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Peer Support Education for uncontrolled hypertension among African Americans adults

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Walden University
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Abstract

Peer Support Education for Uncontrolled Hypertension

Among Adult African Americans

by

Melvina Semper

MS, Walden University, 2008

BS, Dominican College, 1999

Project Submitted in Partial Fulfillment

Of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

Hypertension is a major chronic health problem that can lead to heart attack, stroke, and kidney failure. African Americans disproportionately suffer from the morbidity and mortality of hypertension-related illnesses. The purpose of this comparative project was to determine the impact of peer support educational workshops as an avenue for lifestyle modification, using changes in blood pressure (BP) before and after participation. The target population consisted of 64 African Americans with hypertension in Brooklyn NY, aged 20 to 65 years old. BP measurements were taken within 1 month before and after participating in a weekly peer support educational workshop facilitated by designated healthcare providers. The health belief model, using the tenets of lifestyle modification, societal support and health education, was used to guide the study. Demographic data were collated and categorized, considering numeric values used to represent age, income level, and education. Normality testing of the study variables was performed to ensure that the data followed a normal distribution. The study variables included the pre- and post-test systolic and diastolic BP. A *t* test was used in order to compare the 2 groups, revealing a statistically lower significant score from African Americans who participated than those who did not. African Americans who adhered to peer support educational regimens in the workshops revealed a statistically significant lower diastolic BP than those who did not participate. This research contributes to social change by providing evidence-based recommendations that government and health care professionals may use to create strategic plans to promote the well-being of individuals and communities.

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Abstract

Hypertension is a major chronic health problem that affects individuals, communities, and society as a whole. African Americans disproportionately suffer from the comorbidity and mortality of hypertension-related illnesses. The purpose of this comparative project was to determine the impact of peer support educational workshops, as an avenue for lifestyle modification, using changes in blood pressure (BP) before and after participating in the workshops. The target population consisted of 64 hypertensive African Americans in Brooklyn, aged 20 to 65 years. BP measures were taken within 1 month prior and 1 month after participating in a weekly peer support educational workshop facilitated by designated healthcare providers. A comparative study was used to examine the blood pressure of the participants who engaged in the workshops and those who did not, based on readings during the weekly meetings with a registered nurse or nutritionist. The readings were compared, using SPSS 17.0 software, with adherence of the participants to the workshops regimens, which included targeted dietary consumption, medication adherence, and physical activity. The health belief model was used to guide the study. Results indicated that African Americans who adhered to the peer support educational regimens that were introduced in the workshops had lower BPs than those who did not participate. This research contributes to social change by providing findings and recommendations that government and health care professionals may use to create strategic plans, and interventions that may help to promote the health, well-being, self-worth, dignity, and development of individuals, communities, as well as cultures and social conditions.

Dedication

This project is dedicated to my children; son, Burton Semper, my daughter, Beverley Child and my grandchildren; Brandon, Ryan, Savana, and Elora. I hope that they would cherish each day as if it were their last.

Acknowledgement

A number of friends, family, and colleagues supported me throughout this project. I am grateful to have them all in my life. I would like to thank Mrs. Dianne Thomas for allowing me to implement this project with her guidance in the department she oversees. I would also like to acknowledge my committee members, Dr. Nancy Moss, Dr. Phyllis Morgan, and Dr. Stoerm Anderson, for their guidance and mentorship throughout the DNP project. Finally, I would like to thank all the other faculty members who have helped me throughout the various courses I have taken at Walden University.

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Section 1: Overview of the Evidence-Based Project

Introduction

Hypertension (HTN), also referred to as high blood pressure (HBP), is defined as systolic pressure that is greater or equal to 140 mmHg and/or diastolic pressure greater or equal to 90 mmHg (Aronow, 2013). One of the approaches adopted by health practitioners in order to verify a diagnosis of hypertension is to offer ambulatory blood pressure monitoring (ABPM). This is done by taking two blood pressure (BP) measurements of the patients during the usual waking hours to get the accurate BP. Hypertension affects many people worldwide, and is an important public health problem (Heard, Whitfield, Edwards, Bruce, & Beech, 2011).

Risk factors for HTN are diabetes and obesity (AHA, 2013). In African American adults ages 50 to 64 years old, HTN is more common compared to other age groups. Besides old age as one of the major risk factors, BP tends to worsen during these age figures among African Americans. There has been a steady increase in cases of HTN among African Americans and is therefore of concern to this community, particularly because risk factors of HTN for this population are not adequately understood (Schoenthaler, Ogedegbe, & Allegrante, 2009).

African American adults are more likely to be diagnosed with HTN, which could be life threatening, because of their genetic make-up (AHA, 2013). Findings in genetic research conclude that the susceptibility of African Americans to HTN is because of varying levels of angiotensinogen or 235T gene variant, which is linked to higher risk of hypertension (Cooper, Rotimi, and Ward, 1999). However, only a few researches have explored what factors lead to the increase of HTN among African Americans such as

genetic disposition, stress, and even diet. All these factors increase the chances of comorbidities that create resistance to the treatment of HTN-related conditions such as obesity, diabetes mellitus, and depressed glomerular filtration rate (Flack, Nasser, & Levy, 2011). Despite being considered as an underserved population, African American adults with HTN continue to seek the available and most effective care in the treatment and management of this chronic disease (Flack et al., 2011). However, one third of the African American population is not aware of the fact that they have HTN, and the lack of education level and knowledge are factors affecting the increase of HTN cases (American Heart Association, 2013).

