

University of Memphis

University of Memphis Digital Commons

---

Electronic Theses and Dissertations

---

12-1-2010

## Effect of a Weight Loss Intervention in a Faith-Based Environment with Overweight-Obese African American Women

Janelle Marie Meeks

Follow this and additional works at: <https://digitalcommons.memphis.edu/etd>

---

### Recommended Citation

Meeks, Janelle Marie, "Effect of a Weight Loss Intervention in a Faith-Based Environment with Overweight-Obese African American Women" (2010). *Electronic Theses and Dissertations*. 124.  
<https://digitalcommons.memphis.edu/etd/124>

This Thesis is brought to you for free and open access by University of Memphis Digital Commons. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of University of Memphis Digital Commons. For more information, please contact [khggerty@memphis.edu](mailto:khggerty@memphis.edu).

To the University Council:

The Thesis Committee for Janelle M. Meeks certifies that this is the final approved version of the following electronic thesis: "Effect of a Weight Loss Intervention in a Faith-Based Environment with Overweight-Obese African American Women."

---

Terra L. Smith, Ph.D., R.D.  
Major Professor

We have read this thesis and recommend  
its acceptance:

---

Robin R. Roach, MPH, EdD, RD

---

Ebenezer O. George, Ph.D.

Accepted for the Graduate Council:

---

Karen D. Weddle-West, Ph.D.  
Vice Provost for Graduate Programs



EFFECT OF A WEIGHT LOSS INTERVENTION IN A FAITH-BASED  
ENVIRONMENT WITH OVERWEIGHT-OBESE AFRICAN AMERICAN WOMEN

by

Janelle Marie Meeks

A Thesis

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Science

Major: Clinical Nutrition

The University of Memphis

December 2010

## ABSTRACT

Meeks, Janelle Marie. M.S. The University of Memphis. December 2010. Effect of a Weight Loss Intervention in a Faith-Based Environment with Overweight-Obese African American Women. Terra L. Smith, Ph.D., R.D.

The incidence of obesity is alarmingly high among African Americans, especially among African American women. Therefore, to help address the weight loss needs among a group (n=10) of obese African American women in a faith community, a seven-week nutrition intervention study was developed and implemented. Each session was lead by a member of the faith community and incorporated prayer and encouragement. BMI, waist, and hip circumference were measured and three-day food diaries were collected at baseline and post-intervention. A paired sample t-test was used to analyze the data. A mean loss of 1.1 in. was observed in waist circumference (p=0.089). A mean loss of 1.7 in. was observed in hip circumference (p=0.021). There was no significant difference in BMI (p=0.343). Post-intervention three-day food diaries demonstrated some improvement from baseline such that 40% (n=4) more of participants met the Food Guide Pyramid food intake recommendation for grains, and 40% (n=4) more of participants met and did not exceed the Food Guide Pyramid food intake recommendation for meats and beans. Faith-based interventions may offer the best solution for reducing obesity. Familiar community settings, peer support, and places of worship were important in this study group.

## TABLE OF CONTENTS

Chapter		Page
1	Introduction	1
2	Literature Review	3
	Causes of Obesity	3
	Health Care Costs and Consequences	4
	African Americans and Obesity	5
	Soul Food and Social Factors	5
	African American Women and Body Image	7
	Faith-Based Interventions	8
3	Methodology	12
	Recruitment	12
	Intervention	12
	Instrumentation	14
4	Results	16
	Baseline and Post-Intervention Characteristics	16
	Outcomes	18
	Three-Day Food Diaries	19
5	Discussion	21
	Limitations	22
	Conclusions	22
	References	24
	Appendices	
	A. Information and Consent Form	27
	B. Permission to Use Church	
	Letter of Invitation	30
	C. Invitation to Participate (Flyer)	33
	D. Pre-Test/Posttest	35
	E. Instructions on Accessing Mypyramid.gov	40
	F. Description of Educational Sessions	42
	G. Certificate of Completion	46

## LIST OF TABLES

<b>Table</b>	<b>Page</b>
1. Timeline and description of educational sessions	14
2. Changes observed from baseline for BMI	17
3. Changes observed in waist and hip circumference from baseline to post-intervention	17
4. Changes observed in weight from baseline to post intervention	18
5. Paired samples T-test	19
6. Three-day food diary scores – baseline	20
7. Three-day food diary scores – post-intervention	20

# CHAPTER I

## INTRODUCTION

Obesity is simply defined as having an excess of body fat. A person is considered overweight if they have a body mass index (BMI) 25 to 29.9 kg/m<sup>2</sup> and obese if their BMI is 30 kg/m<sup>2</sup> or greater (1-3). Morbid obesity is a condition in which a person has a BMI of 40 or greater, and the excess body fat severely impacts their health and activities of daily living. As of 2007, no state had met the “Healthy People 2010” objective to reduce, by 15%, the number of obese adults in the United States (4). Many Americans are currently struggling with their weight. A large percentage is either overweight or obese. “Healthy People 2010” set a target for the US. The country should have 15% or less of the population being reported as obese; in reality, that number actually is 26% (5). In 2005 *The Nations Health* reported that the growing problem of obesity can cut the life expectancy of the average American by 5 years – meaning obese Americans can expect to live 5 years shorter than their non-obese counterparts (6). The cause of obesity cannot be linked to only one factor; the cause is linked to numerous factors. African Americans, a minority in the country over all, are a majority in the overweight/obese population. Of the African American population, women are more likely than men to become overweight or obese. Fortunately, African American women have shown a desire to obtain a healthier weight. Obtaining a healthier weight lowers a person’s risk for developing cardiovascular disease (CVD), hypertension, Type 2 diabetes, stroke, and certain cancers. Faith-based interventions have shown to be successful in aiding African American women in obtaining a healthier weight. The literature review will cover the causes of obesity, the financial and health consequences, the prevalence of obesity in the

African American population, diet and social factors that contribute to obesity in the African American population, and how body image influences the rate of obesity in African American women. The concluding topic of the literature review will cover faith-based interventions and how they have been shown to be successful in helping not only African American Women but also African Americans as a whole. One of the problems of African Americans, women in particular, is that they are not aware of the resources that are already available to them. Therefore, the purpose of this study was to examine the effectiveness of a faith-based community intervention designed to reduce obesity and induce healthy lifestyle changes in overweight or obese African American women.

