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Barriers to Consuming Healthy Food and the Role of Food Pantries in Improving Diets on Low Income Families

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Barriers to Consuming Healthy Food and
the Role of Food Pantries in Improving Diets of Low Income Families

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Abstract

Background: Poor diet and physical inactivity are among the leading preventable causes of deaths in the United States which disproportionately affect people with low income. A healthy diet rich in fruits and vegetables may prevent the most common diet-related chronic conditions.

Objective: This study explores factors that affect the ability of low income American families to consume a healthy diet. It also addresses the role of food pantries in providing nutritious food to families at risk of food insecurity.

Methods: An online survey was emailed to 50 food pantries that are members of The Foodbank Inc., Dayton Ohio. Thirty three food pantries completed the survey.

Results/Discussion: A majority of food pantries in the Dayton area are run by faith-based organizations. Contradictory to existing literature, most food pantries offer healthy foods like fresh fruits and vegetables. Pantries were less likely to offer dairy products, consistent with previous findings. Seventy percent of food pantries reported encouraging clients to eat healthier meals but only 41% encouraged donation of healthier food items. A significant relationship between pantries’ role in encouraging clients to eat healthy foods and providing nutritional information about eating a healthy diet was found. There was no relationship between operational practices and how food pantries offer food or policies that encourage donation of healthy food and source of food.

Conclusion: Findings suggest that nearly all pantries encourage clients to eat healthier diets but few encourage donation of healthy food. Pantries can device creative ways to acquire healthier food to meet increasing demand.

Keywords: Food pantry, healthy food, barriers
Barriers to Consuming Healthy Food and the Role of Food Pantries in Improving Diets of Low Income Families

Poor diet and physical inactivity are the second leading preventable causes of deaths in the United States behind tobacco use (Mokdad, Marks, Stroup, & Gerberding, 2004). A healthy diet rich in fruits and vegetables may prevent against the most common diet-related chronic condition and diseases such as obesity, diabetes, cardiovascular disease, and cancer (U.S. Department of Agriculture & U.S. Department of Health and Human Services [USDA & USDHHS], 2010). Fruits and vegetables are filling, naturally low in fat and calories, and rich in fiber, vitamins, and minerals. A healthy diet - abundant in fruits and vegetables, introduced in early childhood is not only vital for healthy growth and development in children but helps prevent diet-related diseases in adult life (Horodynski, Stommel, Brophy-Herb, & Weatherspoon, 2010). In 2011, 14.9 percent of households were food insecure meaning they lacked resources to provide sufficient food for all members of their household at some time in the year (Coleman-Jensen, Nord, Andrews, & Carlson, 2012). Based on this study, the prevalence of food insecurity in Ohio is slighted higher at 15.5 percent compared to 14.7 percent nationwide. In addition to using Federal assistance programs like Supplemental Nutritional Assistance programs and school lunches and breakfast programs, these food insecure household also utilize food emergency services like food pantries for free groceries to evade hunger (Grutzmacher & Gross, 2011). Understanding barriers to consuming fruits and vegetables among low-income population could assist food pantries to cost effectively and knowledgeably provide nutritious foods to its clients.
Statement of Purpose

The purpose of this study is to examine factors that affect the ability of low income families to consume a healthy diet - fruits and vegetables as a proxy for a healthy diet. This study also addresses the role of food pantries as a community food resource in providing nutritious food to those who are at risk of being food insecure.

Literature Review

A healthy diet abundant in fruits and vegetables can protect against chronic diseases like obesity, diabetes, cardiovascular diseases, and some cancers. However, very few Americans consume the recommended servings of fruits and vegetables based on United States Department of Agriculture (USDA) dietary guidelines (USDA & USDHHS, 2010; Casagrande, Wang, Anderson, & Gary, 2007). Twenty-four-hour dietary recall data from National Health and Nutrition Examination Survey (NHANES) III (1988 to 1994) and NHANES 1999 to 2002 revealed that 89 percent of Americans did not meet the recommended daily 2 or more servings of fruits and 3 or more servings of vegetables. Consumption levels are much lower for non-Hispanic African-Americans and for people of lower education and income (Casagrande et al., 2007).

Low income people living in “food deserts” disproportionately face increased risk for chronic diseases due to inadequate consumption of healthy food (Laska, Borradaile, Tester, Foster, & Gittelsohn, 2010). The poor dietary intake of high energy dense foods and less fruits and vegetables by Americans is linked to multiple factors that range from environmental to personal preferences.
Socio-demographic Characteristics and Diet

Education and income.

People with low education are more likely to earn less, live in poor neighborhoods, and work several jobs, giving them less time to shop and prepare nutritious meals. Several research findings have consistently linked low level of education and low income to lower consumption of fruits and vegetables in adults (Casagrande et al., 2007; Bhargava & Bhargava, 2004; Horodynski et al., 2010). For example, mothers with low level of education are less informed to understand nutritional requirements that constitute a healthy diet. In a survey of low income families in East Anglia, United Kingdom, 73% of participants believed they were healthy eaters when 82% did not eat up to five servings of fruits and vegetables a day (Dibsdall, Lambert, Bobbin & Frewer, 2003). Another study by Turrell and Kavanagh (2006) suggest that participants with no post-high school education and low income were least likely to have dietary knowledge and less likely to shop for high fiber, and low fat, sugar, and salt foods like fruits and vegetables. Parents with low income and less that a high school education was less likely to consume fruits and vegetables four or more times a week (Horodynski et al., 2010).

People with higher education may have better knowledge of what constitutes healthy foods and the benefits of consuming the recommended amounts of fruits and vegetables. Factors that support knowledge of healthy eating include higher levels of social support and an increased sense of self control compared to people with lower education. Turrell and Kavanagh (2006) emphasize that it is important to acknowledge the interconnections between education, socioeconomic factors, and purchasing power. Socioeconomic variables influence healthy eating behaviors as levels of education determine occupational status which may in turn influence purchasing power. For example, a recent study by Middaugh, Fish, Brunt, and Rhee (2012)
suggests that income significantly influenced dietary intake of fruits and vegetables at 400 percent poverty threshold. This result suggests that income provides the opportunity, affordability and can be a significant factor in determining the consumption of fruits and vegetables compared to education. In addition, when Lallukka et al. (2010) examined the link between income and fresh fruit and vegetable consumption at different educational levels in Finland, they found that people with low education and higher incomes consumed more fruits and vegetables than highly educated people with low incomes. Conclusively, purchasing and consuming healthy food is positively related to education and income. However, more research is necessary to investigate the impact of confounding factors that may modify the influence of education and income on the consumption of fruits and vegetables.

**Race/ethnicity.**

Fruit and vegetable consumption varies significantly across different racial and ethnic groups. Research consistently revealed that fruit and vegetable consumption is lower among non-Hispanic blacks than non-Hispanic whites (Casagrande et al., 2007; Horodynski et al., 2010). When compared to non-Hispanic Caucasian mothers, African American mothers earn significantly lower incomes and are less likely to be married (Horodynski et al., 2010). This means African American mothers are more likely to be single parents and have financial and time constraints which are negatively associated with fruit and vegetable consumption.

