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## **Eating Healthy on a Budget: A Grocery Cart Display**

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Eating Healthy on a Budget: A Grocery Cart Display  
(TITLE)

BY

**UNDERGRADUATE THESIS**

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Eating Healthy on a Budget: A Grocery Cart Display

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### **Abstract**

Many barriers to healthy eating have been reported including having to give up favorite food dishes, consuming lesser desired food items, and perceiving that fresh, unprocessed food is too expensive. For a week, customers were able to view a display of two grocery carts: one filled with healthy foods and the other filled with unhealthy foods. Each cart had the cost and nutritive values of the contents posted. For 6 hours on 3 different days, the researcher interviewed interested shoppers (n=33). While the majority of the shoppers indicated they were very concerned about their families eating healthy (mean score 4.2/5), the belief that they could purchase a week's worth of healthy meals at the SNAP level was uncertain (mean score 3.5/5). Additionally, participants were uncertain (mean score of 3.2/5) about their ability to eat healthy on a budget. While the grocery cart display caused participants to pause and think for a moment, 82% stated that seeing the display did not change their opinion about eating healthy on a budget. While this awareness activity did not seem to promote behavior change or a change in self-efficacy, it did lead customers to reflect on his/her eating patterns. A noted limitation of the study was that the display was after groceries were purchased. Placement of the carts, provision of healthy eating handout, and the interview time with the researcher might have been better received before shopping. Future research endeavors could include supermarket tours or in-store food testings.

## Table of Contents

	Page
Chapter 1.	
Introduction.....	5
Statement of the Problem.....	5
Purpose for the Research.....	6
Significance of the Study.....	6
Definition of Terms.....	7
Assumptions.....	7
Chapter 2.	
Review of Literature.....	8
What Constitutes Healthy Eating Habits.....	8
Perceived Barriers to Eating Healthy.....	9
The Perceived Cost of Healthy Eating.....	10
Avenues to Decrease Grocery Bills.....	11
Ways to Make Food Last Longer.....	11
Chapter 3.	
Methodology.....	13
Design of the Study.....	13
Data Collection.....	14
Data Analysis.....	14
Chapter 4.	
Results and Discussion.....	16
Research Question 1: On a scale of 1 to 5, how possible do you think it would be to purchase a week's worth of healthy meals for a family of four at the SNAP level benefit of \$131?.....	16
Research Question 2: On a scale of 1 to 5, how concerned are you about your family eating healthy?.....	17
Research Question 3: On a scale of 1 to 5, how possible do you think it is to eat healthy on a budget?.....	18
Research Question 4: Has the grocery cart display changed your mind about how possible it is to eat healthy on a budget?.....	19
Chapter 5.	
Summary, Conclusions, Limitations, & Recommendations.....	20
Summary.....	20
Conclusions.....	21
Limitations.....	21
Recommendations.....	22

References..... 24

Appendix..... 28

## **Chapter 1**

### **Introduction**

The economy in American has had an effect on all Americans regardless of social class; some individuals have lost their jobs or have been struggling to find a job (Baker & Hassett, 2012); this has caused everyone to save money whenever and wherever possible (Hurd & Rohwedder, 2010). The diets and obesity rates have also become worse with the economy due to the fact that unhealthy processed foods have been more sought after than healthy food choices (European Food Information Council, 2005); the reason for this is that many are not familiar with the nutritional guidelines, there are many perceived barriers to healthy eating that have been extracted from multiple groups of different cultures, and many do not know different ways food dollars can be stretched to inexpensively eat healthy like using assistance programs, coupons, as well as skills concerning cooking and food preservation (Centers for Disease Control, n.d.; USDA 2011, 2012). Many people think that a healthy diet is impossible to accomplish on a budget, but many people are also misled where nutrition and healthy eating is concerned.

### **Statement of the Problem**

The end result of not eating healthier due to a multitude of barriers has caused the United States to become a generally unhealthy country. According to the Centers for Disease Control, more than 34% of adults in the United States are obese (2014), and 67% individuals who report having type 2 diabetes state that they have hypertension, as well (2012). Obesity, type 2 diabetes, and hypertension are nutrition-related diseases, which undoubtedly have been caused, in part, by the poor dietary habits of the average

American, which in turn could very likely be caused by the perceived cost of healthy foods and the perceived inability of individuals being able to afford healthy groceries.