## **CHAPTER II**

### **LITERATURE REVIEW**

#### **Causes of Obesity**

Obesity in the US is an epidemic. The US has come to be called a “fat” nation among health care professionals and researchers (4, 7-9). The cause of this overwhelming rise in obesity in the US can be attributed to several factors, some of which are: a decline in physical activity, increased consumption of processed foods and fast foods, larger portion sizes, busy lifestyles, a lack of knowledge about health and nutrition, genetics, frequency of eating, slow metabolism, various medications, and psychological factors (emotional eating, depression); the list is endless (7, 9-11). Social activities are centered on food. Fast food, which is high in fat and calorie content, comprise food choices for at least one meal of the day (10). Also, in the food service industry, portion sizes are out of control. A hamburger ordered at a fast food restaurant is nearly double the size it was approximately 50 years ago. Convenience foods and foods that are prepared outside of the home are high in fat and have added sugars to increase the taste; Americans would rather consume sodas and other sugary drinks in the place of water (2). Advertising for these foods has saturated the market. Companies would rather spend millions on advertising high-fat, sugary foods than on advertisements promoting fruits, vegetables, whole grains, and healthy eating (12). Americans are bombarded with advertisements for food and with places to purchase food. Food in the US can literally be purchased anywhere in the country. Americans can purchase food from a 24-hr convenience store, gas stations, and from the supermarket (12). Because of this increase

in size, the treatment of obesity and its co-morbidities has become a major part of health care.

### **Health Care Costs and Consequences**

Due to the fact that an alarming number of people in the US are either overweight or obese, the cost to treat obesity and its co-morbidities has increased dramatically; the cost to treat obesity is putting a strain on the wallets of not just obese individuals but all Americans (5, 13, 14). The economic costs of obesity can be divided into three levels: 1) on the individual level; 2) in the workplace where employers pay the cost for reduced productivity, missed work days, poor employee performance, and insurance; and 3) state and local governments cover some of the private and workforce costs which can result from obesity (8). The health care industry has seen a rise in the diagnoses of CVD, Type 2 diabetes, hypertension, and stroke; obesity is also one of the leading causes of death in the US. “It is estimated that the number of people with diabetes will increase from 175 million in 2000 to 353 million in 2030” (8). Obesity is associated with increased health care costs, reduced quality of life, and an increased risk for premature death; overweight and obese individuals use health care services at a higher frequency than healthier individuals (4, 6).

Certain co-morbidities are also associated with obesity. Individuals who are obese are at an increased risk for developing Type 2 diabetes, hypertension, CVD, stroke, and certain cancers (colon cancer and ovarian cancer in women). Obesity can take a toll on other body systems as well. Osteoarthritis, lower back pain, shortness of breath (SOB), and sleep apnea are all complications of excess body fat (2). Second only to tobacco as the leading cause death, obesity is a preventable cause of excess health care

costs in the US (15). The nation spends \$62.7 billion in doctors' visits and employers pay \$39.3 billion in lost workdays; unfortunately, more money is spent on Type 2 diabetes than any other co-morbidity (8, 15, 16). The annual number of deaths attributed to obesity among US adults is approximately 112,000; in 2003, an estimated \$75 billion was spent on the treatment of obese individuals (17). In the US, a disproportionate number of minorities are obese. Surprisingly, African Americans make up the majority of the \$75 billion cost.

### **African Americans and Obesity**

African Americans unfortunately share a large portion of the obese population. African Americans are expected to live shorter lives when compared to Caucasians. It was estimated in 2003 that white men and women could expect to live 6.3 and 4.5 years longer than African American men and women (18, 19). The difference in life expectancy can be explained by the high incidences of CVD and Type 2 diabetes within the African American population.

Between 2006 and 2008, the Centers for Disease Control and Prevention (CDC) conducted a Behavioral Risk Factor Surveillance System (BRFSS) survey. The BRFSS has been credited with being the world's largest, long-term telephone health survey system. The results of the survey showed that 35.7% of African Americans in the US were obese; by comparison, only 23.7% of Caucasians were obese (4, 8, 9, 18).

However, there are certain cultural and social reasons why African Americans are more obese than the rest of the US population.

### **Soul Food and Social Factors**

African American cuisine ("soul food") is derived from heritage and tradition. Slaves who were brought to the US combined their West African cooking methods with

European and Native American techniques. They used the foods were available to them to produce a cuisine that was culturally unique (20). This is soul food. Many foods that are fried, roasted, boiled, and smoked make up this traditional cuisine. Soul food is prepared with added salt and sugar. The addition of these two ingredients, along with saturated fats, gives soul food its rich flavors; however, the over-consumption of soul food is one of the leading contributors to high blood pressure and Type 2 diabetes in the African American population (21). African Americans also cook with cheaper cuts of meat, which are usually high in fat. The foods of the African American culture are a large contributor to weight gain; soul food is known for being tasty but not heart-healthy (4, 22). Poor eating habits are also a major contributor to obesity among the African American population. African Americans consume high fat and high calorie diets; in general their intake of fruits and vegetables, fiber, and whole grains is low, when compared nationally (20). African Americans consume soul food in high numbers because they are culturally familiar and less expensive to purchase than fresh foods. The over- consumption of these calorically dense foods can lead to excess weight gain, and obesity.

The US Department of Agriculture's Healthy Eating Index (HEI) is a measure of dietary quality for Americans; it measures conformance to federal guidelines for dietary intake. The HEI measures the consumption of 10 core dietary components. A single score results out of a possible 100 points. If a diet has a score which is greater than 80, the diet is considered to be a "good" diet. A score of 51-80 is "fair", and if a score is less than 51 it is a "poor" diet. James (20) reported in 2004 that the average score on the HEI for African Americans was 61.1, suggesting a diet that is "fair" and in need of

improvement. The Food Guide Pyramid also suggests that Americans strive to improve their eating habits. Nationally, few African Americans met the Food Guide Pyramid recommendations; in addition, African Americans consumed higher amounts of sodium and cholesterol than other group (20). African Americans are also more accepting of larger sizes than Caucasians; a large frame is seen as a sign of healthiness and “good living”. Particularly, African American Women are more satisfied with their body size than Caucasian women (4).

### **African American Women and Body Image**

Even though a large number of African American women are overweight, they are more accepting of “bigger” frame sizes. According to Thomas and colleagues (17), 67.3% of African American women qualify as overweight or obese, compared to 46.8% of European American women (3). Mainstream society sees extreme thinness as a healthy size, and most women, in general, believe that if a person is thin, then they are beautiful. To African American women, images of extreme thinness are unrealistic and unhealthy. They are happier with a full-figured frame. Compared to Caucasian women, African American women experience less social pressure to be thin. They do not see their large frame size as a blemish on their beauty (3, 17, 19, 23). Yet despite these factors, African American women have expressed a desire to achieve a healthier weight and a willingness to participate in intervention programs that are designed to help them achieve a healthier weight. However, many of the current intervention programs are generalized to the larger US population and not tailored to the particulars of African American culture. One size does not fit all.

