Yes/No)

15. In the last 12 months, were the children ever hungry but you just couldn't afford more food? (Yes/No)

16. In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food? (Yes/No)

17. (If yes to question 16) How often did this happen--almost every month, some months but not every month, or in only 1 or 2 months?

18. In the last 12 months did any of the children ever not eat for a whole day because there wasn't enough money for food? (Yes/No)
b. Current Prevalence of Food Insecurity in the U.S.

In 2011, 14.9 percent of U.S. households experienced food insecurity at some point during the last year (Figure 2).¹ This translates into 17.9 million households that were unable to acquire sufficient amounts of food for one or more household members. About two-thirds of these households prevented significant reduction or changes in food intake by relying on limiting the variety of their diets and relying on a few basic food items. Almost 7 million households (6.8 million or 5.7 percent of households) confronted very low food security, meaning that the food intake of one or more household members was reduced or disrupted because of insufficient financial resources to obtain enough food. After a sharp increase in the prevalence of food insecurity in 2007, rates of food insecurity have not significantly changed since 2009; however, the prevalence of very low food security increased from 5.4 percent in 2010 to 5.7 percent in 2011.
Food insecurity affects both adults and children in a household, although young children are often protected from experiencing very low food security. In 2011, both children and adults were food insecure in 10 percent (3.9 million) of households with children.\(^1\) It is important to note that these statistics are conservative estimates of the prevalence of food insecurity, due to the omission of homeless individuals and families.

Rates of food insecurity are relatively high compared to the national average for the following demographic and geographic groups: all households with children, especially those with children under age six; households with children headed by a single parent; Black, non-Hispanic and Hispanic

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**FIGURE 2 – U.S. Household Food Security Status, 2011\(^1\)**
households; households with incomes below 185 percent of the poverty threshold; households in principal cities of metropolitan areas; and households in the South and West (Figure 3). Rates of very low food security follow similar trends.

The national standard for a nutritous, low-cost diet is known as the Thrifty Food Plan. Developed by the USDA, this plan represents a “market basket” of food, which could be consumed to maintain a healthful diet and meet nutritional standards for certain categories of people based on age and gender. The typical U.S. household spends $47.50 on food per person each week and about 15 percent more than the cost of the Thrifty Food Plan for that household. Parallel to food insecurity rates, households with children, single parents, incomes below the poverty line, and Black non-Hispanic or Hispanic families spent less on food than the cost of the Thrifty Food Plan.
FIGURE 3 – Prevalence of Food Security by Household Type, 2011

c. Characteristics & Core Causes of Food Insecurity

Limited-resource, food insecure individuals use a range of coping strategies, or practices to obtain and maintain food supplies, to prevent very low food security. Compromised quality, anxiety and uncertainty, socially unacceptable meals, and the use of emergency strategies are coping strategies that signify the four stages of food insecurity, progressing from food insecurity to hunger. These behaviors are responses to the challenges that food insecure households face to acquire sufficient amounts of safe, healthy, and culturally acceptable foods. Coping strategies include: participating in federal food and nutrition assistance programs or community food programs, like food pantries and emergency kitchens; limiting the variety of foods eaten; changing eating patterns; restricting food consumption; attending events to obtain food; receiving help from and exchanging resources with members of a support system; increasing income with temporary activities and decreasing expenses through money saving activities; managing a budget and shopping for low-cost, value foods; and rationing and conserving food supplies.

Barriers to preparing meals reported by food insecure households include: not knowing what to cook or how to stretch meals; not having the energy to cook; not knowing how to compare prices or shop on a budget; not having the skills to prepare low-cost and nutritious meals; not understanding how to best store food; and not being able to feed children that want to eat right away. As the typical managers of family eating, women are heavily impacted by the effects of food insecurity. For example, women usually cut fruits and vegetables from their food
budgets first when financial resources are tight. When confronting ways to cope with insufficient access to food, households strive to balance a family's desire for independence with their need for assistance to have enough to eat.

Food insecurity is strongly associated with income. As a household's income falls further below the poverty line, food insecurity greatly increases. Food insecurity results from a lack of money or other resources to obtain food, which makes household spending on food a good indicator of how adequately a household is meeting its basic dietary needs. When household food spending drops below a certain level, the disrupted eating patterns and reduced food intake characteristic of food insecurity occur. Food spending includes money spent on food items at supermarkets, grocery stores, produce stands, meat markets, bakeries, convenience or corner stores, restaurants, cafeterias, vending machines, and any other venue where food is sold. Household income is the most easily recognized factor associated with food insecurity, but other economic determinants include: low level of income from assets; limited capacity to save money; high unemployment, though employment is not sufficient to protect against food insecurity; heavy debt and poor credit; expenses of medical bills, transportation, heating or cooling, and childcare; poor budgeting; use of money to gamble and purchase illicit drugs; housing costs and high residential mobility. Due to these financial strains, food insecure households often face a “heat or eat dilemma,” the choice between paying for food or for their utilities, heat, medications, or rent.
Some physical factors associated with food insecurity, other than the obvious physical feelings of hunger, include poor mental health – depression, stress, anxiety, and low self-esteem – and poor health or disability. \(^3\) Food insecurity is associated with unsuitable housing conditions for storing food bought in bulk or cooking, lack of transportation, geographic location, which may change food costs and access, and whether the location is urban or rural. Sociocultural factors associated with household food insecurity are: lack of nutrition knowledge, cooking skills and preparation skills; low levels of education; single parent families, especially those headed by a female; single, often older, people; large households with many children; limited acculturation and language barriers; and low social capital.\(^3\)

As described above, there are a “complexity of factors”\(^3\) impacting food insecurity. Food insufficiency is largely caused by poverty, which in turn is due to unemployment or underemployment, the high cost of housing and utilities, and the inadequacy of welfare and federal benefits;\(^2\) however, need is unevenly distributed in our society, meaning inequality is more of a root cause of food insecurity than poverty.

II. Public and Private Assistance Programs

To supplement the food they are able to buy, some food insecure individuals participate in federal food and nutrition assistance programs, or they acquire food from private emergency food providers in their neighborhoods.\(^1\) The USDA’s Food and Nutrition Service (FNS) offers fifteen domestic food and
nutrition assistance programs, of which the three largest are the Supplemental Nutrition Assistance Program (SNAP), formerly known as the Food Stamp Program, the National School Lunch Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). In 2011, among food insecure households in the U.S., 40.1 percent participated in SNAP, 32.2 percent received free or reduced-price school meals, and 11.2 percent received WIC food vouchers. In 2011, 56 percent of households with very low food security status reported participating in nutrition assistance programs, most of which participated in SNAP. Although food insecure families can benefit from receiving federal assistance through SNAP, individuals do not receive assistance because they are unaware of the program, don’t think they are eligible, believe the application process is too difficult, are wrongly denied benefits, do not meet eligibility requirements despite a genuine need, or the benefits they do receive are not enough to help them make ends meet.\textsuperscript{2}

Today, food pantries and emergency or soup kitchens are the primary, direct providers of private emergency food assistance in the United States. These agencies depend on volunteers to operate and are often supported by faith-based organizations. The USDA supplements the food assistance resources of food banks, food pantries and soup kitchens through The Emergency Food Assistance Program (TEFAP), which supplies local programs with federal commodities.\textsuperscript{13} To provide some insight into the dependence of food insecure households on private programs for assistance, and the inadequacies of federal benefits, the CPS Food Security Supplement also includes questions
about the use of community emergency food and nutrition assistance programs, specifically food pantries and soup kitchens. These questions are asked to households with incomes below 185 percent of the Federal poverty threshold. In 2011, the CPS Food Security Supplement showed that 24.2 percent of food insecure households used food pantries while 3.2 percent used soup kitchens. In the same year, 32.1 percent of households with very low food security used food pantries and 5.1 percent used soup kitchens. Of all households surveyed, with incomes less than 185 percent of the poverty line, 70.3% received emergency food from a food pantry and 77.5% ate a meal at a soup kitchen. The data collected likely underestimate the use of these programs because people who are homeless or who have unstable housing arrangements are not included. This especially biases the estimates of soup kitchen use, since a kitchen is often needed to prepare the food items handed out at food pantries.

In the 1930s, during the years of the Great Depression, food pantries and soup kitchens were thought of as divisive, inadequate, inefficient and demeaning to the poor, and bread lines were interpreted as evidence of serious unmet needs. In the 1980s, the emergency food system of food pantries and soup kitchens resurfaced and was embraced as a demonstration of charity and a good cause for addressing a community’s food needs. As the emergency food system grew and expanded, it became more institutionalized and established. This became increasingly true as food banks were created to support frontline agencies providing emergency food, and they became mutually reinforcing. Food banks distribute unprepared food items to food pantries, which then distribute
food to clients. Emergency food kitchens, commonly called soup kitchens, provide prepared food that is consumed on site. Food rescue programs, private donations, and unsellable products from the food industry also support local food assistance programs.

It has been argued persuasively by Poppendieck that food pantries are not a solution to the fundamental problem of poverty; they are a response to the symptom of hunger. Food pantries and emergency food programs provide a symbolic connection between the wealth and abundance of American society and the needs of families in poverty. As Poppendieck argues in her classic book on emergency food, *Sweet Charity*, the emergency food system serves society and addresses the problem of hunger, but government policies and public assistance programs would be more effective at addressing the core, root causes of food insecurity; however, there are mechanisms in government and the food industry that reinforce and sustain the emergency food assistance system. The emergency food system saves government money by reducing expenditures on public assistance programs, and the government and some sectors of society believe that the emergency food system is sufficient for addressing hunger. It saves money for the food industry too, which receives a tax break for their food donations, identifies ways to improve their manufacturing to create more desirable products with fewer defects, and is able to dispose of unsellable products free of charge by donating excess food to food banks. Since food is a flexible portion of a household’s budget, and it is the easiest kind of assistance to
receive, emergency food programs have endured economic declines and will continue to do so if the current system continues as it is.

III. A History of Food Assistance in the United States

The three primary factors that led to the establishment of the private food assistance network were: legislation in the early 1980s to cut the food stamp program (now SNAP), which mobilized the anti-hunger movement to provide private assistance; the resurgence of the government commodity program, which provided a steady food supply for distribution; and the creation of America’s Second Harvest (now called Feeding America) in 1979.  

a. The Establishment of the Emergency Food System

The history of the food stamp program started in 1932 when the government began giving commodities to private food assistance agencies, which then distributed the food to those in need. In 1939 the government developed a program designed to expand the market for surplus commodities to offer the needy sufficient assistance to maintain a nutritious diet. Participants had to buy food stamps with cash, and for every dollar spent received additional stamps that could be used to purchase commodity crops only. In the context of American consumerism, the food stamps afforded participants the ability to shop with the same convenience and consumer choice as their more well-off neighbors. The food stamp program fizzled out due to lack of participation and competing demands for food during World War II. However, hunger remained a
problem, as evidenced by many malnourished war draftees, causing Congress to pass the National School Lunch Act in 1946 to address this public health problem. Efforts to renew the distribution of commodities to the poor began in 1949, but the program was not effectively administered and served only a small percentage of those in need. In addition, the USDA’s allegiance to farm programs prevented the adoption of several introduced food stamp bills. Americans became more aware of the need to expand food assistance when President Kennedy took office and quickly initiated a pilot food stamp program with improvements compared to the first offering. For example, shifting to a single color stamp system lifted some purchasing restrictions such that purchases were not limited to surplus commodities. Regardless, participation still remained low, in part because food stamps still had to be purchased with a lump sum of money, which most families in poverty were unable to do.

In 1964, the program became permanent with the passage of the Food Stamp Act; however, the program still failed to effectively address the problem of hunger, and media attention eventually pressured the USDA to make improvements. In response to the rediscovery of hunger through government investigations of the nutritional status of people living in poor, disadvantaged communities in the 1960s and 1970s, an anti-hunger movement gained momentum in the 1970s. The anti-hunger movement, called the “hunger lobby”, won many victories in the 1970s to reform and bolster food assistance programs. After the Food Stamp Reform Bill was passed in 1970, participation significantly increased due to expanded eligibility and the adjustment of benefits to inflation.
Participation increased further when the purchase requirement was eliminated with the Food Stamp Act of 1977. Although this allowed more people to obtain food stamps, it also encouraged households to budget less of their income for food and to seek free or low-cost food, because food stamp benefits are usually not enough to last a month. The rise in shelter costs in the 1970s due to the fuel crisis, and again in the 1980s due to speculation in urban real estate, resulted in rent and utility charges that were out of reach for the poor. This in turn resulted in people becoming homeless, which automatically increased the need to rely on food pantries and soup kitchens for food due to lack of kitchen facilities. These circumstances began the chronic dependence on food pantries we observe today.

Despite these steps forward for Food Stamps in the late 1970s, Congress took two steps back with legislation passed in 1981 and 1982, which reduced federal benefits and made eligibility requirements stricter. At this time, high unemployment and underemployment rates, high housing costs, decreased economic security and a weakened welfare safety net converged, steadily increasing the national poverty rate and the length of lines at food pantries and soup kitchens. The anti-hunger movement was immediately up in arms and the Omnibus Budget Reconciliation Act of 1982 sought to pacify activists by renewing commodity distributions. This ultimately led to the institutionalization of the emergency food system, with its efforts to provide private food assistance through nonprofit and religious organizations, as well as the help of many volunteers and donors.
In 1983, the Temporary Emergency Food Assistance Program (TEFAP) was introduced. TEFAP was developed to distribute surplus commodities from the Department of Agriculture to private emergency food providers and funding from the Federal Emergency Management Agency (FEMA) stimulated the growth of the emergency food system.² This led to a boom in the number of food pantries because they now had a relatively regular and substantial supply of commodity food to meet the escalating demand for food.

