2015

Impact of client-centered tailored vs. expert-centered tailored nutrition education on the perceived autonomy of food pantry clients

Ellen Victoria Pudney

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ABSTRACT

IMPACT OF CLIENT-CENTERED TAILORED VS. EXPERT-CENTERED TAILORED NUTRITION EDUCATION ON THE PERCEIVED AUTONOMY OF FOOD PANTRY CLIENTS

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School of Family, Consumer and Nutrition Sciences
Northern Illinois University, 2015
Amy Ozier, Director

The purpose of this study was to examine perceived autonomy support of food pantry clients who were provided with tailored nutrition education in two different methods. By allowing some clients to self-select their recipes (CT) while having other clients receive recipes that were selected for them (ET), the researcher hoped to show a greater increase, pre versus post, in perceived autonomy support among the CT clients. As of late, the current literature has lacked in distinguishing the manner by which educational materials have been tailored to specific audiences. Using Self-Determination Theory (SDT) as a framework, the researcher theorized that an educational approach that is supportive of one’s autonomy is more likely to promote intrinsic motivation and thereby a stronger and longer lasting change.

This experiment was a random-controlled field study using a pretest/posttest design with two experimental groups and a control group. The intervention consisted of measuring perceived autonomy support directly before receiving recipe packets and then again two weeks later. The researcher collected survey data from 125 clients at a food pantry in northern Illinois. Approximately one-third of the participants were allowed to select their own recipes (n=40),
another one-third received recipes selected by the research volunteers (n=44), and the final one-third of participants served as a control (n=41).

The results did not show any significant changes in the scores of perceived autonomy support between the CT and ET participants. The results also failed to identify any significant changes among the CT, ET, and control group participants. Finally, the results did not show any significant differences between the CT and ET participants regarding keeping and using the recipes. All of the results were affected by low power in the models due to small sample sizes and high variance in the data. The low power in this study makes it inappropriate to draw any strong conclusions regarding the research questions. Nevertheless, this study identified a need for more reliable, valid, and effective methods of providing nutrition education to food pantry clients. Additionally, the data did reveal several trends and tendencies that should be considered by future researchers when working with this population.
IMPACT OF CLIENT-CENTERED TAILORED VS. EXPERT-CENTERED TAILORED NUTRITION EDUCATION ON THE PERCEIVED AUTONOMY OF FOOD PANTRY CLIENTS

BY

ELLEN VICTORIA PUDNEY
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A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE MASTER OF SCIENCE

SCHOOL OF FAMILY, CONSUMER, AND NUTRITION SCIENCES

Thesis Director:
Amy Ozier
ACKNOWLEDGEMENTS

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CHAPTER 1

INTRODUCTION TO THE STUDY

Introduction

The current state of food insecurity in the United States is cause for concern. According to data from the United States Department of Agriculture (USDA), 14.5% of households in the United States were food insecure at some point during 2012 (1). Food insecurity is defined as either low food security, meaning there are “reports of reduced quality, variety, or desirability of diet,” or very low food security, meaning there are “reports of multiple indications of disrupted eating patterns and reduced food intake” (2).

According to the USDA dietary guidelines, Americans would improve their diet quality if they increased their intake of fruits and vegetables, particularly dark green, red and orange vegetables and beans and peas, consumed at least half of their grains as whole grains, increased their intake of low-fat or fat-free dairy products or soy beverages, and consumed a variety of lean meats and non-meat sources of protein (3). However, studies have shown that food insecurity creates several barriers to a high quality diet (4-9). Results similar to these also appear in the literature that focuses on food pantry participants specifically (10-11).

Research shows that 85% of people who receive aid from pantries are food insecure (12), so it is likely that food pantry participants are consuming a lower quality diet compared to those
who do not use a food pantry. Therefore, the target population to receive nutrition education for this study was food pantry participants. Food pantry participants were selected not only because of the high likelihood that they might benefit from nutrition education, but also because they might be more willing and open to education since they are already reaching out to pantries for assistance. However, it is important to note that because food pantry participants are often suffering from either acute or chronic hardships, nutrition educators need to be particularly careful when providing education (13). It is imperative that nutrition educators be sensitive to the vulnerability of this population and provide education that does not inadvertently make the participants feel inferior to the educator. Some trends in the research have shown that a tailored and indigenous method of nutrition education could empower food pantry clients (14). However, such a technique does not appear to be widely described in the literature, so further research on this topic is warranted.

The food pantry that was selected for this study was the Hand in Hand Community Center in Rochelle, Illinois. Rochelle is a town in Ogle County with a population of approximately 9,541 in 2013, according to the United States Census Bureau (15). It is estimated that the current poverty rate in Ogle County is 13% (16). The Hand in Hand Community Center is a choice pantry that allows its clients to receive food every other week. They reported that they serve approximately 200 families on a regular basis. Hand in Hand was unique in that they had not provided their clients with any nutrition education, which created a clean slate for this study’s intervention.

A recent informal needs assessment survey at Hand in Hand found that 78.1% (n=82) of the respondents would be interested in a nutrition education program. The four main topics of interest included shopping and stretching food dollars (36.8%, n=32), how to cook tasty, low-
cost food (17.2%, n=15), feeding kids (14.9%, n=13), and knowledge of healthy foods and nutrition (13.8%, n=12). Due to the participants’ interest in receiving nutrition education, the researcher of this study provided recipes that attempted to target the four main topics of interest in either a client-centered tailored (CT) or expert-centered tailored (ET) approach. The following paragraphs will identify and define the significance of a CT versus an ET approach to nutrition education.

**Generic vs. Tailored Education**

Oftentimes educators provide generic informational materials in order to reach a large group of people in an easy and efficient way. Generic communication is defined as “communication that is not individualized or based on any kind of individual assessment” (p. 674) (17). Generic materials may provide education, but education does not equal behavior change. Oftentimes there is a gap between being educated on a topic and making behavior changes based on that knowledge. For example, smokers are aware of the negative health consequences of their habit, yet are unable or unwilling to quit smoking, so their knowledge of the topic does not affect their ability to change.

Among the many interventions that food pantry participants receive, the concept of tailored nutrition education shows to be effective at increasing fruit and vegetable intake among pantry clients (14, 18). Tailoring is defined as “any combination of strategies and information intended to reach one specific person, based on characteristics that are unique to that person, related to the outcome of interest, and derived from an individual assessment” (p. 277) (19).
Since 1993, evidence has shown that tailoring is a promising approach to communicating messages (20).

**Expert-Centered vs. Client-Centered**

Traditionally, health education promotes behavior change through extrinsic motivation. “The term extrinsic motivation refers to the performance of an activity in order to attain some separable outcome and, thus, contrasts with intrinsic motivation, which refers to doing an activity for the inherent satisfaction of the activity itself” (p. 71) (21). Not only has traditional health education typically focused on extrinsic motivation, but also providing education in a community environment tends to lead to generic information. Some critics have argued that the common methods for promoting behavior change that use popular theories, such as the Transtheoretical Model, the Health Belief Model, or the Social Cognitive Theory, are not as effective at promoting behavior change as they could be (14, 22). Although these theories can help provide educators with valuable and accurate insight into their clients, they have the potential to encourage the educator to decide what is best for the client, which can inadvertently set up a paternalistic relationship (14). Paternalistic relationships oftentimes promote external motivation, and external motivation can undermine internal motivation (14, 21). Not only can paternalistic relationships make the client feel inferior to the educator, but they can also make the client feel as though they should change because the educator “said so” and not because they inherently want to. Although tailoring can add important personalization to education, depending on how it is used, it can either promote extrinsic or intrinsic motivation. For the purposes of this paper, the
term paternalistic will be referred to as expert-centered and thereby implies that the expert or educator knows more about what the clients need than the clients themselves.

On the other hand, the term client-centered will be used when referring to an indigenous approach, which was coined by researchers Clarke, Evans, and Hovy in 2011. It is based on the premises of Self-Determination Theory (SDT), which promotes client choice, and emphasizes that the clients, not the educator, are the experts on themselves. SDT focuses on the idea that the need for autonomy (experiencing a sense of volition and psychological freedom), competence (feeling effective), and relatedness (feeling loved and cared for) are significant when promoting intrinsic motivation (23). According to the theory, if an educator is supportive of these constructs, particularly autonomy, then they are more likely to induce intrinsic motivation.

Hopefully, by using client-centered tailoring to promote intrinsic motivation, populations who attend food pantries will adopt healthy behavior change more successfully.

Statement of Problem

Health educators have taken numerous approaches to improve the diet quality of populations who are food insecure. Oftentimes the approach is generic and delivered in an expert-centered manner, which could cause client resistance and hinder the learning process. Research has supported the effectiveness of using both tailored education and education based in SDT to promote health behavior change. However, there is limited research that combines the two by implementing a client-centered style of tailoring, and there does not appear to be any research comparing expert-centered to client-centered tailoring.
Statement of Purpose

The purpose of this study was to determine whether a client-centered, tailored (CT) nutrition education approach increases feelings of perceived autonomy support among food pantry clients compared to clients who receive an expert-centered, tailored (ET) nutrition education approach. Furthermore, it was to determine whether both tailoring interventions increase feelings of autonomy to a greater extent than the control group clients. Finally, it was to examine whether the clients who receive CT nutrition education are more likely to keep and utilize the nutrition education materials compared to the clients who receive ET nutrition education.

Research Questions

1. Will the CT participants have a greater increase in their score of perceived autonomy support from pre-intervention to post-intervention than the ET participants?

2. Will the CT participants as well as the ET participants have a greater increase in their score of perceived autonomy support from pre-intervention to post-intervention than the control group?

3. Will the CT participants report keeping their recipes to a greater extent than the ET participants?

4. Will the CT participants report using their recipes to a greater extent than the ET participants?
Hypotheses

1. CT participants will have a greater increase in their score of perceived autonomy support from pre-intervention to post-intervention than the ET participants.

2. CT participants as well as the ET participants will have a greater increase in their score of perceived autonomy support from pre-intervention to post-intervention than the control group.

3. The CT participants will report keeping their recipes to a greater extent than the ET participants.

4. The CT participants will report using their recipes to a greater extent than the ET participants.

Operational Definitions

1. Food pantry client: any adult over the age of 18 who obtains food from a food pantry on at least one occasion.

2. Client-centered: an approach that emphasizes that the client is the expert on him/herself.

3. Expert-centered: an approach that emphasizes that the educator is a better judge of what the client needs than the client him/herself.

4. Tailoring: any combination of strategies and information intended to reach one specific person, based on characteristics that are unique to that person, related to the outcome of interest, and derived from an individual assessment (17).

5. Autonomy: experiencing a sense of volition and psychological freedom (23).
6. Perceived autonomy support: the degree to which someone experiences their health-care providers (or their physician, or their counselor, or their health-care program leader) to be autonomy supportive versus controlling in providing general treatment or with respect to a specific health-care issue (24).
CHAPTER 2

METHODOLOGY

Introduction

Prior to data collection, the researcher obtained permission to conduct this study from the Institutional Review Board at Northern Illinois University (Appendix B). Each participant received an informed consent form with their survey (Appendix C), which stated that completing the survey implied consent. Participants were informed prior to receiving the survey that participation was voluntary, they could withdraw their participation at any time without penalty, and their decision regarding participation would not affect receiving pantry food.

The researcher selected the recipes from the Quick! Help for Meals database, which was originally developed in 2009 by Evans et al., who provided the recipes in both English and Spanish and granted permission for their use in this study (25). However, before selecting the recipes the researcher decided on using potatoes as the vegetable theme. Potatoes were selected due to their availability during the winter months and due to their general popularity and acceptability (14). The researcher then selected eight potato recipes featuring a variety of ingredients and flavors. The CT intervention consisted of creating two display boards, one in English and one in Spanish, to feature the eight potato recipes. The displays also said “Free Potato Recipes” and featured the Pampered Chef kitchen knives, which served as a thank you
gift to the participants who completed both phases of the project. The ET intervention consisted
of creating one display board with sugar packets, salt packets, and butter packets, to provide a
visual of sugar, salt, and fat to support the question, “has anyone ever told you to limit sugar,
salt, or fat?” The same eight recipes were also used for the ET intervention, but were divided into
four groups based on their perceived nutritional status. The researcher selected recipes 1 and 2 to
represent low sugar (i.e. low carbohydrate) options, recipes 3 and 4 to represent low fat options,
recipes 5 and 6 to represent low sodium options, and recipes 7 and 8 to represent general healthy
eating options (Figure 1).

<table>
<thead>
<tr>
<th>Recipe #</th>
<th>Title</th>
<th>Category</th>
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<tr>
<td>1</td>
<td>One-Dish Potatoes and Baked Chicken</td>
<td>low sugar</td>
</tr>
<tr>
<td>2</td>
<td>Potatoes Topped with Beans and Salsa</td>
<td>low sugar</td>
</tr>
<tr>
<td>3</td>
<td>Potatoes with Cooked Spinach or Greens</td>
<td>low fat</td>
</tr>
<tr>
<td>4</td>
<td>Potatoes and Chili</td>
<td>low fat</td>
</tr>
<tr>
<td>5</td>
<td>Potatoes Baked with Cheese</td>
<td>low sodium</td>
</tr>
<tr>
<td>6</td>
<td>Meat Stuffed Potatoes</td>
<td>low sodium</td>
</tr>
<tr>
<td>7</td>
<td>Potato and Meat Tacos</td>
<td>general healthy eating</td>
</tr>
<tr>
<td>8</td>
<td>Potato, Meat, and Corn Casserole</td>
<td>general healthy eating</td>
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Figure 1: Recipe numbers, titles, and categories.