### **Purpose for the Research**

Studies have identified the perceived cost of healthier foods as being a very common barrier to eating healthy (WebMD, 2013; Shephard, 1999), most likely, individuals outside of these studies feel the same about the price of fresh and healthier foods. For that reason, the purpose of this study was to create a healthy one-week menu for a family of four based on the Supplemental Nutrition Assistance Program (SNAP) limit for a four-person family (~\$131) (USDA, 2014b) and to interview customers at a local grocery store in a mid-sized Midwest college town on their perceptions of healthy eating on a budget. The study was created to inquire the following research questions:

1. On a scale of 1 to 5, how possible do you think it would be to purchase a week's worth of healthy meals for a family of four at the SNAP level benefit of \$131?
2. On a scale of 1 to 5, how concerned are you about your family eating healthy?
3. On a scale of 1 to 5, how possible do you think it is to eat healthy on a budget?
4. Has the grocery cart display changed your mind about how possible it is to eat healthy on a budget? Yes or no?

### **Significance of the Study**

Although there are numerous resources studies concerning the financial barrier of eating healthy, the population still seems to collectively think healthy foods are too exorbitant, which may indicate that nutrition education is not adequately implemented (WebMD, 2013; Shephard, 1999; European Food Information Council, 2005). Also,



other forms of literature do not research whether or not being and eating healthy is a true concern to those who do believe that eating healthy is too expensive.

The results of this study could be useful to nutrition programs throughout the United States, as they search for different ways to educate low-income families about eating healthy.

### **Definition of Terms**

- Supplemental Nutrition Assistance Program (SNAP) – “the largest program in the domestic hunger safety net” (United States Department of Agriculture, 2014a).

The SNAP level benefit for a family of four is approximately \$131.

### **Assumptions**

The researcher assumed that the store manager of the Charleston, Illinois County Market would allow the grocery carts to be displayed for an entire week. The researcher also assumed that the store manager would allow data collection in the form of asking store customers to answer a short series of questions.

## Chapter 2

### Literature Review

This review highlights why individuals make the food choices that they do, where confusion lies concerning healthy eating and doing so on a budget, and different ways individuals can come closer to being able to eat more on a budget as well as making healthier food choices. The focus is on the perceived cost of healthy eating and other barriers that deter the population from making healthier food choices, such as lack of nutrition knowledge and giving up favorite food dishes; especially for low-income families who receive benefits from the Supplemental Nutrition Assistance Program (SNAP). This literature review also includes information regarding individuals who benefit from the Supplemental Nutrition Assistance Program and the Special Supplemental Nutrition Program for Women, Infants, and Children WIC program.

### The Definition of Healthy Eating

There sometimes seems to be a discrepancy over what constitutes a healthy diet and healthy eating habits; the *Dietary Guidelines for Americans, 2010* states that a healthy diet is “one that focuses on nutrient-dense foods and beverages, and that contributes to achieving and maintaining a healthy weight” (USDA, 2010, p. i). The USDA provides tips for adopting and maintaining a healthy diet through its “Nutrition Education 10 Series” as well as various other online sources. (USDA, 2011a,d-h). The *Dietary Guidelines for Americans, 2010* recommend consuming whole grains, low-fat or fat-free dairy products, restricting sodium levels to a maximum of 2,300 milligrams, choosing lean protein like fish in place of fatty meats, and adding more fruits and vegetables to your diet are found within the *Dietary Guidelines for Americans, 2010*.

**Barriers to Eating Healthy**

In addition to there being a lack of knowledge in nutrition (European Food Information Council, 2004), many perceived barriers exist and often deter individuals from adopting a healthier diet. The “optimistic bias” is the assumption that messages concerning healthy eating are geared more toward individuals that are more vulnerable than the average person; it is also a barrier to healthy eating (European Food Information Council, 2004; Shepherd, 1999). Taste preferences in foods, lack of time to prepare healthy foods, giving up favored foods, lacking willpower, lack of nutrition/health knowledge, cost of healthy foods, and unavailability of healthy foods were identified as barriers in multiple articles (European Food Information Council, 2004; Shepherd, 1999; Farwan, 2011; Christodoulides, Michaelidou, & Torova, 2012). The most common barrier was the cost of healthy foods, which can actually be relatively low (Schober, n.d.; Hananel, 2012.). The convenience of consuming fast food was a barrier to healthy eating as well (Bogart et al., 2009; Farwan, 2011). Religious, demographic, and cultural factors also influence a person’s diet and can cause be barriers to eating healthy (Shephard, 1999). A barrier not commonly identified is the thought that individuals will never be able to change the way they eat; the fear of being judged by others is a barrier (WebMD, 2013; Gibney, Holm, Lappalainen, Mykkanen, & Saba, 1997). Barriers to healthy eating are also facilitated by lack of support from family and friends as well as stress and having to eat food separate from everyone else (WebMD, 2013; Farwan, 2011). The previously discussed barriers to healthy eating seem to be based on the fear of being judged or not supported by loved ones as well as being uninformed about nutrition and the true cost of health groceries.