## **Faith-Based Interventions**

Faith-based interventions have shown to be valuable in helping African Americans, particularly African American women, achieve a healthier weight and alter lifestyle factors that contribute to obesity. Historically, the Black church has been a driving force in the African American community (24). Today, in African American communities, the church remains a strong foundation for support, especially among older African American women (25). Churches have hosted events for cancer screening, blood pressure control, weight loss programs, cholesterol education, stroke prevention, physical activity, and nutrition education (24, 25). Black churches, historically, have supported its members spiritually, socially, and in health (24). Thus, interventions need to be a part of the church if they are to be successful. The WORD (Wholeness, Oneness, Righteousness, Deliverance), a faith-based, community-based participatory research (CBPR) intervention program used local community leaders to conduct the interventions at their respective churches. Churches often have strong ties within the congregation and outside in the surrounding communities; thus Kim and colleagues (24) designed an intervention built on these strong ties to promote their intervention. Thirty-five individuals participated in the intervention. Of those 35 individuals, 66% were women. From baseline to 8-week follow-up, there was an average loss of 3.0 lbs and an average loss of 2.5 cm in hip circumference in the treatment group (24). The participants in the program believed that the project was successful in their respective churches and communities. They also had a desire to eat healthier and to improve their overall health. Affiliation with the church and having the classes conducted by the WORD leaders also lead to the success of the program. WORD leaders reported making personal changes in their own health habits, particularly in the area of nutrition; they attributed these personal

changes to the training they received to teach their fellow church members (24). Even though the church is a strong source for social support within the African American community, support from persons outside of the community is widely accepted.

Resincow and colleagues (26) had two objectives for their study: (a) to test the effectiveness of a culturally targeted self-help diet and physical activity (PA) intervention versus standard health education materials not geared toward an African American church and (b) to test the effectiveness of motivational interviewing (MI) delivered by phone on fruit and vegetable (F & V) intake and PA. This type of intervention in the Black church was successful as well. The 2 types of interventions were successful in changing F & V consumption (an increase) and also in increasing the PA of the participants from baseline. The intervention was a success due to the fact that it sought to tailor the intervention to the African American culture. Mixing what is familiar in African American culture with the intervention tool was a method used to ensure a successful outcome.

Food for Health and Soul was a curriculum that supported families' interest in still being able to consume their cultural foods while reducing dietary fat, sodium and sugar, and increasing fiber (27). The participants were instructed on how to read a food label and how to make healthy alternatives to soul food recipes. The participants' evaluation of the program was very positive; 94% indicated that they would use the information learned, and 96% stated that they would encourage others to attend (27). Woodson and colleagues (27) showed that this type of approach is effective in improving the health behaviors of African Americans and thereby reducing the risk for chronic illnesses. Peer educated interventions have also shown to be effective.

In a study done in an East Harlem community (through the community churches) by Goldfinger and colleagues (28), peer-lead education focused on the following: portion control, filling the plate with fruits and vegetables of multiple colors, drinking calorie-free beverages, cutting fat, increasing PA, and eating healthy food on a budget and at fast food restaurants. Focusing on faith communities helped to improve dietary behaviors of the participants (29). The 26 individuals that participated in the study lost an average of 4.4 pounds 10 weeks into the study, and they continued to lose weight one year later. Daily servings of F & V also increased significantly at all time points (from 3.7 to 4.4 servings per day) (28). While focusing on the church community as a whole is a highly effective method of improving health outcomes, African American women are a unique subset of the population that need more specialized interventions to improve their dietary and health habits.

James (20) conducted 6 focus groups in north central Florida in which women were identified as good targets for health education programs. In the household, African American women have the responsibility of purchasing and preparing meals for their families. Because they have this responsibility, they are likely to be more receptive than the men in their communities. African American women are also more likely to participate if there is a faith component to the intervention. Fifty-nine overweight/obese African American women participated in an intervention conducted by Fitzgibbon and colleagues. Although the results were not statistically significant, the number of participants showed that the faith-based intervention positively affected the outcome of the study (30). African Americans are unique culturally and socially; it is important to

disseminate health interventions that are tailored to them. They are more likely to participate if the intervention is through their church or a familiar setting (25, 24).

## **CHAPTER III**

### **METHODOLOGY**

#### **Recruitment**

Approval was granted from The University of Memphis Institutional Review Board (IRB) for the use of human subjects (Appendix A). The study utilized a 7-week, nutrition education and weight loss intervention with participants who were enrolled at the start of the seven-week study. Letters of invitation were sent out to the Health Ministry leaders of five Memphis area Baptist churches who regularly associate with the researcher's home church (Appendix B). The letter of invitation included a flyer (Appendix C) for the Health Ministry leader to copy and distribute throughout the church. Follow-up phone calls were made to the Health Ministry leader the following week to further promote the study. A public promotion of the study was made in one of the invited churches. No participants were allowed to enroll after the start of Week 2. All participants signed a consent form (Appendix A) agreeing to participate in the study and had the right to withdraw from the study at anytime. Inclusion criteria included African American females age 16 years and over with a desire to lose weight, learn ways to adopt a healthier lifestyle, and those who had a BMI of 25 kg/m<sup>2</sup> or greater.

#### **Intervention**

All intervention classes were conducted at the researcher's home church (an inner-city African American Baptist church), and were taught by the researcher. A pre-test/posttest (Appendix D) was also administered at baseline and post-intervention. Each session was opened and concluded with a prayer. The sessions lasted for approximately

one hour (30 minutes for presentation of online nutrition educational materials, 30 minutes for question and answer period).

The study lasted for seven weeks each week started on a Saturday and the subjects were instructed on various nutrition topics during the sessions (see Table 1). The participants were given instructions on how to generate their own personal meal plan on Mypyramid.gov (Appendix E), and they were also given sample meal plans, that matched their estimated energy requirements, reprinted from the American Dietetic Association's (ADA) Nutrition Care Manual (Appendix F). Three-day food dairies (Appendix F) were given to all participants to complete and return at the start of week one of the study. During the question and answer period of each session, participants also shared their individual experiences with the meal plans, and offered spiritual support to their fellow participants. All participants were given handouts of the online nutrition education materials (Appendix F) which were presented informally by the researcher. Topics of each week's sessions were selected based on research conducted prior to the start of the study. The participants had the opportunity to ask question during the presentation as well. The dairies were evaluated based on whether the participants met, exceeded, or did not meet the guidelines of the Food Guide Pyramid; they were used as an evaluation tool to determine whether or not participants followed the guidelines of Food Guide Pyramid (personal meal plans).

At the start and completion of the study, BMI was calculated; waist and hip circumferences were measured, the differences between baseline and post-intervention were compared. The top 5 participants that lost the most weight received \$10 Wal-Mart gift cards. All participants received certificates of completion (Appendix G).