This experiment was a random-controlled field study using a pretest/posttest design with
two experimental groups and a control group. The six intervention days were randomly assigned
to ET, CT, or CG using a random number generator. Regardless of the test day, all of the participants filled out a pre-test and post-test survey, with approximately two weeks in between, as shown in Figure 2. Since the clients at this pantry were only allowed to receive food from the pantry every other week, the clients who came to the pantry during week one of the intervention were different from the clients who came to the pantry during week two. The independent variables in this study were CT and ET nutrition education (recipes). The dependent variables were perceived autonomy, keeping the recipes, and using the recipes.

Figure 2: Study design.
Sample Selection

Eligible participants included any adult over the age of 18 who was coming to the food pantry to receive food and had been to the pantry at least once prior. Participation was limited to one survey per household. An a priori power analysis showed that for a medium effect size, an alpha level of 0.05, and a power of 0.80 the total sample size needed was a minimum of 159 participants to find an effect when comparing the mean differences among the CT, ET, and control groups (research question 2) (26). Furthermore, using the same parameters, the sample size needed was a minimum of 102 participants to find an effect when comparing the CT and ET groups for perceived autonomy support (research question 1) as well as keeping and using the recipes (research questions 3 and 4) (26). Finally, to assess for differences between the three test groups regarding education and ethnicity/race, the total sample size needed was a minimum of 196 participants (26).

Instrument Development

Survey A (Appendix C) is a healthy diet-specific Health Care Climate Questionnaire (HCCQ), which measures a patient’s perceived autonomy support from their health-care provider. The survey consists of statements such as, “I feel that my health-care practitioners have provided me with choices and options about changing my diet (including not changing),” which are assessed using a Likert scale ranging from one to seven (Figure 3). The original questionnaire consisted of 15 questions with a Cronbach’s alpha score of 0.90 and has been used in several studies (27-33). For this study, the researcher decided to use the short version of the HCCQ,
which consisted of six questions instead of 15, to keep interruption of the pantry clients to a minimum. The one modification that was made to the survey is that the term “health-care providers” was replaced with the term “staff” to represent all of the workers and volunteers at the pantry. An individual’s score is the average of his or her responses on the six items; the higher the score, the more autonomy support the client perceives. Survey A also contained four demographic questions to identify age, gender, ethnicity/race, and level of education.

Survey B was the same six-question HCCQ, but the questions referred to the past two weeks since receiving the recipes, and it had two additional questions (seven and eight) (Appendix D). Questions seven and eight were created by the researcher to reflect the participants’ perceived feelings toward the recipes regarding their value and usefulness and were based on the study by Clarke et al. (14). Survey C was the same as Survey B except it did not have questions seven and eight because those were not applicable to the control group participants.

All of the surveys were translated into Spanish as well as back-translated into English. The surveys were formatted to meet the “Simply Put” guidelines from the U.S. Department of
Health and Human Services and the Centers for Disease Control and Prevention (34). Finally, before implementation the researcher of this study pilot tested the surveys at a comparable food pantry.

**Pilot Test**

The researcher conducted a pilot test at a comparable food pantry in DeKalb, IL. The researcher and four research volunteers passed out the surveys to the pantry clients while they waited in line to receive food. The research volunteers then invited the clients to come up to the display board featuring the recipes in English and Spanish and gave them the opportunity to select the recipes that they would like. After about 30-45 minutes, the research volunteers stopped allowing the clients to select the recipes for themselves and instead asked them the ET protocol question and gave them the corresponding recipes. Twenty-four pantry clients filled out the survey during the pilot study. Unfortunately, at the time of the pilot study only the English version of the survey was available. However, the Spanish-speaking participants were able to take recipes with the assistance of the Spanish-speaking research volunteer. It appeared as though the clients were able to understand the survey instrument without difficulty because they did not ask the research volunteers any questions and did not express any need for assistance. However, three of the survey respondents neglected to fill out the backside of the survey sheet, most likely due to not realizing that there was a second side. Based on the results of the pilot test, the only change that was made to the data collection procedure was to remind the participants that the survey was two sided.
Data Collection

Both English and Spanish-speaking research volunteers invited the clients to participate in the study, provided the nutrition education, and collected the corresponding data. Data collection took place on six days in mid-November 2014. Each day was randomly assigned to one of three groups: CT, ET, or CG. On each day of data collection every pantry client was asked if he or she would like to volunteer to participate in the study (Appendix E). Clients were excluded from the study if they were under the age of 18, if someone from their household already participated, or if it was their first time to the pantry. Every eligible client who agreed to participate, regardless of the day, received Survey A to fill out (Appendix C). If it was a CT day, the participants were directed to two display boards, one in English and one in Spanish, each featuring the same eight recipes. They got the opportunity to select which recipes they would like, and with the help of a research volunteer, they created a packet of their selected recipes. If it was an ET day, the participants were directed to a display board decorated with sugar, salt, and butter packets and the research volunteer asked them if anyone had ever told them to limit sugar, salt, or fat in their diet. Based on each participant’s response, the volunteer made a packet of recipes for the participant that featured low sugar, low salt, and/or low fat recipes. If a participant said no to all three questions, or that he or she “didn’t know,” the participant was provided with recipes featuring general healthy eating. Finally, if it was a CG day, the participants were told that they did not need to take any further action at that time. Before any of the CT, ET, or CG participants finished their involvement with the first phase of the project, they were asked to provide their first name, phone number, and the best time to reach them on a second sheet of paper, which was separate from any identifying information (Appendix C). Research volunteers
explained that this information was needed so the participant could be contacted in two weeks to answer more questions and find out how to receive his or her thank you gift. Furthermore, all of the clients who attended the food pantry during those two weeks, regardless of their intervention group or whether they chose to participate in the study or not, had the opportunity to take unlimited amounts of raw potatoes. Two weeks after the intervention, the researcher, or a Spanish-speaking research volunteer, called each participant (see Appendix D for phone call script). If the participant did not answer the first call, the researcher left a voicemail. If the researcher did not hear back from the participant by the next day, they called him or her a second time and left a second voicemail. If the participant did not answer or return either of the calls, then the researcher did not try to contact the participant again. During the follow up phone calls, the CT and ET participants were asked the questions on Survey B, and the CG participants were asked the questions on Survey C (Appendix D). At the end of each phone call the participants were informed that they would receive their thank you gift the next time they go to the pantry simply by telling the pantry volunteers that they completed the project. After the study finished, the pantry was provided with extra copies of the recipes so all of the clients had the opportunity to take them.

Treatment of Data

To score Surveys A, B, and C, the responses to the six questions were averaged to get an overall perceived autonomy score between one and seven. The average score was calculated for all of the pre and post-test responses. However, due to participant dropout, a group of randomly
selected pre-test participants was used for analysis to ensure equality of sample size between initial and follow-up groups.

Categories for education level and ethnicity/race were condensed to three groups each to help balance the samples sizes. In terms of education level, participants who selected grades 1-8 or grades 9-11 as their highest level of education were combined into one group representing “no high school diploma or GED.” The group of participants who answered that they received a high school diploma or GED remained unaltered. The participants who received some college or graduated from college were combined into one group representing “some college or college graduate.” Regarding ethnicity/race, the participants who described themselves as American Indian or Alaskan Native, Asian, Black or African America, Native Hawaiian or other Pacific Islander, or selected more than one of the options were combined into one group representing “other,” while those who selected white or Hispanic remained unaltered. Finally, no adjustments were made to the responses regarding age or sex.

In terms of missing data points on Survey A, one person skipped question two, one person skipped question three, one person skipped question four, three people skipped question five, and four people skipped question six. Since less than 5% of the cases were missing and the data appeared to be missing at random, the researcher imputed the mean for the missing variables on Survey A. Missing data points for demographic information were not adjusted.

The researcher analyzed age, sex, ethnicity/race, and education level using descriptive statistics and then tested for possible differences between groups based on ethnicity/race and/or education level using a two-way ANOVA. The researcher used an independent-means t-test to compare mean differences between CT and ET groups and a one-way ANOVA to compare the mean differences among the CT, ET, and CG groups. Finally, to assess for significant differences
between the CT and ET groups regarding the responses to questions seven and eight, the researcher used an independent-means t-test. A priori the p-value was set at 0.05 and the power was set at 0.80.
CHAPTER 3

RESULTS

Introduction

As mentioned previously, the researcher conducted a pilot test at a different food pantry in northern Illinois. Since only the English version of the survey was available at the time of the pilot, the number of eligible participants was limited. However, 24 people filled out the English version of Survey A. Of those 24 participants, 22 of them were female and two were male. The average age was 38 with a range of 25 to 62. In terms of ethnicity/race, eight were white, eight were Hispanic or Latino/a, five were other, and three people did not disclose. Fourteen of the participants reported attending some college or being a college graduate, three reported having a high school diploma or GED, four reported not having a high school diploma or GED, and three did not disclose. In terms of the composite variable comprised of the average from items one through six, which represented perceived autonomy support, the distribution of the results had a skew of -0.50 and a kurtosis of -0.94. The average response to the six autonomy questions was 4.8 out of the 7-point scale with a standard deviation of 1.99. The distribution is represented below in a histogram (Figure 4).
For the intervention itself, participants were recruited from the Hand in Hand Community Center’s food pantry in Rochelle, Illinois on each data collection day. A total of 125 people filled out the pre-test survey (see Table 1). Of those 125 participants, 97 of them were female, 24 male, and four did not disclose. The average age of the participants was 45 with a range of 20 to 80, however 12 of the participants did not disclose their age. In terms of ethnicity/race, 75 were white, 33 were Hispanic or Latino/a, 13 were other, and four people did not disclose. Since the surveys were offered in both English and Spanish, 15 of the participants chose to fill out the Spanish version while the remaining 110 participants filled out the English version. Forty-nine of the participants reported attending some college or being a college graduate, 43 reported having a high school diploma or GED, 28 reported not having a high school diploma or GED, and five did not disclose. Of the 125 participants who completed the pre-test, 40 of them were in the CT...
group, 44 were in the ET group, and 41 were in the control group. Only 115 of the pre-test participants provided their phone number to be contacted for the post-test. The most common reason why those 10 participants did not provide their phone number was because they did not have a phone. As shown in Figure 5, of the 115 participants 60 (52%) completed the post-test survey, 37 (32%) received voicemails yet did not call the researcher back or answer the calls, 11 (10%) reported that they did not want to answer the questions or, due to timing or other circumstances, could not answer the questions, and 7 (6%) provided a phone number that was incorrect or had been disconnected. Of the 60 participants who did complete the post-test, 14 were CT participants, 24 were ET participants, and 22 were control participants. Since only 60 of the 115 eligible participants completed the study, the dropout rate was 48%.

Regardless of whether the data collection day was a CT, ET, or CG intervention, the participants filled out Survey A to measure perceived autonomy support from the food pantry staff. As shown in Figures 6 and 7, the pre-test results had a skew of -0.66 and a kurtosis of -0.45. Two weeks after the pre-test and intervention, the CT and ET participants answered Survey B and the CG participants answered Survey C over the phone (Appendix D). As shown in Figures 8 and 9, the post-test results had a skew of -1.02 and a kurtosis of -0.27.
### Table 1
Demographics of Participants

<table>
<thead>
<tr>
<th></th>
<th>Hand in Hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=125</td>
<td></td>
</tr>
<tr>
<td>Age Average (range)</td>
<td>45 (20-80)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>97 (77.6%)</td>
</tr>
<tr>
<td>Male</td>
<td>24 (19.2%)</td>
</tr>
<tr>
<td>Did not disclose</td>
<td>4 (3.2%)</td>
</tr>
<tr>
<td>Ethnicity/Race</td>
<td></td>
</tr>
<tr>
<td>White (non-Hispanic)</td>
<td>75 (60%)</td>
</tr>
<tr>
<td>Hispanic or Latino/a</td>
<td>33 (26.4%)</td>
</tr>
<tr>
<td>Other</td>
<td>13 (10.4%)</td>
</tr>
<tr>
<td>Did not disclose</td>
<td>4 (3.2%)</td>
</tr>
<tr>
<td>Education Level</td>
<td></td>
</tr>
<tr>
<td>Some college/college graduate</td>
<td>49 (39.2%)</td>
</tr>
<tr>
<td>High school diploma or GED</td>
<td>43 (34.4%)</td>
</tr>
<tr>
<td>No high school diploma or GED</td>
<td>28 (22.4%)</td>
</tr>
<tr>
<td>Did not disclose</td>
<td>5 (4%)</td>
</tr>
</tbody>
</table>
Figure 5: Post-test follow-up.
Figure 6: Histogram of pre-test results.