### **The Perceived Cost of Healthy Eating**

The perceived cost of a healthy diet was seen to be an issue across the board as to why more people did not consume a healthy diet, especially for low-income families and individuals; however, there are assistance programs that can aid those with low-income such as the Supplemental Nutrition Assistance Program (SNAP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Just as the *Dietary Guidelines for Americans, 2010* recommended, the SNAP-Ed Fact Sheet suggests increasing physical activity, keeping a proper calorie balance, and making it so that fruits and vegetables take up half of a plate at mealtime. While the fact sheet for SNAP (2012a) provides just facts, the SNAP-Ed Guiding Principles (2013) article provides list of values for states to follow when issuing benefits to those in need of assistance. One guiding principle states that nutrition and obesity prevention education should be provided to those benefiting from SNAP; this differs slightly from the SNAP-Ed Fact Sheet, which seems to give tips that would remedy obesity for adults, but possibly prevent obesity in younger SNAP participants. The WIC program is another very helpful tool for low-income families and individuals. Much like the SNAP-Ed Fact Sheet, the WIC Fact Sheet (2012d) provides information regarding what the program does for its participants, who is considered eligible for the program, where it is available, and multiple other facts. WIC provides food vouchers for certain food items, such as fresh produce, milk, cheese, and infant food products, while SNAP covers any edible food item (USDA, 2012d; 2013b). Through SNAP and the WIC program, healthy eating on a very strict budget can become much less of an impossibility

### **Ways to Reduce Grocery Costs**

Other available avenues for those wanting to reduce their grocery bill are supermarket sales and coupons. Coupons can be a great resource to utilize if used in a timely fashion and if the consumer understands the life cycle of coupons and how they work (No Author, 2009). Catalina coupons are another very valuable resource when consumers are trying to save money as they are coupons that can remove dollar amounts (sometimes even up to five dollars) from the grocery bill; a tool such as a Catalina coupon can aid in the challenge for some to consume a healthy diet on a budget (Montaldo, n.d.; Livesey, 2011). When properly used, various coupons can make it possible for consumers on a budget to afford eating a healthy diet.

As previously reviewed, many do not believe a healthy diet can be possible on a budget, however, with the right planning and tools, it certainly can be. Numerous articles suggested purchasing items in bulk, recycling leftovers, purchasing store brand foods, making grocery lists and buying only what is on the list, make stews and casseroles that can be used for multiple meals, buying in-season produce, taking advantage of sales and coupons, purchasing canned or frozen vegetables, and purchasing produce that is not pre-cut or pre-washed (USDA, 2011c; USDA, 2012b). There are multiples avenues consumers can utilize to help reduce their food cost (Lino, 2011; USDA, 2012b). Recommendations include making 100% fruit juice from concentrate due to the fact that is less expensive than buying bottled juice, purchasing small amounts of produce when trying something new, frequenting large grocery stores instead of small convenience stores because large stores offer more choices for less, and labeling refrigerated foods with the date and contents to avoid eating food that could cause food-poisoning (CDC,

n.d.). Studies were conducted and exemplify in multiple articles that proved a healthy diet could be inexpensive (Lino, 2011; Holleman, 2013). According to the United States Department of Agriculture, doubling or even tripling recipes, dividing the resulting food product into individual serving containers, and freezing them for later are other suggestions for consumers trying to reduce their grocery bill (USDA, 2011c).

From the compiled information from the reviewed articles, eating nutritious foods without surpassing the limit of a thrifty budget is actually possible. There are many barriers to eating healthy such as the optimistic bias, the perceived cost of healthy foods, and not wanting to be ostracized by friends and family; however, there are also many motives to eating healthy like wanting to look and feel good, wanting to prevent chronic diseases, and wanting to lose weight (Christodoulides, Michaelidou, & Torova, 2012). Assistance programs, such as the SNAP and WIC, are also available for low-income families. The usage of sales and coupons can also be very helpful in reducing food costs.

## **Chapter 3**

### **Methodology**

The method of this study utilized the quantitative method with four questions asked to each participant. The research questions that were asked of each participant are as follows:

1. On a scale of 1 to 5, how possible do you think it would be to purchase a week's worth of healthy meals for a family of four at the SNAP level benefit of \$131?
2. On a scale of 1 to 5, how concerned are you about your family eating healthy?
3. On a scale of 1 to 5, how possible do you think it is to eat healthy on a budget?
4. Has the grocery cart display changed your mind about how possible it is to eat healthy on a budget? Yes or No?