The prevalence of high BP among African American adults contributes to ethnic health disparities worldwide. High BP is one of the factors that leads to cardiovascular disease within this community (Gupta et al., 2010). The prevalence of HTN among African American adults is culturally influenced by their attitudes, and lifestyle practices towards food preferences (Kershaw et al., 2013). Researchers indicated that cultural practices that include social support, among this population, contribute towards the lowering of stress, depression, and HTN, and that their psychosocial and behavioral characteristics change with the implementation of counseling and support services (Fernandez et al., 2011; Heard et al., 2011). Several studies have further demonstrated that continuous coaching and a strengthened support system reduces the risk of comorbid diseases associated with HTN (Small et al., 2013; Turner et al., 2012).

I designed this project to test the value of a peer support education program to increase adherence to diet modification among African American adults for at least one month. The focus of this project was the usage of a combination of drugs for better

control and minimizing the risk to target organs in the high-risk population, as suggested by Flack et al. (2011). Thus, change in lifestyle is also another form of controlling the risks of HTN.

Lifestyle modification, such as change in diet, is essential for improved BP control and therefore, the African Americans suffering from hypertension can manage the disease through the implementation of certain lifestyle changes. These lifestyle modifications include changes to physical activity, diet, as well as weight control (AHA, 2013). Hypertension is primarily treated with medication; however, non-pharmaceutical treatments like lifestyle modifications that include exercise, mind and body practices, and diet are more strongly recommended by physicians (Maruthur, 2009). The most important part of a patient's treatment plan is awareness and education of how a healthy diet may be helpful to effectively deal with HTN (AHA, 2013). Government institutions that provide health education, regarding diet modification, can contribute greatly to patient empowerment. Health education assists in sensitizing the African American community to health issues such as HTN and helping individuals make the lifestyle changes necessary to increase the community's health and wellbeing.

The primary concern is to decrease dietary sodium consumption and increase the level of physical activity (Flack et al., 2011). The expectations of such treatments is that all changes in the diet for all treatment participants would show improvement in HTN control, and even greater improvement would result if participants also have weekly discussions with health care providers and consultants. This type of approach includes the use of a support system to patients who intend to modify their lifestyle patterns and behaviors towards achieving physical health. Support mechanisms have proven to be an

essential element in the reduction of stress, depression, and HTN among individuals (Heard et al., 2011). Support mechanisms may be available in the form of peer and practice team interventions (Turner et al., 2012). Peer staff supports the patients' goal concerning behavioral change and consequently offers counseling to achieve BP reduction (Fernandez et al., 2011). Small et al. (2013) conducted a study that demonstrated the positive influence of peer support education. Unfortunately, researchers did not document the dietary adherence of patients, resulting from the introduction of the support mechanism program. Despite this, the findings of this study remain encouraging.

This doctoral study focused on determining the impact of a peer support education program on the dietary adherence of African Americans with uncontrolled HTN in an effort to lower their high blood pressure. This project used changes in BP as an indicator of the success or failure of the 1-month lifestyle modification program. The project is aiming to provide relevant nutritional information and peer support to participants. This study is significant because it focused on the local African American community as an underserved population and aimed at educating the local African American community on the effectiveness of lifestyle changes targeted to their health. This study will ultimately contribute to the development of a health management program specifically and culturally targeted to the needs of this underserved population. Due to their underserved status, the data generated through this study might prove to be more significant than data on those population groups that have regular access to medical institutions.

Problem Statement

In the United States, there are at least 65 million adult African Americans who are

diagnosed with HTN (Deinzer, Veelken, Kohnen, & Schmeider, 2009). HTN is a major cause of increased morbidity and mortality rates among African Americans (American Heart Association, 2013). Hypertension is recognized as a silent killer because an individual can walk around with HTN and not know that they have the disease, and can die from a heart attack or stroke (American Heart Association, 2013). Data indicates that 42% of African American men and 44% of African American women have comorbid conditions associated with HTN (Lee et al., 2011). HTN can lead to chronic health conditions such as obesity, kidney failure, and other cardiovascular diseases (Kathryn et al., 2011). There are several factors that contribute towards HTN among African Americans, including inadequate awareness of the diseases, poor lifestyle choices, low socioeconomic status and lack of timely screening (Flack et al., 2011). Adult African Americans with HTN have higher rates of heart failure, stroke, end-stage renal disease, and greater heart disease mortality than Caucasian Americans (Kathryn et al., 2011).

There are cultural beliefs and practices among some African American adult patients with HTN that may make it challenging for them to adhere to medical regimens for HTN (Lewis, 2011). Thus, the traditional way of treating HTN has proven to be characterized by non-adherence to medical routines among a relatively large portion of patients. While lifestyle modifications have been found effective in large Caucasian populations (Eskridge, 2010), there is a scarcity of research that concentrates on the African American population as subjects for lifestyle modification in HTN control.

Purpose Statement

The purpose of this project was to determine whether attending the workshop on peer support education can help reduce the BP of 64 underserved hypertensive African

Americans in Brooklyn aged 20 to 65 years within a month of participating in a peer support education program. The outcome of the study determined the impact of educational workshops on peer support as the avenue for lifestyle modification for African American adults with HTN in Brooklyn by monitoring the changes in BP readings. Designated health care providers such as a nurse, nutritionist, or physician facilitated the educational workshops. The BP reading from the hypertensive African American participants during their weekly meeting with a registered nurse or nutritionist was used as baseline data. It is to be noted that the baseline data of the participants were taken into consideration to ensure that there is sufficient and ample monitoring of the results. Two groups of participants were compared to investigate BP and demographic differences in relation to the participants' adherence to the recommended diet to reduce BP.