<b>Timeline</b>	<b>Content of Educational Sessions</b>
Week 1: Saturday May 22, 2010 (Baseline)	<ul style="list-style-type: none"> <li>• BMI calculated – weed-out</li> <li>• Waist and hip circumference measured</li> <li>• Provided instructions for Mypyramid.gov</li> <li>• Pre-test</li> <li>• Distributed and instruct on three-day food diaries</li> </ul>
Week 2: Saturday May 29, 2010	<ul style="list-style-type: none"> <li>• Collected 3-day food diaries</li> <li>• Session 1: Basic Nutrition</li> <li>• Subjects instructed to begin following personal meal plan generated from Mypyramid.gov</li> </ul>
Week 3: Saturday June 5, 2010	<ul style="list-style-type: none"> <li>• Sessions 2 and 3: Reading a Food Label and Healthy Grocery Shopping</li> </ul>
Week 4: Saturday June 12, 2010	<ul style="list-style-type: none"> <li>• Sessions 4 and 5: Eating Out and Portion Control</li> </ul>
Week 5: Saturday June 19, 2010	<ul style="list-style-type: none"> <li>• Session 6: Increasing Physical Activity</li> </ul>
Week 6: Saturday June 26, 2010	<ul style="list-style-type: none"> <li>• Session Seven: Fruit and Vegetable Consumption</li> </ul>
Week 7: Saturday July 3, 2010 (post-intervention)	<ul style="list-style-type: none"> <li>• 3-Day Food Diaries repeated</li> <li>• BMI re-calculated, waist and hip circumferences re-measured</li> <li>• 3-Day food diaries collected</li> <li>• Posttest</li> </ul>

### **Instrumentation**

Data collected included height, weight, waist, and hip circumference. Weight (pounds), waist circumference (inches), and hip circumference (inches) were measured. Height was self-reported. Weight was assessed using a calibrated, digital Weight Watchers® scale; participants removed their shoes and emptied their pockets of anything that would add to their weight. Two pounds were subtracted for clothing. The BMI was calculated by converting the participants' weight and height into the metric units of

kilograms and meters. Waist and hip circumference were measured using a fabric tape measure. The Statistical Package for the Social Sciences (SPSS) was used to analyze the data. Descriptive statistics were used to characterize the results of the intervention. A paired samples t-test was used to compare the data for each subject at pre- and post-intervention. The paired samples t-test compared the differences between the two means (baseline and post-intervention).

## CHAPTER IV

### RESULTS

#### **Baseline and Post-Intervention Characteristics**

The total number of subjects that completed the study was ten (n=10), though 12 participants started the study. One participant withdrew from the study because she did not wish to continue, and one subject was dropped from the study for not completing the post-intervention three-day food diary. Of the 5 Baptist churches that were invited to participate in the study, only members from one church (the researcher's home church) volunteered to participate. Their ages ranged from age 22 to 62 years. At the start of the study, participants had a mean BMI of  $30 \text{ kg/m}^2$ , an indicator for obesity. Table 2 shows a  $0.4 \text{ kg/m}^2$  decrease in mean BMI. Subjects had a mean waist circumference of 37.9 in. and a mean hip circumference of 44.9 in. During the study, a mean loss of 1.1 in. was observed in waist circumference, and a mean loss of 1.7 in. was observed in hip circumference (see Table 3); also the mean loss in weight for all participants was 1.2 kg (see Table 4).

**Table 2. Changes observed from baseline for BMI**

<b>Subject Number</b>	<b>BMI (kg/m<sup>2</sup>) Baseline</b>	<b>BMI (kg/m<sup>2</sup>) Post-intervention</b>
001	41	39
002	32	30
003	28	28
004	26	25
005	32	34
007	25	24
008	25	24
009	34	34
010	29	29
<b>012</b>	28	29
Mean	30	29.6

**Table 3. Changes observed in waist and hip circumferences from baseline to post-intervention**

<b>Subject Number</b>	<b>Waist Circumference (inches) Baseline</b>	<b>Waist Circumference (inches) Post-intervention</b>	<b>Hip Circumference (inches) Baseline</b>	<b>Hip Circumference (inches) Post-intervention</b>
001	48	48	53	50
002	40	37.5	47	46.5
003	37	36	48	44
004	32	32	41	40.5
005	46	41.5	43	45.5
007	36	33.5	43	39
008	30	28	41	39.5
009	38	40	48	46.5
010	37	37	42	40
012	35	34.5	42.5	40
Mean	37.9	36.8	44.9	43.2

**Table 4. Changes observed in weight from baseline to post-intervention**

<b>Subject Number</b>	<b>Weight (kg) Baseline</b>	<b>Weight (kg) Post-intervention</b>
001	118.8	112.4
002	102.1	97.1
003	82.1	81.2
004	72.6	71.7
005	93.9	98
007	79.4	77.6
008	64.0	60.8
009	98.9	98.0
010	74.4	75.3
012	81.8	84.4
Mean	86.8	85.6

### **Outcomes**

Results were analyzed in a paired samples t-test comparing baseline measurements to post-intervention measurements (see Table 5). Only baseline and post-intervention hip circumference demonstrated a statistically significant difference (P=0.021). There was no significant difference in BMI (P=0.343) and waist circumference (P=0.089) from baseline to post-intervention. Also, there was no change in the scores of the pre- and posttests. All participants scored 82% on both tests.

**Table 5. Paired samples T-test comparing means for BMI, waist circumference, and hip circumference**

	<b>Mean</b>	<b>Standard Deviation</b>	<b>t-values</b>	<b>Degrees of freedom</b>	<b>P-values (1-tailed)</b>
BMI B-BMI P	-0.400	1.27	1.000	9	0.343
Waist B-Waist P	-1.10	1.82	1.908	9	0.089
Hip B-Hip P	-1.70	1.93	2.782	9	0.021

**B=baseline, P=post-intervention**

### **Three-Day Food Diaries**

In the grain category (see Table 6), 10% of participants (n=1) met the Food Guide Pyramid's guideline for grains. Fifty percent (n=5) exceeded the recommendation for grains, and 40% (n=4) did not meet the recommendation for grains. At baseline, no participant met the Food Guide Pyramid's guidelines for fruit or vegetable intake. Twenty percent (n=2) exceeded the intake of milk products; the other 80% (n=8) did not meet the recommendation. Eighty percent (n=8) exceeded the recommended intake of meat and beans, and 20% (n=2) did not meet the guideline of meat and beans. Eighty percent (n=8) exceeded the recommended intake for oils. The 20% (n=2) did not meet the recommended intake for oils.

Compared to the baseline three-day food diaries, the post-intervention three-day food diaries (see Table 7) demonstrated some positive results. The goal was to have the participants meet the recommendations in the categories of the Food Guide Pyramid. Fifty percent (n=5) of participants met the recommendation for grains. Intake of fruit did show slight (20% met the recommendation) improvement. Ten percent (n=1) exceeded the recommendation for milk products. Forty percent of participants (n=4) met their

intake of meat and beans. Forty percent (n=4) of participants met the recommended intake of oils, and 40% (n=4) exceeded their intake of oils.