### **Design of the Study**

This study was composed of a verbal survey comprised of four questions (see Appendix A). The survey used a number value systems for the first three research questions and the scale ranged from 1 to 5; the fourth research question was one that participants could answer with merely a "yes" or a "no." To gather the greatest amount of data possible, the researcher was present at the data collection site for a minimum of six hours requesting customers leaving the site to participate in the survey. Quantitative data were gathered due to the possibility of a large research population, it being of greater ease to compare results, and to pinpoint relationships between the results (Stluka, 2006). A visual aid, the grocery cart display, was used to as a basis for the fourth and final research question. The study, beginning with the set-up of the grocery cart display to the end of

the data collection process, was completed in one week. Participants were asked if they would like to volunteer for the survey and if they agreed to volunteer, the survey questions were asked. Results were analyzed based on the number answer they gave for the first three questions and whether or not the grocery cart display had changed their minds about how possible it was to eat healthy on a budget.

### **Data Collection**

Upon IRB approval (IRB #13-169), the researcher spoke with the store manager at County Market to gain approval from them so the researcher could create the grocery cart display and ask customers to take part in the survey. The research population was comprised of shoppers at the Charleston, Illinois County Market who were at least eighteen years old and appeared to be the primary purchaser of groceries for their respective household. The researcher was present at County Market near the grocery cart display for six hours throughout the week to ask for survey volunteers. Participants were gained by voluntary means only; customers were in no way required to take the survey. A paper questionnaire using four research questions was utilized. The faculty advisor of the researcher for content validity analyzed the surveys. Content validity assesses the match between questions and the content they are meant to address (The College Board, 2014). The survey took approximately two minutes to complete. The sample size of the study was 33 participants. After one week, the grocery cart display was taken down and data collection was concluded.

### **Data Analysis**

Simple descriptive statistics were calculated for each of the four questions based on the type of variable. As the first three research questions yielded ratio data, a mean



and percentages based on participant answers were calculated. Means were calculated due to the fact that the mean is the most dependable measure of central tendency (McWilliams, 2012). The percentage of yes and no responses were calculated, as it was a nominal variable, for the fourth research question. Percentage calculations were used as a means to exemplify or characterize the study results (McWilliams, 2012).

The researcher gathered results by interviewing participants (n=33) on a voluntary basis. Participants for the study were shoppers at the local County Market in a Midwestern town that were both above the age of eighteen years old and the primary purchaser of groceries for their household. A short verbal survey was used to collect data and those data results were calculated into means and percentages. The calculated results were then analyzed in order to see if any trends developed within any of the questions.

## Chapter 4

### Results and Discussion

The purpose of this study was to create a healthy one-week menu for a family of four based on the Supplemental Nutrition Assistance Program (SNAP) limit for a four-person family (\$131) and to interview customers at a local grocery store in a mid-sized Midwest college town on their perceptions of healthy eating on a budget. The following research questions were addressed:

1. On a scale of 1 to 5, how possible do you think it would be to purchase a week's worth of healthy meals for a family of four at the SNAP level benefit of \$131?
2. On a scale of 1 to 5, how concerned are you about your family eating healthy?
3. On a scale of 1 to 5, how possible do you think it is to eat healthy on a budget?
4. Has the grocery cart display changed your mind about how possible it is to eat healthy on a budget? Yes or No?

For one week, customers were able to view a display of two grocery carts: one filled with healthy foods and the other filled with unhealthy foods. Each cart had the price and nutritive values of the contents posted. For 6 hours on 3 different days, the researcher interviewed interested shoppers. A total of 33 shoppers volunteered to take the survey.

**Research Question 1: On a scale of 1 to 5, how possible do you think it would be to purchase a week's worth of healthy meals for a family of four at the SNAP level benefit of \$131?**

The majority of participants (42.4%) thought it was possible to purchase a week's worth of healthy groceries for \$131 for a family of four; the fairly possible and extremely possible responses were combined. Twelve participants (36.3% of the study population) were not sure how possible it was to purchase healthy groceries for a four-person family on a SNAP budget. Only 21.2% of the participants thought it was hardly possible to purchase healthy groceries on a budget for four; both the answers for "not impossible, but difficult" and "impossible" were combined.