Significance of the Study to Practice

The goal of this project was to decrease HTN with education on dietary changes. In line with Walden University's mission, this DNP project may encourage positive social change and have a vital impact on African American adults by creating and implementing strategic plans, and effective interventions to promote the self-worth, dignity, and development of individuals, communities, and cultures to improve their social conditions and well-being. The group discussions and contact with other participants affected how they ultimately made lifestyle changes, for example, by consuming more healthy foods such as fresh fruits and vegetables.

Healthcare providers must be proactive in detecting HTN in an effort to decrease and prevent mortality and morbidity in African American adults with this disease.

Determining the significance of this disease is vital to the prevention, education, awareness, and equal access to health care among the African American adult population with HTN. Research on using evidence-based practice (EBP) with non-pharmacological (diet and exercise) and pharmacological (anti-hypertensive medications) treatment options is necessary to enhance the quality of life and manage the HTN rate within this population.

Research Question and Hypotheses

The following were the research questions and hypotheses:

RQ1. What is the difference in BP for African Americans with HTN who participate in a peer group healthy heart diet educational program versus African Americans who do not participate in a peer group healthy heart diet educational program?

$H1_0$: There are no significant differences between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet.

$H1_a$: There are significant differences between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet.

RQ2. What is the relationship between BP and age, educational background, and income levels among African Americans who participate in a peer group healthy heart diet educational program?

$H2_0$: There are no significant differences between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet based on demographics (age, education, and income level).

$H2_a$: There are significant differences between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet based on demographics (age, education, and income level).

Evidence-based Significance of the Project

The use of an EBP intervention can be considered as an effective method in resolving issues concerning the inability of health care providers to implement better ways for the control of HTN in the African American population. Patients can receive up-to-date and appropriate health care by implementing EBP (McEwen & Willis, 2010). In this particular project, the goal was to implement an educational workshop on peer support that motivated lifestyle modification among African American adults aged 20-65 in Brooklyn and to then determine the changes in BP among study participants who participated in the educational workshops and those who refused to attend the activity.

In this instance, two groups of study participants from Brooklyn have been recruited to take part in a controlled set of lifestyle modification activities. Based on the sampling plan, 64 participants were recruited and grouped into two categories in addition to data on the kinds of food consumption were collected from all participants. The food consumption of participants was recorded and presented at the clinic. Eating patterns were captured in diaries and this data assisted the professional team to provide guidance regarding dietary changes, adherence, and education of participants. The benefit of keeping food journals or diaries was for participants to record food consumed and caloric content (Parker, 2012). It is well established that keeping track of food intake helps in making appropriate portion choices and improves adherence to diet that leads to improved health (Parker, 2012).

Definition of Terms

For the purpose of this study, the following operational definitions were used:

African Americans with HTN - The World Health Organization (WHO) definition of HTN where systolic BP is 140-159 mmHg and/or diastolic BP is 90-99 mmHg was used in this study. African Americans who were present at the clinic with BP measurements where systolic and diastolic pressures were in line with the WHO definition were considered for the study.

Evidence-based practice (EBP) group discussion for diet modification. My group discussions covered the dietary changes necessary to reduce HTN, such as decreasing fried foods and salt intake, and increasing the consumption of fruit and vegetables. This advice was based on the best available information from current research. Evidence-based practice incorporates a holistic approach and improves the reliability of outcomes (Burns & Grove, 2009). For example, the Dietary Approaches to Stop Hypertension (DASH) diet is a preferred treatment option (Burns & Grove, 2009).

Assumptions and Limitations

In this study, I assumed that cultural beliefs and inadequate dietary consumption had an impact on the increased rate of HTN within the African American community. For this reason it was assumed that the participants in this study were Africans Americans with similar cultural beliefs. With this assumption, I expected that the framework used in this study was appropriate for the present study.

As this study engaged the responses of participants, I also assumed that the participants' responses were truthful and representative of their perceptions and

experiences. It was assumed that the submitted food diary contained an honest documentation of participants' food intake. In addition, medication adherence is believed to play a significant role in African Americans suffering from HTN (Doughlas et al., 2004). It was assumed that participants in the study would comply with advice and recommendations on medication regimens.

The project has been conducted with a non-probability convenience purposive sample of 64 African American adults in Brooklyn. The study was limited to participants who had a history of HTN, individuals at risk for the disease due to family history, and of the same cultural background. The study was limited to the participants within a small hospital clinic in Brooklyn. These limitations affected the general ability of the findings of the study because the study was focused on a single geographical location with a marginal number of participants. Hence, factors such as culture, lifestyle habits, and living conditions may vary on the same target population on another region, thus the results of this study may be considered appropriate for practical application.

Summary

Practitioners must be sensitive in addressing the social, cultural, and economic issues of African Americans when dealing with HTN (Doughlas, Bakrus, & Epstien, 2004). Barriers such as obesity, high dietary intake of sodium, low dietary calcium intake, low adherence to the treatment plan - due to side effects, such as impotence - and distrust of the medical system are attributed to social, cultural, and economic issues of this population (Burns & Grove, 2009). Other barriers include access to care and high rates of poverty in African American adults.

In an effort to control HTN, education on dietary modification may need to be

considered when treating African Americans if HTN is to be treated and managed effectively. The study assumed that implementing lifestyle changes could lower the increased rate of African Americans with HTN. However, this project also needed to evaluate the efficacy of this assumption by comparing the change in BP of 64 hypertensive African American adults in Brooklyn within a month.

As presented in this section, the purpose of determining the change in BP was to modify the behavioral and controlled beliefs of African American adults on increasing adherence with diet modification prior to introducing and preserving other self-care behaviors necessary to manage HTN. I also stated the research questions and hypotheses requiring answers and the significance of this study to the practice of healthcare concerning the healthcare needs of this minority population. Here is where the scope, limitations, and the operational definitions of the terms used in this study were presented.