**Table 6. Three-day food diary scores – baseline**

<b>Subject Number</b>	<b>Grains</b>	<b>Vegetables</b>	<b>Fruits</b>	<b>Milk</b>	<b>Meat and Beans</b>	<b>Oils</b>
001	E	NM	NM	NM	E	E
002	E	NM	NM	NM	NM	NM
003	NM	NM	NM	NM	E	E
004	M	NM	NM	NM	E	E
005	NM	NM	NM	NM	NM	NM
007	E	NM	NM	E	E	E
008	NM	NM	NM	NM	E	E
009	E	NM	NM	NM	E	E
010	NM	NM	NM	NM	NM	E
012	E	NM	NM	E	E	E

**M=Met, NM=Did not meet, E=Exceeded**

**Table 7. Three-day food diary scores – post-intervention**

<b>Subject Number</b>	<b>Grains</b>	<b>Vegetables</b>	<b>Fruits</b>	<b>Milk</b>	<b>Meat and Beans</b>	<b>Oils</b>
001	E	NM	NM	NM	M	E
002	M	M	M	M	M	M
003	NM	NM	NM	NM	E	M
004	M	NM	M	NM	M	M
005	NM	NM	NM	NM	E	E
007	M	NM	NM	NM	NM	NM
008	M	NM	NM	NM	M	M
009	M	NM	NM	NM	NM	NM
010	NM	NM	NM	NM	NM	E
012	NM	NM	NM	NM	E	E

**M=Met, NM=Did not meet, E=Exceeded**

## CHAPTER V

### DISCUSSION

The purpose of this study was to examine the effectiveness of a faith-based weight loss intervention on African American females who had a BMI of 25 kg/m<sup>2</sup> or greater. Faith-based interventions have been shown to be effective due to the fact that African Americans, females specifically, rely greatly on the church for support when compared to African American males (24-26, 29, 30). Various aspects of the faith were used during this study to facilitate positive health outcomes including prayer, support of other women in the church who were apart of the same congregation, and being in their home church environment. Participants also encouraged each other during the discussion periods.

The seven-week intervention was completed successfully. Reduction in weight and BMI was seen in 50% of the participants (see Tables 3 and 4). Most participants, however, lost inches off their waists and hips. All but one participant lost inches from their waist or hips. The participants that demonstrated the greatest amount of weight loss did improve in one or more categories of the Food Guide Pyramid. The two participants (subject 001 and subject 002) that had the largest decrease in BMI (-2 kg/m<sup>2</sup>) improved the most in regard to recommendations for the Food Guide Pyramid. Subject 001 met the guidelines in all food categories; however, she did not lose the most weight, but subject 002 lost the most weight. Subject 002, however, only improved in one category of the Food Guide Pyramid (meat and beans). Surprisingly, there was no change in knowledge level when comparing the pre-tests and posttests; the average score for both the pre- and posttest was 82%. However, lower pre-test scores, with an improvement in posttest

scores, was expected. The intervention utilized the Mypyramid.gov website and nutrition education, which have shown to be effective among African American women (4).

Because scripture was only used in one study from the research, the use of scripture was optional; therefore it was not used in this research. In addition, participants were not observed spontaneously quoting scripture (The Holy Bible) during the education sessions. The results of this study suggest that faith-based interventions are effective within this particular faith community. Continued weight loss might have been observed if the study continued for longer than seven weeks.

### **Limitations**

The lack of a control group prevented determining whether the observed changes were due to the faith-based education interventions or other unknown factors. The recruitment may have also affected the result. This type of recruitment strategy may have created a bias within the study. The recruitment was limited to only the five churches who were asked to participate, and public promotion was only done in two of the invited churches. Therefore, the results of this study cannot be generalized to the larger population. With a longer timeframe, more significant improvements may be observed. Also, other factors such as blood pressure and fasting blood sugar could have been measured to test improvement in co-morbidities. The three-day food diary would be omitted since self-reported data was often unreliable, and few of the participants followed the directions on how to fill the diary out correctly.

### **Conclusions**

In this study, participants found support from the researcher and from fellow study participants. The results of the study also suggest that there is a need for a long-

term study using the same intervention strategies (with the addition of a physical activity component). The addition of a physical activity component may achieve greater results if this intervention were to be repeated. Based on the results, a structured intervention and support of the church proved effective in bringing about successful weight loss in 50% (n=5) of the participants. Therefore, it can be concluded that more faith-based interventions should be established within the African American community to facilitate a significant reduction in the incidences of obesity and its co-morbidities.

## REFERENCES

1. Obesity Facts, Causes, Emotional Aspects and When to Seek Help. Available at: <http://www.webmd.com/diet/guide/what-is-obesity>. Accessed October 22, 2010.
2. Shephard VE. The obesity epidemic: Its causes and methods of assessment. *Pract Nurs*. 2006;31:41-45.
3. Beverley C. Obesity African-American women (HOUSE CALL). *Ebony*. 2007;56(2):62.
4. Differences in Prevalence of Obesity Among Black, White, and Hispanic Adults --- United States, 2006--2008. Available at: [www.cdc.gov/mmwr/preview/mmwrhtml/mm5827a2.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5827a2.htm). Accessed October 21, 2010.
5. Watts A. The war on obesity (SNACK CORNER). *Film J Int*. 2010;67(1):113.
6. Marchese MC, Healey BJ. Addressing employee obesity in the United States (survey). *Acad Health Care Manage J*. 2008;1(21):4.
7. Apovian CM. The causes, prevalence, and treatment of obesity revisited in 2009: What have we learned so far? *Am J Clin Nutr*. 2010;91:277S-279.
8. Runge CF. Economic consequences of the obese (PERSPECTIVES IN DIABETES) (report). *Diabetes*. 2007;2668(5):56.
9. Christie C, Watkins JA, Weerts S, Jackson HD, Brady C. Community church-based intervention reduces obesity indicators in African American females (report). *Internet J Nutr Wellness*. 2010;9(2):1-11.
10. Obesity in African American women - Guest Editorial - Brief Article | ABNF Journal, The | Find Articles at BNET. Available at: [http://findarticles.com/p/articles/mi\\_m0MJT/is\\_3\\_14/ai\\_103380680/?tag=content;coll](http://findarticles.com/p/articles/mi_m0MJT/is_3_14/ai_103380680/?tag=content;coll). Accessed October 21, 2010.
11. Obesity (Weight Loss) Complete medical information on this all too common disease on MedicineNet.com. Available at: [http://www.medicinenet.com/obesity\\_weight\\_loss/article.htm](http://www.medicinenet.com/obesity_weight_loss/article.htm). Accessed 10/21/2010.
12. Greenblatt A. Obesity epidemic. *CQ Researcher*. 2003;13(4):73-104.
13. Obesity and Overweight for Professionals: Economic Consequences | DNPAO | CDC. Available at: <http://www.cdc.gov/obesity/causes/economics.html>. Accessed October 22, 2010.