The government soon felt that the TEFAP could keep everyone happy – farmers were guaranteed that their products would be purchased; industries donated food and didn’t have to pay the cost for the disposal of unwanted products; the private emergency food system had a steady supply of food to offer food insecure families and received subsidies for storing surplus commodities; and the government was able to use public funds to buy these commodities to transfer to emergency food providers.⁴ Some government officials argue that food pantries, often run by nonprofit or religious organizations, can help connect clients with community social services; however, critics counter that TEFAP is inequitable and more susceptible to fraud. The purchase of agricultural surpluses by the federal government undoubtedly played an instrumental role in the establishment and institutionalization of the emergency food system.²

In 1979, the formation of America’s Second Harvest (Feeding America), a nonprofit organization that facilitates the donation of large quantities of food from the food industry to the private food assistance network, solidified the presence of food pantries in our society.⁴ As a supplier for America’s Second Harvest, the
food industry receives tax credits for donating food, saves money on the disposal of unwanted food, and is able to tout itself as a charitable donor that helps feed the hungry. Almost all food banks in the U.S. are certified by and a member of America’s Second Harvest, which does not store food, but serves an organizational, administrative function. The emergency food system, encompassed by the operation of America’s Second Harvest, is evidence of a larger trend in food assistance from entitlement to charity, and from rights to gifts in our country.²

b. Definitions, Measures, and Standards of Food Security

During the early 1980s, the Reagan administration proposed large cuts to federal food assistance programs, partly because there were no accurate national measurements of the number of people who were hungry. The anti-hunger movement was under pressure to define and measure hunger to justify expenditures for federal food assistance.¹⁴ This became the impetus for the USDA to develop the Food Security Supplement for the CPS and define four levels of food security in the late 1980s and early 1990s.

The term food insecurity replaced the word hunger, as there was a shift in focus from the physical sensations of not having food to eat to the social, financial, and psychological effects of not having a reliable, safe supply of food.² Food security requires at a minimum readily available, nutritious and safe foods, and the ability to obtain food in socially acceptable ways, which does not include food pantries, soup kitchens, begging, scavenging and theft. Therefore, as the
private emergency food system became entrenched, and federal benefits remained underutilized, more individuals and families living in poverty relied on food pantries, and the number of households defined as food insecure increased. In 1990, the name of the TEFAP program changed too, removing the word temporary while preserving the acronym by simply calling it, The Emergency Food Assistance Program. This signified the recognition that food assistance was a chronic need and transitioned TEFAP from a surplus disposal program to a regular food procurement program.

Another factor that continually fueled the food insecurity fire, and shifted the demand for assistance from public to private programs, was the erosion of the poverty line over time, which captured fewer and fewer of the truly needy. The federal poverty line is based on an estimate of what it costs to eat. Originally calculated in the 1960s, the premise of the federal poverty line was based on data from 1955 showing that the majority of households spent a third of their income on food. Any household who could not afford a nutritionally adequate diet using a third of their income would be considered poor. A series of poverty income thresholds was then established by multiplying the cost of a short-term, subsistence diet based on household size, called the Economy Food Plan, or Thrifty Food Plan, by three. Though the poverty line is updated annually according to changes in the cost of living, it is not adjusted to changes in the standard of living. Most households are spending much less than a third of their budget on food expenses, because over time the cost of rent, utilities, health care and transportation has increased. This trend has lead to the “heat or eat”
dilemma. To make matters worse, the inability of the poverty line to capture truly poor households, or define them as eligible for federal benefits, means there are more people who are close to the poverty threshold and are in need of food and related social services, but are not eligible for public food assistance programs.

The Thrifty Food Plan is also outdated. Food stamps were designed in the 1960s to fill the gap between a third of a household’s income and the cost of the Thrifty Food Plan; however, times have changed, and there are many more demands on the household dollar. The Thrifty Food Plan is flawed in that it assumes that recipients have access to supermarket priced foods, can be a bargain hunter, and have the knowledge to select the right foods to make up a nutritionally complete diet, and cook meals almost entirely from scratch.
FIGURE 4 – Timeline of the History of Food Assistance in the United States
IV. Public Health Consequences of Food Insecurity

Food insecurity is a preventable threat to public health. The physical and emotional development of children and adolescents, and the health of adults and the elderly are at risk when households have insufficient amounts of food to sustain themselves. In addition to the many health consequences of not having enough nutritious food to eat, families may not be able to afford health care or health insurance, resulting in a limited ability to prevent illness and disease. Food stamp recipients are less likely to have health insurance or a regular health provider than people who do not receive food stamps. Therefore, in parallel to relying on emergency food assistance, food insecure individuals often depend on emergency medical care.

Within a household, children are often protected against food insufficiency, yet are more likely to experience physical, emotional and mental health consequences compared to their food secure peers. In a household experiencing very low food security, even young children suffer adverse health outcomes from hunger. Food insecurity is associated with poor physical health of infants and toddlers; behavior problems in toddlers; lower educational achievement among kindergarteners; and psychological issues, including depression and suicidal behavior, among adolescents. Children relying on food stamps also engage in less physical activity and watch more television than nonparticipants.

Single mothers are more likely to experience food insecurity than households with a set of caregivers, and food insecure families consume poorer
quality family meals than food secure households. Food insecure parents are more likely to serve sugar-sweetened beverages and fast food to their children more often, and also serve fruits and vegetables less often than food secure parents because food insecure families are more likely to view fruits and vegetables as too expensive to purchase. Food insecure parents are also more likely to exhibit unhealthy eating patterns themselves, such as not eating breakfast and binge eating. These behaviors are characteristic of a cycle of deprivation and overeating common among food-insecure adults, who overeat when food supplies are good, often when SNAP benefits are received, and then under-eat when SNAP benefits dwindle at the end of the month. This eating pattern can lead to excess weight and promote an unhealthy relationship with food among both adults and children.

Poor nutrition as a result of food insecurity affects the health of people across the lifespan – food insecurity is associated with nutrient deficiencies, primarily due to low consumption of fruits and vegetables. In general, food stamp recipients have a lower Healthy Eating Index score, which is an indicator of diet quality based on foods and nutrients consumed, than those not receiving federal benefits. It has been shown that food stamp participants consume fewer meals, but more food energy than nonparticipants; they consume inadequate amounts of iron and are consequently more likely to have anemia; they are less likely to consume adequate amounts of zinc, folate, and calcium; and they exceed dietary recommendations for maximum cholesterol and sodium intake. Among the elderly, food stamp participants are significantly more likely to have
reduced bone density. In response to insufficient food supplies, households commonly decrease the variety of their diets and increase the consumption of energy-dense foods, which although less expensive are of poor nutritional quality. Food-insecure households in the U.S. characteristically eat fewer servings of fruits, vegetables, and dairy each week as well as lower amounts of essential micronutrients including B vitamins, magnesium, iron, zinc, and calcium. Among children, these dietary patterns lead to increased rates of anemia, acute infections, chronic illness, obesity, and developmental and mental health problems. Together, these dietary behaviors predispose food insecure individuals of all ages to the development of chronic diseases.

Food insecurity is associated with weight gain and overweight, particularly among adult women. Adults participating in SNAP have a significantly greater average body mass index than nonparticipants. This difference is largely due to female food stamp recipients, who are more likely to be at an unhealthy weight than nonparticipants. The same pattern is observed among children receiving federal nutrition assistance. The relationship between food insecurity and obesity is mediated by income, race and gender. This leads to a dual problem of obesity and malnutrition, or the “paradox of hunger in the midst of plenty”. SNAP participants are also less likely than nonparticipants to engage in any physical activity and are more likely to smoke, or be exposed to second-hand smoke, than nonparticipants.

In addition to being overweight or obese, food stamp recipients are more likely than those not receiving benefits to report having a range of chronic
diseases with associated negative health outcomes, including emphysema\(^6\), congestive heart failure, heart attack, stroke, high blood pressure, high cholesterol\(^8\), heart disease, and metabolic syndrome. A study analyzing data from the National Health and Nutrition Examination Survey shows that food insecurity is independently associated with diabetes.\(^7\) Not surprisingly, food stamp recipients are more likely to rate their health as fair or poor, rather than very good or excellent, in comparison to those not receiving federal benefits.\(^6\)

The mechanism by which food insecurity predisposes individuals to chronic disease is thought to involve changes in the quantity and quality of food consumed. Increased levels of inflammation and decreased levels of folate may also play a role in the association between food security and chronic and infectious diseases, respectively.\(^17\) Food insecurity is not only linked to chronic disease due to the quantity and quality of food available, but is a consequence of high medication costs, disabilities or health conditions that limit employment, and not working because of having to care for an ill family member.\(^2\)

Finally, food insecurity impacts not only physical health, but affects mental health too. Food insufficiency, financial strain, and work-family spillover are all associated with symptoms of depression.\(^18\) One study found that participants experiencing food insufficiency had almost three times the odds of having depressive symptoms than those not experiencing food insufficiency.\(^18\) The mental health consequences of food insecurity make it even more challenging for individuals to pull themselves out of poverty and become more self-sufficient.
Despite the availability of public and private food assistance, food insecurity continues to be a problem, and the public health consequences of food insecurity described above contribute to the high prevalence of chronic diseases observed in the U.S. This is evidence of shortcomings and disparities within the food systems that serve those in greatest need of nutrition assistance, which begs the question: how can we alter food assistance programs to more effectively increase food security and improve the health of disadvantaged populations?

V. Freshplace: A Fresh Perspective on Food Security

The research study presented here was conducted in Connecticut, where 11.9 percent of households completing the CPS in 2011 experienced food insecurity, including 4.7 percent of households that experienced very low food security. The number of food insecure households in the state has grown over time – 16,000 more households were food insecure in 2010 than in 2009, and 3,000 more were very low food secure. Over the same time period, the number of individuals participating in SNAP and the Temporary Assistance to Needy Families (TANF) program increased. In 2010, the average number of students receiving free and reduced-price meals through the National School Lunch Program increased to 152,153 students. In 2011, the average monthly participation in SNAP in the state was 378,677 individuals, and the average monthly participation in WIC was 56,083 women, infants and children. Funding through the TEFAP program increased between 2009 and 2010.
This study evaluates a food pantry intervention called Freshplace, located in Hartford, CT, that attempts to address some of the root causes of food insecurity, prevent the negative physical and mental health consequences of food insecurity, and act as a model for new and existing food pantries to improve their capacity to effectively serve their clients. Freshplace is an innovative food pantry that originated from a collaboration between three community organizations – Foodshare, the Chrysalis Center and the Junior League of Hartford – to help residents living in the North End of Hartford acquire long-term food security and self-sufficiency. Self-sufficiency is broadly defined as a state of well being where individuals have a sense of independence and a limited reliance on government assistance.

The poverty rate of this neighborhood in Hartford is approximately 39% and well over a quarter of the population is unemployed (28.2%). Approximately 4% of neighborhood residents are college graduates and approximately 64% completed high school. Most residents are African American, non-Hispanic (83%). More specifically, 24% of residents are of West Indian origin, of which over 90% are Jamaican.

Many individuals that frequent food pantries and soup kitchens in Hartford are not just in need of a loaf of bread or a can of soup. As indicated above, food pantry clients are often in need of employment, additional education, better health care, improved housing conditions, and affordable childcare. Families facing these challenges are likely to experience very low confidence in their ability to pull themselves out of poverty and be self-sufficient.
Food that is available and accessible is key to preventing food insecurity; however, to promote long-term food security, interventions have to address more than just food access. Recognizing this public health issue and its accompanying challenges, the Freshplace food pantry intervention uses Bandura’s Social Cognitive Theory to guide its approach to the problem of hunger and food insecurity. Knowing that behavior change is a process that involves several stages, the Freshplace intervention also uses the Stages of Change Model to help clients make positive changes in behavior by setting small, achievable goals. Freshplace strives to offer a more fundamental approach to the problem of hunger, and uses case management and motivational interviewing to address the root causes of poverty. The primary outcome objectives of Freshplace are to improve food security, self-sufficiency, and diet quality.

VI. Self-Efficacy, Self Sufficiency and Motivational Interviewing

The Social Cognitive Theory is based on a core set of determinants. These determinants include knowledge of risks and benefits of health behaviors; perceived self-efficacy that one has control over personal health behaviors; outcome expectations of health behaviors; health goals and related plans; and perceived facilitators, as well as social and environmental impediments that may present barriers to achieving health goals. Self-efficacy (the belief in one’s ability to make changes) is at the center of this core set of determinants, as it is the basis for motivation and action. Perceived self-efficacy is what allows health
campaigns to achieve any amount of success. Population-based approaches to behavior change encourage improvements in the health practices of people with high self-efficacy and positive expectations for health outcomes. Health campaigns must tap into all the core determinants incorporated into the social cognitive theory to be most effective.

Self-efficacy refers to an individual’s confidence in their ability to plan and follow through with a series of actions that will result in desired outcomes or achievements. Without a sense of self-efficacy, individuals will not feel compelled to change their behavior, believe in themselves, or persevere through challenges to reaching their goals. Self-efficacy includes personal influence over a range of events related to producing desired outcomes, such as perceived control over motivations, thoughts, emotions, and surroundings. Efficacy beliefs are essential for action. Without a sense of efficacy, people do not believe their actions can produce desired effects and do not perceive an incentive to act. Efficacy also regulates behavior by improving knowledge and enhancing skills, supporting motivation and goal-setting, strengthening commitment and resilience to adversity, influencing positive and negative thought patterns, as well as determining experiences of stress. The beliefs and confidence people invest in their ability to execute changes in behavior determine whether they make good use of the skills they already have.

The most effective ways to improve and strengthen perceived self-efficacy are mastery experiences and successes. Conversely, failures can weaken an individual’s sense of self-efficacy, particularly when a robust sense of self-
efficacy is yet to be established. Other means of improving self-efficacy include the observation of positive social models (vicarious experiences) and verbally convincing individuals that they have the capability to act (social persuasion). An individual's level of self-efficacy can indicate their beliefs in the causes of their successes and failures. Those with high self-efficacy perceive their failures to be due to inadequate effort or strategies, while those with low self-efficacy perceive their failure to be due to low ability. Similarly, those with high self-efficacy set higher goals for themselves and remain committed to achieving these goals over time, while those with low self-efficacy doubt their capabilities and are easily discouraged by obstacles or failures.

A person's self-efficacy and sense of control over their motivation and habits influences all stages of behavior change. Self-efficacy determines whether people consider or choose to change their behavior in the first place, whether they have the perseverance to succeed, how well they maintain new habits, their likelihood to relapse, and their ability to return to their habits after setbacks or relapse. Given that self-efficacy appears to regulate transitioning between all stages of change, bidirectional, high self-efficacy acts as a universal facilitator of progression through all stages of behavior change. This makes self-efficacy unique from other social-cognitive variables, such as risk perception, outcome expectancies, action planning and social support, which are more stage specific and therefore limited in their impact. Self-efficacy influences health behaviors directly, as described above, or indirectly by affecting other
determinants. Efficacy beliefs shape goals, aspirations, commitment, expected outcomes, and perception of obstacles and challenges.