This next section will include a detailed discussion concerning HTN and the prevalence of this chronic disease among the African American population. The review of the literature on HTN will reveal the gap concerning HTN healthcare practices to healthcare providers.

Section 2: Review of Scholarly Evidence

Introduction

The purpose of the study is to determine whether attending the workshops on peer support education can reduce the blood pressure (BP) of 64 underserved hypertensive African Americans in Brooklyn aged 20-65 years within a month of participating in a peer support education program. Blood pressure is a crucial indicator of health as it is related to the overall functioning of a person as it relates to the nervous system, the heart and other principal organs. This investigation focused on changes in BP within a period of one month that could be attributed to lifestyle modification as a result of the introduction of educational workshops focused on the lifestyle changes required in lowering HTN among the African Americans adults in Brooklyn.

In order to get a good grip on the relevant concepts relating to the research topic, I conducted a review of the literature to determine what these adults need to know about HTN, what their health risks are, why they delayed medical care and the challenges and barriers they encountered while accessing and receiving medical care. The keywords that I used to access literature included *African American adults*, *hypertension*, *health disparity*, *Blacks and health*, *health education and Black adults*, *barriers to health*, *health perception*, *health challenges*, *cultural factors and health*, *health interventions*, *health benefits*, and *attitudes.* The sources of information included Medline, PubMed, ProQuest, CINAHL, EBSCO, Mass Media, and additional databases such as Academic Search Premier. Only relevant studies were sought and identified, regardless of the date or publication status (e.g., dissertations, in press, or published).

Specific Literature

Dietary and Health Status of the African American Population

Current dietary habits in the African American population were derived from a rich African culture that includes consumption of mainly starchy foods from fruits and vegetables, and moderate protein from animal sources (AHA, 2013). The United States' slavery trade, also known as the Middle Passage, have resulted in physiologic and biologic losses, including death, by which genetic profiles have shifted. This experience has affected the ordinary metabolic processes responsible for responding to nutrients in foods, resulting in a debilitating effect on the current health status of this group (Flack et al., 2011). For example, scientists postulate that the predisposition to HTN experienced by African Americans is a consequence of large sodium losses endured during the Middle Passage, which altered the subsequent genetic profile of this group (Flack et al., 2011).

Health disparities, including cardiovascular disease (CVD), type 2 diabetes, HTN, and cancer rates have been on the rise since 2000 in the African American population. African American women had disproportionately high rates of obesity, CVD, type 2 diabetes, and breast cancer in the US, with nearly 53% being obese in 2006. The risk of developing type 2 diabetes, CVD, HTN and other chronic diseases have significantly increased by obesity. Therefore, the federal efforts to address obesity have increased, but have been less than optimal. Hypertension has been related to CVD, since it is directly correlated to the functions of the heart. With these figures, researchers have suggested that African Americans may be at a higher risk of developing metabolic syndrome (Mets), a cluster of chronic disease risk factors leading to obesity, dyslipidemia (coronary heart disease), insulin resistant (type 2 diabetes), and elevated BP. Hypertension is related

to lifestyle behaviors that may be modified with moderation in food intake, accompanied by proper exercise (Cohen, McChargue, & Collins, 2003).

A national survey representing the US civilian population, The National Health and Nutrition Examination Survey (NHANES), collects data on dietary and lifestyle behaviors, disease conditions, and socio-demographic factors (Tasosa, Schuster, & McAlearney, 2010). The NHANES is conducted annually and other sampling methods are implemented in the data collection process to account for underrepresented groups (Tasosa, Schuster and McAlearney, 2010). Results from an epidemiologic analysis of NHANES I data of Caucasians and African Americans to assess the incidence of fish consumption and HTN found that increased fish intake led to decreased rates of HTN among African-Americans (Tasosa, Schuster and McAlearney, 2010).

Although a qualitative assessment of fish consumption in northern California found that African Americans may be consuming fish up to four meals per week, it is likely that this group is consuming fish that are not high in Omega 3 fatty acids, leading to reduced benefits regardless of a higher fish intake (Bertoni et al., 2011). Researchers assessing the epidemiologic relationship between fish intake and the prevalence of obesity and type 2 diabetes among WOC are lacking in the literature (Johnson, Sallsten, Schutz, Sjors, & Barregard, 2004). It is to be noted that the food intake of participants would always contribute to their condition, especially when the examination pertains to BP and HTN.

Cultural and Socioeconomic Status of the African American Population

Historically, the African American culture has accentuated a deep communal, social, spiritual, and familial connection to life, humanity, food, and purpose. Significant

changes in the belief system among this group have transpired over the years due, in part, to poverty, low levels of education, and the institutions of racism and classism. Several studies have suggested that socioeconomic factors including poverty, racism, older age, low education levels, and other social injustices contribute to the ill health of African Americans, which exacerbates the persistence of HTN (Bertoni et al., 2011). These factors, along with the dietary acculturation to a Westernized diet, were attributed to the continual demise of the nutritional status in this group.

Nutrition Education

A 2004 US General Accounting Office Report on Nutrition Education indicated that poor nutrition accounted for about 300,000 preventable deaths per year in the United States. As the leaders of the nation continue to focus on promoting health and preventing diseases, the role of nutrition education is even more vital than before. Government food and nutrition programs such as the SNAP-Ed, the Expanded Food and Nutrition Education Program (EFNEP), Supplemental Program for Women, Infants, and Children (WIC), and the National School Lunch Program (NSLP) were found to be deficient in the methods used to evaluate the success and impact on the programs' target populations (Bertoni et al., 2011). In 2006, a researcher suggested a staged process for developing and evaluating the Supplemental Nutrition Assistance Program - Education (SNAP-Ed), formerly the Food Stamp Nutrition Education Program (FSNEP), which included the pretesting and validation of assessment tools (Bertoni et al., 2011).