14. Anand SS. Obesity: The emerging cost of economic prosperity (commentary). *Can Med Assoc J*. 2006;1081(2):175.
15. Hlaing WM, Kim S, Davalos DM. Hospital charges and comorbidities of obese and morbidly obese patients (report). *Internet J Epidemiol*. 2009;7(2):1-18.
16. Preventing obesity may not cut the costs of health care: Healthy weight people live longer but they are more expensive to care for over a lifetime (clinical digest). *Nurs Stand*. 2008;16(1):22.
17. Thomas JL, Stewart DW, Lynam IM, Daley CM, Befort C, Scherber RM, Mercurio AE, Okuyemi KS, Ahluwalia JS. Support needs of overweight African American women for weight loss. *Am J Health Behav*. 2009;33:339-352.
18. Katzmarzyk PT, Bray GA, Greenway FL, Johnson WD, Newton RJ, Ravussin E, Ryan DH, Smith SR, Bouchard C. Racial differences in abdominal depot-specific adiposity in white and African American adults. *Am J Clin Nutr*. 2010;91:7-15.
19. Campo S, Mastin T. Placing the burden on the individual: Overweight and obesity in African American and mainstream women's magazines. *Health Commun*. 2007;22:229-240.
20. James D. Factors influencing food choices, dietary intake, and nutrition-related attitudes among African Americans: Application of a culturally sensitive model. *Ethnic Health*. 2004;9:349-367.
21. Kalb C, Kuchment A. Health: saving soul food. *Newsweek*. 2006;147:54-55.
22. News bites. Heart and soul food. *Tufts Univ Health Nutr Lett*. 2006;24:3-3.
23. Chandler-Laney P, Hunter GR, Ard JD, Brock DW, Gower BA, Roy JL. Perception of others' body size influences weight loss and regain for European American but not African American women. *Health Psychol*. 2009;28:414-418.
24. Kim KH, Linnan L, Campbell MK, Brooks C, Koenig HG, Wiesen C. The WORD (wholeness, oneness, righteousness, deliverance): A faith-based weight-loss program utilizing a community-based participatory research approach. *Health Educ Behav*. 2008;35:634-650.
25. Yanek LR, Becker DM, Moy TF, Gittelsohn J, Koffman DM. Project joy: Faith based cardiovascular health promotion for African American women. *Public Health Rep*. 2001;116:68-81.
26. Resnicow K, Jackson A, Blissett D, Wang T, McCarty F, Rahotep S, Periasamy S. Results of the healthy body healthy spirit trial. *Health Psychol*. 2005;24:339-348.

27. Woodson JM, Braxton-Calhoun M, Benedict J. Gem no. 403: Food for health and soul: A curriculum designed to facilitate healthful recipe modifications to family favorites. *J Nutr Educ Behav*. 2005;37:323-324.

28. Goldfinger JZ, Arniella G, Wylie-Rosett J, Horowitz CR. Project HEAL: Peer education leads to weight loss in Harlem. *J Health Care Poor Underserv*. 2008;19:180-192.

29. Hannon PA, Bowen DJ, Christensen CL, Kuniyuki A. Disseminating a successful dietary intervention to faith communities: Feasibility of using staff contact and encouragement to increase uptake. *J Nutr Educ Behav*. 2008;40:175-180.

30. Fitzgibbon M, Stolley M, Ganschow P, Schiffer L, Wells A, Simon N, Dyer A. Results of a faith-based weight loss intervention for Black women. *J Natl Med Assoc*. 2005;9: 1393-1402.

**APPENDIX A**  
**INFORMATION AND CONSENT FORM**

## Effect of a Weight Loss Intervention in a Faith-based environment with African-American Women

### **Description of the Study:**

You or your child is being asked to take part in a study about weight loss. The goal of this study is to help people lose weight through basic nutrition skills and faith. You/your child have asked to be in this study because you are interested in losing weight. Please read this form and ask any questions you may have before you agree to be in the study.

If you/your child decide to take part in this study, you will be asked to have your weight taken. You will also have your waist and hips measured. As part of the program you will need to have a computer or have access to a computer. In addition, you will be asked to take part in an 8-week course that will teach basic nutrition.

### **Risks and Benefits of Being in the Study:**

There will be no risk to you/your child while you are participating in this study. You/your child will not be asked to do anything that will harm you in any way.

- Though there does not appear to be any risks or discomforts to you/your child the researchers will let you/your child know that you may withdraw for the study at anytime without any penalties.
- It is unclear if you/your child may be come upset by the research activities. You/your child may stop participating in the study at anytime.
- It is possible that some of the activities or lessons may upset you/your child. You may stop participating in the study at anytime.

While participating in this study, you/your child may experience weight loss. This is to be expected.

### **Compensation:**

**For attending the first session, you/your child will receive a free gift. The gift will consist of pens, paper, and other small items.**

### **Confidentiality:**

- **Any information obtained about you/your child from the research including answers to questionnaires, history, laboratory data findings, or physical examination [choose appropriate items] will be kept strictly confidential.**
- **Any information with you/your child's name attached will not be shared with anyone outside the research team.**
- **We will protect your/your child's confidentiality by coding your information with a number so no one can trace the answers to your name, properly disposing of computer sheets and other papers, limiting access to identifiable information, telling the research staff the importance of confidentiality, and storing research records in locked cabinets.**

- **The data derived from this study could be used in reports, presentations, and publications but you/your child will not be individually identified.**

**Voluntary Nature of the Study:**

Your decision to take part in the study is voluntary. You/your child are free to choose not to take part in the study or to stop taking part at any time without any penalty.

**Contacts and Questions:**

If you have questions now, feel free to ask.

Janelle Meeks

(901) 373-6089 (home)

(901) 486-5249 (cell)

[jmmeeks@memphis.edu](mailto:jmmeeks@memphis.edu) (email)

**Statement of Consent:**

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to allow my child

\_\_\_\_\_ to participate in this study. I have been provided a copy of this form. *Print your/your child's name*

Please check the box that applies:

photographed

My child and I **may** be

photographed

My child and I **may not** be

\_\_\_\_\_  
Print Parent/Guardian Name

\_\_\_\_\_  
Signature of Parent or Guardian & Date

\_\_\_\_\_  
Print Your Name (solo participation)

\_\_\_\_\_  
Sign Your Name (solo participation)

**APPENDIX B**  
**PERMISSION TO USE CHURCH**  
**LETTER OF INVITATION**

JANELLE M. MEEKS

5393 Pipers Gap  
Memphis TN 38134  
Home: (901) 373-6089  
Cell: (901) 486-5249  
Fax: (901) 373-6089  
jmmeeks@memphis.edu

April 11, 2010

Rev. Robert C. Jones, Jr.  
Pastor of Keel Avenue Baptist Church  
778 N. Bellevue  
Memphis, TN 38107

Dear Pastor Jones

I am a Masters Degree candidate at the University of Memphis in the Clinical Nutrition Program. I will be conducting research for my thesis, and I would like the help and participation of our church. The purpose of this study is to help African American women, through faith and prayer, achieve a healthy weight and to instill in them the necessary skills to make healthy food choices and lifestyle changes.