**Age and fruit and vegetable consumption.**

Age is a key determinant of fruit and vegetable consumption. Early introduction of fruits and vegetables would shape taste preferences and eventually adult eating behaviors. Since toddlers model after the diet behavior of their parents, it is crucial to introduce fruits and vegetables at an early age to develop taste familiarity with fruits and vegetables which may
ultimately promote consumption (Horodynski et al., 2010). Adolescent age is also a target age to encourage fruit and vegetable consumption since nutritional habits and preferences are shaped during this period and may extend into adulthood (Granner & Evans, 2011). Parental modeling and self-efficacy play a significant role in ensuring that toddlers and adolescents consume the recommended fruits and vegetables.

**Price of fruits and vegetables.**

The relatively higher price of fresh produce such as fruits and vegetables acts as a barrier to consuming a healthy diet especially for low income families. Food prices affect both what low income families buy and where they shop. Perceived high cost and higher prices of healthy food negatively influenced the purchase and consumption of healthy food (Wiig & Smith, 2008; Turrell & Kavanagh, 2006; Krølner et al., 2011). Children and adolescents preferred to buy cheaper and familiar foods that would fill them up rather than fruits and vegetables (Krølner et al., 2011). In one study, based on a large national sample of young American adults, fruit and vegetable consumption levels were significantly inversely related to fruit and vegetable prices (Powell, Zhao, & Wang, 2009). In contrast, women in Melbourne, Australia consumed more fruits and vegetables even though the cost was higher (Thornton, Crawford, & Ball, 2010). In disadvantaged neighborhoods, corner stores are conveniently located but low income women prefer to travel by public transportation to supermarkets to benefit from low prices (Wiig & Smith, 2008). The reason being that, corner stores do not only sell at higher prices, but also generally have a limited selection of healthy and fresh variety food items.
Personal Influences

Taste.

Taste significantly influences fruit and vegetable consumption. The sweet taste of fruits encourages consumption while consumption of vegetables depends on the method of preparation. Several studies suggest that children and adolescent preferred fruits because of its sweet taste and liked or disliked vegetables based on whether it was plainly cooked or had an additional topping or condiment to enhance its taste (Molaison, Connell, Stuff, Yadrick, & Bogle, 2005; Wiig & Smith, 2008; Krølner et al., 2011). Low income African American adolescents in the lower Mississippi Delta region thought vegetables were “yucky” and preferred eating sweet fruits and vegetables that were prepared with added sugar or cheese (Molaison et al., 2005, p. 248). Low-income women in Twin cities, Minnesota prefer the taste of fresh fruits and vegetables to their canned version (Wiig & Smith, 2008). Regrettably, they could not afford fresh foods because of budget constraints. These finding suggest that taste is a key determinant of fruit and vegetable consumption among children and adolescents.

Cultural food preference.

Cultural food preferences may affect fruit and vegetable consumption as taste and ethnic traditions influence food preferences. Studies suggest food preferences are influenced by personal, economic, social, and cultural factors (Willard, 2002; Johnson-Koszlow et al., 2011; Bryant et al., 2011). Meat is “considered a status food in American culture and may increase familial self-esteem” (Wiig & Smith, 2008, p. 1732). Each culture has a distinct “food way” which depends on a single food source as a base for one’s meal. The foodway, defined as a culture’s primary form of nutritional sustenance, is meat to the Americans (Willard, 2002). Meat to Americans is as corn to Mexicans and rice to Japanese. Low-income single mothers spent
more on meat especially low quality, high fat variety meat like stew meat, hot dog, and ground beef and less on fruits and vegetables even if their food stamp allowance increased because meat is their favorite food group (Wiig & Smith, 2008). Meat consumption among American families decreases with an increase in socioeconomic status and level of education (Rimal, 2002). Also, low income Latino families of Bushwick Brooklyn, New York believe good parenting is equivalent to “eating right” which entails “unhealthy options and overfeeding” (Kaufman & Karpati, 2007, p. 2185). These findings suggest that the cultural food preferences of Americans and especially low income families are cultivated through various cultural foodway, and coping strategies which may result in buying cheap, unhealthy, and convenience foods to stretch monthly dollars.

**Time to shop and cook meals.**

The amount of time required for shopping and cooking meals may be an important barrier to fruit and vegetable consumption for low income families. Shopping and preparation of fruits and vegetables takes time compared to pre-packaged meals requiring no preparation like fast food, drinks, salty and sweet snacks (Krølner et al., 2011). Studies suggest that when fruits and vegetables are served during meal time, toddlers and children are more likely to consume them (Horodynski et al., 2010; Granner & Evans, 2011; Krølner et al., 2011). Many low income single mother head of households work multiple jobs and lack the time to shop and prepare meals (Rose & Richards, 2004) resulting in a low intake of fruits and vegetables by the family. The lack of time to prepare meals coupled with an overabundance of fast food restaurants in low income minority neighborhood encourages convenience food consumption leading to high intake of calorie dense vegetables like coleslaw and French fries (Jago, Baranowski, Baranowski, Cullen, & Thompson, 2007; Wiig & Smith, 2008).
Food Environment and Diet

The food environment consists of both the home food environment, school food environment and the community or neighborhood food environment. The community food environment is defined as the type and location of the food stores in the area (Thornton et al., 2010; Brown, Vargas, Ang, & Pebley, 2008) including convenience stores. Farmers markets are have not been considered in literature that addresses food environment and would not be included in this study because of their seasonal nature. Thornton, Crawford, and Ball (2010) also included the consumer nutrition environment as an element of the food environment. The consumer nutrition environment is comprised of within store factors like product quality, availability, price, and hours of operation.

The home food environment.

Several studies have consistently suggested that availability of fruits and vegetables in the home is the strongest predictor of healthy food intake among children and adolescent due to parental modeling (Mikkelsen & Chehimi, 2007; Jago et al., 2007; Granner & Evans, 2011; Bryant et al., 2011; Horodynski et al., 2010). Maternal self-efficacy is the extent to which a mother thinks she is capable of performing necessary tasks of her role as a mother (Horodynski et al., 2010). Home availability of foods was associated with maternal self-efficacy, knowledge, parental modeling, and household and community income (Granner & Evans, 2011). Parents with a high maternal self-efficacy served home cooked meals and modeled fruits and vegetable consumption had higher consumption of fruits and vegetables among their children (Horodynski et al., 2010; Granner & Evans, 2011). A study of eighty African American first time mother/infant dyads in Wake and Durham counties in North Carolina found a link between mother and infant consumption of fruits and vegetables and home availability. The authors
found that infants who lived in homes with greater availability of fruits consumed an average of 103.3g of fruits compared to 42.5g of fruits consumed by children in homes with the least availability of fruits. In the same study infants with higher availability of vegetables at home consumed more than twice the number of vegetables servings compared to their counterparts living in home with the smaller amounts of vegetables available (Bryant et al., 2011).

The community or neighborhood food environment.

The community/neighborhood food environment is defined as the availability of healthy food within a neighborhood and the ease with which resident can access foods (Mikkelsen & Chehimi, 2007). The food environment includes chain supermarkets, independent supermarkets, convenience stores (Brown et al., 2008). Supermarkets provide access to a large variety of fresh produce, such as, fresh fruits and vegetables, at lower prices compared to convenience stores (Mikkelsen & Chehimi, 2007; Brown et al., 2008; Larson, Story, & Nelson, 2009; Thornton et al., 2010).