Figure 7: P-P plot of pre-test results.
Figure 8: Histogram of post-test results.

Figure 9: P-P plot of post-test results.
In order to identify any statistically significant differences among the three groups regarding the factor ethnicity/race (white, Hispanic, or other) or the factor education level (no diploma or GED, diploma or GED, or some college/graduate), the researcher conducted a two-way ANOVA. As shown in Table 2, the ethnicity/race of the participants was not statistically different among the three groups \((p=0.06)\), but the power was 0.55, meaning there was only a 55% chance of finding an effect, which is less than the a priori power of 0.8 or 80%.

Furthermore, the education level of the participants was not statistically different among the three groups \((p=0.18)\), but the power was 0.36. Finally, any interaction between ethnicity/race and education was not statistically significant \((p=0.12)\), but the power was 0.56.

Table 2

Comparison of Ethnicity/Race and Education Level

<table>
<thead>
<tr>
<th>Group</th>
<th>Sig.</th>
<th>Observed Power</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>0.063</td>
<td>0.546</td>
<td>1.802</td>
<td>2</td>
</tr>
<tr>
<td>Education</td>
<td>0.175</td>
<td>0.364</td>
<td>1.126</td>
<td>2</td>
</tr>
<tr>
<td>Ethnicity * Education</td>
<td>0.118</td>
<td>0.556</td>
<td>1.201</td>
<td>4</td>
</tr>
</tbody>
</table>
The surveys used a Likert scale to measure perceived autonomy support of the food pantry staff. The scale ranged from one, “Not at all true,” to seven, “Very true,” so the higher the score, the more autonomy support the client perceived. A Cronbach’s alpha test for internal consistency was conducted for survey questions 1 – 6 in both the pre and post-test and resulted in a score of $\alpha = 0.95$, which is stronger than the 0.90 from previous research (27-33). As shown in Table 3, the average score of perceived autonomy pre-intervention was 4.78 (standard deviation of 1.52) for the CT participants, 4.95 (1.84) for the ET participants, and 4.69 (1.97) for the CG participants. After the intervention, the average score of perceived autonomy was 5.39 (1.97) for the CT participants, 5.51 (1.83) for the ET participants, and 5.30 (1.78) for the CG participants. Therefore, as shown in Table 4, the average change from pre-test to post-test in perceived autonomy was 0.62 (1.95) for the CT participants, 0.56 (2.11) for the ET participants, and 0.60 (2.92) for the CG participants. When comparing the CT group to the ET group, the change in perceived autonomy was not significantly different ($p=0.94$), but the statistical power of this comparison was 0.05, a 5% chance of finding an effect. Furthermore, when comparing the CT, ET, and CG groups to each other, the change in perceived autonomy was not significantly different ($p=0.07$), but the statistical power of this comparison was 0.45 (Table 5), a 45% chance of finding an effect.
Table 3

Average Scores of Perceived Autonomy Support

<table>
<thead>
<tr>
<th>Test Group</th>
<th>n</th>
<th>Mean (SD) Pre-test</th>
<th>Mean (SD) Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>14</td>
<td>4.78 (1.52)</td>
<td>5.39 (1.97)</td>
</tr>
<tr>
<td>ET</td>
<td>24</td>
<td>4.95 (1.84)</td>
<td>5.51 (1.83)</td>
</tr>
<tr>
<td>CG</td>
<td>22</td>
<td>4.69 (1.97)</td>
<td>5.30 (1.78)</td>
</tr>
</tbody>
</table>

Table 4

Average Change in Scores Between CT and ET Groups

<table>
<thead>
<tr>
<th>Test Group</th>
<th>n</th>
<th>Mean (SD) Change</th>
<th>Sig.</th>
<th>Observed Power</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>14</td>
<td>0.62 (1.95)</td>
<td>0.940</td>
<td>0.05</td>
<td>0.076</td>
<td>36</td>
</tr>
<tr>
<td>ET</td>
<td>24</td>
<td>0.56 (2.11)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5

Average Change in Scores Among All Test Groups

<table>
<thead>
<tr>
<th>Test Group</th>
<th>n</th>
<th>Mean (SD) Change</th>
<th>Sig.</th>
<th>Observed Power</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>14</td>
<td>0.62 (1.95)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ET</td>
<td>24</td>
<td>0.56 (2.11)</td>
<td>0.068</td>
<td>0.45</td>
<td>0.003</td>
<td>2</td>
</tr>
<tr>
<td>CG</td>
<td>22</td>
<td>0.60 (2.92)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Questions seven and eight on the post-test survey measured keeping and using the recipes among the CT and ET participants. Both questions used a Likert scale that ranged from one, “Strongly disagree,” to seven, “Strongly agree.” As shown in Table 6, the average response for keeping the recipes among the CT participants was 6.43 (1.02), while the average response among the ET participants was 6.78 (0.52). The difference between the groups was not statistically significant ($p=0.24$), but the power of this comparison was 0.27, a 27% chance of finding an effect. In addition, as shown in Table 7, the average response for using the recipes among the CT participants was 5.21 (2.05), while the average response among the ET participants was 5.30 (2.36). The difference between the groups was not statistically significant ($p=0.91$), but the power of this comparison was 0.05, only a 5% chance of finding an effect.

Table 6

Average Response to Keeping the Recipes

<table>
<thead>
<tr>
<th>Test Group</th>
<th>Question #</th>
<th>n</th>
<th>Mean (SD)</th>
<th>Sig.</th>
<th>Observed Power</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>7</td>
<td>14</td>
<td>6.43 (1.016)</td>
<td>0.242</td>
<td>0.272</td>
<td>-1.211</td>
<td>17.189</td>
</tr>
<tr>
<td>ET</td>
<td>7</td>
<td>23</td>
<td>6.78 (0.518)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 7

Average Response to Using the Recipes

<table>
<thead>
<tr>
<th>Test Group</th>
<th>Question #</th>
<th>n</th>
<th>Mean (SD)</th>
<th>Sig.</th>
<th>Observed Power</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>8</td>
<td>14</td>
<td>5.21 (2.045)</td>
<td>0.907</td>
<td>0.052</td>
<td>-0.118</td>
<td>35</td>
</tr>
<tr>
<td>ET</td>
<td>8</td>
<td>23</td>
<td>5.30 (2.363)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 4

IMPLICATIONS OF THE RESEARCH

Discussion

The purpose of this study was to examine the effects of different tailoring methods on perceived autonomy support. By allowing some clients to self-select their recipes (CT) while having other clients receive recipes that were selected for them (ET), the researcher hoped to show a greater increase, pre versus post, in perceived autonomy support among the CT clients. As of late, the current literature has lacked in distinguishing the manner by which educational materials have been tailored to specific audiences. Using Self-Determination Theory (SDT) as a framework, the researcher theorized that an educational approach that is supportive of one’s autonomy is more likely to promote intrinsic motivation and thereby a stronger and longer lasting change (35).

Food pantry clients were selected as the participants of this study since they are more likely to consume a poor quality diet (36-37). Furthermore, food pantry clients are often targeted for nutrition education interventions, yet there are no standards or a consensus on the best practices for providing education to this population. It has been established that tailoring is likely an effective approach to provide education (15, 38, 39), but it is unclear whether different modes
of tailoring are more effective than others. Due to the likelihood that food pantry clients have characteristics that make them more vulnerable and potentially sensitive to an educational intervention, it is imperative that the profession develop standards for working with this audience in order to ensure that they receive the best care without incurring any harm (13, 22, 23). The following sections will discuss the answers to the four research questions, listed below, as well as provide insight into all of this study’s findings.

1. Will the CT participants have a greater increase in their score of perceived autonomy support from pre-intervention to post-intervention than the ET participants?

2. Will the CT participants as well as the ET participants have a greater increase in their score of perceived autonomy support from pre-intervention to post-intervention than the control group?

3. Will the CT participants report keeping their recipes to a greater extent than the ET participants?

4. Will the CT participants report using their recipes to a greater extent than the ET participants?

Perceived Autonomy Support of Food Pantry Clients

To answer the first research question, the researcher compared the average change in autonomy of the CT participants to the ET participants. The findings failed to show a significant difference between the two means. However, the error of this model was elevated since the statistical power was less than 0.8 (40-41). Similarly, in regards to the second research question,
the findings failed to show a significant difference between the means of all three groups. However, once again, the statistical power of this model was less than 0.8, so the high risk of type II error makes it inappropriate to draw any strong conclusions about the effects that the different interventions had on the perceived autonomy of the participants. Although this study compared a CT to an ET intervention, while the Clarke et al. study compared a CT to a generic intervention, their results differed from this study in that Clarke et al. found the CT approach to be more effective at promoting behavior change than the generic approach (14). They also found that the generic approach was not significantly different from the control group, concluding that receiving generic education was comparable to not receiving any education (14).

Keeping and Using the Recipes

To answer the third research question, the researcher compared the average responses of the CT participants to the ET participants to question seven in the post-test, which referenced keeping the recipes (Appendix D). The findings failed to show a significant difference between the two means, but the model had a statistical power below 0.8. Once again, although this study assessed different intervention groups compared to the Clarke et al. study, their results differed from this study in that Clarke et al. found eight out of ten of the CT clients were able to find their recipe booklets compared to only half of the clients who received generic recipes (14). However, Clarke et al. recorded this measurement six weeks post-intervention, compared to this study’s two weeks, and they measured proof of retaining the packet by asking the client to bring it to the phone and report the picture on the front cover, whereas this study used a Likert-scale question.
The fourth research question referenced use of the recipes, which question eight measured in the post-test survey. Similar to the previous result, the findings failed to show a significant difference between the two means and the model had a statistical power below 0.8. These results also differed from Clarke et al.’s findings in that 67% of the CT clients stated that they consulted the recipes “often,” while only 34% of the generic recipients made that claim (14). However, they measured use of the recipes by first asking “whether the cooks had used their booklet to prepare meals or snacks in recent weeks” and if so, “had they used the materials once or on several occasions?” (p.575) (14). Once again, their mode of questioning was more open ended than the Likert-scale used in this study. Since the power was so low for the results pertaining to keeping and using the recipes, one cannot draw any strong conclusions from these findings.

Trends and Tendencies

The current study yielded several interesting findings. In terms of the reliability of the survey instrument at measuring perceived autonomy, the results of a Cronbach’s alpha test showed the survey to be strong, so the scale had high internal consistency. Although the mean change in the scores were not significantly different among the three groups, it should be noted that the median score of perceived autonomy increased approximately one whole point for all three groups (see Figures 10 and 11). The CT participants increased from a median response of 5 to a response of 6; the ET participants increased from a median response of 4.9 to a response of 5.9; and the CG participants increased from a median response of 5.5 to a response of 6.5.
There are several potential reasons why this result occurred. The first is due to measurement reactivity because the participants filled out the pre-test survey independently while they were at the pantry, yet filled out the post-test with a research volunteer over the phone (42). It is possible that the participants felt more pressure to answer favorably on the phone because the researcher had to ask the participant each question directly (42). Additionally, the repeat testing of the survey during the pre and post-test may have influenced the results since the participants were exposed to the same questions twice (42). Another possible explanation for this change could be that the actual interaction of the research volunteers with the pantry clients during the data collection affected how the clients felt toward the research volunteers (43-44). Since the constructs supporting SDT are autonomy, relatedness, and competence, this study intervention may have inadvertently manipulated the construct of relatedness through the research volunteers’ face-to-face interactions with the participants. Clarke et al. referred to this as the “pantries’ social capital,” meaning the relationships and trust between pantry staff and their clients (14, 43-44). This interaction may have affected the data by increasing the client’s social desirability response bias, which is prevalent in measurements that are self-reported (45).

In terms of demographic information, researchers at Northern Illinois University collected data from two other food pantries in northern Illinois on separate occasions, not connected to the current study: the Community Cupboard and Barb Food Mart (46-47). As shown in Table 8, there are both similarities and differences among the demographics of the two other pantries compared to the current study at Hand in Hand. The average age of the participants ranged from late 30s to mid-40s across all three studies. Female was the dominant gender for all three studies, but the current study had a larger percentage of males (19.2%) than the Community Cupboard and Barb Food Mart participants (12.4% and 9.9%, respectively).
Regarding ethnicity/race, all three pantries differed in their distributions. At Hand in Hand the white participants held the majority (60%), while 46.1% of the Community Cupboard participants were white, and only 33.8% of the Barb Food Mart participants were white. Barb Food Mart also appeared to have a greater variety of ethnicities with 19.7% of the participants falling into the “other” category, while at Hand in Hand and Community Cupboard only 10.4% and 6.7% of the participants were “other.” Finally, nearly 40% of the participants at both Hand in Hand and Barb Food Mart attended some college or were college graduates, while only 22.5% of the participants at Community Cupboard attained that level of education. However, Hand in Hand differs from Barb Food Mart in regards to the percentage of participants who did not receive a high school diploma or GED. Of Hand in Hand participants, only 22.4% made that claim compared to 33.8% of Barb Food Mart participants. These results are important because they show the wide variety of people that can make up the clientele at a food pantry. Even when comparing pantries in the same region of Illinois, there is still a significant range of people regarding their demographic profiles.
Figure 10:

Median scores of autonomy on pre-test.