Behavioral Change Initiatives for African American Adults

The Black Adults' Health Study was initiated in 1994 to examine the environmental factors contributing to the morbidity and mortality of African American

adults due to chronic diseases. This initiative includes studies on the relationship between diverse factors, including engagement in physical activity and the development of various chronic disease indicators. Li, Hu, Dong, and Arao (2013) and Gupta et al. (2013) were among the researchers who have developed and implemented several nutrition education programs and found that an emphasis on the development of culturally targeted programs that reach underserved minority groups, particularly African American adults, are warranted. These culturally tailored programs have been the most successful at sustaining positive dietary and lifestyle behavior changes among this underserved group.

Community-based participatory research (CBPR) is an approach that engages the community in a collaborative venture with researchers in devising interventions and programs. Various CBPR methods have been utilized to implement culturally targeted programs, such as nutrition education interventions. These methods employ the standard education and behavior models from the psychology and education disciplines such as social cognitive theory, adult learning theory, experiential learning theory, the trans-theoretical model of planned behavior (stages of change model), and the health belief model (Bandura, 1986). For example, in the adult learning theory, it is apparent that nutrition education programs that deliver messages in a dialog instead of a pedagogical teaching approach is essential to sustaining positive dietary behaviors among adult learners. These theories are further extrapolated in the discussion of the principles that were applicable in guiding the conduct of this study.

Embedded in these theories are the philosophical ideologies of social re-constructivist, existentialism, and perennials, which form the foundation of goal-oriented education for the curriculum of all disciplines. Social re-constructivism allows a person

to address the sociocultural issues that may affect dietary behaviors. In literature, this is referred to as *empowerment to take action*. Existentialism deals with individual self-reflection and the meaning of existence in the control of personal destiny. Perennial-ism applies to developing activities with reoccurring themes to re-emphasize certain concepts, ideas, terms, and behaviors. Triangulating these philosophies, along with the above-mentioned health and education behavior theories and models, set the platform for developing, implementing, and evaluating the effectiveness of a culturally tailored, nutrition and health education program aimed at increasing knowledge and changing dietary and lifestyle behaviors in a group of African American adults aged 18-55 years (Freedman & Murea, 2004).

The nutritional and health benefits gained from consuming fish are well documented in the literature. Fish is a lean source of protein containing several vitamins and minerals, and most significantly, is an excellent source of the Omega 3's, eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA). Intake of EPA and DHA at levels of at least 0.4 grams/day promotes healthy brain functioning in infants and adults, as well as protecting against cardiovascular and inflammatory related conditions. Several federal government and professional organizations have developed weekly fish consumption recommendations for the public in order to mitigate the risk of deaths caused by coronary heart disease and other medical conditions. The Institute of Medicine (IOM, 2007) concluded that the benefits of fish consumption outweighed the risks of mercury exposure; however, the public remains perplexed about which types and amounts of fish are safe to eat, due to the health warnings also associated with fish consumption. Without adequate knowledge, low-income populations may exceed current

fish consumption advisories set by governmental agencies to protect against contaminants, and still not meet recommendations such as those contained in the US Dietary Guidelines that promote fish consumption to reduce chronic disease.

It is necessary to develop adequate dietary intake tools that assess fish intake for high-risk groups such as low-income adults of childbearing age (18-45 years), to educate this population effectively. Previous fish consumption estimation methods, particularly in California, have been conducted with adult males, particularly fishermen (also referred to as anglers). However, adults of childbearing age and young children are most vulnerable to the detrimental effects of fish contaminants such as mercury (Landmark, 2004).

General Literature

In this section, I discuss the relevant literature concerning lifestyle modification and pharmaceutical interventions. These topics are essential for understanding how health service professionals provide clinical intervention for patients with HTN. The content of this section allows the reader to relate the particular condition of African Americans in relation to the available therapeutic interventions for HTN patients.

The American Academy of Family Physicians (2007) stressed the urgency of treatment and management of HBP and explained the effects it would have on the African American society if not treated early. This population seems to be more sensitive to salt, which increases the risk of HBP and damages their health (Qaseem et al., 2007). Genetic factors, environmental factors, or a combination of factors can contribute to increased HTN rates in African Americans. Researchers suggested that keeping blood pressure under control and participating in physical activity is beneficial.

Kearney et al., (2005) suggested that 73 million Americans aged 20 and older

have HTN, but that the disease is more common in African Americans. Lifestyle modifications to control weight, increase physical activity, and follow a healthy eating plan with an emphasis on fruits and vegetables have been shown to control HTN successfully (Kearney et al., 2005).

The implementation of this study will be beneficial to the participants if the lifestyle modifications are properly applied. Therefore, adherence is strongly suggested. The appropriate study designed to address the African American adult population with HTN was the cross-sectional study. This method is useful for research with a focus on a group or population's health problem.

Lifestyle Modification

Significantly, guidelines on HTN propose behavior modification towards achieving a healthy lifestyle as secondary and preventive, while the use of drugs is indicated as an immediate intervention (Elder et al., 2012; Noheria, Mosley, & Kullo, 2010). The lack of empirical evidence and the need to support current clinical practices necessitates investigating approaches that may have a significant effect among patients who have been diagnosed with HTN. The former covers cessation of smoking, healthy food choices, and physical activity, while the latter deals with controlling BP, cholesterol levels, and glucose levels (Noheria et al., 2010). However, literature on preventive interventions revealed that, while there is improvement in drug prescription and medical treatment, long-term behavioral changes, which prevent risks of HTN and comorbid diseases, remain challenging (Warren-Findlow et al., 2012).