Low income or disadvantaged neighborhoods have fewer super markets than higher income neighborhoods (Mikkelsen & Chehimi, 2007; Ver Ploeg, 2010). According to a 2009 USDA study, 8.4% or 23.5 million Americans live in low income neighborhoods and 4.1% have low incomes [defined as less than or equal to 200% of Federal poverty threshold] and live more than a mile away from a supermarket (Ver Ploeg, 2010). A study by Rose and Richards (2004) revealed a positive relationship between easy access to supermarket and consumption of fruits and vegetables. The study showed that people living further than five miles from their primary grocery store consumed 62 grams per day of fruits less than those living within a mile. For vegetable consumption the difference was 36 grams per day. Supermarkets in a lower socioeconomic, minority neighborhood are reported to offer fewer healthy food and affordable
items like fruits and vegetables than higher socioeconomic Caucasian neighborhoods (Laska et al., 2010; Brown et al., 2008; Ver Ploeg, 2010). However, the evidence of the relationship between neighborhood environment and diet quality is mixed.

Most studies suggest that better access to supermarkets and limited access to convenience stores is associated with increased fruit and vegetable consumption and lower rate of obesity (Rose & Richards, 2004; Mobley et al., 2006; Brown et al., 2008; Larson et al., 2009). Limited access to fresh fruits and vegetables may account for poorer dietary intake and higher rates of obesity among lower income families (Mobley et al., 2006; Brown et al., 2008). However, some research studies suggest that there is no link between the neighborhood environment and fruit and vegetable consumption (Brown et al., 2008; An & Sturm, 2012).

**Fast-food restaurants.**

The fast-food restaurants are also part of the food environment (An & Sturm, 2012). The presence of fast food restaurants in a community may significantly influence food intake patterns. Some studies report that residents in lower socioeconomic neighborhoods consumed fast food more frequently because of an overabundance of such restaurants in their neighborhoods (Thornton et al., 2010; Mikkelsen & Chehimi, 2007). One study suggests a positive link between fast food restaurants and consumption of fruit and juice. In the same study, consumption of high fat vegetables like french fries was positively linked to the presence of fast food restaurants (Jago et al., 2007). Thornton et al. (2010) reported that residents in highly disadvantaged neighborhoods were more than three times likely to consume fast food than their counterparts in low-disadvantage neighborhoods in Melbourne, Australia. However, there is a lack of consensus on the association between fast food restaurants and fruit and vegetable consumption (Larson et al., 2009; Ver Ploeg, 2010).
Transportation.

Transportation is a significant factor that contributes to access to affordable and fresh fruits and vegetables for low income Americans living in disadvantaged neighborhood. Most low income families have to travel further than high income families to buy food (Mikkelsen & Chehimi, 2007). This association is assessed as the percentage of household without a vehicle for grocery shopping (Sharkey, Horel, Daikwon, & Huber, 2009). Baker, Schootman, Barnidge, and Kelly (2006) report that 2000 census data show that 48.8 percent of residents in the St Louis, Missouri study area did not have an available vehicle. Wiig and Smith (2008) report at data from the national food stamp participant survey show that low income families are six to seven times less likely to own a car and some existing car owners cannot rely on their car for transportation to the grocery store. Although car owners can shop as needed, others who must rely on relatives and friends for a ride are able to shop less frequently. People dependent on public transportation (bus or taxi) are limited by the amount of grocery they can physically carry home. A study in 2002 revealed that lack of transport limits low income families’ ability to shop at supermarkets to once a month compared to an of average 2.2 trips per week for the general population (Mikkelsen & Chehimi, 2007).

The Foodbank, Inc. Dayton, Ohio

A food bank is a charitable organization that solicits, receives, stocks, stores, and distributes donated food and grocery items to charitable agencies that directly serve those in need. The Foodbank’s mission is to relieve hunger among hungry children, their families, individuals, and seniors. The Dayton Foodbank, Inc. realizes this mission through a network of nearly 80 charitable member agencies in Montgomery, Preble and Greene Counties. These member agencies consist of food pantries, soup kitchens, emergency shelters, Kids Café sites and school
backpack programs. The Foodbank, Inc serves over 5000,000 meals to more than 70,000 people annually. Of the 70,000, 40 percent are children and 87 percent of the people served do not know where their next meal will come from and 79 percent of families served have incomes below the poverty line (The Foodbank, Inc., n.d.).

_Urban food pantries._

Rising poverty, food insecurity, and hunger across the nation due to economic downturn and high unemployment rates have prompted increasing request for emergency food assistance programs such as food banks, soup kitchens, and food pantries. Food banks serve as centralized warehouses for collection and distribution of emergency food to food pantries and soup kitchens. While soup kitchens are mostly used by homeless people, food pantries have become an important and reliable source of nutrition for food insecure households in the United States. Although very few authors include food pantries as part of the food environment, it is important to note that food pantries are an important resource to people who cannot afford food. Food pantries are non-profit private emergency food assistance services, usually run as religious based organizations. They rely heavily on volunteer labor and receive donations from food banks, farmers, companies, charitable organizations, and individuals. Food pantries distribute groceries free of charge to clients to prepare and consume food at home (Duffy, Zizza, Jacoby, & Tanyie, 2009; Butkus, 2012; Algert, Reibel, & Renvall, 2006).

Most urban food pantry users are likely to be food insecure, less likely to own a car, and participate in one or multiple forms of federal assistance programs like food stamps, also called, Supplemental Nutritional Assistance Programs (SNAP), Women, Infant, and Children program (WIC), and School Lunch programs (Garasky, Morton, & Greder, 2004; Daponte, Lewis, Sanders, & Taylor, 1998; Butkus, 2012). The urban food pantry clientele is characterized by
young and middle aged head of household, low-income women, and single parents with children with low level of education (Daponte et al., 1998; Duffy et al., 2009; Hoisington, Shultz, & Butkus, 2002; Garasky et al., 2004). Urban pantry clients are less likely to graduate high school than their rural and suburban counterparts. Garasky, Morton, and Greder (2004) reports that 35.6 percent of urban food pantry clients did not graduate high school compared to 23.4 percent for rural food pantry clients and 13.3 percent of suburban food pantry clients in Iowa. Demographic and ethnic characteristics of pantry users vary significantly. For instance pantry users were 49.8 percent African American in Allegheny County, Pennsylvania (Daponte et al., 1998), 60 percent African American in Lee County, Alabama (Duffy et al., 2009), 79 percent Caucasian in Washington State (Hoisington et al., 2002), 57 percent Caucasian in upstate New York, 65 percent African American in New York City (Clancy, Bowering, & Poppendieck, 1991) and 59 percent Hispanic in Los Angeles, California (Algert et al., 2006).