Studies have shown that self-efficacy predicts stage transitions related to fruit and vegetable consumption\textsuperscript{28} and have demonstrated that self-efficacy is strongly and consistently associated with higher consumption of fruits and vegetables,\textsuperscript{29} a health behavior food insecure individuals have a limited ability to adopt. An analysis of the U.S. National Cancer Institute’s Food Attitudes and Behaviors Survey from 2007 suggested that adults with high self-efficacy who consume fruits and vegetables were more likely to perceive that it was easy for them to access and choose to eat fruits and vegetables when they ate out.\textsuperscript{30} A careful analysis of this association between self-efficacy and diet has suggested that self-efficacy acts as a moderator of the variables mediating the relationship between intention and behavior change.\textsuperscript{31} More specifically, planning can function as a mediator between intention and changes in dietary behavior; however, individuals may not be able to enact a plan if they have little confidence in their capabilities. For this reason, it is recommended that self-efficacy interventions be promoted over planning treatments\textsuperscript{31} for individuals with poor diets, and researchers have encouraged the exploration of empowerment, self-efficacy, and goal setting as important components in understanding food insecurity.\textsuperscript{9}
VII. The Context of Confidence and How Freshplace Promotes Self-Efficacy

Modern financial obstacles and the limitations of public assistance create an environment that does not promote a sense of confidence in one’s ability to be self-sufficient. Current socioeconomic conditions undermine an individual’s self-efficacy and likely contribute to the high level of depression and mental illness observed among food insecure populations. Hunger is at the base of Maslow’s classic hierarchy of human needs and if someone can’t meet this very basic requirement for life, they may not feel confident that they can meet other needs that support self-sufficiency.

An individual or family cannot plan with any confidence or reliability when food insecure. It would be difficult to feel confident in your ability to feed yourself and provide for your family if you’re not sure your food supply will last until the end of the month or are uncertain where your next meal will come from. This is often referred to as living in “the tyranny of the moment.” It’s also impossible for emergency food providers to plan ahead in the current context of food insecurity. From week to week it’s difficult to predict how many people will come to get a meal from a soup kitchen or if a food insecure household will find the means to get by until the end of the month. Unlike a grocery store where people can select the foods they need or prefer, food pantries have no way to know which basic food items each person truly needs and will consume. These conditions leave food insecure families less confident in their ability to feed themselves in a way that is nutritionally and culturally appropriate.
Clients of food pantries are identified by their need for care and assistance, as well as their passive role in accepting charity. Traditional food pantries are designed with pre-packaged bags of food that have been predetermined by volunteers and then handed to clients who have often waited in long lines, and have no say in the food they receive. When this perspective permeates the emergency food system, clients are imparted with a feeling that they don’t have the ability or self-efficacy to care for themselves. Low levels of confidence are not only observed among food insecure adults, but among children too. Children in food insecure households are often hard to satisfy and are ashamed that they have to eat “low-income food”. This is evidence of a child’s lack of confidence in their families’ ability to eat like other households, and in socially accepted ways.

The American culture emphasizes and protects consumer choice, and to not be able to exercise choice when accessing food is very deflating. If someone is not able to meet a basic biological need to feed themselves, and do so in a way that aligns with their culture, beliefs, and taste preferences, their confidence in their ability to be self sufficient decreases. The inequalities and disparities inherent in the emergency food system create a separate social plane in which poor, food insecure individuals operate, making it hard for them to feel confident that they will ever pull themselves out of it.

The present analysis is one part of a larger study called “Evaluating Freshplace, an innovative new food pantry”. Freshplace was originally created as a collaborative project between three community organizations and the
Principal Investigator, Dr. Katie Martin from the University of Connecticut. Freshplace is located in a 2,000 square foot facility of the Chrysalis Center in the Upper Albany neighborhood of Hartford, CT. Freshplace is staffed by a Project Manager, who is funded by Chrysalis Center, and volunteers from the Junior League of Hartford and other community organizations. Volunteer staff helps stock the pantry, assist members when selecting food, and support the Project Manager, as needed. Foodshare, the regional food bank of greater Hartford, provides food items to Freshplace, the majority of which are fresh fruits, vegetables, dairy and meat. The pantry is open three days a week, on Tuesdays, Thursdays and Saturdays. The Freshplace program includes access to the food pantry every two weeks and monthly meetings with the Project Manager. At these monthly meetings members create a Freshstart Plan to establish and monitor small, achievable goals for becoming food secure and self-sufficient. To help members achieve their goals related to food security and self-sufficiency, Freshplace offers a variety of services on-site as well as makes referrals to existing programs with community partners.

Freshplace is considered an innovative food pantry model, as it provides (1) fresh food in a client choice format that replicates the atmosphere of a regular grocery store; (2) twice monthly case management meetings during which members set goals to become food secure and receive motivational counseling; and (3) individualized referral services to community programs and social services. Each of these components of the program plays a role in increasing the self-efficacy of food insecure individuals.
Traditional food pantries are designed to “feed the hungry,” which implies that food insecure families are not able to help themselves. People that come to Freshplace are called “members” rather than clients. Freshplace views its members as problem solvers, and works to increase self-efficacy so members can help themselves. Freshplace helps improve self-efficacy through its grocery store, client-choice layout, which allows members to choose what food they take home and feel more personal responsibility in securing food for themselves, rather than simply receiving a handout. Freshplace provides access to healthier foods, most importantly fresh fruits and vegetables, which are essential to supporting health and wellness. When grocery shopping, food insecure individuals don’t feel that they are able to afford fresh fruits and vegetables, and therefore do not make a habit of purchasing and consuming wholesome fruits and vegetables. At Freshplace, members can practice choosing healthy foods without concerns of having to stretch their budget to accommodate desired and preferred foods, including fruits and vegetables.

Another way in which the Freshplace intervention increases self-efficacy is by incorporating motivational interviewing techniques into the case management services provided. When people first join Freshplace, they meet with a Project Manager and together they develop a FreshStart Plan, identifying areas in which the member wants to make progress, and the Project Manager evaluates their readiness for change. They set small, realistic goals for the next month and then meet monthly to review and discuss progress. Individuals participating in Freshplace receive motivational counseling at these monthly meetings with a
Project Manager, who is trained in motivational interviewing and helps clients set and monitor their personal goals for becoming food secure and self sufficient. Motivational interviewing is a counseling style, commonly used to treat addictions, that relies on communication strategies such as reflective listening, shared decision-making and eliciting change talk. The goal of motivational interviewing is to guide individuals to think about and verbally express their personal motivations and reasons for changing their behavior. Motivational interviewing is described as nonjudgmental, encouraging, client-centered, goal-driven and directional. Increased self-efficacy and competence is an expected outcome of motivational counseling.

Finally, Freshplace builds confidence through case management services, which assists clients in applying for federal assistance programs, finding employment, and furthering their education, all while building a relationship with the client to provide social support and motivational interviewing. Other confidence boosting services offered at Freshplace include nutrition education and Cooking Matters classes, which improve food shopping and healthy food preparation skills. Cooking Matters is a course designed by the national organization Share Our Strength, which is locally funded by the Community Health Network of Connecticut Foundation. The program helps families with limited resources learn how to select nutritious and low-cost ingredients, and prepare them in ways that are healthiest for their families. Course instructors teach cooking skills, practical nutrition information, and food budgeting strategies. Traditional food pantries in Connecticut may claim that their program offers case
management services, but the services they offer are usually limited to brochures or referrals to other organizations that provide assistance or individual case management services. Due to limited staff and knowledge of motivational interviewing, most food pantries only have the capacity to assess the needs of customers and do not develop plans for self-sufficiency or food security, monitor progress or repeatedly offer follow-up meetings with individual clients.

The Freshplace intervention is an important model for other food pantries to enhance and expand their services in a way that promotes long-term food security and self-sufficiency. In order to evaluate and quantify the efficacy of the Freshplace food pantry program, a randomized control trial comparing the Freshplace intervention to a traditional food pantry control group was completed between June 2010 and December 2012. The primary outcomes of interest for the study were changes in food security, self-sufficiency and diet quality. The survey instrument used for the evaluation also included a new self-efficacy scale developed by the research team to measure confidence in one’s ability to become food secure. The data collected from this scale and other measures in the survey instrument were analyzed to answer the primary research questions of the present study.

VIII. Research Questions and Hypotheses

The study aim is to better understand the association between food insecurity and self-efficacy, and to evaluate the ability of Freshplace to increase
the food security and self-efficacy of members. The data collected will be used to answer the primary research questions of this analysis, which include:

1) Is the self-efficacy scale used in the study reliable?
2) Is there an association between self-efficacy and food security?
3) Does Freshplace participation increase the food security of members after 6 months?
4) Does Freshplace participation increase the self-efficacy of members after 6 months?

Based on the literature review provided and additional research, it is hypothesized that the self-efficacy scale will prove to be a reliable survey instrument. It is expected that there is a positive association between self-efficacy and food security, such that as self-efficacy increases, so does food security. Freshplace has been strategically designed and heavily influenced by accepted social behavioral theories of health behavior change. Therefore, it is expected that Freshplace will increase the food security of members. It is hypothesized that self-efficacy will moderate this effect, such that members with high self-efficacy will have greater food security than members with low self-efficacy.
Methods

I. Introduction

The evaluation of Freshplace consisted of an experimental study with a randomized, control group design. Freshplace opened in 2010 and outcomes were measured for study participants over eighteen months. The primary outcomes of interest for this study were the food security and self-sufficiency status of members of the Freshplace program in comparison to a control group participating in traditional food pantries. The University of Connecticut Health Center’s Institutional Review Board approved the study protocol, study instruments, consents, and all other forms completed by study participants.

II. Setting and Recruitment

Recruitment of study participants took place in two traditional food pantries located near the Freshplace food pantry in the North End of Hartford. The pantries were open on different days of the week. To be included in the study participants were required to be over age 18; be a Hartford resident living in zip codes 06112, 06105 or 06120; receive food from a Hartford food pantry; speak English; and be mentally competent. Participants were recruited from and consented at local pantries with IRB approval.

After receiving consent, participants were randomized to the Freshplace intervention group or the food pantry control group. To do this in a way that empowered participants and imparted a sense of ownership, participants were asked to blindly pick a ball from a bag. Those that picked a red ball were invited
to go to the Freshplace program and those that picked a blue ball were assigned to the control group. If assigned to Freshplace, participants received a folder of informational materials and scheduled a time to meet with the Project Manager. The research team set a goal of recruiting 100 families into the Freshplace program and additional members were recruited in anticipation of some attrition. The control group was oversampled to accommodate expected dropouts too. Participants were recruited on a rolling basis throughout one year to achieve the overall sample.

III. Survey Instruments

The survey instrument used for data collection is designed to primarily measure food security and self-sufficiency. Household food security was measured using the validated USDA Food Security Module, which is considered the gold standard for measuring food security. The module includes 18 questions that ask with increasing severity about a household’s experiences with food insufficiency during the previous three months. Based on responses to these questions, study participants were classified as having high, marginal, low, or very low food security. Those with low or very low food security are considered food insecure. Based on the number of questions that can be answered by a given household and the severity of the questions, very low food security is defined as a food insecurity score of 8 – 18 for households with one or more children and a food insecurity score of 6 – 10 for households with no children (see appendix for food insecurity scoring module and scoring instructions). Self-
sufficiency was measured using the Missouri Community Action Family Self-Sufficiency Scale, which includes subscales for education, employment, income, housing, health insurance, transportation, and childcare, as well as physical, mental, and emotional health. \(^3\) This scale was originally designed for case management programs to assess improvements in the self-sufficiency of families served and to evaluate programs.

Self-efficacy was measured using a newly developed Self Efficacy Scale for Food Security. \(^2\) The scale consists of six questions, which participants answer using the following response categories: 1 = not at all confident, 2 = not very confident, 3 = somewhat confident, 4 = very confident. The six questions were:

1) How confident are you that you can plan meals ahead of time?
2) How confident are you that you can make your food money last all month?
3) How confident are you that you can make a shopping list before going to the grocery store?
4) How confident are you that you can compare prices before you buy food to get the best deal?
5) How confident are you that you can make low-cost meals?
6) How confident are you that you can buy foods that you think are healthy for your family?
Study participants were classified as having high self-efficacy if their average score was above 3 (3.1–4.0), and they were classified as having low self-efficacy if their average score was 3 or below (1-3). This categorization was used based on an even distribution of participants with low and high self-efficacy at baseline.

Additional information about diet quality, social support, social capital and health status was also collected. Basic demographic information, including age, race/ethnicity, level of education, marital status, employment status, household size, use of food pantries, and federal benefits received, was collected at baseline and at each three-month follow-up. Table 1 presents the metrics for these demographic variables and the complete follow-up survey instrument is included as an appendix.

IV. Data Collection and Management

The survey instrument was administered to participants every three months for up to 18 months after the time of recruitment and baseline data collection. Complete demographic information was collected at baseline. All study participants received a monetary incentive of $10 at baseline and the 12-month follow-up, and $5 for other quarterly interviews. Data were collected in an interview style, with a member of the research team asking a participant the survey questions and filling out the survey according to their responses. If a follow-up data collection appointment was missed, participants were contacted by phone or mail to either schedule an in-person appointment at their earliest
convenience or complete the survey over the phone. Recognizing that the study participants were part of a transient population, the research team used multiple contact methods to schedule and complete each follow-up survey.

Trained research assistants scored the completed surveys and data were recorded in an electronic database. All participants were assigned a unique identification number to maintain participant confidentiality. All surveys and paper records were kept in locked cabinets, and all electronic files and databases are password protected.

For Freshplace members, attendance at the food pantry, meetings, and additional programs were tracked as an indicator of the “dose” of the intervention. After completing 18 months of data collection or graduating from the Freshplace program, members were also asked to participate in a short phone survey to gather qualitative information about their experience and provide feedback regarding future improvements to the program. Since this population is difficult to reach, written consent was waived, the participants were fully informed of the interview content and intent, participation was voluntary, and verbal consent was indicated through agreement to continue with the questions. No monetary incentive was provided for this qualitative interview.