Interestingly, most participants stated that it was possible to eat healthy on a budget. The 21.2% who stated that they did not believe eating healthy on a budget was possible was more expected due to the fact that purchasing healthier and fresher foods is usually perceived to be too expensive. The perceived cost of eating healthy is a very common barrier to eating healthy according to various sources (European Food Information Council, 2004; Shepherd, 1999; Farwan, 2011; Christodoulides, Michaelidou, & Torova, 2012).

**Research Question 2: On a scale of 1 to 5, how concerned are you about your family eating healthy?**

An overwhelming majority of the research population (78.7%) were concerned about how healthy their families ate. Only 18.1% of participants were unsure of how concerned they were with the nutritional value of their families' food choices. A very minute 3.0% of participants were not concerned about the consumption of healthy food options by their families.

The question dealt with a concept known as the "optimistic bias," which is the belief that the promotion of eating healthy is aimed more toward individuals who are

more vulnerable than the average person (European Food Information Council, 2004). A great majority of participants, when asked this question, did not seem to have the optimistic bias; this could be because they are aware that eating healthy is for everyone and not just vulnerable individuals or it could also be that they assume the optimistic bias for themselves, but not their family members. The 3.0% of participants who were not concerned with their family members eating healthy could have assumed the optimistic bias for them with the belief that their family members are not vulnerable and do not necessarily need to be concerned with their eating habits and food choices.

**Research Question 3: On a scale of 1 to 5, how possible do you think it is to eat healthy on a budget?**

Most participants (45.4%) found it to be possible to eat healthy on a budget. Nine participants (27.2%) were not entirely sure how possible it was to consumer healthy foods on a budget. Another nine participants also thought eating healthy on a budget to be “not impossible, but difficult” and “impossible,” collectively.

This question, just like the first question, assessed the perceived cost of healthy foods to be much higher than it actually is. Many individuals feel as though eating healthy is much more expensive than eating unhealthy foods, however, eating healthy is not as pricey as many think. A recent study researched how expensive healthy eating really is; it was found that lettuce, carrots, pinto beans, and bananas, per serving, were less expensive than ground beef, ice cream, soda, and French fries (Hananel, 2012). It has been said that “some people don’t think they get as much value from fruits and vegetables as they get from other foods” (Hananel, 2012); For example, if a consumer were to buy a bag of chips for two dollars, they would likely think it to be a good deal,

but if they were to buy a bag of apples for the same price, they would think it to be too expensive.

**Research Question 4: Has the grocery cart display changed your mind about how possible it is to eat healthy on a budget? Yes or No?**

The grocery cart displayed caused participants to stop and think for a moment about how possible it actually could be to eat healthy on a budget with almost 82% stated that the display did not change their mind. A little more than 15% percent of the research population said that the grocery cart display did change their mind about the possibility of eating healthy on a budget. One participant chose not to answer the question.

A possible explanation for the majority of individuals not adopting a different opinion about eating healthy could be that some individuals who were interviewed already thought eating healthy on a budget was possible. If such affluent individuals were shown a grocery cart display showing them that it is possible to inexpensively eat healthy, something they already believed to be true, would not have swayed their opinions.

## Chapter 5

### Summary, Conclusions, Limitations, & Recommendations

#### Summary

The purpose of this study was to study was to create a healthy one-week menu for a family of four based on the Supplemental Nutrition Assistance Program (SNAP) limit for a four-person family (\$131) and to interview customers at a local grocery store in a mid-sized Midwest college town on their perceptions of healthy eating on a budget. The perceived cost of healthy eating is a great and very common barrier that causes many individuals to believe that having a healthy diet simply is not possible with the average person's salary, let alone on a budget. (European Food Information Council, 2004; Shepherd, 1999; Farwan, 2011; Christodoulides, Michaelidou, & Torova, 2012).

The four research questions utilized in this study were: (a) on a scale of 1 to 5, how possible do you think it is to purchase a week's worth of healthy meals for a family of four at the SNAP level benefit of \$131, (b) on a scale of 1 to 5, how concerned are you about your family eating healthy, (c) on a scale of 1 to 5, how possible do you think it is to eat healthy on a budget, and (d) has the grocery cart display changed your mind about how possible it is to eat healthy on a budget?

Participation in this quantitative, descriptive study was obtained by asking shoppers (n=33) at the Charleston, Illinois County Market to volunteer a few minutes of their time to answer a short series of questions.

Results indicated the majority of the study population were concerned about how healthy their families ate. For the most part, study participants were uncertain how possible it is for a family of four to purchase healthy groceries at their SNAP level benefit

(\$131) and how possible it is to eat healthy on a budget. The majority (82%) of participants also stated that the grocery cart display had not changed their mind.