Also, an increase in the frequency and number of people using food pantries in recent years has prompted a rise in requests for food pantries across the nation. Requests for food assistance services from Iowa department of human services doubled in 2003 (Garasky et al., 2004). Although food pantries were designed to attend to emergency food needs of food insecure households, many of these households tend to use pantry services for longer periods of time – up to two years in Allegheny, Pennsylvania (Daponte et al., 1998) and three years in upstate New York (Clancy et al., 1991). Long term use is also referred to as chronic use in the literature (Daponte et al., 1998). A study by Daponte, Lewis, Sanders, and Taylor (1998) suggests that 74 percent of pantries initially created to serve emergency needs now address chronic needs.
Nutritional quality of the pantry food should be of great importance since for the past decade it has met chronic needs of low income families who are disproportionately at risk for diet related diseases. Studies have consistently suggested that in general, food pantry items are of low nutritional quality and food pantry clients face nutritional deficiencies (Duffy et al., 2009; Companion, 2010; Akobundu, Cohen, Laus, Schulte, & Soussloff, 2004). Akobundu, Cohen, Laus, Schulte, and Soussloff (2004) found that San Francisco pantry foods were high in protein, fiber, iron, and folate but low in calcium, vitamin A and C. Meanwhile in a study survey of food pantry donations for the month of September 2008, Michele Companion (2010) found that most donated items consisted of pasta (28.1%), corn kernel (19.4%), noodles (16.9%), white rice (10.2%) and canned peas (11.7%), salty crackers (11.3%), peaches (8.4%), and cream mushroom (8.2%). The food options in a typical distribution box was high in carbohydrates, sodium, and sugar and low in dietary fiber, vitamins, whole grains, and protein (Companion, 2010). Pantry clients however have expressed desire for healthy foods like fruits and vegetables but limited refrigeration capacity and insufficient volunteer hours in food pantries acts as a significant barrier to offering healthy food items (Companion, 2010; Akobundu et al., 2004). Limited nutritious food like fresh produce in food pantries acts as a barrier to consuming healthy food for food insecure household which is of great concern for pantry clients with existing diet-related conditions such as obesity, diabetes, and hypertension.

**Research Questions**

Food pantries provide access to food for low income families. The practices of food pantries in providing access to food may impact their ability to provide healthy and nutritious food such as fresh produce to their clients. This descriptive study will answer the following questions:
1. What is the relationship between food pantry operational practices and how food pantries offer food?

2. What is the relationship between food pantry policies to encourage consumption of healthy food and the provision of nutritional information to clients served?

3. What is the relationship between food pantry policies to encourage donation of healthy food and the source of food?

**Methodology**

**Design**

This is a quantitative research study which was conducted from February to March 2013. Data was collected using an online questionnaire completed by over 50 food pantry coordinators or their representatives in Southwest Ohio (Montgomery, Preble, and Greene counties). Montgomery, Preble, and Greene counties were chosen because The Foodbank, Inc. distributes food to food pantries only in these counties. The food pantries had two weeks to complete the survey.

**Subject Selection and Description**

Participation in this study was limited to food pantries only. Eligible participants were food pantries that were members of The Foodbank, Inc. For privacy reasons as described in the petition criteria for exemption, by Wright State University (WSU) Institutional Review Board (IRB) for the Protection of Human Subjects in Research, the survey questionnaire and consent letter were sent out by a liaison at The Foodbank, Inc. to all Foodbank member food pantries. Two onsite meetings were held with the food bank liaison at The Foodbank, Inc. facility in Dayton to discuss the study protocol and distribution of the online survey instrument. Follow up
correspondence occurred via e-mail and phone to discuss and clarify issues related to the research project.

**Instrumentation**

The questionnaire for this study was adapted from Ward Family Foundation (WFF), Inc. (2008). The executive director of the WFF was contacted for the original copy of the questionnaire used in the WFF’s best practices report on food pantries study, which was received promptly in an email. The WFF questionnaire was adjusted following recommendation made by the researcher's advisor and the Foodbank, Inc. liaison. Some questions were rephrased for better understanding based on the common language used in Southwest Ohio by food pantries and also to properly address research questions. Questions that were irrelevant to the research project were excluded. In order to ensure that participants understood, full capacity, a term in the questionnaire was explained further. To properly address research questions, two new questions were added to determine whether pantries in Southwest Ohio encourage clients to eat healthy food, as well as, encourage donation of healthy food (Ward Family Foundation, 2008).

The questionnaire (see Appendix A) was created using an online survey tool called Qualtrics. Qualtrics is a WSU online survey tool used to create, design, administer, distribute, and provide basic analysis of survey questions. The survey used for this study included a total of 34 questions that could be completed in about 10 to 15 minutes. An online link to the survey generated by Qualtrics was included in a consent letter email.

**Data Collection Procedure**

Data collection began in February 2013 after petition for exemption was approved by WSU IRB. The IRB approved consent letter was emailed with the link to the online survey. The consent letter explained the research objectives and asked for voluntary participation.
Completing the survey meant consent meanwhile not completing the survey was translated as opt out. One follow-up email was sent to food pantries a week later to remind those who did not completed the survey to do so before the deadline which was set at March 1, 2013. Prior to sending out the reminder letter a phone call was placed only to those pantries with available telephone contact number to verify if they received the email with the survey. The consent letter (see Appendix B) and an online link to the food pantry questionnaire were sent via email to The Foodbank, Inc. liaison, which was forwarded to all The Foodbank, Inc. member food pantries in the Southwest Ohio (see Appendix C for IRB approval).

**Statistical Analysis**

Data was analyzed using SPSS (Statistical Package for the Social Sciences, version 20) statistical software. The relationship between pantry operational practices and policies and the availability of healthy food to support consumption was analyzed after recoding the survey responses. Data analysis included descriptive statistics of characteristics of food pantries. Chi-Square test was used to determine statistical significance between categorical variables. For the purpose of accuracy, two tailed Fisher’s exact test was used to determine significance whenever cell sizes were less than five. Statistical significance was determined at p-value equal to or less than 0.05.

**Results**

**Food Pantry Profile**

Table 1 shows a partial profile of food pantries in the Southwest Ohio (see Appendix D for the entire profile). Thirty three food pantries out of fifty food pantries that were surveyed, responded to the food pantry online survey. A majority of the food pantries in Montgomery, Preble, and Greene counties are run by faith based organizations (81%). Fifty nine percent
provide food pantry services only. Only 21% of food pantries reported getting all their food from the food bank.

Table 1

Food Pantry Profile

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does pantry offers multi social service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi service</td>
<td>13</td>
<td>40.6</td>
</tr>
<tr>
<td>Stand alone</td>
<td>19</td>
<td>59.4</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Is pantry run by a faith based organization?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>26</td>
<td>81.3</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>18.8</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Does the pantry get all its food from the food bank?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td>No</td>
<td>26</td>
<td>78.8</td>
</tr>
<tr>
<td>How often can clients access the pantry?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whenever and as often as needed</td>
<td>3</td>
<td>9.1</td>
</tr>
<tr>
<td>Once a week only</td>
<td>2</td>
<td>6.1</td>
</tr>
<tr>
<td>Twice a month only</td>
<td>1</td>
<td>3.0</td>
</tr>
<tr>
<td>Once a month only</td>
<td>20</td>
<td>60.6</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td>What amount of food do you distribute to clients each time they access the pantry?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 meals for 3 days for everyone in household</td>
<td>5</td>
<td>16.1</td>
</tr>
<tr>
<td>3 meals for 4 days for everyone in household</td>
<td>7</td>
<td>22.6</td>
</tr>
<tr>
<td>3 meals for 5 days for everyone in household</td>
<td>8</td>
<td>25.8</td>
</tr>
<tr>
<td>3 meals for a week for everyone in household</td>
<td>4</td>
<td>12.9</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>22.6</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Services other than food distribution offered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clothing distribution</td>
<td>14</td>
<td>23.3</td>
</tr>
<tr>
<td>Food services only, but refer to other social services agencies</td>
<td>11</td>
<td>18.3</td>
</tr>
<tr>
<td>Counseling on how to obtain available entitlement like food stamps</td>
<td>7</td>
<td>11.7</td>
</tr>
<tr>
<td>Financial assistance</td>
<td>7</td>
<td>11.7</td>
</tr>
<tr>
<td>Counseling on available community services like free medical clinics</td>
<td>6</td>
<td>10.0</td>
</tr>
<tr>
<td>None</td>
<td>5</td>
<td>8.3</td>
</tr>
<tr>
<td>Other Services</td>
<td>4</td>
<td>6.7</td>
</tr>
<tr>
<td>Counseling on what foods make up a healthy diet</td>
<td>3</td>
<td>5.0</td>
</tr>
<tr>
<td>Job training</td>
<td>3</td>
<td>5.0</td>
</tr>
</tbody>
</table>
Most of the food pantries offer canned and packaged goods (97%), fresh fruits and vegetables (94%) bread and other grains (94%), meats (94%), but only 70% offer dairy products (Figure 1).