I would like to your permission to use the church to conduct my research. It will be for 8 weeks beginning in the month of March. As soon as I have approval from The University of Memphis, I will be able to tell you exact dates.

Thank you in advance for your cooperation with this study. This will be of considerable help to me in achieving my educational goals. It will also help combat one of many health issues African American women face today, obesity. If you have any additional questions, please do not hesitate to contact me. I look forward to hearing from you.

Yours in Christ,

Janelle M. Meeks  
Health Ministry Member, Keel Avenue Baptist Church

JANELLE M. MEEKS

5393 Pipers Gap  
Memphis TN 38134  
Home: (901) 373-6089  
Cell: (901) 486-5249  
Fax: (901) 373-6089  
jmmeeks@memphis.edu

April 26, 2010

Health Ministry Leader  
Golden Gate Cathedral  
3240 James Rd  
Memphis, TN 38128

Dear Health Ministry Leader

Hello, my name is Janelle Meeks and I am a member of Keel Avenue Baptist Church where Rev. Robert C. Jones, Jr. is pastor. I am also a Masters Degree candidate at the University of Memphis in the Clinical Nutrition Program. I will be conducting research for my thesis, and I would like your help and participation. The purpose of this study is to help African American women, through faith and prayer, achieve a healthy weight and to instill in them the necessary skills to make healthy food choices and lifestyle changes.

Our churches have worked together in the past. This will be a great opportunity for the women in your congregation who are interested in healthy weight loss. Enclosed with this letter is a flyer advertising the study. Please announce and post copies of the flyer. If any women are interested in participating in the study, they can contact me at the number or email address listed on the flyer.

Your participation will be of considerable help to me in achieving my educational goals. It will also help combat one of many health issues African American women face today, obesity. If you have any additional questions, please do not hesitate to contact me. I look forward to hearing from you and any interested members.

Yours in Christ,

Janelle M. Meeks  
Health Ministry Member, Keel Avenue Baptist Church

**APPENDIX C**

**INVITATION TO PARTICIPATE (FLYER)**

## Interested in Achieving a Healthy Weight



*Keel Avenue Baptist Church  
778 N Bellevue*

---

Saturday May 22<sup>nd</sup> and 29<sup>th</sup>, June 5<sup>th</sup>, 12<sup>th</sup>, 19<sup>th</sup>, and 26<sup>th</sup>, July 3<sup>rd</sup> @ 10:00 am

---

Take Part in a 7-Week Program that Will Give You the Skills to Achieve a Healthier Weight

No Money Required

Thank You Gifts for All of Those Who Attend

Contact Janelle Meeks

**901-373-6089 (home)**  
**901-486-5249 (cell)**  
**[jmmeeks@memphis.edu](mailto:jmmeeks@memphis.edu)**

**APPENDIX D**  
**PRE-TEST/POSTTEST**

## Pre-Test

1. **What is a whole-grain?**
  - a. White bread
  - b. Grain with a hole in it
  - c. Bread that still has all of the nutrients that are good for you
  - d. Biscuits
  
2. **How many servings of fruits and vegetables should you eat in a day?**
  - a. None
  - b. three
  - c. two
  - d. five
  
3. **True or false: it is all right to clean your plate even though you feel full.**
  - a. True
  - b. False
  
4. **How many minutes should you spend exercising during the day?**
  - a. At least 10 minutes
  - b. At least 30 minutes
  - c. At least 20 minutes
  - d. At least 15 minutes
  
5. **While grocery shopping, choose vegetables that are...**
  - a. Fresh or frozen
  - b. Canned
  - c. Included in a frozen dinner
  - d. Don't buy vegetables
  
6. **Which of these is not a food group?**
  - a. Fruits
  - b. Vegetables
  - c. Grains
  - d. Potato chips and soda
  
7. **Which of these side items should you choose instead of fries while eating at a restaurant?**
  - a. nachos
  - b. side salad or fruit
  - c. potato skins (technically they're not fries)
  - d. mozzarella sticks

- 8. While eating out it is best to...**
- a. Eat until you can't eat anymore.
  - b. Get the "all you can eat option".
  - c. Ask for a to-go box before you start eating and place half of your food in the to-go box. Take the rest home.
  - d. Only eat fried foods.
- 9. When you read a food label, look for foods that are...**
- a. Low in sodium
  - b. High in sodium
  - c. Don't worry about the label
  - d. No sodium
- 10. When you park in a parking lot, park...**
- a. As close as possible (who wants to walk that far?)
  - b. In the handicapped space (they have all the good spaces)
  - c. Choose valet parking (do we have that in Memphis?)
  - d. As far away as possible (a little walk to the front door won't hurt you, actually it's good for your heart).

## Posttest

- 1. What is a whole-grain?**
  - a. White bread
  - b. Grain with a hole in it
  - c. Bread that still has all of the nutrients that are good for you
  - d. Biscuits
  
- 2. How many servings of fruits and vegetables should you eat in a day?**
  - a. None
  - b. three
  - c. two
  - d. five
  
- 3. True or false: it is all right to clean your plate even though you feel full.**
  - a. True
  - b. False
  
- 4. How many minutes should you spend exercising during the day?**
  - a. At least 10 minutes
  - b. At least 30 minutes
  - c. At least 20 minutes
  - d. At least 15 minutes
  
- 5. While grocery shopping, choose vegetables that are...**
  - a. Fresh or frozen
  - b. Canned
  - c. Included in a frozen dinner
  - d. Don't buy vegetables
  
- 6. Which of these is not a food group?**
  - a. Fruits
  - b. Vegetables
  - c. Grains
  - d. Potato chips and soda
  
- 7. Which of these side items should you choose instead of fries while eating at a restaurant?**
  - a. nachos
  - b. side salad or fruit
  - c. potato skins (technically they're not fries)
  - d. mozzarella sticks

**8. While eating out it is best to...**

- a. Eat until you can't eat anymore.
- b. Get the "all you can eat option".
- c. Ask for a to-go box before you start eating and place half of your food in the to-go box. Take the rest home.
- d. Only eat fried foods.

**9. When you read a food label, look for foods that are...**

- a. Low in sodium
- b. High in sodium
- c. Don't worry about the label
- d. No sodium

**10. When you park in a parking lot, park...**

- a. As close as possible (who wants to walk that far?)
- b. In the handicapped space (they have all the good spaces)
- c. Choose valet parking (do we have that in Memphis?)
- d. As far away as possible (a little walk to the front door won't hurt you, actually it's good for your heart).