Figure 11:

Median scores of autonomy on post-test.
Table 8

Comparison of Demographics

<table>
<thead>
<tr>
<th></th>
<th>Hand in Hand N=125</th>
<th>Community Cupboard N=89</th>
<th>Barb Food Mart N=71</th>
<th>National Food Pantry Statistics N=52,052</th>
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</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average OR percent (range)</td>
<td>45 (20-80)</td>
<td>60.7% between 31-50</td>
<td>38 (27-52)</td>
<td>37.6% between 30-49</td>
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<tr>
<td><strong>Gender</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>97 (77.6%)</td>
<td>78 (87.6%)</td>
<td>61 (85.9%)</td>
<td>70.4%</td>
</tr>
<tr>
<td>Male</td>
<td>24 (19.2%)</td>
<td>11 (12.4%)</td>
<td>7 (9.9%)</td>
<td>29.6%</td>
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<tr>
<td>Did not disclose</td>
<td>4 (3.2%)</td>
<td>0</td>
<td>3 (4.2%)</td>
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</tr>
<tr>
<td><strong>Ethnicity/Race</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>White (non-Hispanic)</td>
<td>75 (60%)</td>
<td>44 (49.4%)</td>
<td>24 (33.8%)</td>
<td>43.2%</td>
</tr>
<tr>
<td>Hispanic or Latino/a</td>
<td>33 (26.4%)</td>
<td>37 (41.6%)</td>
<td>32 (45.1%)</td>
<td>20.0%</td>
</tr>
<tr>
<td>Other</td>
<td>13 (10.4%)</td>
<td>6 (6.7%)</td>
<td>14 (19.7%)</td>
<td>36.9%</td>
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<tr>
<td>Did not disclose</td>
<td>4 (3.2%)</td>
<td>2 (2.2%)</td>
<td>1 (1.4%)</td>
<td>----</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
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<td></td>
</tr>
<tr>
<td>Some college/college graduate</td>
<td>49 (39.2%)</td>
<td>20 (22.5%)</td>
<td>28 (39.4%)</td>
<td>20.2%</td>
</tr>
<tr>
<td>High school diploma or GED</td>
<td>43 (34.4%)</td>
<td>35 (39.3%)</td>
<td>18 (25.4%)</td>
<td>46.2%</td>
</tr>
<tr>
<td>No high school diploma or GED</td>
<td>28 (22.4%)</td>
<td>31 (34.8%)</td>
<td>24 (33.8%)</td>
<td>26.5%</td>
</tr>
<tr>
<td>Business, trade, or technical school</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>7.1%</td>
</tr>
<tr>
<td>Did not disclose</td>
<td>5 (4%)</td>
<td>3 (3.4%)</td>
<td>1 (1.4%)</td>
<td>----</td>
</tr>
</tbody>
</table>

Note: Totals may not equal 100% due to rounding
As part of Feeding America’s “Hunger in America 2014” national report, they surveyed 60,122 people who participated in food assistance programs nationwide that provided either groceries or meals (12). For the purposes of comparison, only the programs that provided groceries were reported here (N=52,052) (see Table 8, above). The study reported that the most common age group, 30-49, who used the grocery programs represented 37.6% of the participants, which was similar to the northern Illinois food pantries (12). The report found that 70.4% of the survey respondents were female, while 29.6% were male (12). The amount of males represented nationally is somewhat higher than the participants in the northern Illinois studies, but females still hold the majority. In terms of ethnicity/race, the national study found that 43.2% of the participants were white, 20% were Hispanic, and 37% were other races. As stated previously, for this study African American participants were included in the “other” category since they were not highly represented, but nationally African American participants made up 26% of the total clients (12). For comparison in Table 8, the African American participants were included in the “other” category along with an additional 11% of Feeding America participants who fell into additional categories. It seems that the national representation of African American participants who used food assistance programs was higher than northern Illinois, whereas the national level of Hispanic/Latino participants were lower than northern Illinois. Finally, in terms of education level, the national results showed a larger percentage of clients who received a high school diploma or GED and a smaller percentage who went to college compared to the clients in northern Illinois (12). Another notable difference was that the national study measured post-high school education that is not college (i.e. business, trade, or technical schools), while the current study did not. If the participants in the northern Illinois study selected “some college” or “college graduate” to represent other post-high school
education that they received, then that percentage might be more similar to the national statistics. Once again, there appears to be some common trends in terms of the typical demographics of people who use food assistance programs. However, there is still a wide variety, particularly in terms of ethnicity/race and education level. Exploring whether these factors play a role in the effectiveness of nutrition education may be a potential area for further research.

Due to the variance in ethnicity/race and education level among food pantry clients, the researcher compared these factors among the CT, ET, and control groups in order to identify any differences. The results showed that there were no significant differences between the three test groups regarding ethnicity/race, education level, or the interaction between the two factors. Since it would appear that there were not any significant differences, it is unlikely that the results were influenced by differences in these factors among the three groups. However, the observed power of the model was below 0.8, so it is not appropriate to draw any conclusions from these findings.

Another notable finding from this study was the participant attrition rate. Forty-eight percent of the study participants who filled out the pre-test did not fill out the post-test because the researcher could not connect with participants via phone in the post-program follow up. As stated previously, 6% of the clients provided an invalid phone number and 10% answered the call, but could not or did not want to participate. However, the remaining 32% of the participants did not participate because they did not answer the call or respond to the voicemail from the researcher. This study’s rate of 48% was larger than the dropout rate in Clarke et al.’s study, which was 37% (14). However, it is possible that because Clarke et al.’s study intervention was more complex and engaging, the participants felt more devoted to the project.

In terms of the makeup of which recipes the participants chose during data collection, the researcher observed several trends. When the ET participants were asked whether anyone had
ever told them to limit their sugar, salt, or fat intake, most of them reported that they restricted one or two of the options and thereby received a packet with two or four recipes in it. This result reflected the likelihood that many of these participants might already have, or be at risk for, cardiovascular disease and/or diabetes, which is associated with food insecurity (6, 12, 48).

In regards to the CT participants, who were allowed to choose which of the eight recipes they wanted in their packets, the majority asked for all eight. By asking for all of the recipes, it could signify that the clients valued the recipes. Or, it is possible that they simply did not want to miss out on the opportunity to receive more of something that was being offered to them free of charge. However, some of the participants were more selective with their approach when deciding which recipes they wanted and oftentimes those participants decided to take only two or three. Finally, a few participants reported that they were experienced cooks and have many cookbooks, so they did not wish to take any of the recipes. Those trends differ somewhat from the findings by Clarke et al. who reported more variety in the manner by which their clients made their selections. In their study, there was a mix in that some people wanted only a few recipes, some wanted nearly all of them, and some wanted moderate amounts (14). It is evident that a variety of factors can influence the manner by which the participants selected their recipes. However, it is unclear from this study why the CT participants made their selections the way they did. Thus, this topic may warrant future research.

Limitations

One of the major limitations of this study was the low statistical power of all of the models, and therefore a heightened chance of error. This low power can be explained by two
reasons. First, both the standard deviations for the change in autonomy score were greater than their respective means, signifying that there was too much variance in the model. Second, and more importantly, the small sample sizes influenced the statistical power. Regardless of the statistical test, none of the samples were large enough to meet the minimum recommended values, as shown in Table 9. The sample size needed to answer the first research question was 102, but included data on only 38 participants. Similarly, the second research question needed 159 participants, but only had data from 60. For research questions three and four, the sample size should have been 102, but included only 38 participants. Finally, when comparing the differences regarding ethnicity/race and education among the three test groups, instead of the desired 196, the sample size was 125. Not only was sample size a problem in this study, but the attrition rate for the post-test also posed an issue because non-response is a major threat to validity (42). These factors most likely contributed to the low power in these models and could explain why the results did not show any statistical significance.

Table 9
Recommended vs. Actual Sample Sizes

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Recommended # of Participants</th>
<th>Actual # of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>102</td>
<td>38</td>
</tr>
<tr>
<td>2</td>
<td>159</td>
<td>60</td>
</tr>
<tr>
<td>3 &amp; 4</td>
<td>102</td>
<td>38</td>
</tr>
</tbody>
</table>
Furthermore, the pilot test had some limitations. First, only the English version of the survey was available at the time of the pilot test, so possible issues with comprehension among Spanish-only speaking participants were not assessed. In addition, the researcher did not implement the follow-up piece of the intervention. Doing a post-test phone survey with the pilot test participants may have provided more insight into potential issues, such as participant dropout rate. Additionally, doing a post-test survey might have highlighted the potential weaknesses with questions seven and eight. This would have provided the researcher with the opportunity to alter those questions, which could have led to stronger results. The researcher chose to use a Likert-scale to measure keeping and using the recipes in order to be consistent with the rest of the survey and to gather the data in an objective manner. However, the open-ended line of questioning that Clarke et al. used to measure keeping and using the recipes may have revealed responses that were more honest. Another limitation of the pilot test was that the participants at the pilot location had previously been a part of research studies with Northern Illinois University, which included surveys and nutrition education, whereas the Hand in Hand food pantry had not previously been exposed to any research or nutrition education. Due to this difference, it is possible that the pantry selected for the pilot test was not the most appropriate to accurately reveal issues with the survey and the methodology.

In terms of the intervention itself, receiving recipes in different manners may have not been significant enough to invoke a change in feelings of autonomy. If the recipe intervention was too mild to influence feelings of autonomy, then the results could not have reflected a substantial difference between the CT and ET interventions. Another unintended result of the intervention that could be viewed as a limitation was that not all of the participants in the CT group wanted to take recipes. In order to support their autonomy, the research volunteers did not
pressure those participants to select any recipes, but questions seven and eight on the post-test did not provide the clients with an option to say “not applicable,” or “choose not to take any recipes.”

Other limitations to this study were related to the measurement tool, the HCCQ. To the researcher’s knowledge, this questionnaire had never been tested with a population of food pantry clients. Although when used in this study the tool had a Cronbach’s alpha value of 0.95, it is unknown whether it was a valid tool to measure autonomy in this population. The potential bias of the participant to please the researcher (i.e. the halo effect) might have been heightened compared to other populations since they did not want to appear ungrateful for the free services that they received at the pantry (49). During the follow-up phone calls one participant stated, “I just want you to know I am going to answer 7 to all of them because I absolutely love the people at the food pantry. That’s how I answered all of the first ones too [on the pre-test].” Furthermore, the shorter, 6-question, version of the HCCQ was used in this study instead of the full 15-question version. Although the statistical analysis of the 6-question version showed it to be reliable, it is possible that the longer version might have provided more insight into the client’s perceptions.

Another limitation related to the survey tool was the use of the term “staff.” The researcher intended the word “staff” to represent both the people who regularly help at the pantry as well as the research volunteers as the supporters of autonomy for the clients. The goal was for the pre-test to measure how the clients typically felt they were treated when they came to the pantry and the intention of the post-test was to measure how the clients felt after the research volunteers engaged with them during the intervention. Based on the way some of the participants answered the post-test questions over the phone, it gave the researcher the impression that some
clients may not have considered the research volunteers as part of the staff. For example, during a follow-up phone call one participant stated, “The staff does nothing, but since you girls [research volunteers] were so nice I’ll say 2.” Of course, not all of the participants alluded to this differentiation, but it is likely that some clients were not interpreting the questions the way they were intended.

Finally, high frequencies of the pre-test responses were clustered near the top of the Likert scale (i.e. “very true”). This created a ceiling effect that prevented the scale from measuring a change in those participants from pre to post (42). In other words, some of the participants might have been feeling supported in their autonomy before receiving the intervention, but even if the intervention did increase their feelings of autonomy, then the survey would not have been able to record this change. Additionally, by truncating the ethnicity/race results as well as the data on education in order to balance the sample sizes, it may have diminished the specificity of the data.

Implications for Future Research

This study exposed the need for a standardized method of educating food pantry clients that effectively promotes behavior change yet is sensitive to their potential vulnerability. There are several ways by which this study could be improved upon in future studies to have a better understanding of the effectiveness of different tailoring methods for providing nutrition education at food pantries. The researcher recommends validating the HCCQ with a food pantry population before using it a pantry setting. In addition to, or instead of, measuring autonomy future researchers should consider a less personal and more objective way of measuring behavior.
change, such as a food frequency questionnaire or, as seen in Clarke et al., measuring “days-and-ways,” to assess whether the participants increased their consumption of vegetables (14).

Furthermore, using a more advanced study design, such as Solomon’s Four Group Design, would have limited repeat testing bias and provided a more accurate description of whether the intervention had an effect (42, 50, 51). Future researchers may want to consider coding the pre-tests in order to match the participants to their post-test responses. Since the potential drop-out rate is likely be high, coding may help strengthen the results. However, researchers need to weigh this benefit against the cost of having data that is not anonymous.