![Figure 1. Kinds of food/products that pantries usually distribute](chart)

Eighty-five percent of food pantries reported that they have enough food for all of their clients (see Appendix D) but 46% report that their greatest challenge is not having enough food to distribute to their clients (Figure 2). United States Department of Agriculture (USDA) commodities are distributed by 64% of pantries, 33% indicated they were uncertain whether they distribute USDA commodities.
Seventy-six percent of pantries limit client access to once a month or less. A good number of food pantries (61%) distribute enough food to provide three meals a day for five days or longer for all member of the household. The main reason for seeking food assistance is having unforeseen expenditures for those who normally have adequate income (see Appendix D). Fifty three percent of food pantries also offer other services such as clothing, financial aid, and medical care. Appendix D provides information about food pantry services not addressed in this study.

Table 2 shows the relationship between sources of food by food pantries and frequency of client access. No statistical difference was found between services offered and frequency of client access (p = 0.834).

Table 2
Services Offered by Frequency of Client Access

<table>
<thead>
<tr>
<th>How often clients can access pantry</th>
<th>Services offered other than food distribution</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Food Pantry Only</td>
<td>Pantry &amp; Other</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Once a month or less</td>
<td>45.8</td>
<td>11</td>
<td>54.2</td>
<td>13</td>
</tr>
<tr>
<td>More than once a month</td>
<td>50.0</td>
<td>4</td>
<td>50.0</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>46.9</td>
<td>15</td>
<td>53.1</td>
<td>17</td>
</tr>
</tbody>
</table>

Chi-Square 0.042, df=1, p = 0.838
Table 3 shows the relationship between services other than food distribution and amount of food distributed to client. There is no statistically significance difference between services offered and the amount of food that they distribute (p = 1.00). Fifty four percent of pantries that offered other services besides food provided clients access once a month or less.

Table 3  
*Services Offered by Amount of Food Distributed to Clients*

<table>
<thead>
<tr>
<th>Services offered other than food distribution</th>
<th>Food Pantry Only</th>
<th>Pantry &amp; Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of food distributed</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>3 meals for 3 to 4 days</td>
<td>50.0</td>
<td>6</td>
<td>50.0</td>
</tr>
<tr>
<td>3 meals for 5 days &amp; more</td>
<td>44.4</td>
<td>8</td>
<td>55.6</td>
</tr>
<tr>
<td>Total</td>
<td>46.7</td>
<td>14</td>
<td>53.3</td>
</tr>
</tbody>
</table>

Fishers Exact test p = 1.0

Table 4 shows the relationship between providing nutrition information and encouraging consumption of healthy food. There is a significant relationship between providing nutrition information and encouraging consumption of healthy food (p = 0.005). Of the 33 pantries, 23 pantries indicate that they encourage clients to eat a healthy diet. Of the pantries that actively encourage clients to eat a healthy diet 52% also offer some type of nutrition information. None of the 10 pantries that do not encourage clients to eat a healthy diet offer nutrition information.

Table 4  
*Encourage Clients to Eat Healthy Foods by What Pantry Does to Encourage Consumption of Healthy Food*

<table>
<thead>
<tr>
<th>Provide nutrition information</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourage healthy eating</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>47.8</td>
<td>52.2</td>
<td>12</td>
</tr>
<tr>
<td>No</td>
<td>100.0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>63.6</td>
<td>36.4</td>
<td>13</td>
</tr>
</tbody>
</table>

Fishers Exact test p = 0.005
Table 5 shows the relationship between whether pantries encourage donation of healthy foods and whether pantries get all their food from the food bank. There was no significant difference between encouragement of the donation of healthy food and sources of food.

Table 5
*Pantry Gets all its Food from the Foodbank by Pantry Encouraging Donation of Healthy Food*

<table>
<thead>
<tr>
<th>Encourage donation of healthy food</th>
<th>Food bank only</th>
<th>Food bank and other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>30.8</td>
<td>4</td>
<td>69.2</td>
</tr>
<tr>
<td>No</td>
<td>15.8</td>
<td>3</td>
<td>84.2</td>
</tr>
<tr>
<td>Total</td>
<td>21.9</td>
<td>7</td>
<td>78.1</td>
</tr>
</tbody>
</table>

Fishers Exact test p = 0.401

**Discussion**

Unlike most food pantry studies that obtained information from pantry users through interviews and or surveys, this study actually surveyed pantry administrators or their representatives. This section addresses findings for each of the research questions and public health implications

**What is the relationship between food pantry operational practices and how food pantries offer food?**

Food pantry operational practices (such as the services offered by food pantries) have no influence on the ways pantries offer food to their clients. Most pantries allow clients to access their services once a month or less, this is consistent with findings from the Ward Family Foundation (2008). The findings in this study are similar to those of Daponte et al. (1998) in that most pantries in the Dayton area offer some social services in addition to a food pantry. Pantries that offer other services were most likely to allow clients to access their pantries once a month or less and provide enough food for three meals for five days or more. This may suggest that
pantries that offer multiple services have more resources to meet their client’s needs. These pantries also are more likely to have a policy that discourages chronic pantry usage. For instance, one multi-service pantry reported that it offered “short and long term case management towards self-sufficiency”. Another offers “financial assistance with water and gas bills” which might free up the family’s funds and increase their purchasing power to buy nutritious food and not have to depend on the pantry for food assistance. There is no difference in access between single service and multi-service pantries. It could be more beneficial for more pantries to offer additional services that would empower their clients like, cooking classes, chronic disease management, employment services, and GED preparation.

What is the relationship between food pantry policies to encourage consumption of healthy food and the provision of nutritional information?

The most interesting finding of this study is that 70% of pantries say they encourage clients to eat healthy foods but only 52% of pantries actively provide nutritional information in the form of brochures, posters, recipes, lessons, etc to encourage clients to eat healthy. This suggests that fewer pantries in the Dayton area actually encourage their clients to eat healthy food. Ninety-seven percent of pantries reported they had adequate storage capacity; this supports the pantry’s ability to provide healthy food to their clients. The results show that local pantries offer enough fruits and vegetables, bread and grains, and meat. However, they offer dairy products to their clients less often. This is consistent with the findings of Akobundu and colleagues (2004) who found the food in San Francisco pantries to be low in calcium, vitamin A and C but high in protein, fiber, iron, and folate. Lack of adequate refrigeration may prevent storage of dairy products. Refrigeration capacity is listed in study by Companion (2010) as one of the most significant limiting factor in providing healthy food.
What is the relationship between policies to encourage donation of healthy food and the source of food?