V. Statistical Analysis

Data were analyzed using SPSS software, version 20. Frequencies were used to report descriptive statistics for demographic variables of the study sample. Bivariate associations between categorical or dichotomous variables and
food security measures were analyzed using chi-square or t tests. A Cronbach α test was used to validate the Self Efficacy for Food Security Scale. Chi-square tests were used to examine associations between self-efficacy and food security, the intervention and food security, and the intervention and self-efficacy. Although data was collected over 18 months, for this sub-analysis associations were tested at baseline, three months, and six months. The α level of significance was specified as $P < .05$. 
Results

I. Demographics of Study Participants at Baseline

A total of 227 individuals were recruited into the study, for which baseline demographic data were collected. Of the 227 participants, 115 were randomized to the control group and 112 were randomized to the Freshplace intervention group. The demographic characteristics of each study group are presented in Table 1. There were no significant differences between the demographics of the study groups, with the exception of household size ($P = .04$) and frequency of food pantry use ($P = .02$). Individuals in the control group had a smaller household size than the Freshplace group, and were more likely to frequent a food pantry on a weekly basis. Very few participants had received any education beyond high school; however, twice as many control participants (18) as Freshplace participants (9) had received education beyond a high school diploma. The majority of the control group had not received a high school diploma or earned a GED (45.2%), while the majority of the Freshplace group had at least a high school diploma or GED (52.7%); however, these differences were not statistically significant ($P = .06$).

For the overall sample, there were more females than males and approximately 56% of participants in each group were aged 50 years or older. The majority of participants were single. Within each study group, approximately 74% of participants were Black/African American and approximately 20% were West Indian. This generally reflects the distribution of races/ethnicities in the
North End of Hartford. Over 65% of participants in each study group were unemployed, and approximately 10% were retired.

Over 80% of all study participants in each study group were food insecure, among which 47.8% of participants in the control group and 51.8% of participants in the Freshplace group reported very low food security. The majority of participants frequented food pantries weekly, with 70.4% of the control group and 55.4% of the Freshplace group using a food pantry one or more times a week. Approximately 38% of study participants in each group were clients of three or more different food pantries in the neighborhood. Food stamp (SNAP) benefits were used by 60.9% and 56.3% of control and Freshplace group study participants, respectively, and approximately 23% of study participants lived in a household where a child received free or reduced-price school meals. Table 1 also displays the food security status and use of food assistance in each group.

The mean self-efficacy scores of the control group and Freshplace group were 3.03 (SD = 0.67) and 3.09 (SD = 0.67), respectively. The variable of self-efficacy was dichotomized based on the distribution of the data, such that at baseline approximately 50% of participants were categorized as having low self-efficacy and 50% were categorized as having high self-efficacy.
## TABLE 1 – Demographic Characteristics of Control and Freshplace Groups at Baseline

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<th>Characteristic</th>
<th>Control</th>
<th>Freshplace</th>
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<td></td>
<td>N (%) 115 (100)</td>
<td>N (%) 112 (100)</td>
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<tr>
<td><strong>Gender</strong></td>
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<tr>
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<td>44 (39.3)</td>
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<tr>
<td>Female</td>
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<td>68 (60.7)</td>
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<td><strong>Age</strong></td>
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<td>18-29</td>
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<td>4 (3.6)</td>
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<td>6 (5.4)</td>
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<td>44 (39.3)</td>
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<td>High School/GED</td>
<td>45 (39.1)</td>
<td>59 (52.7)</td>
<td></td>
</tr>
<tr>
<td>Some college/Associates/Bachelors</td>
<td>18 (15.7)</td>
<td>9 (8.0)</td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>70 (60.9)</td>
<td>65 (58.0)</td>
<td>0.45</td>
</tr>
<tr>
<td>Married/Living with Partner</td>
<td>21 (18.3)</td>
<td>21 (18.8)</td>
<td></td>
</tr>
<tr>
<td>Separated/Divorced/Widowed</td>
<td>14 (20.8)</td>
<td>26 (23.3)</td>
<td></td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>25 (21.7)</td>
<td>21 (18.8)</td>
<td>0.69</td>
</tr>
<tr>
<td>Unemployed</td>
<td>76 (66.1)</td>
<td>78 (69.6)</td>
<td></td>
</tr>
<tr>
<td>Retired</td>
<td>14 (12.2)</td>
<td>12 (10.7)</td>
<td></td>
</tr>
<tr>
<td><strong>Household Size</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2 people</td>
<td>66 (57.4)</td>
<td>46 (41.1)</td>
<td>0.04</td>
</tr>
<tr>
<td>3-5 people</td>
<td>44 (38.3)</td>
<td>56 (50.0)</td>
<td></td>
</tr>
<tr>
<td>6+ people</td>
<td>5 (4.3)</td>
<td>10 (8.9)</td>
<td></td>
</tr>
</tbody>
</table>
TABLE 1 – Demographic Characteristics of Control and Freshplace Groups at Baseline (continued)

<table>
<thead>
<tr>
<th>Food Security Score</th>
<th>Control</th>
<th>Freshplace</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>9 (7.8)</td>
<td>9 (8.0)</td>
<td>0.90</td>
</tr>
<tr>
<td>Marginal</td>
<td>8 (7.0)</td>
<td>10 (8.9)</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>43 (37.4)</td>
<td>35 (31.3)</td>
<td></td>
</tr>
<tr>
<td>Very Low</td>
<td>55 (47.8)</td>
<td>58 (51.8)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food Insecure</th>
<th>Control</th>
<th>Freshplace</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (Low/Very Low Food Secure)</td>
<td>98 (85.2)</td>
<td>93 (83.0)</td>
<td>0.65</td>
</tr>
<tr>
<td>No (High/Marginal Food Secure)</td>
<td>17 (14.8)</td>
<td>19 (17.0)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Very Low Food Security</th>
<th>Control</th>
<th>Freshplace</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>55 (47.8)</td>
<td>58 (51.8)</td>
<td>0.55</td>
</tr>
<tr>
<td>No</td>
<td>60 (52.2)</td>
<td>54 (48.2)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food Pantry Use</th>
<th>Control</th>
<th>Freshplace</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 or more times a month</td>
<td>34 (29.6)</td>
<td>49 (43.8)</td>
<td>0.02</td>
</tr>
<tr>
<td>1 or more times a week</td>
<td>81 (70.4)</td>
<td>62 (55.4)</td>
<td></td>
</tr>
<tr>
<td>1-2 food pantries</td>
<td>71 (61.7)</td>
<td>68 (60.7)</td>
<td>0.99</td>
</tr>
<tr>
<td>3 or more food pantries</td>
<td>44 (38.3)</td>
<td>42 (37.5)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Federal Benefits</th>
<th>Control</th>
<th>Freshplace</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Stamps</td>
<td>70 (60.9)</td>
<td>63 (56.3)</td>
<td>0.48</td>
</tr>
<tr>
<td>Free/Reduced-price school meals</td>
<td>26 (22.6)</td>
<td>27 (24.1)</td>
<td>0.79</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Self-Efficacy</th>
<th>Control</th>
<th>Freshplace</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>57 (49.6)</td>
<td>49 (43.8)</td>
<td>0.38</td>
</tr>
<tr>
<td>High</td>
<td>58 (50.4)</td>
<td>63 (56.3)</td>
<td></td>
</tr>
</tbody>
</table>

II. Reliability Test of Self-Efficacy Scale and the Self-Efficacy of Study Participants

When testing the reliability of a scale, a Cronbach $\alpha$ value of 0.60 is considered minimally acceptable, with a Cronbach $\alpha$ value of at least 0.70 recommended. The newly developed Self-Efficacy for Food Security Scale used in this study was evaluated with a Cronbach $\alpha$ test at baseline, 3 months, and 6 months. At each time point the scale had a Cronbach $\alpha$ value above 0.70.
Results of each Cronbach α test are listed in Table 2. There were no significant differences between groups in self-efficacy status or mean score on each of the six self-efficacy scale questions at baseline (Tables 1 and 3).

**TABLE 2 – Reliability Test Results for Self-Efficacy Scale**

<table>
<thead>
<tr>
<th>Time</th>
<th>Cronbach α</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>0.77</td>
<td>6</td>
</tr>
<tr>
<td>3 months</td>
<td>0.78</td>
<td>6</td>
</tr>
<tr>
<td>6 months</td>
<td>0.74</td>
<td>6</td>
</tr>
</tbody>
</table>

**TABLE 3 – Mean Scores for Each Question in the Self-Efficacy Scale at Baseline**

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Freshplace</th>
<th>Pearson's R Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean (SD)</strong></td>
<td>Mean (SD)</td>
<td>Pearson's R Correlation</td>
<td></td>
</tr>
<tr>
<td>Question 1</td>
<td>3.2 (0.87)</td>
<td>3.2 (0.95)</td>
<td>0.85</td>
</tr>
<tr>
<td>Question 2</td>
<td>2.6 (0.92)</td>
<td>2.6 (0.92)</td>
<td>0.88</td>
</tr>
<tr>
<td>Question 3</td>
<td>2.9 (1.13)</td>
<td>2.9 (1.15)</td>
<td>0.89</td>
</tr>
<tr>
<td>Question 4</td>
<td>3.0 (1.12)</td>
<td>3.2 (1.07)</td>
<td>0.27</td>
</tr>
<tr>
<td>Question 5</td>
<td>3.3 (0.85)</td>
<td>3.5 (0.77)</td>
<td>0.12</td>
</tr>
<tr>
<td>Question 6</td>
<td>3.2 (0.98)</td>
<td>3.2 (1.02)</td>
<td>0.71</td>
</tr>
</tbody>
</table>
III. Association Between Self-Efficacy and Food Security

There was a significant association between self-efficacy and food security at baseline ($P = .004$) and at 3 months ($P = .02$), such that participants with low self-efficacy were more likely to be food insecure and participants with high self-efficacy were more likely to be food secure. At 6 months the association was no longer significant at the $\alpha = .05$ levels ($P = .07$). There was a significant association between self-efficacy and very low food security at baseline ($P = .003$), at 3 months ($P = .002$), and at 6 months ($P = .02$). The results show that participants with high self-efficacy did not report very low food security as often as participants with low self-efficacy. The positive association between high self-efficacy and food security appears to weaken over time. Table 4 displays the relationship between food insecurity and very low food security among participants with low and high self-efficacy at baseline, 3 months, and 6 months.
TABLE 4 – Association Between Self-Efficacy and Food Security at Baseline, 3 months, and 6 months

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Low Self-Efficacy</th>
<th>High Self-Efficacy</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>106 (100)</td>
<td>121 (100)</td>
<td></td>
</tr>
<tr>
<td>Food Insecure</td>
<td></td>
<td></td>
<td>0.004</td>
</tr>
<tr>
<td>Yes</td>
<td>97 (91.5)</td>
<td>94 (77.7)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>9 (8.5)</td>
<td>27 (22.3)</td>
<td></td>
</tr>
<tr>
<td>Very Low Food Security</td>
<td></td>
<td></td>
<td>0.003</td>
</tr>
<tr>
<td>Yes</td>
<td>64 (60.4)</td>
<td>49 (40.5)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>42 (39.6)</td>
<td>72 (59.5)</td>
<td></td>
</tr>
<tr>
<td>3 Months</td>
<td>Low Self-Efficacy</td>
<td>High Self-Efficacy</td>
<td>P Value</td>
</tr>
<tr>
<td>Characteristic</td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>55 (100)</td>
<td>98 (100)</td>
<td></td>
</tr>
<tr>
<td>Food Insecure</td>
<td></td>
<td></td>
<td>0.02</td>
</tr>
<tr>
<td>Yes</td>
<td>44 (80.0)</td>
<td>60 (61.2)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>11 (20.0)</td>
<td>38 (38.8)</td>
<td></td>
</tr>
<tr>
<td>Very Low Food Security</td>
<td></td>
<td></td>
<td>0.002</td>
</tr>
<tr>
<td>Yes</td>
<td>25 (45.5)</td>
<td>21 (21.4)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>30 (54.5)</td>
<td>77 (78.6)</td>
<td></td>
</tr>
<tr>
<td>6 Months</td>
<td>Low Self-Efficacy</td>
<td>High Self-Efficacy</td>
<td>P Value</td>
</tr>
<tr>
<td>Characteristic</td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>48 (100)</td>
<td>89 (100)</td>
<td></td>
</tr>
<tr>
<td>Food Insecure</td>
<td></td>
<td></td>
<td>0.07</td>
</tr>
<tr>
<td>Yes</td>
<td>36 (75.0)</td>
<td>53 (59.6)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>12 (25.0)</td>
<td>36 (40.4)</td>
<td></td>
</tr>
<tr>
<td>Very Low Food Security</td>
<td></td>
<td></td>
<td>0.02</td>
</tr>
<tr>
<td>Yes</td>
<td>19 (39.6)</td>
<td>19 (21.3)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>29 (60.4)</td>
<td>70 (78.7)</td>
<td></td>
</tr>
</tbody>
</table>
IV. Association Between Study Group and Food Security

There was no significant association between study group and food security at baseline, 3 months, and 6 months; however, the association between Freshplace participation and not reporting very low food security at 3 months had a $P$ value at the $\alpha$ level of significance ($P = .05$). Table 5 displays the cross-tabulation of food insecurity and very low food security in each study group at 3 months and 6 months.

**TABLE 5 – Association Between Study Group and Food Security at 3 and 6 Months**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Control</th>
<th>Freshplace</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3 Months</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Insecure</td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>52 (73.2)</td>
<td>52 (63.4)</td>
<td>0.19</td>
</tr>
<tr>
<td>No</td>
<td>19 (26.8)</td>
<td>30 (36.6)</td>
<td></td>
</tr>
<tr>
<td>Very Low Food Security</td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>27 (38.0)</td>
<td>19 (23.2)</td>
<td>0.05</td>
</tr>
<tr>
<td>No</td>
<td>44 (62.0)</td>
<td>63 (76.8)</td>
<td></td>
</tr>
<tr>
<td><strong>6 Months</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Insecure</td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>37 (64.9)</td>
<td>52 (65.0)</td>
<td>0.99</td>
</tr>
<tr>
<td>No</td>
<td>20 (35.1)</td>
<td>28 (35.0)</td>
<td></td>
</tr>
<tr>
<td>Very Low Food Security</td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>19 (33.3)</td>
<td>19 (23.8)</td>
<td>0.22</td>
</tr>
<tr>
<td>No</td>
<td>38 (66.7)</td>
<td>61 (76.2)</td>
<td></td>
</tr>
</tbody>
</table>
V. Association Between Study Group and Self-Efficacy

There was a significant association between study group and self-efficacy status at 6 months ($P = .001$). At 6 months 76.2\% of study participants in the Freshplace group had high self-efficacy, whereas 49.1\% of study participants in the control group had high self-efficacy. The frequencies in Table 6 show the distribution of participants with high self-efficacy and low self-efficacy in each study group over time. The percent of participants with high self-efficacy in the Freshplace group increased over time, while approximately half of the study participants in the control group had high self-efficacy and the other half had low self-efficacy over time.