In terms of the intervention itself, receiving recipes may have not been significant enough to induce any change in feelings of autonomy, and it is likely that it did not facilitate a health behavior change, which was ultimately the goal. A more involved nutrition education experience, such as providing more in-depth materials and having more discussion with each participant, may be necessary to cause a more measurable effect (14). This may also provide a stronger contrast between ET and CT approaches. Furthermore, it is important to be aware of the fact that the process of tailoring may automatically increase feelings of relatedness since the educator has to inquire about the individual needs of each client, which logically would make the client feel cared for and more connected to the educator, which could pose as a confounding variable (14). Future researchers should be aware of this potential effect and may need to control for it. To help improve attrition rate and decrease halo effects, it might be beneficial for future researchers to inform the pantry clients of the project in the weeks prior. This would allow the clients to ask questions about the project and potentially take the process more seriously. Pantry clients may need to be briefed prior to data collection on general research protocols in order to feel more comfortable with the research process. Another point to consider for future research is
that the selection of potatoes for this study did not appear to be very desirable among the clients, most likely because the pantry regularly provided potatoes. Future researchers may want to consider selecting a vegetable that is still well-liked, yet not typically seen at a food pantry in order to make getting the vegetable and the recipes a more exciting experience.

Conclusions

The current study was unable to identify whether a CT method of providing nutrition education was more effective at supporting perceived autonomy compared to an ET method. Based on the results of this study, no significant differences were found to determine whether food pantry clients who received recipes in a CT manner were more likely to keep and use the recipes compared to the clients who received them in an ET manner. Nevertheless, this study identified a need for more reliable, valid, and effective methods of providing nutrition education to food pantry clients. One potential method for meeting this need could be a client-centered method of tailoring. This study was also able to bring to light many of the challenges and considerations that researchers must face when working with this population. In some ways, it is easy to work with this population because they are typically very grateful for the attention and services that the researcher provides. However, their gratefulness can also pose a threat to accurately testing hypotheses and can make it difficult to pinpoint best practices. Researchers should consider these ideas when working with this population and should continue trying to identify the best ways to empower this population to improve their health.
REFERENCES


APPENDIX A

REVIEW OF LITERATURE
According to the Hunger in America 2014 National Report, 85% of people who participate in grocery programs (i.e. food pantries) are food insecure (1). Food pantries, which are also referred to as food shelves, are distribution sites for donated food from food banks as well as other sources of donated food, such as local grocery stores and community food drives. Regulations pertaining to who can receive food and how much food participants can receive are typically dictated by the food pantry itself. Some pantries require little more than the name of each participant while other pantries ask for documentation proving information such as their family size and income. Furthermore, pantries may be very lax or strict regarding the amount of food a client can take at each visit as well as the number of visits each client is allowed in a given month. For example, some pantries do not set any limit on the number of items each individual or family may take and allow participants to use the pantry as often as they need. On the other end of the spectrum, some pantries enforce rules pertaining to the number of items that each participant can take based on the number of people in their family and will reject clients if they meet their quota for visits in a given month. There are also two different types of pantries: choice and non-choice. Choice pantries allow participants to choose which of the food options they would like to take home while non-choice pantries provide their clients with a pre-made box or bag. Regardless of whether a pantry is choice or non-choice, food pantries are generally considered to have low quality food (2, 3).

Food insecurity is associated with a low quality diet. In rural areas of the Mississippi Delta Champagne, researchers conducted a telephone survey (n=1,470) and found vegetable intake to be significantly lower in food insecure adults compared to food secure adults (4).
Cunningham, Barradas, Rosenberg, May, Kroelinger, and Ahluwalia used mail and telephone surveys in Oregon to compare the diets of toddlers with food secure and insecure mothers (n=1,522). They found that toddlers of food insecure mothers were less likely to consume fruits and vegetables and more likely to consume soda in a given week (4-7 days) (5). In regards to food pantry participants in particular, Robaina and Martin surveyed food pantry participants in Hartford, CT (n=212), and found increased food insecurity to be significantly correlated with decreased intake of fruits and vegetables (6). Similarly, researchers in Eastern Alabama who interviewed food pantry clients regarding overall diet quality found that most of the respondents reported no fruit, whole fruit, whole grain, dark green or orange vegetables, or legumes consumption (7).

Reported in the 2010 position paper on food insecurity by the Academy of Nutrition and Dietetics, formally known as the American Dietetic Association, food insecurity is also associated with numerous negative health outcomes. Examples of these outcomes include: poor physical and mental health in adults and depression in women, overweight and weight gain, adverse health outcomes for infants and toddlers, behavioral problems in preschool-aged children, lower educational achievement in kindergarteners, and depressive disorder and suicidal symptoms in adolescents (8). The 2006 position paper reported that numerous studies show that households that are food insecure have lower intakes of potassium, fiber, vitamins C, A, E, and B6, thiamin, niacin, magnesium, folate, iron and calcium than their food secure counterparts (9).

The stigma associated with receiving food from a food pantry is an additional burden for an already vulnerable population. In 2008, Berner, Ozer, and Paynter delved into studying the people who food pantries serve. They surveyed 1,897 food pantry clients in northeastern Iowa in order to examine the type of clientele who received assistance (10). The researchers of this study
examined both pantry clients who received food on a supplemental basis (regularly over an extended period of time) and emergency clients who used a pantry’s services during an acute circumstance (irregularly over a short period of time). Berner et al. found that 29% of the emergency clients had recently lost their job, 3% experienced a fire at home, and 3% recently lost a family member (10). Forty percent of the respondents selected the other category as to why they started using the pantry (10). Other responses included: general financial hardship, health problems, change in domestic relationship, housing situation, homelessness, recent move to the area, and recent release from prison (10). Over the course of the two year study the researchers reported that 10% of the emergency clients transitioned into supplemental clients, although they speculated that this was an underestimate (10).

In Washington, Hoisington, Shultz, and Butkus conducted focus groups with food pantry users from nine locations across the state. Out of the 90 participants, 40% stated that they had a disability that limited their daily activities (11). Similarly to Berner et al. the researchers found that a variety of factors caused the participants to alter their food habits, such as the loss of income due to “a lay-off, loss of food-related income (e.g. food stamps running out at the end of the month), or a money drain elsewhere (e.g. injury requiring expensive medication)” (p. 329) (11). In Oregon, researchers conducted interviews with low-income and/or food-insecure survey respondents (12). They found several themes among the responses for reasons that contributed to the participants’ current financial circumstances. The contributing themes to food insecurity were illness and injury, unemployment and underemployment, family changes, prior prison time, addictions, and other bills that had to take priority over buying food (12).

The population that uses the services of a food pantry is likely dealing with either acute or chronic hardships, which need to be taken into account when providing nutrition education.
Programs aimed at this population, no matter the intention, could potentially have either positive or negative effects. Nutrition education for food pantry clients is warranted, but the manner in which the education is provided might be important considering the vulnerability of this population (10-12). Creating programs that promote intrinsic motivation and empower clients could be the key when working with this population, and using client-centered tailoring may help achieve that goal.

Theoretical Framework

Self-Determination Theory (SDT) was developed by researchers Richard Ryan and Edward Deci in 1980 to better understand human motivation. According to Ryan and Deci, motivation can be categorized as amotivation, extrinsic motivation, and intrinsic motivation (13). Child development experts report that children naturally seek to expand their knowledge and challenge their skills even when they are not provided with external rewards (14). Yet, in order to maintain this inherent curiosity it needs to be supported by one’s environment because it can be easily disrupted (13).

Research has shown that “extrinsic rewards can undermine intrinsic motivation” (p. 70) (13). Extrinsic motivators such as gifts, threats, deadlines, directives, and imposed goals weaken intrinsic motivation because they promote an external locus of control, which is the belief that events in one’s life are caused by factors that are outside of one’s control (13). In contrast, choice, acknowledgement of feelings, and opportunities for self-direction were found to enhance intrinsic motivation, particularly because they promote feelings of autonomy (13). Research has
shown that environments that support autonomy, competence, and relatedness help to maintain and enhance intrinsic motivation (13).

It is understood that intrinsic motivation plays a significant role in behavior, but it is not the only form of self-determined motivation. Motivation can range from “amotivation or unwillingness, to passive compliance, to active personal commitment” (p. 71) (13). According to SDT, internalization, also known as identification (“taking in” a value or regulation), and integration (transforming that regulation into one’s own) is relevant for the regulation of behavior throughout one’s life (13). Therefore, motivation can progress within the spectrum of extrinsic motivation to becoming more self-determined through integration, as depicted in Figure 12 (13). In order to facilitate the integration of extrinsic motivation the three needs for autonomy, competence, and relatedness are crucial. Supporting autonomy, by promoting personal choice and freedom from external control, allows individuals to actively adopt new values into their own (13). Regarding competence, SDT is based on White’s 1959 finding that organisms have the natural urge to master their environment (15). Finally, the need for relatedness is significant because a behavior that is motivated extrinsically is usually not interesting to the person who is trying to adopt that behavior, but oftentimes one tries a new behavior because it is modeled or valued by someone with whom one feels relatedness (13).
SDT specifically cites health behavior changes as needing to be internalized in order to be initiated and maintained long-term. When health-care professionals facilitate feelings of autonomy, competence, and relatedness within their patients, internalization of health change behaviors are more likely to occur (16). SDT argues that although external control can successfully initiate behavior change, it might not maintain the change (16). Practitioners often try to motivate their patients to change by using incentives or their authority to externally control their patient’s behavior, which is a form of controlled motivation and causes a patient to be motivated only to please an outside source (16). Another manner in which practitioners use controlled motivation is through introjection, which is when a patient feels obligated to change to avoid feelings of guilt or to receive praise from the practitioner (16).

Using these forms of controlled motivation do not promote feelings of autonomy in the patient, which is most likely why these techniques are often unsuccessful at creating lasting
behavior change (16). Practitioners can support autonomy through internalization and integration (16). Internalization is achieved when practitioners provide their patients with rationales for why the behavior change is important and avoid making the patient feel pressured (16). Integration can be facilitated when a practitioner promotes their clients’ choices and simply provides guidance regarding their clients’ journeys as they come across barriers, and the practitioner helps them explore different options to achieving their health goals (16). Internalization also requires that the person feels competent that they can change, meaning the patient has the tools and skills to change and is supported by the health professional throughout the change process (16).

Finally, internalization of a health behavior change can be facilitated when practitioners promote the construct of relatedness. By engaging in this process, their clients feel that their practitioner trusts, understands, and respects them, which is important for creating a strong connection (16).

The research on SDT shows that when patients have their psychological needs met for autonomy, competence, and relatedness they will be more successful in regards to maintaining lasting health behavior change (16). Figure 13, below, represents how satisfaction of autonomy, competence, and relatedness can lead to positive mental and physical health outcomes. Whether those needs are satisfied can depend on the health care climate, but may also be influenced by personality differences and differences in life aspirations (16).
Patrick and Williams reviewed numerous studies regarding health behavior change interventions that used SDT as a theoretical framework. The researchers examined studies involving health behaviors, such as tobacco cessation, oral health, weight loss, physical activity, and dietary change, and found in all of the studies that the SDT-based interventions were more effective at promoting behavior change compared to controls (17). Studies have linked autonomous motivation specifically to maintained weight loss (18), control of diabetes (19, 20), and reduction of cholesterol in patients at risk for cardiovascular disease (21). Fortier, Duda, Guerin, and Teixeira compared three large studies involving the promotion of physical activity through SDT-based interventions: PAC Trial, Empower Trial, and PESO Trial. These randomized, controlled trials were conducted in three different countries and varied in length and
intensity, yet they all supported the effectiveness of SDT-based interventions (22). In the 2012 study by Teixeira, Silva, Mata, Palmeira, and Markland, the researchers looked specifically at weight-control studies that were guided by the promotion of intrinsic motivation. After exploring the current literature, the authors concluded that the majority of the interventions focused on addressing the skills needed for behavior change and neglected to address critical components needed to aid in the process of creating behavior change (23). They also stated that oftentimes interventions undermine internalization of new behaviors when they do not promote autonomy (23). The researchers concluded that by helping individuals meet their needs for autonomy, competence, and relatedness, participants will likely experience more success in maintaining behavior change (23). This finding endorses the use for a new approach to health interventions that is supportive of competence, relatedness, and particularly autonomy. The constructs that support SDT are inherently client-centered and promote intrinsic motivation. Motivational interviewing is one popular method that has inadvertently applied the concepts behind SDT to create behavior change in a client-centered manner (17, 24).