Most pantries do not encourage people to donate healthy foods. It is likely that the nutritional content of foods received in food drives and other sources are less than adequate for nutrition. Companion (2010) found that most donated items had content of carbohydrates, sodium, sugar, and were low in dietary fiber, vitamins, whole grains, and protein. Food pantries may be interested in receiving donated items that have a long shelf life. These items are usually lower in nutritive content because in the process of canning or packaging many of the nutrients are lost or the products are preserved using high salt or sugar content. Food pantries also receive donations close to their expiration date from food companies that receive tax credits for donating these unsold food items (Daponte, 2000). Companion (2010) reported that pantry clients prefer fresh fruits and vegetables over the canned substitutes. Despite the food pantry’s desire for health foods they may be hampered by the policies of the providers of foods to feed their low income clients.

Public Health Implications

Food pantries are used by people with low income with limited access to nutritious foods. Most of these food pantry users also participate in multiple government outreach programs like SNAP and WIC. Food pantries focus on providing food with limited consideration for nutritional content. Food pantries could improve the nutritional content of the food they offer by providing lists of recommended items to those who donate food to the pantry.

Conclusion

Findings suggest a relationship between encouraging clients to eat healthy foods and providing nutritional information to clients about eating a healthy diet. Most of the pantries studied encourage clients to eat healthier diets but few encourage donation of healthy food. Food
pantries have the opportunity to improve diets of low income families. But too often pantries become preoccupied with providing enough food for their clients and are unable to focus on nutritional quality. Although, food pantries make an effort to encourage the consumption of healthy food, most of the foods they distribute to their clients are canned and/or packaged. Pantries need to focus on developing creative ways to acquire healthier food while working to meet increasing demand.

**Recommendations**

Current study findings suggest that food pantries do not encourage donation of healthy food. Other studies suggest that pantry clients may not be familiar with the food items they receive from food pantries. They may not know how to prepare them. Three recommendations suggested from this research are as follows:

1. By encouraging donation of healthy foods, pantries may be able to collect and distribute fresh foods. Requests for monetary donations may allow the pantries to purchase healthy foods instead of focusing on foods with longer shelf life foods that are generally unhealthy.

2. By offering classes to teach their clients how to eat a healthy diet on a restricted budget, may lead to less spending on food with low nutrition content and increase spending on affordable fiber rich and filling healthy foods.

3. Educating pantry clients on the benefits of consuming a healthy diet and showing them how to prepare simple delicious culturally appropriate nutritious meals may help enhance dietary intake among low income people.
Strengths and Limitations

This study used a tested instrument and adapted the instrument to terminology used by local food pantries. This study is also unique because it actually examines the role of food pantries in seeking and providing healthy food to its participants rather than merely providing food.

A major limitation of this study is that the small sample size may have impacted the results. The results for this study are specific to pantries in the Dayton area and cannot be generalized to food pantries in general. An additional limitation was the fact that this study was limited to only food pantries and included only those pantries that were members of the food bank and located in Greene, Preble, and Montgomery counties. Future research should include food shelters and soup kitchens which are also members of the food bank in order to determine whether these programs are efficiently meeting the nutritional needs of their clients. In addition, future research should examine what pantry clients do with unused food items.
References


Bryant, M., Stevens, J., Wang, L., Tabak, R., Borja, J., & Bentley, M. E. (2011). Relationship between home fruit and vegetable availability and infant and maternal dietary intake in African-American families: Evidence from the exhaustive home food inventory. *Journal...


The Foodbank, Inc. (n.d.). *Leading the Charge to relieve hunger for our Miami Valley neighbors* [brochure]. Dayton, Ohio.


Appendix A – The Food Pantry Questionnaire

Food Pantry Survey

Q1 Food Pantry Name:

Q2 Is your pantry part of a multi social service agency or a Standalone organization?
   ☐ Multi service
   ☐ Stand alone

Q3 Is your pantry run by a Faith based organization?
   ☐ Yes
   ☐ No

Q4 What days is your pantry open?

Q5 Is your pantry mobile, stationary, or both?
   ☐ Mobile
   ☐ Stationary
   ☐ Both mobile and stationary

Q6 How many distribution sites does your pantry operate and Where?

Q7 How is your pantry known to your community?
   ☐ Television, radio, and print ad
   ☐ Regular mailings to churches, schools etc
   ☐ Word of mouth
   ☐ Referrals from other agencies
   ☐ Other ____________________

Q8 Does your pantry have adequate equipment such as refrigerators, freezers, and shelves to fully accommodate the needs of your clients?
   ☐ Yes
   ☐ No

Q9 What kinds of food/products does your pantry usually distribute? check all that apply
   ☐ Fresh fruits and vegetables
   ☐ Dairy products
   ☐ Bread and other grains
   ☐ Meats
   ☐ Canned and packaged goods
   ☐ Frozen entrees
   ☐ Non-food items such as cleaning products, diapers
   ☐ other ____________________

Q10 Does your pantry typically distribute at full capacity i.e have enough food for everyone that visits your pantry.
   ☐ Yes
   ☐ No

Q11 How close is your pantry to the nearest food bank?
Q12 Does your pantry get all its food from the food bank?
   ☑ Yes
   ☐ No

Q13 What percentage of food that you distribute to clients comes from the food bank?
   ☑ All of it
   ☑ 75% or more
   ☑ Between 50 to 75%
   ☑ Less than half
   ☑ None of it

Q14 How does your pantry obtain food from the food bank?
   ☑ Pantry picks up
   ☑ Food bank delivers
   ☑ Both
   ☑ Other ____________________

Q15 If your pantry does not get all its food from the food bank, what are your other sources of food?
   ☐ Food drives
   ☐ Purchase by pantry at retail establishments
   ☐ Purchase by pantry at wholesale establishments
   ☐ Donations of Surplus by grocery stores
   ☐ Donations of Surplus by area restaurants
   ☐ Food Networks
   ☐ Other ____________________

Q16 Does your Pantry operate with a fixed menu, i.e a list of items that it feels it always must have in stock?
   ☑ Yes
   ☐ No

**Answer If Does your Pantry operate with a fixed menu, i.e a list of... Yes Is Selected**

Q17 If yes please list

Q18 Do you address special dietary needs in your pantry (health conditions and/or allergies)?
   ☑ Yes
   ☐ No

**Answer If Does you address special needs and allergy diets in your ... Yes Is Selected**

Q19 If so, please list what special needs diets that you address at your pantry

Q20 What model of food distribution best describe your pantry?
   ☑ Standard bags are distributed i.e, the same goods are distributed to everyone with larger amounts given to larger families
   ☑ Clients are given free access to and choice of food such as if shopping in a grocery store
   ☑ Clients are given free access to and choice of food such as if shopping in a grocery store but quantities are limited
   ☑ Clients are given a combination of standard bags and free access only to certains foods that are more plentiful, such as bread
   ☑ Clients give pantry staff a list of what they want and wait for it to be assembled for them
Clients are allocated points depending on their family size and can then choose whatever they like up to their number of allocated points

Clients are given a total number of items to choose based on family size

Q21 Does your pantry conduct food preference surveys (surveys to know what foods clients like best or prefer)?

- Yes
- No

Answer If Does your pantry conduct food preference surveys? Yes Is Selected

Q22 If so, does your pantry attempt to modify the types of food it acquires as a result of the food preference surveys?