The response rate of the control group was lower than that of the Freshplace group over time. At 3 months the control group had a response rate of 61.7\% compared to 73.2\% for the Freshplace group. At 6 months, the response rate of the control group and Freshplace group was 49.6\% and 71.4\%, respectively.
TABLE 6 – Association Between Study Group and Self-Efficacy at Baseline, 3 Months, and 6 Months

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Control</th>
<th>Freshplace</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
<td>N (%)</td>
<td>N (%)</td>
<td>P Value</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>115 (100)</td>
<td>112 (100)</td>
<td>0.38</td>
</tr>
<tr>
<td>Low</td>
<td>57 (49.6)</td>
<td>49 (43.8)</td>
<td>0.38</td>
</tr>
<tr>
<td>High</td>
<td>58 (50.4)</td>
<td>63 (56.2)</td>
<td>0.38</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3 Months</th>
<th>Control</th>
<th>Freshplace</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
<td>N (%)</td>
<td>N (%)</td>
<td>P Value</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>71 (100)</td>
<td>82 (100)</td>
<td>0.86</td>
</tr>
<tr>
<td>Low</td>
<td>25 (35.2)</td>
<td>30 (36.6)</td>
<td>0.86</td>
</tr>
<tr>
<td>High</td>
<td>46 (64.8)</td>
<td>52 (63.4)</td>
<td>0.86</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6 Months</th>
<th>Control</th>
<th>Freshplace</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
<td>N (%)</td>
<td>N (%)</td>
<td>P Value</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>57 (100)</td>
<td>80 (100)</td>
<td>0.001</td>
</tr>
<tr>
<td>Low</td>
<td>29 (50.9)</td>
<td>19 (23.8)</td>
<td>0.001</td>
</tr>
<tr>
<td>High</td>
<td>28 (49.1)</td>
<td>61 (76.2)</td>
<td>0.001</td>
</tr>
</tbody>
</table>
Discussion

I. Overview

Research has clearly demonstrated that there is more to food insecurity than not consistently having enough food to support active, healthy living, as implied by the USDA’s definition. The underlying causes of food insecurity are unemployment and underemployment, high rent and heating costs along with poor housing conditions, poor access to transportation, low levels of education, inadequate federal assistance and in general, poverty. National rates of food insecurity, and more specifically rates of very low food security, indicate that this hardship is more prevalent among households with children headed by a single adult, individuals living alone, Black, non-Hispanic households, low-income households, and households in principal cities of metropolitan areas. The present study of a food insecure population residing in the capital city of Connecticut offers a snapshot of the conditions faced by food insecure households across the nation.

In the North End of Hartford, approximately 78% of children live with a single parent. The majority of residents (80.7%) identify themselves as African American, non-Hispanic. A third of households have been living at the same address for less than five years, half of all housing units were built before 1950, and over 63% of renters pay greater than 30% of their income on housing – all characteristics of a setting consisting of a highly transient population facing high costs of living and poor housing conditions. Greater than 38% of people residing in the North End live in poverty, and 76.6% of children live below 200% of the
poverty level. One out of four families comprised of a single female householder caring for her own children live in poverty. Only 63.5% of adults over 25 years old have earned a high school diploma and 28.2% are unemployed. This combination of socioeconomic factors put families in the North End at a high risk for food insecurity.

The study sample characteristics accurately represent living conditions in this urban neighborhood. Study participants were predominantly African American, had an education level equivalent to or less than a high school diploma, were single, and unemployed. The majority of study participants were food insecure and approximately half had very low food security. Consequently, most participants used a food pantry on a weekly basis.

The evaluation of the Freshplace program is the first study to rigorously evaluate a food pantry intervention, and adds to the literature on improved methods of increasing food security. Equally novel is the analysis of the association between self-efficacy and food security. The existing literature on food security largely ignores the role of self-efficacy, despite its potentially significant influence on food security status.

Traditional food pantries have become run like businesses, as they have expanded over the past three decades; however, this business model of efficiency, and the commodification of charity – often measured by giving more bags of food to more people each year – fails to recognize the human elements of dignity and self-efficacy that factor into a person’s ability to be food secure and self-sufficient. By relying on handouts from food pantries, food insecure
individuals are not able to take an active role in choosing their food or reciprocating the generosity shown towards them, undermining their sense of self-efficacy. Food pantry clients should be given more autonomy, dignity and choice when obtaining food, and be counseled in a manner that supports self-efficacy. Food assistance programs must prioritize the self-efficacy of individuals over the efficiency of their operations in order to increase food security among populations facing this hardship. This change will require adjusting the roles of food pantry volunteers and staff, as well as the way they interact with clients.

II. The Self-Efficacy for Food Security Scale

Before it could be determined whether there was an association between self-efficacy and food security, or whether Freshplace increased self-efficacy, it was essential to test the Self-Efficacy for Food Security Scale to ensure that it was a reliable measure. If the scale did not prove to be reliable, any conclusions drawn from analyses of the relationships between self-efficacy and food security, or participation in Freshplace, would not be valid.

The self-efficacy for food security scale did prove to be reliable, and can therefore be used in future studies of similar populations. Additional testing with other populations will be important to ensure face and content validity. This scale represents a novel study instrument to measure self-efficacy among food insecure populations; however, additional research is needed to confirm its reliability with other populations of different demographics.
III. The Association Between Self-Efficacy and Food Security

Self-efficacy, or having confidence in one’s ability to plan and follow through with actions that lead to a desired outcome or achievement,\(^{27}\) has been shown to effectively promote positive health behavior change, such as increasing consumption of fruits and vegetables.\(^{28,29}\) The present study contributes to the literature on food security by demonstrating that there is a significant association between self-efficacy and food security. The results confirm the study hypothesis that individuals with high self-efficacy are more likely to be food secure. This lends further evidence to the assertion that self-efficacy is an influential factor that helps individuals move through the stages of change.\(^{27}\) This is particularly encouraging considering approximately half of the study participants had very low food security at baseline, and food insecure populations are at risk for many chronic diseases.\(^{5-7,16}\) The positive association between self-efficacy and food security may indirectly benefit the health of food insecure populations, too.

It is important to note that the direction of the association between self-efficacy and food security cannot be determined from this analysis. Whether high self-efficacy causes an individual to become more food secure or whether food security causes an individual to have greater self-efficacy is not clear. Self-efficacy may act as a moderator of variables that promote food security, such that it enhances the positive effects of variables that directly increase food security. Further studies are needed to clarify the relationship through which self-efficacy has an effect.
IV. Freshplace and Food Security

The Freshplace food pantry is designed to increase food security through a client choice format, monthly case management meetings, and targeted referral services; however, the results of this study show that participation in Freshplace did not consistently increase food security over 6 months in the program; however, the reduction of very low food security at 3 months had a $P$-value of 0.05. This outcome did not support the hypothesis that Freshplace would significantly increase food security among participants over 6 months.

There are many factors that are involved with increasing food security. The net effect of the various components of the Freshplace intervention may have masked any positive impact that increased self-efficacy may have had on food security, particularly at 6 months when the association between study group and self-efficacy reached significance. Or, assuming self-efficacy acts as a moderator, if variables that directly and positively affect food security were not present, high self-efficacy may not have been expressed as increased food security. It is possible that significant improvements in food security will be detected at later time points. There are many conditions and challenges that must be overcome to increase food security, meaning the positive effects of the components of the Freshplace intervention may take time to emerge, and be indicated by long-term food security and self-sufficiency.
V. Freshplace and Self-Efficacy

Based on the Social Cognitive Theory, Freshplace was expected to increase self-efficacy to promote positive health behavior change, long-term food security and self-sufficiency. As confirmed by this study, increased self-efficacy of individuals is associated with increased food security. Results support the study hypothesis that Freshplace significantly increased the self-efficacy of members after 6 months in the program. Progression through the early stages of change and the process of planning and setting goals could have delayed increases in self-efficacy. Additionally, the means through which self-efficacy is strengthened, including mastery experiences and vicarious experiences, require time to be implemented.

The highly significant increase in the self-efficacy of Freshplace members at 6 months is encouraging and could be an indicator of continued increases in self-efficacy, or the maintenance of high self-efficacy. Although this was not matched by an increase in food security at the same time point, it is possible that over time, at 9 months and 12 months, the Freshplace intervention could demonstrate a positive effect on food security due to increases in self-efficacy. If high self-efficacy is maintained over time and if variables that directly increase food security – and that can be enhanced by high self-efficacy – are also present, the increase in self-efficacy among Freshplace members observed at 6 months may help promote long-term food security. Further analysis of the association between Freshplace and self-efficacy at 9 months and 12 months will help
answer these research questions regarding trends in self-efficacy and food security over time.
Limitations

There are a few limitations of the Freshplace evaluation that should be noted. First, the data collected through interviews with study participants were self reported, which potentially introduces a response bias into the data collection and analysis. Completing surveys as an interview rather than individually and anonymously, may have influenced how participants answered questions based on how they thought their answers would be perceived or interpreted. Next, the demographics of the sample, which was comprised of Black, older individuals living in a specific neighborhood in Hartford, limits the ability to generalize study outcomes to other groups of a different age, race or region. Furthermore, community resources, health programs, and social services available in the neighborhood during the study period may have influenced the observed effect of the Freshplace intervention, and could have been utilized differentially by study groups or survey respondents compared to non respondents. Another limitation was the demographic differences between study groups at baseline. It was reported that study participants in the control group had a smaller household size than the Freshplace group, which means they are more likely to be food secure in comparison to larger households, and individuals in the control group were more likely to frequent a food pantry on a weekly basis, which is an indication of greater need for food assistance and food insecurity. Finally, the attrition of participants from each study group was an anticipated limitation of the study design, and was addressed during recruitment. Attrition over time reduced sample sizes and the ability to detect significant associations between variables.
of interest. For example, it is possible that participants with low self-efficacy were less likely to complete their follow-up surveys and increased rates of high self-efficacy among Freshplace participants could have been partly responsible for the higher response rates in the Freshplace group. Every effort was made to contact participants, through phone calls, letters, and in-person conversations, to remind them about their follow-up surveys; however, not all study participants completed a follow-up survey every 3 months. When possible, surveys were completed over the phone.
Recommendations

The outcomes of this study demonstrate that self-efficacy is a factor that has the potential to contribute to food security. First, it is recommended that the associations between variables of interest considered in this study be tested again with 9-month and 12-month follow-up data. This will show whether the association between self-efficacy and food security is consistent over time, and it may reveal significant associations between the Freshplace food pantry intervention and increased food security and self-efficacy.

Based on the positive association between self-efficacy and food security observed through this analysis, it is recommended that Freshplace program coordinators and staff consider methods of further increasing the self-efficacy of Freshplace members in conjunction with directly increasing food security through employment, improved housing, increased access to transportation or child care, and federal assistance. To accomplish this, the following additions to the Freshplace program are suggested: increase the offerings of cooking, shopping and budgeting classes; increase the dose or intensity of motivational interviewing with additional follow-up phone call consultations, support group activities, and regular trainings in motivational interviewing; and consistently offer workshops and support services to promote self-efficacy throughout the intervention. Participation in these added services and classes could be tracked so that activities that increase self-efficacy the most can be identified. Eventually, after the best methods for increasing self-efficacy and food security in the context of the emergency food system are determined, a manual or guidebook should be
developed and disseminated to other food pantries to encourage them to transition to an improved, more effective food pantry model.

To further examine the effects of self-efficacy on food security, additional studies should be conducted to consider how changes in self-efficacy could improve community food security. Community food security is defined as, “a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes self-reliance and social justice.” Client counseling and referral to existing programs and services has been identified as a strategy to progress through the first stage of building community food security, which is the initial step to food system change. Though the Freshplace evaluation and survey instruments measure individual and household level change, it is important to consider how these outcomes take place in the context of the emergency food system and community food security. Indicators of community food security should be measured and monitored in future studies to provide a more holistic understanding of how improvements in emergency food assistance delivery may impact not only individuals, but also communities, neighborhoods and municipalities.

In light of research identifying self-efficacy as a key aspect of successful public health campaigns influencing large groups of people, it is important to consider how to increase the self-efficacy of populations struggling with food insecurity. Data collected from community-level studies could support the funding of programs and the promotion of policies that adequately address this public
health issue. For instance, an education or awareness campaign could be designed to specifically reach out to food insecure families and empower them with the knowledge and tools they need to build self-efficacy. This approach would be most effective if accompanied by readily accessible services and programs that allow individuals to learn and practice the behaviors needed to increase self-efficacy, food security and self-sufficiency. Programs are even more successful when matched by strategic policies that encourage self-efficacy and community food security. Due to current government policies and programs, food insecure individuals operate in a food system separate from the mainstream. The charity of the emergency food system creates divisions and inequalities in our society that make it seem impossible to surmount the obstacles to becoming self-sufficient.\(^2\) Providing individuals with adequate federal benefits like SNAP would help them become more integrated into society, learn shopping skills, maintain their self-esteem, and impart the confidence needed for when they are able to overcome their financial challenges and be self-sufficient. Strategies that increase self-efficacy as a means of promoting food security and public health at the individual, household, and community level should be a topic of future research on food security.
Conclusion

Despite decades of attempts to address hunger and food insecurity in the U.S. through public and private food assistance programs, food insecurity remains a serious issue in our society, with significant public health consequences. In an effort to develop a different strategy to increase long-term food security and self-sufficiency, and prevent chronic dependence on food assistance programs among those in need, the innovative Freshplace food pantry program was developed. Combining a client choice format with access to fresh foods, case management using motivational interviewing, and targeting referral services to local resources, the Freshplace food pantry provides a new model for delivering food assistance. The evaluation of Freshplace is the first randomized control trial of a food pantry intervention, and it is expected to provide valuable insights of how to improve private food assistance programs, will inform food policies affecting public food assistance, and, most importantly, provide guidance on how to increase household food security.