Motivational Interviewing

Motivational interviewing (MI) is a style of counseling that is effective at promoting behavior change. It is supported among many health professionals and appears to be particularly useful for facilitating changes in nutrition-related behavior (25, 26). Interestingly, the literature shows an alignment between the premises of MI and SDT (17, 24). MI is defined as a “client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence” (p. 25) (27). It is based on four principles: express empathy, develop
discrepancy, roll with resistance, and support self-efficacy (27). In an article by Markland, Ryan, 
Tobin, and Rollnick, they compare MI to SDT and propose that SDT can provide a theoretical 
framework to MI, which is something that MI is lacking (24). As shown in Figure 14 the 
practices set forth in MI reflect the constructs of competence, autonomy, and relatedness. As 
represented in the diagram, MI can help the client feel competent by helping them set realistic, 
self-selected goals and providing nonjudgmental feedback (24). Autonomy is supported through 
MI because the client does not feel persuaded to change by the counselor. By exploring 
discrepancies between the client’s current behaviors and their desired behaviors, the client can 
identify their intrinsic motivation to change their behavior (24). Finally, MI supports relatedness 
through the counselor’s expression of empathy and support (24). The literature has shown these 
techniques, which parallels the constructs of SDT, to be effective at promoting a variety of health 
behavior changes in an assortment of different populations (25, 26).

Several researchers have explored the relationship between MI and SDT. Patrick and 
Williams view the two domains as significant to one another in the sense that MI needs the 
thoretical backing of SDT while SDT needs the applicability of MI (17). This is important 
because it allows for further understanding of why MI is effective and enables the constructs of 
SDT to be applied to real-life scenarios. Researchers who have tested MI interventions with the 
use of SDT as their theoretical framework have found successful results (25, 26). A randomized 
controlled trial by researchers Gourlan, Sarrazin, and Trouilloud used a SDT-based MI 
intervention to measure changes in weight and physical activity among 54 obese adolescents 
compared to a standard weight loss program (SWLP) (25). The researchers randomly assigned 
the participants to a SWLP or to a SWLP with MI and then followed for six months. The SWLP 
consisted of two 30 minute individual sessions with a healthcare provider over a period of three
months (25). The SWLP entailed the providing and transmitting of knowledge and skills and using logical and rational arguments to convince the participants to change their behaviors (25). The intervention group also participated in the SWLP, but received six 20 minute MI phone sessions with a counselor over the six month period. The MI sessions focused on physical activity and emphasized promoting the client’s interest in making changes and resolving ambivalence (25). The researchers concluded that the SWLP provided the participants with the skills needed to make the desired behavior changes, thereby supporting competence, and the MI facilitated the quantity and quality of motivation to make the changes, supporting autonomy (25).

Similarly, Hardcastle, Blake, and Hagger conducted a prospective study using a MI intervention, with SDT and the Transtheoretical Model as explanatory frameworks, to increase physical activity. Out of the 207 participants, 143 were categorized as having low socio-economic status (26). The intervention consisted of each participant receiving MI consultations over the course of six months. The results revealed significant improvements regarding amount of time spent doing physical activity, the stage of change, self-efficacy, and social support from friends and family (26). Although the results showed that the participants who received only one or two sessions increased their physical activity to a lesser extent than the participants who participated in four or five sessions, the researchers stated that “the intervention was still effective among lower attendees” (p. 325) (26).

As revealed in the literature, MI is a successful technique that facilitates health behavior changes. However, one major drawback to MI is that it is typically conducted on a one-on-one basis and over a substantial amount of time. This poses a restriction on its usefulness in a community setting, where both time and individual attention are limited. One method that might help achieve a MI-style approach in a community setting is tailored education.
Figure 14: Self-Determination Theory and motivational interviewing

Tailored Education

Based on the definition of tailoring it appears that MI is a form of tailoring because it caters the treatment of the client to his or her individual needs. However, since MI is limited to individual counseling, using the method of tailoring education may be a means to achieve MI outcomes, but in a community education setting. There is a need for programs to use SDT, but in a manner that uses less time and fewer resources. Fortier et al. proposes that in order to successfully employ SDT-based interventions on a “broader societal level, studies will need to determine whether these interventions (e.g., creating autonomy supportive contexts for
behavioral change) are, or can be made, cost-effective” (p. 11) (22). Tailoring might be an avenue for achieving that goal since it is designed to reach groups of people, but in a more individualized way than providing generic information. Tailoring has been used specifically for promoting health behavior changes (28-30) and several researchers have conducted reviews of the current health tailoring literature in order to determine its effectiveness (31-33).

A meta-analysis by Noar, Benac, and Harris reviewed 57 studies dealing with tailored print health behavior change interventions. They reported that the studies’ results showed tailoring to be effective at facilitating health behavior change, particularly in regards to its potential for a population-level impact and its cost-effectiveness (31). In comparison to analyzing printed tailoring materials, Kroze, Werkman, and Brug conducted a systematic review of 30 computer-tailored education studies regarding physical activity and dietary behaviors. The authors found evidence supporting the value of computer tailoring for healthy diet promotion, but they were unable to draw any strong conclusions (32). Therefore, based on the results of the current literature it appears that there is no discernable difference between print and computer tailored education.

Finally, a systematic review by Eyles and Mhurchu explored tailored nutrition education in terms of its long-term effectiveness. One of the purposes of this review was to look specifically at whether tailored nutrition education is more effective than generic nutrition education as well as no nutrition education (33). The second purpose was to evaluate the effects of tailored nutrition education on diet-related behaviors among different ethnic and low-income groups over a period of six months or longer (33). The researchers concluded that tailored nutrition education appears to be a successful strategy for improving the dietary intake of priority ethnic and low-income populations (33).
In a paper by Krueter and Wray they explain that tailoring is so effective because the targeted individual perceives the message as personally relevant, which is important for promoting intrinsic motivation (28). However, there appears to be numerous ways to make a message personally relevant. So although the research has shown that tailoring is more effective than generic messaging, it is unclear whether specific types of tailoring are more effective than others. Furthermore, it appears that tailoring encompasses both client-centered and expert-centered styles; differentiating between the two may provide a better understanding of the role tailoring plays in promoting health behavior change.

Client-Centered Tailoring

The concept of a client-centered approach to tailoring as opposed to an expert-centered style of tailoring has not been well explored in the literature. Since both tailoring and SDT-based interventions are topics showing great promise in the current research, a tailoring approach based on the concepts of SDT is something that needs more attention. As of now only one group of researchers have directly looked at this style of tailoring, and interestingly their study involved food pantry participants (34). Clarke, Evans, and Hovey found that studies involving tailoring typically use the Trans Theoretical Model, the Health Belief Model, or the Social Cognitive Theory to guide who receives which messages (34). And although interventions based in these theories are typically successful, they represent an expert-centered approach because the messages that the participants receive are reflective of what the researchers thought the client needed (34). Similarly, Friederichs believes that these theories are important because they consider constructs such as the stages of change, modeling, attitude, and self-efficacy, but points
out that they do not emphasize the importance of autonomy (35). So, in 2011 Clarke et al. conducted a field experiment and created a nutrition education intervention that examined the effects of a client-centered, tailored approach (34). The intervention materials they used were recipes (Quick! Help for Meals) that Evans and Clarke designed with Koprowski in 2009 to better promote healthy eating among pantry clients (36). Clarke et al. then used these recipes to provide client-centered, tailored nutrition education to food pantry participants promoting vegetable intake. The study design consisted of three groups: client-centered tailoring, generic messaging, and control (34). The researchers asked the participants questions while they waited in the pantry line and provided them with recipes and tips based on their responses (34). Examples of such questions included: “Do you want recipes … for a microwave? children 6-16? with Hispanic flavors?” (p. 573) (34). They were then given an individualized packet of recipes and tips based solely on what each participant asked for. The generic group received the same recipes and tips, but their packets were all identical and the researchers did not ask them for their preferences. Finally, the control group did not receive any materials. In terms of vegetable consumption, the results showed that the generic participants did not consume significantly more than the control participants, while the client-centered, tailored participants did consume significantly higher amounts of vegetables than both the generic and control groups. The authors concluded that the client-centered tailoring was superior to the generic information and that the generic information was “barely distinguishable from no information at all” (p. 578) (34). The authors noted that their study did not compare client-centered tailoring against expert-centered tailoring. Since this comparison has not been directly explored in the literature, the current study attempted to compare client-centered to expert-centered tailoring.
REFERENCES


APPENDIX B

IRB APPROVAL AND APPLICATION
TO: Ellen Pudney  
    Family, Consumer and Nutrition Sciences

RE: Protocol # HS14-0354 “Impact of client-centered tailored vs. expert-centered tailored nutrition education on the self-determination of food pantry clients”

Your Initial Review submission was reviewed and approved under Expedited procedures by Institutional Review Board #2 on 17-Nov-2014. Please note the following information about your approved research protocol:


If your project will continue beyond that date, or if you intend to make modifications to the study, you will need additional approval and should contact the Office of Research Compliance and Integrity for assistance. Continuing review of the project, conducted at least annually, will be necessary until you no longer retain any identifiers that could link the subjects to the data collected. Please remember to use your protocol number (HS14-0354) on any documents or correspondence with the IRB concerning your research protocol.

Please note that the IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Unless you have been approved for a waiver of the written signature of informed consent, this notice includes a date-stamped copy of the approved consent form for your use. NIU policy requires that informed consent documents given to subjects participating in non-exempt research bear the approval stamp of the NIU IRB. This stamped document is the only consent form that may be photocopied for distribution to study participants.

It is important for you to note that as a research investigator involved with human subjects, you
are responsible for ensuring that this project has current IRB approval at all times, and for retaining the signed consent forms obtained from your subjects for a minimum of three years after the study is concluded. If consent for the study is being given by proxy (guardian, etc.), it is your responsibility to document the authority of that person to consent for the subject. Also, the committee recommends that you include an acknowledgment by the subject, or the subject's representative, that he or she has received a copy of the consent form. In addition, you are required to promptly report to the IRB any injuries or other unanticipated problems or risks to subjects and others. The IRB extends best wishes for success in your research endeavors.
Application for Institutional Review of Research
IN VOLVING HUMAN SUBJECTS

Note: Please complete this form thoroughly keeping in mind that the primary concern is the potential risk (economic, ethical, legal, physical, political, psychological, emotional, social, breach of confidentiality, or other) to the participants. Provide copies of all materials to be used in the investigation. The Institutional Review Board (IRB) must have enough information about the transactions with the participants to evaluate the risks of participation.

Name(s) and employee ID for faculty, Z-ID for student:
Ellen Podofsky 11353692 and Amy Oster 601147800417247958

Status:  □ Faculty  □ Graduate Student  □ Undergraduate Student

Department:
School of Family, Consumer, & Nutrition Sciences

Mailing Address (if not department):
1315 W. Lincoln Hwy Apt 113 DeKalb, IL 60115

Phone: (855) 890-2512  E-mail: ellen.podofsky@gmail.com

Project Title:
Impact of Client-Centered Tailored vs. Expert-Centered Tailored Nutrition Education on the Self-Determination of Food Pantry Clients

Proposed Data Collection Start Date:
November 5, 2014

Type of Project (Check one)
□ Departmental Research (faculty/student projects not externally funded and not indicated below)
□ Graduate Thesis/Dissertation (IRB application should be submitted AFTER proposal defense)
   Advisor/Committee Chair (and e-mail): Dr. Amy Oster (aoaster@niu.edu)
□ Undergraduate Project (Senior thesis/capstone, research projects, independent study)
   Advisor/Committee Chair (and e-mail):
□ Externally Sponsored Research
   A complete copy of the grant proposal or contract must accompany this application form for IRB review to take place.
   • Source of Funding:
   • Title of grant proposal (if different from IRB protocol):
   • Name of principal investigator on grant proposal:
   • Office of Sponsored Projects file number (Note: this is not the grant number):
□ Other: Specify:


Part I. Purpose and Procedures:

1) Describe the purpose of your study and the reason(s) this study is needed. Include any necessary background information and a description of your hypothesis or your research question.

Hand in Hand Community Center is a food pantry in Rochelle, IL. A recent informal needs assessment survey at the pantry found that 73.1% (n=12) of the respondents would be interested in a nutrition education program. Therefore, the purpose of this study is to determine whether a client-centered, tailored (CT) nutrition education approach promotes greater feelings of autonomy among food pantry clients compared to clients who receive an expert-centered, tailored (ET) nutrition education approach and control group clients. CT nutrition education is a style of tailoring that caters to the individual and emphasizes that the client is the expert on themselves, while ET nutrition education also caters to the individual, but emphasizes that the expert knows more about what the client needs than the client him/herself. The secondary purpose of this study is to examine whether the clients who receive CT nutrition education are more likely to keep and utilize the nutrition education materials compared to the clients who receive ET nutrition education. Health educators have taken numerous approaches to improve the diet quality of food insecure populations. Oftentimes the approach is generic and delivered in an expert-centered manner, which could cause client resistance and hinder the learning process. Research has supported the effectiveness of using both tailored education and education-based in Self-Determination Theory (SDT) in promoting health behavior change. However, there is limited research that combines the two by implementing a client-centered style of tailoring and there does not appear to be any research comparing expert-centered to client-centered tailoring.

Research Questions:
1. Will the CT participants have a greater increase in their autonomy score from pre-intervention to post-intervention than the ET participants?
2. Will both the CT participants and the ET participants have a greater increase in their autonomy score from pre-intervention to post-intervention than the control group?
3. Will more of the CT participants report keeping their packets in a place where they can easily use it again compared to the ET participants?
4. Will more of the CT participants report using their packets to prepare food for themselves and/or their families compared to the ET participants?