**APPENDIX E**  
**INSTRUCTIONS ON ACCESSING MYPYRAMID.GOV**

## **Generating Personalized Meal Plan from Mypyramid.gov**

1. On your computer, type in [www.mypyramid.gov](http://www.mypyramid.gov).
2. On the left side of the page, under “Interactive Tools”, click on “Mypyramid Plan”.
3. Fill in all of the information, and click “submit”.
4. You may be given two options. Click the “To gradually move toward a healthier weight” option.
5. Read the information on the page. Click on each of the food groups including the “tips”. Read through the information.
6. “Click here to view and print a PDF version of your results.” Bring you plan with you to the next meeting (May 29<sup>th</sup> @ 10:00 am).
7. Follow this plan for six weeks; I will tell you when to start.

**APPENDIX F**  
**DESCRIPTION OF EDUCATIONAL SESSIONS**

**Description of Nutrition Education Sessions (After the description of the educational sessions, links to the online handouts are provided)**

**(Each session was opened and ended with prayer. The participants had the opportunity to ask questions at any time during the sessions.)**

**Week one (Baseline):** Baseline measurements were taken (waist and hip circumference). BMI was calculated. The participants were given instructions on how to generate their personal meal plans from Mypyramid.gov. A pre-test was given and the 3-day food diaries were distributed; they were also given instructions on how to fill out the food diaries.

***Link to Three-Day Food Diary***

***Reprinted from Indian Heart Hospital:***

***[http://www.hearthospital.com/healthyhearts/uploads/files/Food\\_Diary.pdf](http://www.hearthospital.com/healthyhearts/uploads/files/Food_Diary.pdf)***

**Week two:** During session one, the researcher discussed the handout *Understanding Body Mass Index* (BMI) with participants, and the three-day food dairies were collected. Participants were instructed on healthy BMI's and unhealthy BMI's. They were also educated on how to achieve a healthy BMI. The participants were also instructed to begin following their personal meal plans. They were also given sample meal plans from the ADA's Nutrition Care Manual as a guideline.

***Reprinted from: <http://www.eatright.org/Public/content.aspx?id=6844>***

***Sample Meal Plans Reprinted from:***

***[http://www.nutritioncaremanual.org/vault/editor/Docs/1500Calorie%20Menu\\_FINAL.pdf](http://www.nutritioncaremanual.org/vault/editor/Docs/1500Calorie%20Menu_FINAL.pdf),***

***[http://www.nutritioncaremanual.org/vault/editor/Docs/2000Calorie%20Menu\\_FINAL.pdf](http://www.nutritioncaremanual.org/vault/editor/Docs/2000Calorie%20Menu_FINAL.pdf),***

***[http://www.nutritioncaremanual.org/vault/editor/Docs/2200Calorie%20Menu\\_FINAL.pdf](http://www.nutritioncaremanual.org/vault/editor/Docs/2200Calorie%20Menu_FINAL.pdf)***

**Week three:** During week three, two nutrition education sessions (two and three) were covered. Session two covered reading a food label and included a handout on the *Nutrition Facts Panel* so that the participants could understand the components of a food label. They were also instructed on what to look for on the food label when making decisions while shopping. Between the sessions, the participants had the opportunity to ask questions. During the second nutrition session, the researcher presented the handout *Tips for Healthy Grocery Shopping*. The handout was a brief article from WebMD. That article discussed 10 tips for healthy grocery shopping. Some examples of the tips included shopping in the produce section, choosing whole grains and cereals, and having two servings of fish per week.

***Reprinted from: <http://www.eatright.org/Public/content.aspx?id=6387>***

**Reprinted from:** <http://www.webmd.com/food-recipes/guide/10-tips-for-healthy-grocery-shopping?print=true>

**Week four:** During session four, two nutrition education sessions (four and five) were covered. *Tips for Eating Out* included ways for the participants to improve their eating habits even while eating out. The tips included appetizer-size portions, choosing baked meats and fish, and substituting fruits and vegetables for fries. Making physical activity a part of the eating out experience was also discussed. The participants also had the opportunity to ask questions between the sessions. The Portion Control handout provided a visual representation of portion sizes. The handouts included a wallet-sized printout from (*Portion-Size Guide*) that the participants could cut-out and keep in their wallets. Also, a larger home version of portion sizes from Readers Digest (*Reader's Digest Portion Size Guide*) was given to the participants. Seeing the portion represented in everyday objects was intended to aid the participants in visualizing portion sizes easily.

**Reprinted from:** *The American Dietetic Association*  
<http://www.eatright.org/Public/content.aspx?id=6850>

**Reprinted from:** <http://www.webmd.com/diet/printable/wallet-portion-control-size-guide>, [http://www.rd.com/images/content/091406/096\\_RDC\\_portion\\_guide.pdf](http://www.rd.com/images/content/091406/096_RDC_portion_guide.pdf)

**Week five:** During the sixth education session, the researcher discussed increasing physical activity. The handout was distributed to the participants and was titled *Get Moving...For the health and fun of it*. The session included instruction on ways to increase physical activity. The participants were instructed on increasing their physical activity to at least 30 minutes per day. They were also given examples of various types of exercises that they could do in achieving their weight loss goals. The exercises included walking, jogging, and resistance training.

**Reprinted from:**  
<http://www.cnpp.usda.gov/Publications/DietaryGuidelines/2000/2000DGBrochureGetMoving.pdf>

**Week six:** During the seventh educational session, fruit and vegetable consumption information taken from the Mypyramid.gov website titled *Inside the Pyramid - Vegetable Group and Fruit Group was*. The researcher discussed how many servings (daily) of fruits and vegetables the participants should consume for their specific age. The researcher also discussed the health benefits of fruits and vegetables (fiber, vitamins, and minerals). The participants were also given a link to a tool on the CDC website (*Fruit and Veggies Matter*). This tool allows visitors to the site to input their age to calculate how many servings of fruits and vegetables they should consume, daily, for their age group. The three-day food diaries were also repeated.

**Reprinted from:** <http://www.mypyramid.gov/pyramid/vegetables.html>,  
[http://www.mypyramid.gov/pyramid/vegetables\\_why.html](http://www.mypyramid.gov/pyramid/vegetables_why.html),

*<http://www.mypyramid.gov/pyramid/fruits.html>,  
[http://www.mypyramid.gov/pyramid/fruits\\_why.html](http://www.mypyramid.gov/pyramid/fruits_why.html),  
<http://www.fruitsandveggiesmatter.gov>  
*Links to Sample Meal Plans (1500 Calorie, 2000 Calorie, and 2200 Calorie)**

**Week seven:** BMI was re-calculated. Waist and hip circumference were re-measured. The post-intervention three-day food diaries were collected, and the posttest was administered. The participants shared what they experienced during the intervention.

**APPENDIX G**  
**CERTIFICATE OF COMPLETION**

*August 8,*  *2010*

*Keel Avenue Baptist Church  
Rev. Robert C. Jones, Jr., Pastor  
Janelle M. Meeks, Instructor*

*Achieving A Healthy Weight*

*Excellence*

*In Steps Toward Achieving A Healthy Weight*

*Presented To*

---