The limited success of health programs is often associated with the inability of health care providers to change patients' lifestyles (Aronow, 2013). Increased adherence

should be promoted, because it will have a positive impact on the lives of the participants. Due to the potential positive effects, it was the intention of the researcher to determine the change in BP among African American adults in Brooklyn, because of a one month lifestyle modification through a peer support education program. The subsequent section details the differences and similarities of lifestyle and pharmaceutical interventions in the control of blood pressure.

Lifestyle and Pharmaceutical Interventions

Lifestyle modifications have shown significant positive effects in the treatment and prevention of comorbid disease such as chronic heart disease (CHD). According to Rosenson (2010), the risk of developing chest pains, heart attacks and strokes is greatly increased by high cholesterol and lipid levels. The decision to treat lipid levels through lipid-lowering treatments is on a case-to-case basis. Several factors such as current lipid levels, the presence or absence of CHD and other risk factors are considered by clinicians in their decision to treat people with high cholesterol (Rosenson, 2010). Rosenson (2010) also explained that people with CHD benefit from aggressive lipid-lowering treatment and that lipid-lowering therapy, a treatment that is not as aggressive as in patients with CHD, is beneficial to people with no history of CHD.

Lifestyle changes with or without medication can lower lipid levels. In fact, clinicians often recommend that the patient should execute a trial of lifestyle changes prior to medication (Rosenson, 2010). Rosenson (2010) pointed out that day-to-day habits must be changed for all patients with high LDL (Low-Density Lipoprotein) cholesterol. These changes include a diet that limits total and saturated fat, weight loss (if overweight or obese), engaging in aerobic exercise and increasing fruit and vegetable

intake (Rosenson, 2010). The result of these lifestyle modifications may be visible in six to 12 months. Rosenson (2010) noted that the results and success rate of the lifestyle modification approach to lowering lipids vary greatly, and clinicians may decide to start with drug therapy before the six to 12 month period is over.

Although many medications have been found to lower the levels of LDL cholesterol and triglycerides, only a few are available to increase HDL cholesterol. Medications such as Statins, Ezetimibe, and Bile acid sequestrates, Nicotinic acid (Niacin) and Fibrates target a particular lipid and vary in how it works, how effective it is, and how much it costs (Rosenson, 2010). Studies indicated that medication could quickly lower LDL levels; while the result of lifestyle modification takes longer to manifest. Most people stopped treatment with medication because of the side effects. However, a wide selection of medications is currently available that would allow most people to find an option that suits them. Hence, if a particular medication is not working, the patient may be recommended options that are compatible with their lifestyle and beliefs (Rosenson, 2010). Treating high cholesterol and/or triglycerides is a lifelong process. For this reason it is recommended that, once a patient has found a treatment plan that is effective, they stay with that plan, since discontinuing treatment usually results in increased lipid levels.

According to Maruthur, Yuh Wang, and Appel (2009), the critical component of population-based strategies to control BP and subsequently prevent comorbid diseases such as CHD is lifestyle modification. Maruthur et al. (2009) explained that unfavorable lifestyles, where risk factors such as physical inactivity, smoking, obesity, and several aspects of diet are present, have a significant impact on the burden of the disease. Due to

the number of lifestyle factors to be controlled, there is rarely a study that can effectively detect the influence of lifestyle modifications in clinical outcomes for trials of lifestyle modifications because of logistic considerations. Chronic Heart Disease risk factors are often the outcome variables of such trials. Trials of single and multiple lifestyle interventions revealed that changes in lifestyle could have significant effects on controlling BP (Maruthur et al., 2009).

Review of Hypertension Prevalence and Related Research

Hypertension has affected over 50 million people in the US. Many have had to rely on health care providers to treat them according to the provider's treatment plan, with no personal involvement of the client. Health care professionals must recognize the possibility for non-adherence to treatment and be prepared to address treatment modalities sooner rather than later. One of the many ways to solve this problem is to discuss the patient's concerns or questions about medication. Currently, various health service professionals are encouraging a transdisciplinary approach to care where the health care plan includes the patient, nurse, nutritionist, pharmacist, and health educator.

The next step would be to have the provider offer explicit clarification to help dispel any uncertainties that may hinder successful health outcomes. Health care professionals must focus on the questions asked. Open communication between healthcare consumers and those providing care enables a transdisciplinary team to be involved in every aspect of that care, and to discern the health concerns of ethnic minorities.

Cardiovascular disease, with HTN being an important contributing factor, is the primary cause of death in the US. Statistics have shown that over 300,000 Americans

died from HBP in 2006. Hypertension has no consistent warning signs or symptoms. Approximately one in three adults in the US has HTN, and one in four Americans has pre-HTN, a blood pressure measurement that is above the normal range, but not within the established HTN range. In the US, $76.6 billion is spent on health care services, missed days at work, and medication related to HTN. The effects are greater in African American men than in any other population, and the rates of HTN are rising.

A transdisciplinary team approach can assist healthcare providers, nutritionists, pharmacists, and nurses to bridge the gaps in a client's health care plan by fulfilling the needs of the client from the start. To meet a client's health care needs, it requires a trusting relationship between client and health care provider. In such a trusting relationship, the client may become an active participant in his/her own care, and the healthcare professional becomes trustworthy, acceptable, and competent in future health-related challenges or situations. Hypertension is a disease that requires ongoing medical treatment. Treatment includes blood tests, weight management, health history, and a food plan, among other components.