2) The following items will help the IRB reviewers understand the step-by-step procedures of your study:

2A. Explain the participant eligibility and exclusion criteria that will be used.

Eligible participants include any adult over the age of 18 who is coming to the food pantry to receive food, and are the head of household. Participants will be excluded if they are under the age of 18 or if they are not the head of household.

2B. Explain the recruitment procedures (how will participants learn about the study?). If using the snowballing technique, please explain who contacts potential participants (other participants or the researcher).

Participants will be recruited by asking them if they would like to participate in the study when they have already arrived at the pantry to receive food. See Appendix A.

2C. Explain the consent process (verbal and/or written procedures for informing participants of the nature of the study and what they will do).

(Please attach all documents (assent/consent/parent permission – Appendix B) that are appropriate for each group of subjects participating in the study. Consent forms should be prepared for adult participants (age 18 or over). Assent forms should be prepared for minor subjects appropriate to their ages, and permission form(s) for parents or legally authorized representatives should also be prepared. For children too young to comprehend a simple explanation of participation, parental permission is sufficient only if the research will provide direct benefit to the subject, a member of the subject’s family, or other children with the same condition as the subject.)

When a pantry client agrees to participate in the study, they will be given a survey that will begin with a section informing the participants that they are giving implied consent by filling out the survey. See Appendix A for verbal procedures and Appendix B for written procedures.

2D. Describe the data collection procedures including what data will be collected, how it will be collected (include a description of any interventions to be used), the duration of participation in the study session(s), and how the session(s) will end.
Prior to data collection the primary investigator will train all research volunteers (see Appendix A for training guide).

Data collection will occur on six days: Monday 11/3, Tuesday 11/4, Wednesday 11/5, Monday 11/10, Tuesday 11/11, and Wednesday 11/12. Each day will be randomly assigned to one of three groups: Client-Centered Tailored (CT), Expert-Centered Tailored (ET), or control group (CG). On each day of data collection each pantry client will be asked if they would like to volunteer to participate in the study (see Appendix A for script). Every client who agrees, regardless of the day, will receive Survey A to fill out (Appendix B). If it is a CT day the participant will be directed to a display board featuring 3 recipes. They will get the opportunity to select which recipes they would like, and with the help of a research volunteer, they will create a packet of their selected recipes. If it is an ET day the participants will be directed to a research volunteer, who will ask the participant if anyone has ever told them to limit sugar, fat, or salt in their diet. Based on the participant responses the research volunteer will make a packet of recipes for the participants that feature low sugar, low salt, and/or low fat recipe ideas (NOTE: the responses provided by the participant will not be collected data, it is solely for the purpose of selecting the recipes). If the participants say no to all three questions, or that they don’t know, they will be provided with recipes featuring general healthy eating. Finally, if it is a CG day the participant will not be asked to take any further action at that time. Since the surveys ask each of the participants to provide their phone number the research team will call all of the participants two weeks after the initial interview and ask them the post-survey questions over the phone (see Appendix C for script). The CT and ET participants will be asked the questions on Survey B (Appendix D) and the CG participants will be asked the questions on Survey C (Appendix E). After the study has finished, the pantry will be given extra copies of the CT recipes to allow for the ET and control participants, as well as other pantry clients, to have the opportunity to take the recipes if they wish.

Please note: It is the researcher’s responsibility to seek out permission to use copyrighted materials. Please indicate whether you have permission to use any copyrighted materials for your project:

☐ Yes, I have permission to use any copyrighted materials for this project
☐ No, I do not yet have permission to use any copyrighted materials for this project
☐ This is not relevant for the materials being used in this project

28. If applicable, explain the procedures for providing compensation

At the end of each phone call the participant will be provided with a code word that they can tell the pantry volunteer at the registration desk the next time they go to the food pantry and the volunteer will give them an incentive of a Pampered Chef kitchen knife.

29. If applicable, explain the procedures for debriefing participants. Please attach a debriefing script or sheet [Appendix D]

N/A

Reminder: As appendices to this application, attach copies of all: A) Recruitment information [script/flyer/etc.], B) Informed consent documents [asent/parent permission scripts/etc.], C) Materials [questionnaires/surveys/interview questions listing of all information to be collected/etc.], D) Debriefing information [documents scripts], E) Referral list [if appropriate]. It is the responsibility of the researcher to obtain any relevant permission for copyrighted materials. If the research involves an oral interview or focus group discussion that could evolve as it progresses, include a list of discussion topics and any “starter” questions for each topic that can reasonably be expected to be covered. If a draft of a written questionnaire or survey is attached, it should be clearly labeled as such and a final version must be submitted before data collection begins. PLEASE NOTE THAT ANY ITEMS CAN BE ATTACHED AS SEPARATE DOCUMENTS IF NEEDED.

Part II: Research Participants

3) Participant demographics:

☐ Gender: M ☐ F ☐ Both ☐
☐ Estimated age(s): Ages 18 and older
☐ Are any subjects under age 18? Yes ☐ No ☐
• Potentially vulnerable populations (please indicate if any of the following groups are the target population of the study)
  □ Pregnant women & fetuses
  □ Prisoners
  □ Decisionally impaired mentally disabled
  □ Specific ethnic group(s) (list in box):

Hispanic, Latino

If any potentially "vulnerable populations" have been indicated above, please explain the necessity for using this particular group, or if specific groups are excluded from the study, please indicate the exclusion criteria used.

The town of Rochelle has a diverse community and current data support these ethnic groups currently use the Hand in Hand Community Center.

• Target number of participants in the entire study (including controls) from start to finish (keep in mind that this is just an estimate of the total):

100-150

4) Please explain any outside institutional (i.e., schools, hospitals) approval you will need to obtain and how approval will be sought. Provide scripts, letters, or emails providing any information that will be used to obtain needed approvals permission. It is the responsibility of the researcher to follow all applicable policies of any outside institution(s).

The Hand in Hand Community Center collaborates with the Northern Illinois Food Bank.

Part III: Risk/Benefit assessment

5) What knowledge benefit(s) to the field will be gained from the study?

Food pantry populations are commonly targeted for nutrition education by health professionals. However, the manner in which the education is provided typically does not support a client-centered approach. Hopefully this study will show that food pantry clients benefit more from nutrition education that is client-centered compared to the traditional expert-centered approach, which will add to the literature regarding best practices when providing nutrition education to food pantry populations.

6) What direct benefit(s) are there to the participant(s) (if any) from the proposed research? [For example, learning a new skill, psychological insight, teaching experience] [Please note that compensation is NOT considered a direct benefit.]

The participants will learn cooking ideas to prepare vegetables in new and healthy ways.

7) Describe any potential risks (breach of confidentiality, economic, ethical, legal, physical, political, psychological, emotional, social, or other) to the subjects posed by the proposed research. (Note: Some studies may have "no reasonably foreseeable risks." Investigators are required to report all unexpected and/or adverse events to the IRB. Therefore, it is important that you list all reasonably anticipated risks because unanticipated adverse events may need to be reported by NIU to CHRP.

Minimal foreseeable risks:

5) Federal regulations require that researchers use procedures that minimize any risks to participants. What procedures will be used to minimize each risk and/or deal with the challenge(s) stated in “7” above?

N/A

9) If support services are required to minimize risk of harm to participants, explain what will be provided (list of services available – Appendix E). [A resource list for the DeKalb area is available on the ORC website—if using this, please provide a copy with your application.]

N/A

10) How do the potential benefits of the study justify the potential risks to the participants?

N/A

Part IV: Consent Document Variations

11) Will audio, video, or film recording be used?  

Yes [ ] No [X]
If yes, specify the recording format to be used.

Please keep in mind that specific consent must be sought in the informed consent document(s) by including a separate signature/date line giving consent for recording. This is in addition to the signature/date line giving consent to participate in the research project.

12) Will this project require the use of consent/assent documents written in a language other than English?  
   Yes ☐  No ☐

Reminder: If non-English documents will be used, please have the document translator provide documentation (email or written) that the translation is equivalent to the English version. [This can be done after the protocol is approved in order to minimize the number of changes needed.]

13) Are you requesting a waiver of a signed informed consent document?  
   Yes ☐  No ☐

   Please indicate the justification for requesting this waiver:
   ☐ The only record linking the subject to the research would be the signed consent document and the principal risk of the research would be breach of confidentiality.  
   ☐ The research involves minimal risk to the subjects and involves no procedures for which written consent is normally required outside of the research context (e.g., online surveys).

14) Are you requesting a waiver/alteration of some other aspect of the informed consent document?  
   [This section is relevant for studies involving deception.]  
   Yes ☐  No ☐

14a) Please explain which aspects of informed consent will be missing or altered along with a justification for the change.

14b) Please explain how the project meets all of the following criteria:

1) The research presents no more than minimal risk of harm to the participants.

2) The waiver/alteration will not adversely affect the rights or welfare of the participants.

3) The research could not practically be carried out without the waiver or alteration.

4) Whenever appropriate, the participants will be provided with additional pertinent information after participation.

15) Will any HIPAA protected health information be collected as part of the data?  
   Yes ☐  No ☐

   If yes, describe the procedures for protecting the information.

   [Please provide a copy of your HIPAA disclosure form to be given to participants.]

16) Will any protected school records be collected as part of the data?  
   Yes ☐  No ☐

   If yes, describe the procedures for protecting the information.

Part V: Confidentiality and Anonymity

17) Will identifying information be connected to the data (even through an identification key linking identities to a pseudonym or code that is kept separate from the data)?  
   Yes ☐ (confidential data)  No ☐ (anonymous data)
18) If you answered yes to the above question, describe precautions to insure the privacy of the subjects, and the confidentiality of the data, both in your possession and in reports and publications.

The surveys will have the participants phone numbers on them. After the participants hand in their survey, it will be monitored by a research volunteer. At the end of each day of data collection the primary researcher will store the surveys in a locked filing cabinet in a locked office used only by graduate level dietetic interns (Wurtz 305). Only the researchers involved in the follow-up phone calls will access the surveys under the supervision of the primary researcher.

19) How will the records (data, recordings, and consent forms) be stored? Also indicate how long records will be kept and how and when they will be disposed of.

The data will be stored in a locked filing cabinet in a locked office used only by graduate level dietetic interns (Wurtz 305). The records will not contain signed consent forms.

Part VI: Does this project involve deception

[Yes □ No □]

[Complete this section only if your study includes deception]

20) Describe the deception being used. Be sure to clarify whether this is deception by omission (an important aspect of the study is withheld from the participants) or commission (the participant is misled about some aspect of the study) or both. [Complete item 14 if aspects of consent are missing.]

21) Why is deception a necessary and unavoidable component of the experimental design?

22) Debriefing of participants will be:

- Immediate (directly following the research session)
- Delayed
- Full (all aspects of deception will be revealed)
- Partial (some aspects of deception will remain unexplained)

  a) If debriefing is delayed, why is the delay necessary, and when will it occur?

  b) If debriefing is partial, why is the partial debriefing necessary? Would the participant be harmed in any way by full debriefing?

  c) If debriefing is partial, will full debriefing occur later?

  d) Does the presence of deception increase risk of harm to the participants?

  e) Is the respondent free to withdraw his/her data after being fully debriefed?

23) Who will provide the debriefing?

Reminder: Please include a copy of your debriefing script sheet with this application [Appendix D].
Part VII: Credit and Compensation
24) If participants will receive course credit for participation, please describe it below.
   
   N/A

25) If participants will receive some other form of compensation for participation, please describe it below.
   
   N/A

26) Describe any alternative tasks that will be available for participants to earn the credit or compensation.
   
   N/A

Part VIII: Conflict of Interest
27) Do any of the researchers conducting this study have any potential conflicts of interest? 
   [Conflicts of interest may include financial or personal interest, or any condition in which the investigator's 
   judgment regarding a primary interest may be biased by a secondary interest.]  
   Yes ☐ No ☒

28) If yes to the above question, please describe the nature of the conflict of interest.
   
   N/A

Please use the following link to access the NIU research conflict of interest policy:  

Part IX: Researcher Qualifications
29) In addition to listing the investigators' names, indicate their qualifications to conduct procedures to be used in this study (specifically describe past experience conducting research with humans or how training will occur).
   
   Ellen Podney, MS graduate student & dietary intern, has gone through CITI training and conducted research with humans for two other projects while at NIU: "Food Pantry Focus Groups to Identify Nutrition Education Needs" in 2013 and "Assessment of Nutrition Education Needs Pertaining to the Perceived Benefits and Barriers of Food Pantry Clients" in 2014.
   
   Amy Oster PhD, RD, LDN has gone through IRB training with Sandi Arora (2009) and has also taken the National Institutes of Health IRB training (2004).

30) State the date of completion of CITI Human Subjects Protection training program(s) for the individuals listed in the above question. [Note: NIU Policy requires that research investigators must complete appropriate training before conducting human subjects research.] If you have comparable training, please attach certification indicating this.
   CITI (Collaborative Institutional Training Initiative) training is thorough and well recognized:
   https://www.citiprogram.org/Default.aspx?
   