- Yes
- No

Q23 Does your pantry distribute U.S. Department of Agriculture commodities?

- Yes
- No
- I don't know

Q24 Does your pantry encourage clients to eat healthy foods?

- Yes
- No

Q25 What does your pantry do to encourage clients to eat a healthier diet?

- Offer cooking lessons
- Offer nutritional counseling and/or classes
- Offer menus for healthy meals
- Offer clients brochures with nutritional information
- Display posters about eating healthy diet (e.g. My Plate)
- Other ____________________
- Not applicable

Q26 Does your pantry encourage donations of healthy foods (e.g. dried fruits and vegetables, reduced salt canned vegetables, or fruit packed in water)?

- Yes
- No

Q27 What services other than food distribution, if any, does your pantry offer?

- Counseling on how to obtain available entitlement such as food stamps
- Counseling on other available community services such as free medical clinics
- Counseling on what foods make up a healthy diet
- Job training
- Financial assistance
- Clothing distribution
- Pantry offers food services only, but does refer clients to other social services agencies as needed
- none
- other ____________________

Q28 Please describe the greatest challenge(s) your pantry faces?
Q29 How many clients does your pantry serve each month?

Q30 Do you have an intake process?
   - Yes
   - No

Q31 Do you maintain a database of client information that allows you to follow up with clients if needed?
   - Yes
   - No

Q32 How does your pantry get its clients?
   - Through referrals by social service agencies and/or community organizations only
   - Through a combination of referrals and walk-ins
   - Through walk-ins only
   - Other ____________________

Q33 How often can clients access your pantry?
   - Whenever and as often as needed
   - Once a week only
   - Twice a month only
   - Once a month only
   - Other ____________________

Q34 What amount of food do you distribute to clients each time they access your pantry? Enough for
   - Three meals for three days for everyone in the household
   - Three meals for four days for everyone in the household
   - Three meals for five days for everyone in the household
   - Three meals for a week for everyone in the household
   - Other ____________________

Q35 Please rank the reasons for which your clients typically need to use a food pantry, 5 being the highest reason:
   - Client is not employed
   - Client is employed but income is low
   - Client is employed with generally sufficient income but has experienced unforeseen expenses such as medical costs
   - Client is retired and can no longer make ends meet
   - Client has some form of income, such as social security, but income is too low
Appendix B – The Consent Email including Questionnaire Link

Dear Food Pantry Coordinator,

The Foodbank, Inc. is supporting the efforts of a research project on barriers to consuming healthy food and the role of food pantries in improving diets of those in need of food security. Antoinette Sangye is a student at Wright State University conducting this research project as part of the requirement for completions of the Master of Public Health Degree under the direction of Dr. Bill Spears.

They are asking for your help to learn how food pantries promote distribution and consumption of healthy food through its operational practices and policies. If you agree to participate, please complete a survey at the link below. The survey will take only 10 to 15 minutes of your time.

Food Pantry Survey
https://wright.qualtrics.com/SE/?SID=SV_dc0Hw1bRb7Q6Wfb

Please complete by March 1st.

The information obtained in this survey will be kept confidential. Data will be kept on a password protected computer when not in use. Research summaries will provide only aggregate numbers, no names of individuals or food pantries will be reported. There is no known risk for participating in this survey. Though there is no direct benefit to you, the community may benefit from food pantries recognizing the opportunity to promote the consumption of healthy food and reduce the risk of developing nutritional related conditions. Participation in the study is voluntary. You may opt out at any time by not completing the survey. Responding to the survey questions implies your consent to participate in the study.

If you have any questions about the survey you can contact Antoinette at tiopi.2@wright.edu or Dr. Spears, at 937-258-5552 or william.spears@wright.edu.

If you have general questions about giving consent or your rights as a research participant in this research study please call Wright State University’s Institutional Review Board (IRB) at 937-775-4462.

Thank you for your help!

Regards,

Tashira Collier
Program Services Manager

The Foodbank, Inc.
427 Washington Street
Dayton, Ohio 45402
P: (937) 461-0265 x16  F: (937) 461-3828
tcollier@thefoodbankdayton.org
www.thefoodbankdayton.org
February 11, 2013

Dear Food Pantry Administrator,

We are currently conducting a research project on barriers to consuming healthy food and the role of food pantries in improving diets of low income families. Antoinette Sangye is a student at Wright State University conducting this research project as part of the requirement for completions of the Master of Public Health Degree under the direction of her faculty advisor Dr. Bill Spears. We are asking for your help to learn how food pantries promote distribution and consumption of healthy food through its operational practices and policies. If you agree to participate, you will complete a survey. The survey will take 10 to 15 minutes of your time. The information obtained in this survey will be kept confidential. Data will be kept on a password protected computer when not in use. Research summaries will provide only aggregate numbers, no names of individuals or food pantries will be reported. There is no known risk for participating in this survey. Though there is no direct benefit to you, the community may benefit from food pantries recognizing the opportunity to promote the consumption of healthy food and reduce the risk of developing nutritional related conditions. Participation in the study is voluntary. You may opt out at any time by not completing the survey. Responding to the survey questions implies your consent to participate in the study.

If you have any questions about the survey you can contact me at tiopi.2@wright.edu or my faculty advisor, Dr. Spears, at 937-258-5552 or william.spears@wright.edu.

If you have general questions about giving consent or your rights as a research participant in this research study, you can call Wright State University’s Institutional Review Board (IRB) at 937-775-4462.

Thank you for your help!

Antoinette Sangye, B.A
Wright State University
Boonshoft School of Medicine

Bill Spears, Ph.D.
Wright State University
Committee Chair
DATE: January 30, 2013

TO: Antoinette Matie Sangye, PI, Grad. Student
    Public Health
    William Spears, PhD, Fac. Adv.
    Public Health

FROM: B. Laurel Elder, Chair
      WSU Institutional Review Board

SUBJECT: SC# 5058
         'Barriers to Consuming Healthy Food and the Role of Food Pantries in Improving Diets of Low Income Families'

At the recommendation of the IRB Chair, your study referenced above has been recommended for exemption. Please note that any change in the protocol must be approved by the IRB; otherwise approval is terminated.

This action will be referred to the Full Institutional Review Board for ratification at their next scheduled meeting.

NOTE: This approval will automatically terminate two (2) years after the above date unless you submit a "continuing review" request (see http://www.wright.edu/rsp/IRB/CR_sc.doc) to RSP. You will not receive a notice from the IRB Office.

If you have any questions or require additional information, please call Robyn Wilks, IRB Coordinator at 775-4462.

Thank you!