The analysis presented here contributes new findings to the literature on food security. Studies of the association between self-efficacy and food security are missing from the field of food security research. This study demonstrates a significant association between self-efficacy and food security, and highlights the importance of identifying methods to increase self-efficacy to improve food security among populations that depend on food assistance programs. A novel scale to measure self-efficacy among food insecure populations was developed and found to be reliable. This study instrument can be used in other populations
to further test its reliability, and the relationship between self-efficacy and food security.

The results of this study, showing that the Freshplace intervention did not consistently improve food security after 6 months, suggest that further refinements to the Freshplace program are needed to more effectively promote food security and help food pantry members become more self-sufficient. Recommendations have been made regarding how to accomplish this; however, further analysis of 9-month and 12-month data may demonstrate that Freshplace does increase food security and self-sufficiency over time. A complete analysis of data collected from the Freshplace evaluation study will undoubtedly increase knowledge and understanding of how food pantries can best operate and what practices support long-term food security. This study suggests that methods to increase self-efficacy will be an essential component of the evidence-based food pantry model resulting from this research. The Freshplace food pantry is a promising approach to empowering people to become food secure and, if replicated, directly address the problems of chronic dependence on the emergency food system and related chronic diseases plaguing the nation.
Appendices

1. Evaluating Freshplace follow-up survey

Evaluating Freshplace

FOLLOW-UP COVER SHEET

I would like to confirm some information you gave us the last time we talked about you and the people you live with. Please let me know if any information has changed.

Please remember, your answers will be kept completely confidential.

Contact Information: Member # ______________________
First Name ____________________________ Last Name ____________________________
Home Phone __________________ Cell Phone __________________ No Phone _________
Address __________________________________ Apt. # __________________ ZIP __________

Please name an emergency contact who does not live with you but knows you well and how to contact you:

Name of Friend or Relative ____________________________ Phone __________________
Name of Friend or Relative ____________________________ Phone __________________

Group: ______ Freshplace ______ Food Pantry comparison group

Follow-Up: □ 3 month □ 6 month □ 9 month □ 12 month Notes:

[This cover sheet stays with the Freshplace client file, and will be filed separately for the UConn files to maintain the confidentiality of clients.]

1 Version 2.1 May 13, 2011.
FOLLOW-UP SURVEY INSTRUMENT

Member # __________________________

Date of Survey ____________________  Interviewer ________________________________

Demographic Information:
How many people, including you, live in your household? ________________

How many children were 5 years of age or under? _______

How many children were between 6 – 17 years of age?____

Which of the following has your family used to get food in the past 3 months?
For all YES answers, ask how often they use the program.
Did you get food from:

___ Soup kitchens Frequency:__________________________________
___ Food pantries Frequency:__________________________________

If yes to Food pantries, how many different pantries do you usually go to?______________

Do you currently receive:

___ Food Stamps / EBT / SNAP Frequency and amount:___________________________
___ WIC Frequency:___________________________________________________________
___ Summer Food program food Frequency:_______________________________________
___ Farmers Markets food Frequency:___________________________________________
___ Free/reduced price school meals Frequency:___________________________________
___ Earned Income Tax Credit Frequency:_______________________________________
___ Energy Assistance / Rent Rebate Frequency:__________________________________
___ Other _______________________ Frequency:___________________________________

What is your marital status?
___ Single  ___ Married  ___ Separated/Divorced  ___ Living with Partner  ___ Widowed
Food Insecurity / Hunger Survey

(Adapted from Food Security / Hunger Core Module, 3-Stage Design, with Screeners: USDA, FCS: 2/20/97)
Available at http://www.ers.usda.gov/Briefing/FoodSecurity/surveytools.htm.)

Now I’m going to read you several statements that people have made about their food situation. For these statements, please tell me whether the statement was OFTEN true, SOMETIMES true, or NEVER true for your household in the last 3 months, that is, since last __________.

1. The first statement is “We worried whether our food would run out before we got money to buy more.”

   Often True [ ] Sometimes True [ ] Never True [ ] DK/Refused [ ]

2. “The food that we bought just didn’t last, and we didn’t have money to get more.”

   Often True [ ] Sometimes True [ ] Never True [ ] DK/Refused [ ]

3. “We couldn’t afford to eat balanced meals.”

   Often True [ ] Sometimes True [ ] Never True [ ] DK/Refused [ ]
   [If needed: Probe: We couldn't eat a variety of foods, we used the same foods over and over.]

SCREENER: If have children, continue to Q4. If do not have children and “sometimes or often true” to any question, go to Q7. If “never true” to all 3 questions, stop and go to Page 5.

4. “We relied on only a few kinds of low-cost food to feed my/our child/the children because we were running out of money to buy food.”

   Often True [ ] Sometimes True [ ] Never True [ ] DK/Refused [ ]

5. “We couldn’t feed my/our child/the children a balanced meal, because we couldn’t afford that.”

   Often True [ ] Sometimes True [ ] Never True [ ] DK/Refused [ ]

6. “(My child was/ My children were) not eating enough because we just couldn’t afford enough food.”

   Often True [ ] Sometimes True [ ] Never True [ ] DK/Refused [ ]

SCREEN Two: Questions 7-12  [INTERVIEWER: If "often true" or "sometimes true" to any one of Questions 1-6, then continue to Q7; otherwise, go to Page 5.]

7. In the last 3 months, since last __________, did you or other adults in your household ever cut the size of your meals or skip meals because there wasn’t enough money for food?

   Yes [ ] No (Go to Q9) [ ] DK/Refused (Go to Q9)

8. [IF YES to Q7, ASK] How often did this happen - almost every week, some weeks but not every week, or in only 1 or 2 weeks?

   Almost every week [ ] Only 1 or 2 weeks [ ]
   Some weeks but not every week [ ] DK/Refused [ ]
9. In the last 3 months, did you ever eat less than you felt you should because there wasn’t enough money to buy food? [ ] Yes [ ] No [ ] DK/Refused

10. In the last 3 months, were you ever hungry but didn’t eat because you couldn’t afford enough food? [ ] Yes [ ] No [ ] DK/Refused

11. In the last 3 months, did you lose weight because you didn’t have enough money for food? [ ] Yes [ ] No [ ] DK/Refused

12. In the last 3 months, did you or other adults in your household ever not eat for a whole day because there wasn’t enough money for food? [ ] Yes [ ] No (go to Q14) [ ] DK/Refused (go to Q14)

13. [IF YES to Q12, ASK] How often did this happen - almost every week, some weeks but not every week, or in only 1 or 2 weeks? [ ] Almost every week [ ] Only 1 or 2 weeks [ ] Some weeks but not every week [ ] DK/Refused

SCREEN Three: If do not have children, go to Page 5. If have children and If affirmative response to any one of Questions 7-13, then continue to Q14; otherwise, go to Page 5.

14. The next questions are about children living in the household who are under 18 years old. In the last 3 months, since (_______), did you ever cut the size of (your child/any of the children’s) meals because there wasn’t enough money for food? [ ] Yes [ ] No [ ] DK/Refused

15. In the last 3 months, did any of the children ever skip meals because there wasn’t enough money for food? [ ] Yes [ ] No (go to Q17) [ ] DK/Refused (go to Q17)

16. [IF YES to Q15, ASK] How often did this happen - almost every week, some weeks but not every weeks, or in only 1 or 2 weeks? [ ] Almost every week [ ] Only 1 or 2 weeks [ ] Some weeks but not every week [ ] DK/Refused

17. In the last 3 months, (was your child/were the children) ever hungry but you just couldn’t afford more food? ( ) Yes ( ) No ( ) DK/Refused

18. In the last 3 months, did (your child/any of the children) ever not eat for a whole day because there wasn’t enough money for food? ( ) Yes ( ) No ( ) DK/Refused
Self Efficacy Scale for Food Security

It is often hard to prepare meals the way we might want to. There are usually a lot of demands on our time, and other things often get in the way.

Given these problems, I would like to ask you how confident you are that you can do some things that are related to getting enough food for your family.

For each of the following items I would like you to tell me, on a scale from 1 to 4, how confident you are that you can do each thing.

The scale is:

1 = not at all confident, 2 = not very confident, 3 = somewhat confident, 4 = very confident

How confident are you that you can (Repeat this stem for each item):

1. Plan meals ahead of time?
   1  2  3  4

2. Make your food money last all month?
   1  2  3  4

3. Make a shopping list before going to the grocery store?
   1  2  3  4

4. Compare prices before you buy food to get the best deal?
   1  2  3  4

5. Make low-cost meals?
   1  2  3  4

6. Buy foods that you think are healthy for your family?
   1  2  3  4
Self Efficacy Scale for Self Sufficiency

Now I’m going to ask you some questions about how confident you are that you can do some things related to making ends meet for your family.

For each of the following items I would like you to tell me, on a scale from 1 to 4, how confident you are that you can do each thing.

The scale is:
1 = not at all confident, 2 = not very confident, 3 = somewhat confident, 4 = very confident

How confident are you that you can (Repeat this stem for each item):

1. Continue your education, like taking classes, getting a GED, or completing a certificate program?
   1 2 3 4 NA = Retired

2. Improve your job skills to help you get a better job?
   1 2 3 4 NA = Retired

3. Look for a job and apply for a job?
   1 2 3 4 NA = Retired or already employed

4. Pay for your most basic living expenses like housing, food and clothing?
   1 2 3 4

5. Enroll in public assistance programs such as Food Stamps, WIC or Housing Assistance?
   1 2 3 4

6. Pay your rent/mortgage on time?
   1 2 3 4

7. Make sure that you, your children and spouse have health insurance?
   1 2 3 4

8. Pay for transportation such as bus fare or car insurance?
   1 2 3 4

9. Solve difficult problems in your life?
   1 2 3 4

10. (IF have children under age 13) Make sure there is reliable child care for your children?
    1 2 3 4 NA = No kids under age 13

11. Work on your goals without abusing alcohol or drugs?
    1 2 3 4
**Fruit, Vegetable, Fiber and Fat Screener**

Think about what you usually ate last month. Think about the foods you ate at breakfast, lunch, dinner, snacks and eating out. About how many times per month, week or day did you eat the following foods?

<table>
<thead>
<tr>
<th>Fruit, vegetable or grain</th>
<th>Less than 1/WEEK</th>
<th>Once a WEEK</th>
<th>2-3 times / WEEK</th>
<th>4-6 times / WEEK</th>
<th>Once a DAY</th>
<th>2+ a DAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% Fruit juice, like orange, apple, grape, (not soda or juice drinks)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>How often do you eat any fruit, fresh or canned (not counting juice)</td>
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<td></td>
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<tr>
<td>Vegetable juice, like tomato or V-8</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Green lettuce salad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Vegetable soup or stew with veggies</td>
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<tr>
<td>Any other vegetables, including peas, corn, broccoli or any other kind</td>
<td></td>
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<tr>
<td>Fiber cereals like Raisin Bran, Total or Shredded Wheat</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Brown rice</td>
<td></td>
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<td></td>
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<tr>
<td>Beans such as pinto, kidney or lentils</td>
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<tr>
<td>Dark bread such as whole wheat or rye</td>
<td></td>
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</tr>
</tbody>
</table>

Again, thinking about your eating habits over the past 30 days. About how often do you eat each of the following foods? Remember breakfast, lunch, dinner, snacks and eating out.

<table>
<thead>
<tr>
<th>Meats and Snacks</th>
<th>1/ MONTH or less</th>
<th>2-3 times a MONTH</th>
<th>1-2 times a WEEK</th>
<th>3-4 times a WEEK</th>
<th>5+ times a WEEK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamburgers, ground beef, meat burritos, tacos</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef or pork, such as steaks, roasts, ribs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fried chicken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot dogs, or sausage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bacon or breakfast sausage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salad dressings (not low-fat)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Margarine, butter or mayo on bread</td>
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<tr>
<td>Margarine, butter or oil in cooking</td>
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<tr>
<td>Eggs (not Egg Beaters or egg whites)</td>
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<td></td>
<td></td>
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<tr>
<td>Pizza</td>
<td></td>
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<tr>
<td>Cheese (not low-fat)</td>
<td></td>
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</tr>
<tr>
<td>Whole milk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>French fries, fried potatoes</td>
<td></td>
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<tr>
<td>Corn chips, potato chips or crackers</td>
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<tr>
<td>Doughnuts, pastries, cake, or cookies</td>
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<tr>
<td>Ice cream</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Soda (not diet)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Multidimensional Scale of Perceived Social Support
(Zimet, Dahlem, Zimet & Farley, 1998)

Next, we are interested in how you feel about the following statements. Thinking about the last 3 months, for each statement, please tell me how you feel about each one based on the following scale:

1 = Strongly Disagree
2 = Disagree a little
3 = Neutral
4 = Agree a little
5 = Strongly Agree

SD D N A SA
1. There is a special person who is around when I am in need.
2. There is a special person with whom I can share my joys and sorrows.
3. My family really tries to help me.
4. I get the emotional help and support I need from my family.
5. I have a special person who is a real source of comfort to me.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with whom I can share my joys and sorrows.
10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.

Social Capital Scale:

Now I’m going to ask you some questions about your neighborhood. Thinking about the last 3 months, for each of these questions, please tell me whether you strongly disagree = 1, disagree = 2, neutral = 2.5, agree = 3 or strongly agree = 4.

SD D N A SA
1. People around here are willing to help their neighbors.
2. This is a close-knit, or "tight" neighborhood where people generally know one another.
3. If I had to borrow $30 in an emergency, I could borrow it from a neighbor.
4. People in this neighborhood generally don't get along with each other.
5. People in this neighborhood can be trusted.
6. If I were sick I could count on my neighbors to shop for groceries for me.
7. People in this neighborhood do not share the same values.

Is anyone in your family a member of a social or civic organization such as the Boy Scouts, a church, or the PTA? ______ Yes ______ No

How long have you lived in your house or apartment? ________________ years
Health Information

1. Has a doctor ever told anyone in your household that they (or you):
   Have diabetes?   _____ Yes   _____ No
   1a. If yes, are they (or you) getting treatment or taking medication?   _____ Yes   _____ NO

2. Has a doctor ever told anyone in your household that they (or you):
   Have high blood pressure?   _____ Yes   _____ No
   2a. If yes, are they (or you) getting treatment or taking medication?   _____ Yes   _____ NO

Now I want to measure your weight.