After the officials at the US Department of Health and Human Services funded health programs in 40 States, and also the District of Columbia, they implemented environmental policies and interventional changes based on the systems involved. Examples of improved BP readings were evident after policy changes were enforced, and positive outcomes in BP control were realized in individuals and community-level endeavors. The Centers for Disease Control (CDC) claimed that over 50 million people are affected by HTN in the US, 70% are being treated, and fewer than half have controlled BP.

The lowest blood pressure needed to produce adequate organ perfusion is desirable. It is best that throughout the daily functions of the human body, an individual experiences a normotensive blood pressure with as few fluctuations as possible. Flow is the essential factor, which is why there is no one optimal blood pressure goal for all individuals with HTN. Disease states develop from flow issues. For example, atherosclerosis can cause an obstruction in blood flow to develop over a period. An increase in BP produces vasoconstriction of blood vessels, which can cause damage, leading to a heart attack or a stroke. Knowing how insidious HTN becomes over time and the health outcomes involved with care necessitates that health care providers anticipate and assess African American men early for the disease. Treatment for HTN should be more aggressive and begin sooner in African American adults. There is a racial disparity in HTN control (Centers for Disease Control and Prevention, 2002). Poor medical management is an obstacle to achieving BP control in African Americans. Policy makers realized there was a deficiency in training physicians to care for patients of African American ethnicity. It was determined to be clinical inertia, the phenomenon of physicians not intensifying therapy for HTN when it is clinically indicated.

Illness Representation

The beliefs surrounding a particular disease are referred to as illness representation. Warren-Findlow, Seymour, and Shenk (2011) believed that culture has a strong influence on illness representation. In more recent research, Freedman and Murea (2012) added that societies with their own cultures set their own explanatory beliefs that may or may not include modern biomedical explanations. The research of Lee et al. (2011) revealed that help-seeking behaviors, as well as the interpretations of the

symptoms of the disease, are evidences that the framework for such understanding is the culture of the people. As such, it is imperative that medical practitioners understand the context of the culture among target groups, particularly those medical interventions requiring behavioral and attitudinal changes (Fisher et al., 2002).

Based on the research, belief that knowledge is an explanatory variable in determining success of diabetes intervention, many researchers have begun studying various cultures to provide interventions that are effective for patients suffering from diabetes (Tasosa et al., 2010). However, the methods for determining these beliefs have been primarily studied using ethnographic methodologies such as structured interview questionnaires. With these methodologies, the health beliefs of a particular group are identified, including their opinions on the nature and causes of the disease. These methodologies are convincingly effective, as the patient with HTN can articulate the impact of the illness, as well as naming the benefits that medical treatment and management can offer.

In summary, illness representation allows the clinicians and primary care teams for lifestyle modification to understand the culture that hinders and/or facilitates the promotion of health and wellness (Warren-Findlow et al., 2011). Examining the culture and practices of African Americans concerning health and HTN conditions would allow clinicians to identify appropriate strategies for involving HTN patients' support systems in the promotion of lifestyle modification. The examination of culture is relevant, because it might be the motivating factor explaining why adherence is effective, or not effective, among some participants. The subsequent section provides a detailed discussion concerning the framework of this theory and the theory underlying the basic assumption

of the peer support education program to promote healthy diet adherence among African Americans with HTN.

Framework and Theory

Conducting a needs assessment of African American adults with a focus on HTN awareness and education on diet modification, will help to implement more effective self-care behaviors. The ways that patients can self-manage, which include physical activity, weight control, dietary changes, and overall lifestyle modification, have been studied by various researchers.

Evidence-based practice has challenged primary care practitioners to investigate and develop prevention and treatment models for patients with HTN. A review of empirical evidence illustrates that, although behavioral factors such as lifestyle and stress are risks in the development of HTN, lifestyle modification among patients with HTN and CHD remains the second alternative treatment after drug intervention (Mohamad, Alfonso, & Ramappa, 2010; Brenner & Butcher, 2009). Assessment reports of health programs have revealed that, while prescriptive drug interventions improve hypertension risk factors, patient health behavior has become an obstacle to achieving a continuously healthy lifestyle (Mohamad et al., 2010). With these observations in mind, this section will discuss the health belief model (HBM) as used by health providers in changing health and lifestyle behaviors. As a theory within the realm of psychology, health practitioners utilized the theoretical postulations that could correctly explain a phenomenon. In this context, the HBM model was introduced by Rosenstock (1974) in an attempt to provide a model useful to practitioners who intended to influence and motivate patients with health issues.

Health Belief Model (HBM)

A popular simplified model for behavioral change programs is the HBM. The HBM, according to Green (2002), predicts and explains health-related behaviors based on patterns of belief associated with a health behavior in relation to the health problems that a behavior was expected to prevent or control (Green, 2002). Clinicians and policy advocates have used this model in the implementation of lifestyle modification through peer support and health education programs. This psychological health behavior change model was first developed by Rosenstock (1974), while studying and promoting the uptake of health services, and was furthered by Becker and colleagues in the 1970s to 1980s (Rosenstock, 1974). As it was designed to predict behavioral responses from treatments made to acutely and chronically ill patients. The use of this model is to predict more general health behaviors (Ogden, 2007).

Tones and Tilford (1994) later expanded the HBM with their health action model. Their main tenet held that the rational process of behavior change could influence decisions for health actions. The severity of health threats is seen as a logical cue influencing an individual to change behavior. This model postulates that environmental factors contribute to putting action to the planned change. Further, the model contextualizes that health behavior is dependent on an individual's socioeconomic status and, therefore, is believed to be uncontrollable.