Enclosure
Appendix D – Food Pantry Profile

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is your pantry part of a multi social service agency or a standalone organization?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi service</td>
<td>13</td>
<td>40.6</td>
</tr>
<tr>
<td>Stand alone</td>
<td>19</td>
<td>59.4</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Is your pantry run by a faith based organization?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>26</td>
<td>81.3</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>18.8</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Is your pantry mobile, stationary, or both?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile</td>
<td>1</td>
<td>3.0</td>
</tr>
<tr>
<td>Stationary</td>
<td>31</td>
<td>93.9</td>
</tr>
<tr>
<td>Both mobile and stationary</td>
<td>1</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100.0</td>
</tr>
<tr>
<td>Does your pantry typically distribute at full capacity i.e. enough food for everyone that visits?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>28</td>
<td>84.8</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>15.2</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100.0</td>
</tr>
<tr>
<td>How close is your pantry to the nearest food bank?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 miles or less</td>
<td>26</td>
<td>78.8</td>
</tr>
<tr>
<td>Greater than 10 miles</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100.0</td>
</tr>
<tr>
<td>Does your pantry get all its food from the food bank?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td>No</td>
<td>26</td>
<td>78.8</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100.0</td>
</tr>
<tr>
<td>Does your pantry distribute USDA commodities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>21</td>
<td>63.6</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>3.0</td>
</tr>
<tr>
<td>I don't know</td>
<td>11</td>
<td>33.3</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100.0</td>
</tr>
</tbody>
</table>
### Food Pantry Profile (continued)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your pantry conduct preference surveys? If so does it modify the types of food?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preference surveys/no modify</td>
<td>1</td>
<td>20.0</td>
</tr>
<tr>
<td>Preference survey/yes modify</td>
<td>4</td>
<td>80.0</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>100.0</td>
</tr>
<tr>
<td>Missing</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100.0</td>
</tr>
</tbody>
</table>

| Describe the greatest challenge your pantry faces?                           |        |         |
| Not having enough food                                                       | 15     | 45.5    |
| Lack of variety                                                              | 6      | 18.2    |
| Other                                                                         | 7      | 21.2    |
| No challenge                                                                  | 5      | 15.2    |
| Total                                                                         | 33     | 100.0   |

| How often can clients access your pantry?                                     |        |         |
| Whenever and as often as needed                                               | 3      | 9.1     |
| Once a week only                                                             | 2      | 6.1     |
| Twice a month only                                                           | 1      | 3.0     |
| Once a month only                                                            | 20     | 60.6    |
| Other                                                                         | 7      | 21.2    |
| Total                                                                         | 33     | 100.0   |

| What amount of food do you distribute to clients each time they access your pantry? |        |         |
| 3 meals for 3 days for everyone in household                                  | 5      | 16.1    |
| 3 meals for 4 days for everyone in household                                  | 7      | 22.6    |
| 3 meals for 5 days for everyone in household                                  | 8      | 25.8    |
| 3 meals for a week for everyone in household                                  | 4      | 12.9    |
| other                                                                        | 7      | 22.6    |
| Total                                                                         | 31     | 100.0   |
| Missing                                                                        | 2      |         |

| What kinds of food/products does your pantry usually distribute?             |        |         |
| Canned/packaged goods                                                        | 32     | 97.0    |
| Fresh fruits and vegetables                                                  | 31     | 93.9    |
| Bread and other grains                                                       | 31     | 93.9    |
| Meats                                                                         | 31     | 93.9    |
| Frozen entrees                                                               | 24     | 72.7    |
| Dairy products                                                               | 23     | 69.7    |
| Non-food items like cleaning products, diapers                              | 21     | 63.6    |
| Other                                                                        | 10     | 30.3    |
| Total                                                                         |        |         |
### Food Pantry Profile (continued)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please rank the reasons for which your clients typically need to use a food pantry?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sufficient income with unforeseen expenses</td>
<td>14</td>
<td>43.8</td>
</tr>
<tr>
<td>Retired and can not make ends meet</td>
<td>7</td>
<td>21.9</td>
</tr>
<tr>
<td>Unemployed</td>
<td>5</td>
<td>15.6</td>
</tr>
<tr>
<td>Employed but low Income</td>
<td>3</td>
<td>9.4</td>
</tr>
<tr>
<td>Social security but Low Income</td>
<td>3</td>
<td>9.4</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How is your pantry known to your community?</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TV, radio, and print ad</td>
<td>2</td>
<td>6.1</td>
</tr>
<tr>
<td>Regular mailing to churches, schools, etc</td>
<td>6</td>
<td>18.2</td>
</tr>
<tr>
<td>Word of mouth</td>
<td>31</td>
<td>93.9</td>
</tr>
<tr>
<td>Referral from other agencies</td>
<td>25</td>
<td>76.0</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How many clients does your pantry served each month?</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>200 or fewer</td>
<td>10</td>
<td>33.3</td>
</tr>
<tr>
<td>201 to 600</td>
<td>11</td>
<td>36.7</td>
</tr>
<tr>
<td>601 or more</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What services other than food distribution, if any does your pantry offer?</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clothing distribution</td>
<td>14</td>
<td>23.3</td>
</tr>
<tr>
<td>Food services only, but refer to other social services agencies</td>
<td>11</td>
<td>18.3</td>
</tr>
<tr>
<td>Counseling on how to obtain available entitlement like food stamps</td>
<td>7</td>
<td>11.7</td>
</tr>
<tr>
<td>Financial assistance</td>
<td>7</td>
<td>11.7</td>
</tr>
<tr>
<td>Counseling on available community services like free medical clinics</td>
<td>6</td>
<td>10.0</td>
</tr>
<tr>
<td>none</td>
<td>5</td>
<td>8.3</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>4</td>
<td>6.7</td>
</tr>
<tr>
<td>Counseling on what foods make up a healthy diet</td>
<td>3</td>
<td>5.0</td>
</tr>
<tr>
<td>Job training</td>
<td>3</td>
<td>5.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does your pantry operate with a fixed menu?</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>20</td>
<td>60.6</td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>39.4</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100.0</td>
</tr>
</tbody>
</table>
### Domain #1: Analytic/Assessment
- Identify the health status of populations and their related determinants of health and illness (e.g., factors contributing to health promotion and disease prevention, the quality, availability and use of health services)
- Use methods and instruments for collecting valid and reliable quantitative and qualitative data
- Identify sources of public health data and information
- Recognize the integrity and comparability of data
- Identify gaps in data sources
- Adhere to ethical principles in the collection, maintenance, use, and dissemination of data and information
- Collect quantitative and qualitative community data (e.g., risks and benefits to the community, health and resource needs)
- Use information technology to collect, store, and retrieve data
- Describe how data are used to address scientific, political, ethical, and social public health issues

### Domain #2: Policy Development and Program Planning
- Gather information relevant to specific public health policy issues
- Describe how policy options can influence public health programs
- Gather information that will inform policy decisions (e.g., health, fiscal, administrative, legal, ethical, social, political)

### Domain #3: Communication
- Communicate in writing and orally, in person, and through electronic means, with linguistic and cultural proficiency
- Participate in the development of demographic, statistical, programmatic and scientific presentations

### Domain #4: Cultural Competency
- Recognize the role of cultural, social, and behavioral factors in the accessibility, availability, acceptability and delivery of public health services

### Domain #5: Community Dimensions of Practice
- Recognize community linkages and relationships among multiple factors (or determinants) affecting health (e.g., The Socio-Ecological Model)
- Identify stakeholders
- Identify community assets and resources
- Inform the public about policies, programs, and resources

### Domain #6: Public Health Sciences
- Describe the scientific evidence related to a public health issue, concern, or, intervention
- Retrieve scientific evidence from a variety of text and electronic sources
- Discuss the limitations of research findings (e.g., limitations of data sources, importance of observations and interrelationships)

### Domain #7: Financial Planning and Management
- Adhere to the organization’s policies and procedures

### Domain #8: Leadership and Systems Thinking
- Incorporate ethical standards of practice as the basis of all interactions with organizations, communities, and individuals
- Use individual, team and organizational learning opportunities for personal and professional development
- Participate in mentoring and peer review or coaching opportunities