3. Measuring using scale:
   Weight (without shoes) ____________ pounds

4. BMI calculation (entered later in office): _______
   ____ Underweight   _____ Normal Weight   _____ Overweight   _____ Obese   _____ Very Obese

5. How often do you get moderate exercise, like walking for at least 20 minutes?
   _____ Once/month   _____ 2-3 x/month   _____ 1x/wk   _____ 2-3 x/wk   _____ 4-6x/wk   _____ 1x/day

6. In general, would you say your health is...(circle one number)
   1    2    3    4    5
   Excellent    Very good    Good    Fair    Poor
Self Sufficiency Scale
(Missouri Community Action Family Self Sufficiency Scale)

Tell the family:

**Now I want to ask you some questions about your family.**

We will be looking at your CURRENT situation, specifically how your ability to be self-sufficient is influenced by certain situations.

Your input is very important. We will look at ten areas. For each area I will ask several questions about your CURRENT situation.

If you are not comfortable answering a question, please let me know and decline the question. Please do NOT give inaccurate information.

We will do a follow-up interview in about three months so we can see your progress and evaluate the plan we put together.

Do you have any questions?

EDUCATIONAL ATTAINMENT

1a. What is the highest grade you completed in school? (Circle response)
Grade 1 2 3 4 5 6 7 8 9 10 11 HSDIPLOMA GED COLLEGE AS BS/BA MA

If less than an associate’s degree, ASK:

1b. Have you served a trade apprenticeship or completed a technical certificate?

1c. In the past 3 months, have you continued your education in any other way? For example, have you taken a Certified Nursing Assistant (CNA) course or other vocational courses; attended college classes or schooling provided by your employer?

---

1 Interview for Scale Administration
Missouri Community Action Family Self-Sufficiency Scale
© Missouri Association for Community Action and Annette Backs, LCSW 3-28-99
INCOME
2a. Where does your income come from? What money do you have coming in?

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequency</th>
<th>Amount</th>
<th>Temporary or Permanent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

2b. Is your income enough to pay for your most basic housing, utilities, food, and clothing expenses?  _____YES _____NO

If yes and income is permanent, continue:
2c. Is your income enough to allow for some extras, like birthday gifts and small emergencies under $100?  _____YES _____NO

If yes, continue:
2d. Is your income enough to allow for emergencies over $100 and savings?  _____YES _____NO

EMPLOYMENT
3a. Are you employed?  _____YES _____NO _____RETIRED

If not employed, ASK:
3b. How long have you been unemployed? ____________

If employed, ASK:
3c. Is your employment temporary or permanent?  _____TEMP _____PERM
3d. On average, how many hours per week do you work? _______________
3e. How much do you make per hour? __________________

HEALTH INSURANCE
4a. Who in your family has health insurance? ________________________________

If some are covered, ASK:
4b. Is the coverage through Medicaid, Medicare, Husky, or private insurance? (Circle response)
4c. Does the premium interfere with your ability to pay for housing, utilities, or food?  _____YES _____NO
4d. Do the amounts required for deductibles or copays keep you from using needed services?  _____YES _____NO
4e. Are frequently used services covered by the insurance?  _____YES _____NO
PHYSICAL HEALTH
5a. Does a family member have any health problems that interfere with anyone’s ability to work or that require special working conditions?  ____YES  ____NO (10)
   If yes, continue:
   5b. Tell me a little about how the condition impacts their/your ability to work and their/your work attendance.

________________________________________________________

MENTAL HEALTH AND SUBSTANCE ABUSE
These next questions make some people uncomfortable. If you don’t feel you can answer a question, please let me know and we’ll move on to the next section. It’s important that I have accurate information. That way, I will be better able to measure changes.

6a. Does anyone in your household have any problems with their emotions or mental health?
   ____YES  ____NO
   If yes, continue:
   6b. Please tell me a little about the situation and how it affects your family.
       If necessary, follow-up with questions about impact on finances, housing, utilities, employment, treatment programs, and medication costs.

________________________________________________________

6c. Does anyone in your household ever use alcohol or drugs in a way that might keep your family from reaching its goals?
   ____YES  ____NO
   If yes, continue:
   6d. Please tell me a little about the situation and how it affects your family.
       If necessary, follow-up with questions about impact on finances, housing, utilities, employment, treatment programs, and legal problems.

________________________________________________________

HOUSING
7a. How do you describe your housing situation?

   _____ Own  _____ Rent  _____ Temporary/living w friend  _____ Transitional/Shelter  _____ Homeless

7b. Do you get any help paying your rent?
   _____ Family/friend helping  _____ Renters Rebate  _____ Section 8  _____ No

7c. Do you have any problems paying your rent/mortgage on time?  ____YES  ____NO

7d. Have there been any threats of eviction/foreclosure or are you in danger of losing your apt in the past 3 months?
   ____YES  ____NO

7e. What problems, if any, are there with the plumbing, electrical work, heating, water, or structure of the home?

________________________________________________________
CHILD CARE
8a. Do you have children under age 13? _____ YES _____ NO (10)
   If yes, continue:
8b. What arrangements, if any, do you have for your children while you work or attend
    school?
8c. Are there any barriers, such as transportation, hours of operation, reliability, or copays
    that make child care a problem?
8d. Do you receive any financial assistance for child care?
   __________________________
8e. Do you have any concerns on your child care arrangements in terms of each of the
    following:
    Safety:
    Cleanliness and general environment:
    Nutritious meals:
    Structured activities:
    Adult supervision:
    Age-appropriate toys:
8f. What back-up plan(s) do you have if your usual provider isn’t available or your child is ill?
   __________________________

TRANSPORTATION
9a. Do you own a car? _____ Yes _____ No
9b. Can you borrow a car from a friend or relative? _____ Yes _____ No
9c. How do you usually get around when going to work, school, grocery store, and appointments?
   __________________________
9d. What problems, if any, do you have with transportation? For example: reliability, cost, needed
    routes and schedules, access, need for second car.
   __________________________

If the family has a CAR, ASK:
9e. How often do you have difficulty paying for gas?
   _____ Never _____ Sometimes _____ Frequently
9f. How dependable is the car?
   _____ Very dependable _____ Usually dependable _____ Needs repair now _____ Highly undependable
PSYCHOSOCIAL AND ENVIRONMENTAL STRESSORS

While everyone experiences some amount of stress, sometimes certain stressors interfere with a family’s ability to work toward its goals. For example, domestic violence, legal problems, divorce, dissatisfaction with work, heavy debt, stressful relationships, problems with your children, truancy, and the like can make it hard to keep focused on the things you want to do for your family. I’d like to take a moment now for us to discuss any of these, or other stressors, that might CURRENTLY be affecting your family.

10a. Are you CURRENTLY experiencing any stressors that might make it hard for you to achieve your goals? If so, may we talk about them so we can track changes over time?

Stressor(s) ________________________________________________________________________

10b. How does the stress impact your ability to take care of your family?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

10c. Are you getting help from any other sources to cope with these difficulties?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

10d. In the past 3 months, have you ever thought about getting help?

____________________________________________________________________________________

____________________________________________________________________________________

Remember, we will repeat these questions again in 3 months and will pay you another $5 then.
Quarterly Data Collection for Freshplace Clients only

In the past 3 months, were there programs or services that have helped you get more food for your family?

_____ Yes  _____ No

(If yes) I will read a list of programs. Please tell me if these were helpful to you.

(Check all that apply.)

<table>
<thead>
<tr>
<th>Program</th>
<th>Yes, helpful</th>
<th>Not Helpful</th>
<th>Not Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshplace food pantry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other local food pantries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation Frontline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renters Rebate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Stamps / SNAP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WIC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeting / Co-Opportunity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other, please write in: __________________________________________

____________________________________

____________________________________

On a scale of 1-5, with 1 being not at all helpful, and 5 being very helpful, what was most helpful about coming to Freshplace?

<table>
<thead>
<tr>
<th>Task</th>
<th>Not Helpful</th>
<th>A little</th>
<th>Very Helpful</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Meeting with my Case Manager</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. The way I was treated by staff and volunteers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. The amount of food I received</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. The other services and programs available</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Remember, we will repeat these questions again in 3 months and will pay you another $5 then.

Thank you very much!
## Freshplace

**Family Self-Sufficiency Scale**

### Scaling Worksheet

<table>
<thead>
<tr>
<th>Subscale</th>
<th>High Priority</th>
<th>Mid Priority</th>
<th>Lower Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>5 6 7</td>
<td>8 9 10</td>
</tr>
<tr>
<td>Food Security</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational Attainment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Insurance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health &amp; Substance Abuse</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Housing</td>
<td></td>
<td></td>
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<tr>
<td>Child Care</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Transportation</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Psychosocial &amp; Environmental Stressors</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Date: ____________________________

Member #: _________________________

Scored by: _________________________
2. Follow-up survey scoring instructions

Scoring the Food Insecurity Module

To score the Food Security module, add all of the affirmative responses. Households without children have a total sum of 10 affirmative responses, and households with children have a total of 18 responses.

Responses of “yes,” “often true,” “sometimes true,” “almost every month,” and “some months but not every month” are coded as affirmative. The sum of affirmative responses is referred to as the household’s raw score on the scale.

For households with one or more children:

<table>
<thead>
<tr>
<th>Raw Score</th>
<th>Food Security Label</th>
<th>Scaling Priority</th>
<th>Scaling Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>High food security</td>
<td>Lower Priority</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>Marginal food security</td>
<td>Lower Priority</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>Marginal food security</td>
<td>Lower Priority</td>
<td>8</td>
</tr>
<tr>
<td>3 – 4</td>
<td>Low food security</td>
<td>Mid Priority</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>Low food security</td>
<td>Mid Priority</td>
<td>6</td>
</tr>
<tr>
<td>6 – 7</td>
<td>Low food security</td>
<td>Mid Priority</td>
<td>5</td>
</tr>
<tr>
<td>8 – 10</td>
<td>Very low food security</td>
<td>High Priority</td>
<td>4</td>
</tr>
<tr>
<td>11 – 12</td>
<td>Very low food security</td>
<td>High Priority</td>
<td>3</td>
</tr>
<tr>
<td>13 – 14</td>
<td>Very low food security</td>
<td>High Priority</td>
<td>2</td>
</tr>
<tr>
<td>15 – 18</td>
<td>Very low food security</td>
<td>High Priority</td>
<td>1</td>
</tr>
</tbody>
</table>

For households with NO children:

<table>
<thead>
<tr>
<th>Raw Score</th>
<th>Food Security Label</th>
<th>Scaling Priority</th>
<th>Scaling Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>High food security</td>
<td>Lower Priority</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>Marginal food security</td>
<td>Lower Priority</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>Marginal food security</td>
<td>Lower Priority</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>Low food security</td>
<td>Mid Priority</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>Low food security</td>
<td>Mid Priority</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>Low food security</td>
<td>Mid Priority</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Very low food security</td>
<td>High Priority</td>
<td>4</td>
</tr>
<tr>
<td>7 – 8</td>
<td>Very low food security</td>
<td>High Priority</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>Very low food security</td>
<td>High Priority</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>Very low food security</td>
<td>High Priority</td>
<td>1</td>
</tr>
</tbody>
</table>

Households with high or marginal food security are classified as food secure. Those with low or very low food security are classified as food insecure.
Freshplace
Family Self-Sufficiency Scale

Educational Attainment
Rate for primary adult in program. Assign highest score possible.

1. Completed 9th grade or less.
2. Completed 10th grade - 12th grade, non-graduate.
3. Enrolled in GED program.
4. Enrolled in Certificate program.
5. Serving apprenticeship for trade work, e.g. sheet metal worker, carpenter, plumber.
6. Completed certificate program (without GED or high school diploma), e.g., Certified Nursing Assistant (CNA) training, Cosmetology OR Employer-sponsored training institute.
7. High school diploma OR GED.
8. Attending or has completed some college (including continuing education courses); attending vocational training program through college or technical school.
9. Completed vocational training, trades apprenticeship, or technical certificate, e.g. LPN, trade school.
10. Associate degree or higher.

Jamaican Education Equivalents:
Primary education covers grades one through six (roughly ages six through twelve years). The age of entry into primary school is six years, and children generally complete primary school at age twelve.

*** Sixth Standard = grade 6

Secondary education covers five years (grades seven to eleven)

*** Forms 1-3 (Ages 10-13 or 14) = grades 7-9
*** Forms 4 & 5 (Upper School) = grades 10 and 11

Sixth form is the final (optional) two years of secondary schooling when students are sixteen to eighteen years of age and is for those who want to move on to higher education and is equivalent to a college prep school. It is divided into upper and lower sixth. Upon completion of these additional two years (grade thirteen) students may take the General Certificate of Education (GCE) which is the standard criterion used for entry into university-level studies.

*** Equivalent to grades twelve and thirteen
Income

Note: Define income as child support, pensions, SSI, SSD, Earnings, TANF or TA, General relief, regular contributions by friends or family. Supplemental income resources include TANF or TA, SSI, General Relief, Workman’s Compensation, Unemployment benefits, Pell Educational grants, regular contributions by friends or family. Income does NOT include food stamps, Section 8, Medicaid.

1. No regular or consistent income.
2. Temporary income from supplemental resources. Income insufficient for basic needs for food, clothing, shelter (including utilities).
3. Temporary earned income. Income insufficient for basic needs.
4. Permanent earned income or Social Security Disability, but income is insufficient for basic needs.
5. Temporary income from supplemental resources. Income sufficient for basic needs for food, clothing, shelter (including utilities).
6. Temporary earned income. Income sufficient for basic needs.
7. Permanent earned income or Social Security Disability and income meets basic needs OR Temporary earned income sufficient for basic needs and allows for some extras.
8. Permanent income meets basic needs and allows for some extras, e.g. birthday gifts, occasional emergencies under $100.
9. Permanent income meets basic needs, allows for some extras, and emergencies over $100, e.g. car repairs.
10. Permanent income meets basic needs, allows for extras, emergencies over $100, and savings.