Researching the attitudes of consumers in this Midwestern town toward healthy eating and being able to eat healthy on a budget will help current educators, professionals, and mentors in the field of dietetics further understand and address such attitudes towards the perceived cost of healthy foods.

### **Conclusions**

The results indicate a number of different attitudes among the study participants (n=33). Some participants did not value the health of their families, did not find it possible to eat healthy on a budget, and were unchanged upon seeing the grocery cart display; thus indicating a negative attitude toward the idea of not only eating healthy, but doing so on a thrifty budget. The participants who had more positive opinions toward healthy eating and thought it was possible to eat healthy on a budget were in higher numbers than those who had negative. Overall, the shoppers at the local County Market in this Midwestern town found health to be of high value and purchasing fresher and healthier foods for a relatively low cost to be quite possible, whether or not the grocery cart display changed their minds.

### **Limitations**

Three noted limitations for this study include the location of the grocery carts and data collection, the setting in which the data was collected and not being able to keep fresh, refrigerator, and frozen foods in the cart continuously. During this study, the grocery cart display was set up at the exit point of the store; it would be much more beneficial and effective if future grocery cart displays were set up at the entry point of the

store. That way, before consumers shop, they can be educated about nutrition and purchasing healthy groceries on a budget instead of receiving nutrition education and recommendations after they have already purchased their groceries. Many potential participants stated they were on their lunch break or did not have time to take the survey. The ideal participant for the study were the main grocery shoppers of the household/family, however, these individuals were not as inclined to stop for a moment and take a survey even if it is a short one. Finally, the temperature-sensitive foods had to be returned to their respective due to the fact that the products would rot and the grocery store would lose money and product.

### **Recommendations**

Education and awareness play major roles in community nutrition and how much the community knows about shopping for healthy groceries. Further education is needed if the community is to have a more educated approach to shopping for healthier groceries on a budget.

Based on the data from this study, healthy eating is a concern of the community, however, they are uncertain of how healthy groceries can be purchased with a restricted budget. On campus organizations, such as the Student Dietetic Association and Health Education Resource Center, can aid with this uncertainty by holding food and/or cooking demonstrations to educate the Charleston community about how to eat healthy while still being on a restricted budget. Holding food drives on a regular basis could also help as sometimes families utilize food pantries obtain foods. There are multiple measures by which individuals of lower socioeconomic status can be assisted; whether it be through education or collecting food items for them in order to lessen the burden of their grocery



bills. Affording healthy foods is often perceived as being impossible, however, it absolutely is possible; many individuals feel that it is not worth the money to try and buy healthier foods (European Food Information Council, 2004; Shepherd, 1999; Farwan, 2011; Christodoulides, Michaelidou, & Torova, 2012). Such negative ideas about the value of nutrition are a problem; individuals need to be shown that nutrition and their health are not just payments, but investments. Nutrition education is key in order for the population to learn how important nutrition is and how affording healthy groceries on a budget is possible.

### References

- Baker, D. & Hassett, K. (2013, May 12). The human disaster of unemployment. *The New York Times*. Retrieved from [http://www.nytimes.com/2012/05/13/opinion/sunday/the-human-disaster-of-unemployment.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2012/05/13/opinion/sunday/the-human-disaster-of-unemployment.html?pagewanted=all&_r=0)
- Bogart, L., Hawes-Dawson, J., Ryan, G., Schuster, M., Sipple-Asher, B., Uyeda, K., Ying-Ying, G. (2009). Using community-based participatory research to identify potential interventions to overcome barriers to adolescents' healthy eating and physical activity. *Journal of Behavioral Medicine*, 32(5), 491-502.
- Centers for Disease Control. (n.d.). *30 ways in 30 days to stretch your fruit & vegetable budget*. Retrieved from <http://www.cdc.gov/search.do?queryText=30+days+in+30+ways+to+stretch+your+budget&searchButton.x=0&searchButton.y=0&action=search>
- Centers for Disease Control. (2014). *Overweight and obesity* [Data file]. Retrieved from <http://www.cdc.gov/obesity/data/adult.html>
- Centers for Disease Control. (2012). *Diabetes Report Card 2012: National and state profile of diabetes and its complications* [Data file]. Retrieved from <http://www.cdc.gov/diabetes/pubs/reportcard/diabetes-overview.htm>
- Christodoulides, G., Michaelidou, N., & Torova, K. (2012). Determinants of healthy eating: A cross-national study on motives and barriers. *International Journal of Consumer Studies*, 36(1), 17-22.
- European Food Information Council. (2005). *The determinants of food choice*. Retrieved from <http://www.eufic.org/article/en/expid/review-food-choice/>
- European Food Information Council. (2004). *Why we eat what we eat: the barriers to dietary and lifestyle change*. Retrieved from <http://www.eufic.org/article/en/health-and-lifestyle/food-choice/artid/barriers-dietary-lifestyle-change/>
- Farwan, W.M.A. (2011). Perceived personal, social, and environmental barriers to healthy eating among young overweight and obese Saudi women. *Middle East Journal of Family Medicine* 9(10), 3-10. Retrieved from <http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=2&sid=53f55352-89af-4562-830f-5ce0cbd228a3%40sessionmgr115&hid=120>
- Gibney, M., Holm, L., Lappalainen, R., Mykkanen, H., & Saba, A. (1997). Difficulties in trying to eat healthier: Descriptive analysis of perceived barriers for healthy eating. *European Journal of Clinical Nutrition*, 51, S36-S40.