   Ellen Podney completed her CITI for the University of Connecticut on 5/19/09 and completed a refresher for Northern Illinois University on 9/15/14.
To be completed by investigator and confirmed by advisor (if student project) and departmental reviewer. Initials indicate all required parties ratify that application is complete:

Checklist of items required to accompany completed application form:
1. Complete grant proposal contract (for externally funded projects)
2. All surveys, questionnaires, interview questions, or other instruments to be used
3. Subject recruitment introductory materials
4. Informed consent documents (must select at least one):
   a. Consent form for adults (if participants are age 18 or over)
   b. Assent form for minors (if participants are under age 15)
   c. Parental permission form (if participants are under age 15)

Initial indicating all listed materials are attached and application is complete; INCOMPLETE APPLICATIONS WILL NOT BE PROCESSED. The investigator will be notified of deficiencies in the application via e-mail from the Office of Research Compliance (ORC); if no response is received by the ORC within five (5) working days the application will be considered void.

Investigator ______ Advisor (if student project) ______ Department Chair Designate ______

REQUIRED SIGNATURES: ALL PROJECTS

CERTIFICATION
I certify that I have read and understand the policies and procedures for research projects that involve human subjects and that I intend to comply with Northern Illinois University Policy. Any changes in the approved protocol will be submitted to the IRB for written approval prior to those changes being put into practice unless it involves an immediate safety issue for the subject during a procedure. (In such instances, the researcher is required to promptly notify the IRB after the fact.) I also understand that all non-exempt projects require review at least annually.

Investigator(s) Signature(s) Date

Signature of Faculty Advisor (Student Project Only) Date

Authorized Departmental Review:

☐ Project qualifies for Administrative Review.
   Cite the appropriate exempt category:

☐ Project qualifies for Subcommittee Review.
   Cite the appropriate expedited category:

☐ Project is referred for review by the convened IRB.

Signature of Authorized Departmental Reviewer Printed name Date

Return this form, together with necessary documentation, to the Office of Research Compliance, Lowden Hall, 301. For information or additional assistance with the approval process, please call the office at (815) 755-8585 or access the ORC web page at www.orc.niu.edu.
APPENDIX C

CONSENT AND SURVEY A
Food Pantry Consent and Survey

I agree to be a part of a research project by Ellen Pudney at Northern Illinois University with Hand in Hand Community Center and the Northern Illinois Food Bank. The purpose of the study is to find out the best way to offer nutrition education at Hand in Hand.

I understand that if I agree to be a part of this study I will be asked to fill out two surveys, one now and one in two weeks. The first survey will be filled out here at the pantry and the second will be by phone. Each survey takes about 5 minutes to complete. I understand that participation in this project is completely voluntary and that I do NOT have to complete this survey to get food from the food pantry. I understand that all information gathered during this project will be kept private and confidential.

I am aware that if I have any questions about this study I may contact Ellen Pudney at 860-690-9552 or epudney1@niu.edu or I may contact Dr. Amy D. Ozier at 815-753-6343 or aozier@niu.edu. I understand that if I want to have more information about my rights as a participant I may contact the Office of Research Compliance at Northern Illinois University at (815) 753-8588.

Filling out the survey implies that you have given your approval to take part in this study. Thank you!

Start of Survey

Please circle the number that represents how much you either agree or disagree with the following statements. We appreciate your honest feedback!

When I come to Hand in Hand...

1. I feel that the staff provides me with choices and options about changing my diet (including not changing).

   1  2  3  4  5  6  7
   Not at all true  Somewhat true  Very true

2. I feel that the staff understands how I see things with respect to my diet.

   1  2  3  4  5  6  7
   Not at all true  Somewhat true  Very true

3. The staff conveys confidence in my ability to make changes regarding my diet.

   1  2  3  4  5  6  7
   Not at all true  Somewhat true  Very true
4. The staff listens to how I would like to do things regarding my diet.

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5. The staff encourages me to ask questions about my diet.

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<td>Somewhat true</td>
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6. The staff tries to understand how I see my diet before suggesting any changes.

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Please tell us a little about yourself

Please write your age in years: ____

Sex: ___ Male  ___ Female  ___ Prefer not to disclose

How do you describe yourself? (Please check as many as apply)

___ American Indian or Alaskan Native
___ Asian
___ Black or African American (not Hispanic)
___ Hispanic or Latino/a
___ Native Hawaiian or other Pacific Islander
___ White (not Hispanic)
___ Other: ________________

What is your highest level of education? (Please check only one)

___ Grades 1-8
___ Grades 9-11
___ High school diploma or GED
___ Some college
___ College graduate

Thank you!
We will be contacting you in two weeks to complete the second part of the survey. Please provide your phone number, the best time of day to call you, and your first name so we know who to ask for when we call.

My phone number is _______________________

The best time of day to call me is ______________________________

My first name is _________________________
APPENDIX D

PHONE CALL SCRIPT AND SURVEYS B AND C
1. If someone answers the call:

_Hello, this is (insert first name), from the Hand in Hand food pantry. I am calling to speak to (insert participant’s first name)._  

_a) If the person who answers is the participant:_

_Great, thank you so much for taking my call. As I said my name is (insert first name) and we met two weeks ago at Hand in Hand and you agreed to fill out a survey. I have those same survey questions to ask you again over the phone. Is now a good time?_  

If yes:

Proceed to ask the participant the survey B questions if they are a CT or ET participant. Proceed to ask the survey C questions if they are a CG participant.

If no:

_Alright, when would be a good time to call you back? ... Thank you, I will give you a call then!_  

_b) If the person who answers is not the participant and states that the participant is unavailable:_

_Okay, would you be able to give him/her a message or should I call back later?_  

If prefers to take a message:

_Please tell him/her that (insert first name) from Hand in Hand called to ask some more survey questions and tell him/her about their free gift! He/she can call me back at (insert phone number). Thank you!_  

If prefers to have a call back:

_Alright, when would be a good time to call back? ... Thank you, I will call back then!_  

2. If no one answers the call leave a voicemail:

_Hello, this is (insert first name), from the Hand in Hand food pantry. This message is for (insert participant’s first name). We spoke two weeks ago at the pantry and you volunteered to fill out a survey. I would like to ask you those same survey questions again and tell you how you can get your free gift of a kitchen knife. I would appreciate it if you could call me back when you get the chance. Once again this is (insert first name) and you can call me at (insert phone number)._
Survey B

As I said, I’m going to ask you the same 6 questions that you answered at the pantry 2 weeks ago, but I would like to see if you feel any differently since receiving your recipe packet. So, on a scale of 1 to 7, with 1 being “not at all true” and 7 being “very true,” please state the number that represents how you feel about each of the statements since the last time you came to Hand in Hand. And please feel free to answer honestly, so we can learn how to improve our services.

1. I felt that the staff provided me with choices and options about changing my diet (including not changing).

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2. I felt that the staff understood how I see things with respect to my diet.

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3. The staff conveyed confidence in my ability to make changes regarding my diet.

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4. The staff listened to how I would like to do things regarding my diet.

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5. The staff encouraged me to ask questions about my diet.

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6. The staff tried to understand how I see my diet before suggesting any changes.

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I have 2 more statements that are specifically about the recipe packet you received. So, on a scale of 1 to 7, with 1 being strongly disagree and 7 being strongly agree, please state the number that best represents how you feel about the following statements.

7. I kept the recipe packet in a place where I can easily find it again.

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<td><strong>Somewhat disagree</strong></td>
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<td><strong>Neither agree nor disagree</strong></td>
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<td><strong>Agree</strong></td>
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<td><strong>Strongly agree</strong></td>
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8. I used the recipe packet I received to prepare food for myself and/or my family.

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<td><strong>Disagree</strong></td>
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<td><strong>Neither agree nor disagree</strong></td>
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<td><strong>Agree</strong></td>
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Thank you so much for participating in our project! As I mentioned at the food pantry we would like to give you a thank you gift of a Pampered Chef kitchen knife! Starting next week, the next time you go to the pantry you can tell Ralph, one of the pantry volunteers, that you participated in the project and would like to pick up your gift.
Survey C

As I said, I’m going to ask you the same 6 questions that you answered at the pantry 2 weeks ago, but I would like to see if you feel any differently since the first time you answered the questions. So, on a scale of 1 to 7, with 1 being “not at all true” and 7 being “very true,” please state the number that represents how you feel about each of the statements since the last time you came to Hand in Hand. And please feel free to answer honestly, so we can learn how to improve our services.

1. I felt that the staff provided me with choices and options about changing my diet (including not changing).

   1 2 3 4 5 6 7
   Not at all true Somewhat true Very true

2. I felt that the staff understood how I see things with respect to my diet.

   1 2 3 4 5 6 7
   Not at all true Somewhat true Very true

3. The staff conveyed confidence in my ability to make changes regarding my diet.

   1 2 3 4 5 6 7
   Not at all true Somewhat true Very true

4. The staff listened to how I would like to do things regarding my diet.

   1 2 3 4 5 6 7
   Not at all true Somewhat true Very true

5. The staff encouraged me to ask questions about my diet.

   1 2 3 4 5 6 7
   Not at all true Somewhat true Very true

6. The staff tried to understand how I see my diet before suggesting any changes.

   1 2 3 4 5 6 7
   Not at all true Somewhat true Very true

Thank you so much for participating in our project! As I mentioned at the food pantry we would like to give you a thank you gift of a Pampered Chef kitchen knife! Starting next week, the next time you go to the pantry you can tell Ralph, one of the pantry volunteers, that you participated in the project and would like to pick up your gift.
APPENDIX E

TRAINING GUIDE AND SCRIPT
The following is a sequence of activities and statements that research volunteers, translators, and the primary investigator will use when introducing the current study to food pantry participants.

1. Food pantry users will check in at the front desk as is the normal routine.

2. After the pantry user checks in a Spanish-speaking research volunteer or the primary investigator (English-speaking) will ask the client (in either English or Spanish, depending on their language preference) the following (sentences in italics print identify statements from the volunteers):

   a. *Hi my name is [say your first name] and I am doing a project with Northern Illinois University and the Northern Illinois Food Bank about nutrition education. I was wondering if you would be willing to volunteer to fill out a survey. It should only take about 5-10 minutes. This is completely voluntary, so if you choose NOT to take the survey, you WILL still receive your food today.*

      1. If the user says **no**, then the volunteer will allow them to go to the waiting area to receive food.

      2. If the user says **yes**, the volunteer will confirm that the user is 18 years or older and also the primary meal/food provider at home. The research volunteer will then provide them with Survey A (which includes the consent form) in either English or Spanish, depending on their language preference, and a clipboard and pen.

   b. *If you need help filling out the form or have any questions, please let us know. When you have finished filling out the form, please hand it back to us.*

      1. If it is a client-centered intervention day then after the participant hands back the survey the research volunteer will say:

         Thank you for filling out the survey. Today you will have the chance to make a recipe packet. We have volunteers over there (point to the area of couches in the corner of the waiting area) who will assist you.
         (Direct participant or walk over with them.)
         - Continued in part c1, below

      2. If it is an expert-centered intervention day then after the participant hands back the survey the research volunteer will say:

         Thank you for filling out the survey. Today you will have the chance to get a recipe packet. We have volunteers over there (point to the area of couches in the corner of the waiting area) who will assist you. (Direct participant or walk over with them.)
3. If it is control group day then after the participant hands back the survey the research volunteer will say:

*Thank you for filling out the survey. Remember we will be calling you in two weeks to ask you some more questions. After we talk to you on the phone you will get a thank you gift of a kitchen knife!*

c. Once the participant goes up to the research volunteers in the corner of the pantry waiting area the volunteers will say:

1. *Hello and thanks for volunteering to be a part of this project. We have two display boards with the same recipes on them, but one is in English and one is in Spanish. You may choose as many recipes as you would like. Just let us know which ones look good and we will make a packet for you.*

Once the participant selects the recipes he/she wants, compile a copy of each selected recipe, staple the papers together, and hand to the participant.

*Here is your recipe packet. Remember we will be calling you in two weeks to ask you some more questions. After we talk to you on the phone you will get a thank you gift of a kitchen knife! Thanks again, you may go back to the waiting area now.*

2. *Hello and thanks for volunteering to be a part of this project. I have three recipes that feature different topics (point to the piles of recipes/corresponding signs that say “low sugar,” “low salt,” and “low fat”). Has anyone ever told you that you should limit sugar, salt, or fat?*

If the participant says yes to any of the questions above, compile the copies of the corresponding recipes (there will be two recipes featuring that they are low in sugar, two low in salt, and two low in fat). If the participant responds no to all of the questions, or says that they don’t know, then provide them with the two general healthy recipes. Staple the copies of recipes together and hand the participant their packet. (Note: if they ask for additional recipes politely decline and say that these are they only ones they can get today).

*Here is your recipe packet. Remember we will be calling you in two weeks to ask you some more questions. After we talk to you on the phone you will get a thank you gift of a kitchen knife! Thanks again, you may go back to the waiting area now.*