Employment

If two adults are in the program, rate for the primary income provider.
Part time = 29 hrs/week or less; Full time = 30 hrs/wk or more; Temporary = job expected to be available for approximately 6 months or less; Permanent = expectation that job is available indefinitely*

*Include teachers and other school-year based staff in permanent employment.

1. Unemployed-never worked or has not worked for 3 months or more.
2. Unemployed, less than 3 months.
3. Temporary part-time employment.
4. Permanent part-time employment.
5. Temporary full time employment.
6. Full time employment- earning minimum wage or less (including tips, if applicable).
7. Full time employment - above minimum wage for less than 3 months.
8. Full time employment above minimum wage for 3 months or more.
9. Full time employment for 3 months or more and earning living wage (Use regional amount per hour for family of 4)
10. Full time employment - living wage for 6 months or more OR retired.
Health Insurance

NOTE: Medicare is the health insurance available to persons eligible for Social Security retirement or disability benefits. Medicaid is the program that serves people who meet low income guidelines established by their state. Government-sponsored insurance includes Medicaid and MC+. Private insurance includes coverage through employment or school.

1. No health insurance for any family member.

2. All children covered by government-sponsored insurance at no cost, adults uninsured, OR all adults are covered by government-sponsored insurance at no cost, with children uninsured.

3. All children and one adult covered by government-sponsored insurance at no cost, other adult(s) uninsured.

4. All family members covered by government-sponsored insurance at no cost.

5. All children and adults covered by insurance: some by no-cost government-sponsored insurance and others by private insurance (or Medicare) that is unaffordable.

6. All family members covered by government-sponsored insurance, but premium(s) unaffordable.

7. All family members covered by insurance: some by no-cost government-sponsored insurance, others by private insurance, government-sponsored insurance, or Medicare that has affordable premiums.

8. All family members covered by private insurance or Medicare, but premium(s) unaffordable.

9. All family members covered by private insurance or Medicare, premium affordable but deductible/copay unaffordable.

10. All family members covered by private insurance, MC+, or Medicare, and family reports costs of premium and deductible/copay are affordable.
Physical Health

1. Family member’s health problem PROHIBITS work.
   Examples:
   - Family member’s health problem does not permit education, employment.
   - Family member has severe medical problems and cannot work.
   - Family member has acute medical problems that need prompt attention.

2. Family member’s health problem SEVERELY interferes with work.
   Examples:
   - Family member’s health problem limits access to employment or education opportunities.
   - Medication or treatment routines do not allow family member to work regular shifts/hours.

3. Family member’s health problem SERIOUSLY interferes with work.
   Examples:
   - Family member regularly misses work 5 or more times per month due to illness.
   - Family member usually misses work 5 or more times per month for doctor visits or medical treatment.
   - Family member can work only particular hours, or hours are restricted by health problem.

4. Family member’s health problem CONSIDERABLY interferes with work.
   Examples:
   - Family member’s work opportunities limited by health problems, e.g., no lifting, no dust, cannot work outdoors.
   - Cannot improve employment due to health requirements.
   - Family member regularly misses work 4 or more times per month due to illness.
   - Family member usually misses work 4 or more times per month for doctor visits or medical treatment.

5. Family member’s health problem MODERATELY interferes with work.
   Examples:
   - Family member regularly misses work 3 or more times per month due to illness.
   - Family member usually misses work 3 or more times per month for doctor visits or medical treatment.

6. Family member’s health problem MILDLY interferes with work.
   Examples:
   - Family member regularly misses work 2 times per month due to illness.
   - Family member usually misses work 2 times per month for doctor visits or medical treatment.

7. Family member’s health problem OCCASIONALLY interferes with work.
   Examples:
   - Family member regularly misses work 1 time per month due to illness.
   - Family member usually misses work 1 time per month for doctor visits or medical treatment.
   - Some minor modifications to work environment or schedule necessary due to health problems.

8. Family member’s health problem MINIMALLY interferes with work.
   Examples:
   - Most appointments and/or medical treatments occur outside work hours. May use work phone to make appointments.
   - Occasionally misses a half day or less for doctor visit or medical treatment.

9. Family member’s health problem SLIGHTLY interferes with work.
   Examples:
   - Health concerns usually taken care of without absence, e.g., takes breaks to use inhaler for asthma, takes frequent breaks to avoid sitting for extended periods.

10. Family members have no ongoing health problems OR health problems do not interfere with work.
    Examples:
    - All family members are generally healthy.
    - Health problems are controlled by medication or other treatment and do not contribute to absence from work.
Mental Health and Substance Abuse

1. Household needs for food and/or shelter (rent/mortgage, utilities) are UNMET due to substance abuse AND/OR mental illness.
   Examples:
   - Children living outside the home for more than 30 days due to substance use problems or mental illness of parent.
   - Substances require most or all of family financial resources each month.
   - Mental illness results in frequent hospitalization.
   - Frequent lack of food, electricity cut off, eviction notices due to substance use or mental illness.

2. Substance abuse and/or mental illness has SEVERE impact on household needs.
   Examples:
   - Family member lost job or left school due to substance abuse or mental illness.
   - Physical/mental illness due to substance abuse.
   - Substance abuse or mental illness is barrier to employment.
   - Rural: Unable to work due to lost driver’s license.

3. Substance abuse and/or mental illness has SERIOUS impact on household needs.
   Examples:
   - Household member has legal problems due to substance abuse or mental illness.
   - Paying restitution that makes paying for basic needs a problem.
   - Mental illness creates severe financial problems, e.g., gross overspending during manic episodes.

4. Substance abuse and/or mental illness has CONSIDERABLE impact on household needs.
   Examples:
   - Family member considered disabled (by Social Security) due to mental illness.
   - Medication for mental illness is unaffordable.
   - Family member frequently requires hospitalization for mental illness.
   - Family member frequently requires inpatient or full-time treatment for substance abuse.

5. Substance abuse and/or mental illness has MODERATE impact on household needs.
   Examples:
   - Drivers license lost or limited due to substance abuse or mental illness.
   - Mental illness inhibits full time employment.
   - Family member attends support group or treatment program three or more times per week.

6. Substance abuse and/or mental illness has MILD impact on household needs.
   Examples:
   - Family member regularly attends support groups or treatment program two times per week. Costs are within family’s budget capacity.
   - Medication and/or other treatments control most symptoms of mental illness.

7. Substance abuse and/or mental illness has OCCASIONAL impact on household needs.
   Examples:
   - Family member occasionally requires brief hospitalization for mental illness.
   - Family member occasionally uses household expense money for substances.

8. Substance abuse and/or mental illness has MINIMAL impact on household needs.
   Examples:
   - Symptoms of mental illness are mostly controlled by medication.
   - Family member attends support group or treatment program one time per week.

9. Substance abuse and/or mental illness has SLIGHT impact on household needs.
   Examples:
   - Symptoms completely controlled by medication which is affordable (or covered by insurance).
   - Family member occasionally attends support group or uses particular people for support.

10. No impact on household needs due to substance abuse or mental illness.
Housing

1. Homeless or severely substandard housing.
   Examples:
   - Residing/sleeping in unsheltered situations, such as park bench
   - Living out of vehicle
   - Staying in abandoned buildings
   - Living on the street
   - Housing lacks running water, working plumbing/septic system, working heating system, and/or safe electrical system.

2. Temporary housing.
   Examples:
   - Roving house to house
   - Temporarily staying with friends or relatives
   - Residing in a shelter
   - Residential treatment program

3. Transitional housing
   Examples:
   - Home or apartment where family can live for up to six months before getting permanent housing.
   - Agency-sponsored temporary housing program
   - Short term lease or other agreement for moving in less than six months

4. Permanent subsidized housing, but subsidy or lease threatened due to breach of contract, e.g. delinquent/disconnected utilities, property neglect, rule violations OR permanent subsidized housing in need of major repairs. For example: roof leaks, lead paint present, nonworking plumbing, electrical, heating.

5. Permanent non-subsidized housing, current threat of eviction or foreclosure.

6. Permanent subsidized housing or permanently living with family. No threat of eviction or loss of subsidy. No major repairs needed.

7. Permanent unsubsidized housing, but rent/mortgage and utility costs are more than 50% of income AND home is in need of immediate major repairs. For example: roof, siding or painting needs immediate attention; furnace or plumbing is unreliable.

8. Permanent unsubsidized housing, but rent/mortgage and utility costs are more than 50% of income; home does not require major repairs (see #7 for examples) immediately.

9. Permanent unsubsidized housing. Rent/mortgage and utility costs (unsubsidized) are less than or equal to 50% of income.

10. Permanent unsubsidized housing. Rent/mortgage and utility costs (unsubsidized) are less than 50% of income
    AND have been kept current for at least 3 consecutive months.
Child Care

1. Child care needed for education or employment is not available OR child care not currently needed due to unemployment, but will need child care when employed.
   Examples: Evenings, weekends, infants, special needs children.
2. Child care available, but costs exceed potential income.
3. Child care and subsidy are available, but child care provider will not or cannot accept subsidy.
4. Child care available, subsidy accepted by provider, but copay unaffordable.
5. Child care available, subsidy unavailable, but costs exceed 30% of income.
6. Child care available, affordable (may use subsidy), but transportation problems are a problem.
   Examples: Family has no transportation to child care site.
   No transportation from child’s school to child care provider.
   Getting child to provider is too expensive or time consuming.
7. Child care available, affordable (may use subsidy), but of poor quality.
   Poor quality examples: Potential safety hazards, unclean, unlicensed, poorly supervised, no structured activities, unreliable.
8. Child care available, affordable (may use subsidy), and of medium quality OR high quality subsidized care.
   Medium quality examples: Reliable, no safety hazards, some structured activities, variety of toys, nutritious meals, usually supervised.
9. Child care is available, affordable without subsidy, and of high quality.
   High quality examples: Very reliable, constant adult supervision, daily planned structured activities, age-appropriate toys, environment is clean and stimulating, no safety hazards, nutritious meals and snacks.
10. Child care is available, affordable without subsidy, of high quality, AND includes at least one emergency backup care giver or plan. OR Family has no children.
Transportation

1. NO transportation available
   Examples:
   No money for transportation expenses (car, bus/cab fare). No public transportation.
   Suspended/revoked license.
   No friends/relatives to help with transportation.

2. MINIMAL access to transportation.
   Examples:
   Have valid drivers license, but no car or access to car.
   Can occasionally get ride with friend/relative.

3. LIMITED access to transportation.
   Examples:
   Have drivers license and can occasionally use friend/relative’s car.
   Have court-limited drivers license, e.g., can drive only to work.

4. MARGINAL transportation available.
   Examples:
   Friend/relative routinely provides transportation to work only.
   Car won’t run, needs frequent repairs, and/or is unreliable.
   Have car, but no insurance and/or tags.

5. CRUCIAL transportation available.
   Examples:
   Needed routes/hours available on public transportation available, but don’t know how to use it.
   Friend/relative transports to work, grocery store, medical appointments.

6. MODERATE access to transportation.
   Examples:
   Public transportation available, but has limited hours or routes.
   Car runs, but won’t pass inspection.

7. CONSIDERABLE transportation needs met.
   Examples:
   Car usually runs, but presently needs repair.
   Frequently has no money for gas.
   Public transportation fares unaffordable.
   Car insurance up to date, tags valid.

8. SUBSTANTIAL transportation needs met.
   Examples:
   Work/school obligations require second car or transportation arrangements.
   Ride available for most needs, but occasionally unavailable.
   Occasionally without money for gas or public transportation (bus fare cost).

9. Most transportation needs met.
   Examples:
   Car useable, meets inspection, but wearing out. Major repairs expected in next few months.
   Public transportation fares affordable and routes/schedules serve most needs, but must use taxi for some trips.
   Uses public transportation and walks when needed and have no problems with this.

10. Transportation not a problem. Satisfactory access, reliability. All transportation needs met.
Psychosocial and Environmental Stressors

NOTE: The same situation may be experienced at different intensities by different families. Use the labels below as they apply to the family in consideration. Rate only stressors that interfere with the family’s ability to become/remain self-sufficient. If no such stressors are present, score as 10. Examples of stressors: Domestic violence, child abuse/neglect, legal problems, divorce, death of loved one, victim of crime, immigration, incarceration, stressful relationships, family discord, marital problems, dissatisfaction with work, parent/child problems, victim of natural disaster or fire.

1. Pre-occupation with stressor to the extent that family member is UNABLE to address self-sufficiency goals.
   Examples:
   Victim of natural disaster, e.g., tornado, flood
   Current domestic violence

2. Ability to address self-sufficiency goals is SEVERELY influenced by stressor.
   Examples:
   Frequent domestic violence.
   Children removed from home due to abuse or neglect.
   Family member incarcerated.
   Cohabiting prevents self-sufficiency.

3. Pre-occupation with stressor SERIOUSLY impairs ability to focus on self-sufficiency goals.
   Examples:
   Family disrupted by recent divorce, separation, or estrangement
   Severe illness of family member

4. Stressor CONSIDERABLY influences family member’s ability to focus on self-sufficiency goals. Takes substantial effort to turn energy toward goals.
   Examples:
   Recent victim of crime.
   Severe legal problems.
   Outstanding fines or heavy debt.

5. Stressor MODERATELY influences family member’s ability to focus on self-sufficiency goals.
   Examples:
   Record of felony.
   Difficulty adjusting to a new culture.
   Unexpected illness lasting more than 3 weeks.

6. Stressor MILDLY influences family member’s ability to focus on self-sufficiency goals.
   Examples:
   Stressful work schedule or work relationships.
   Difficulties with neighbors or landlord.
   Problems with access to health care.

7. OCCASIONALLY has periods of more than 2 days when is unable to focus on goals due to stressor.
   Examples:
   Strained family relationships or marital problems.
   Dissatisfaction with work or lack thereof.

8. MINIMAL problems focusing on self-sufficiency goals. Problems transient and not unexpected.
   Examples:
   Anniversary of death of loved one.
   Truancy of child.

9. Influence on ability to focus on self-sufficiency is SLIGHT. No more than everyday problems and is able to negotiate solutions to problems as they arise. Remains focused on goals.
   Examples:
   Parent/child problems.

10. No significant stressors that currently interfere with self-sufficiency.
References


14. Martin K. Personal communication.


35. Missouri Association for Community Action and Annette Backs, LCSW. Missouri community action family self-sufficiency scale. <br />

36. IBM. SPSS statistics, release 20.0.0.;20.