- Hananel, S. (2012, May 16). *Healthy food isn't necessarily more expensive than junk food, study finds*. Retrieved from [http://www.huffingtonpost.com/2012/05/16/healthy-food-expensive-junk-food-cost\\_n\\_1521882.html](http://www.huffingtonpost.com/2012/05/16/healthy-food-expensive-junk-food-cost_n_1521882.html)
- Holleman, J. (2013, Apr 9). Eating healthy on a food stamp budget. *The State: South Carolina's Homepage*. Retrieved from <http://www.thestate.com/2013/04/09/2715955/does-a-healthy-grocery-trip-have.html>
- Hurd, M. & Rohwedder, S. (2010). Effects of the financial crisis and great recession on American households. *The national bureau of economic research*. Retrieved from <http://www.nber.org/papers/w16407>
- Lino, M. (2011). *Nutrition doesn't have to be expensive*. Retrieved from <http://www.choosemyplate.gov/downloads/USDABlog-NutritionDoesntHaveToBeExpensive.pdf>
- Livesy, C. (2011, May 23). What is a Catalina coupon and how do they work? Retrieved from <http://www.livingrichwithcoupons.com/2011/05/what-is-a-catalina-and-how-do-they-work.html>
- McWilliams, M. (2012). *Foods experimental perspectives* (7<sup>th</sup> ed.). Boston: Prentice Hall.
- Montaldo, D.L. (n.d.). *Understanding overages when using coupons*. Retrieved from <http://couponing.about.com/od/Couponing101/a/overages.htm>
- No Author. (2009, Jan 29). Extreme couponer 101: Coupon redemption. Retrieved from <http://www.southernsavers.com/2009/01/extreme-couponer-101-coupon-redemption/>
- Schober, T. (n.d.). *Is eating healthy more expensive?* Retrieved from <http://www.coachcalorie.com/is-eating-healthy-more-expensive/>
- Shepherd, Richard. (1999). Social determinants of food choice. *Proceedings of the Nutrition Society*, 58. Retrieved from [http://journals.cambridge.org/download.php?file=%2FPNS%2FPNS58\\_04%2FS0029665199001093a.pdf&code=2c4ad7e84239690313924f0d065b8fde](http://journals.cambridge.org/download.php?file=%2FPNS%2FPNS58_04%2FS0029665199001093a.pdf&code=2c4ad7e84239690313924f0d065b8fde)
- Stluka, S. R. (2006). *Dietetic students' attitudes toward overweight/obese people* (Unpublished master's thesis). Eastern Illinois University, Charleston, Illinois.
- The College Board. (2014). *Validity evidence*. Retrieved from <http://research.collegeboard.org/services/aces/validity/handbook/evidence>
- United States Department of Agriculture. (2011a). *Add more vegetables to your day: 10 tips to help you eat more veggies*. Retrieved from <http://www.choosemyplate.gov/food-groups/downloads/TenTips/DGTipsheet2AddMoreVegetables.pdf>

- United States Department of Agriculture and U.S. Department of Human Services. *Dietary Guidelines for Americans, 2010*. 7<sup>th</sup> Edition, Washington, DC: U.S. Government Printing Office, December 2010.
- United States Department of Agriculture. (2011b). *Eating healthy on a budget: The consumer economics perspective*. Retrieved from <http://www.choosemyplate.gov/food-groups/downloads/ConsumerEconomicsPerspective.pdf>
- United States Department of Agriculture. (2011c). *Eating on a budget – the 3 p’s*. Retrieved from <http://www.choosemyplate.gov/downloads/PlanPurchasePrepare.pdf>
- United States Department of Agriculture. (2012a). *Education (SNAP-Ed) facts*. Retrieved from <http://snap.nal.usda.gov/snap/SNAP-EdFactsheet2012.pdf>
- United States Department of Agriculture. (2011d). *Focus on fruits: 10 tips to help you eat more fruits*. Retrieved from <http://www.choosemyplate.gov/food-groups/downloads/TenTips/DGTipsheet3FocusOnFruits.pdf>
- United States Department of Agriculture. (2011e). *Got your dairy today?: 10 tips to help you eat and drink more fat-free or low-fat dairy foods*. Retrieved from <http://www.choosemyplate.gov/food-groups/downloads/TenTips/DGTipsheet5GotYourDairyToday.pdf>
- United States Department of Agriculture. (2011f). *Make half your grains whole: 10 tips to help you eat whole grains*. Retrieved from <http://www.choosemyplate.gov/food-groups/downloads/TenTips/DGTipsheet4MakeHalfYourGrainsWhole.pdf>
- United States Department of Agriculture. (2011g). *Salt and sodium: 10 tips to help you cut back*. Retrieved from <http://www.choosemyplate.gov/food-groups/downloads/TenTips/DGTipsheet14SaltandSodium-BlkAndWht.pdf>
- United States Department of Agriculture. (2011h). *Smart shopping for veggies and fruits: 10 tips for affordable veggies and fruits*. Retrieved from <http://www.choosemyplate.gov/food-groups/downloads/TenTips/DGTipsheet9SmartShopping.pdf>
- United States Department of Agriculture (2013). *SNAP-Ed guiding principles*. Retrieved from <http://snap.nal.usda.gov/snap/Guidance/GuidingPrinciples2014.pdf>
- United States Department of Agriculture. (2014a). *Supplemental Nutrition Assistance Program*. (2014). Retrieved from <http://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program-snap>
- United States Department of Agriculture. (2013b). *Supplemental Nutrition Assistance Program: Eligible food items*. Retrieved from <http://www.fns.usda.gov/snap/eligible-food-items>

- United States Department of Agriculture. (2014b). *U.S. average cost at four levels* [Data file]. Retrieved from <http://www.cnpp.usda.gov/USDAFoodCost-Home.htm>
- United States Department of Agriculture. (2012b). *USDA's nutrition assistance programs: Eat right when money's tight*. Retrieved from <http://www.nal.usda.gov/snap/EatRightWhenMoneysTight.pdf>
- United States Department of Agriculture. (2012c). *WIC and retail grocery stores*. Retrieved from <http://www.fns.usda.gov/wic/WICRetailStoresfactsheet.pdf>
- United States Department of Agriculture. (2012d). *WIC – the special supplemental nutrition program for women, infants, and children*. Retrieved from <http://www.fns.usda.gov/wic/WIC-Fact-Sheet.pdf>
- United States Department of Agriculture. (2011i). *With protein foods, variety is key: 10 tips for choosing protein*. Retrieved from <http://www.choosemyplate.gov/food-groups/downloads/TenTips/DGTipsheet6ProteinFoods.pdf>
- United States Department of Agriculture. (2014c). *Women, Infants, and Children*. Retrieved from <http://www.fns.usda.gov/wic/women-infants-and-children-wic>
- WedMD. (2013). *Action set: How do you overcome barriers to healthy eating?* Retrieved from <http://www.webmd.com/food-recipes/healthy-eating-overcoming-barriers-to-change>

**Appendix A**  
**Survey Instrument**

Participants will be asked the following questions. Participants do not have to answer all questions, only ones they feel comfortable answering. If a participant refuses to answer any questions, put an “X” next to said question(s). Using a 1-5 scale, write on the data tally sheet whatever answers the participant provides.

1 = Impossible/Not At All Concerned

2 = Not Impossible, But Difficult/Not Very Concerned

3 = Neutral/Not Sure

4 = Fairly Possible/Very Concerned

5 = Extremely Possible/Very Concerned

a. Are you 18 years of age or older?

b. Are you the main food purchaser of the family?

1. On a scale of 1 to 5, how possible do you think it would be to purchase a week’s worth of healthy meals for a family of four at the SNAP level benefit of \$131?

2. On a scale of 1 to 5, how concerned are you about your family eating healthy?

3. On a scale of 1 to 5, how possible do you think it is to eat healthy on a budget?

4. Has the grocery cart display changed your mind about how possible it is to eat healthy on a budget? Yes or No?