The HBM originally consisted of four constructs, namely perceived susceptibility, perceived severity, perceived barriers, and perceived benefits. These concepts are used to measure people's readiness to act (Glanz et al., 1997). An individual's evaluation of the risk of acquiring the condition is referred to as perceived susceptibility, while the

individual's evaluation of the seriousness of a condition and the possible consequences is referred to as perceived severity. Perceived barriers are related to a person's evaluation of the factors that promote or discourage the adoption of the promoted behavior, while perceived benefits refer to an individual's evaluation of the positive consequences of adopting the practice. In addition, the concept of cues to action triggers the readiness and fuels overt behavior (Glanz et al., 1997). This concept helps the HBM to adapt to the challenges of altering habitual unhealthy behaviors, including being sedentary, smoking, or overeating (Rosenstock, 1974).

A critical review of the HBM emphasized the theoretical significance of preventive health behavior (PHB) and sick role behavior (SRB) dimensions in the model (Janz & Becker, 1984). The review of studies since the conception of the HBM in 1974 revealed that the most dominant HBM dimension across different study designs and behavior is perceived barriers. Perceived susceptibility and perceived benefits were both important overall, but the former HBM dimension was a stronger contributing factor in understanding PHB than SRB, while the reverse was true for the latter, where perceived benefits was a stronger contributing factor in understanding SRB. Perceived severity had the lowest significance ratios but this dimension is strongly related to SRB (Janz & Becker, 1984).

Taylor et al. (2013) utilized the HBM in examining the attitudes of African American women and girls on genetic testing for HTN. The model was used to determine perceived barriers and benefits of genetic testing across multigenerational triads of African American women. Taylor et al. (2013) used a descriptive correlational research design to explore the perceptions of African American women in relation to demographic

variables of generation, age, education, or income level. Results of the study indicated that positive attitudes are correlated with ages and education of the sample population (Taylor et al., 2013).

Summary

In this section, I discussed the philosophical perspectives or models of behavioral change and its particular context relating to the health behaviors in providing better conceptual models for programs. It also specifically noted the importance of the development and maintenance of healthy lifestyles as an alternative treatment for hypertensive patients. The theory of behavioral change was discussed as the framework for the discussion of peer support programs. In the next section, I will discuss the methodology that I used in the study and explain the data collection and analysis procedures.

Section 3: Approach

Design and Methods

The purpose of this comparative research study is to determine whether attending the workshops on peer support education can help reduce the BP of 64 underserved hypertensive African Americans in Brooklyn aged 20-65 years within a 1- month period of participating in a peer support education program. I selected underserved hypertensive African Americans or those who do not have sufficient access to extensive care services or programs that are specific for BP reduction. The adherence to the prescribed diet was measured once a week for 1-month. Quantitative data were collected from participants, which included their BP, adherence to the recommended diet, and demographics such as age, education, and income level. The following research questions and hypotheses were used to guide the study:

RQ1. What is the difference in BP for African Americans with HTN who participate in a peer group healthy heart diet educational program versus African Americans who do not participate in a peer group healthy heart diet educational program?

$H1_0$: There are no significant differences between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month.

$H1_a$: There are significant differences between the BP of hypertensive African Americans who adhered and did not adhere to the prescribed diet within a month.

RQ2. What is the relationship between BP and age, educational background, and income level among African Americans who participate in a peer group healthy heart diet educational program?

$H2_0$: There are no significant differences between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month based on demographics (age, education, and income level).

$H2_a$: There are significant differences between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month based on demographics (age, education, and income level).

Research Design

A comparative study approach has been utilized to compare the changes of BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within one month. In this study, I used the actual BP reading from the participants during their weekly meeting with a registered nurse or nutritionist.

The comparative research design was appropriate, because the variables in this study were participant characteristics that were subject to manipulation. The descriptive-comparative design was designed for two groups of participants where one group is able to participate in the peer support education workshop while the other group was not. This was devised to investigate BP and demographic differences in relation to participants' adherence to the recommended diet to reduce BP. With the descriptive-comparative design, the groups of participants who were being compared could be based on different group characteristics such as lifestyle habits and or different acquired blood pressure reduction treatments. In this study, the group characteristic compared was the participants' adherence to the recommended lifestyle practices to reduce BP.

Target Population and Sampling

The target population consisted of African American adults, aged 20-65 years old,

in a small hospital clinic in Brooklyn. I used a non-probability convenience purposive sampling method. The convenience sampling plan is a form of non-probability sampling where the participants are selected according to their availability, accessibility, and proximity to the researcher (Urdan, 2005). A convenience sampling plan is based on the potential respondents' willingness to participate in the study (Urdan, 2005). The sampling frame was obtained from hospital records of a small community hospital clinic in Brooklyn. Before acquiring the hospital records and contacting the participants, an official approval from the university IRB Office was obtained with approval number 08-12-14-0046858. The obtained list of patients was used as a reference to determine the number of African-American patients that have HTN. The importance of determining the number of patients in the small hospital clinic who were found to have HTN is to draw the rough estimate of African-Americans in Brooklyn that can benefit from the outcome of this research.

Sample Size

In determining the minimum sample size required for this quantitative study. I considered three factors. In this study, the questionnaires were sent out to the participants to be completed, and based on the result, two groups were assigned where group 1 consists of participants who adhered to the medication regimen and target daily dietary consumption. Meanwhile, group 2 consisted of participants who did not adhere to the medication and recommended diet. The power of the test, the effect size, and the significance level were then determined based on the BP reading of the participants in groups 1 and 2. For the purpose of this study, 80% power was utilized because a power of 80% ensured that the statistical analysis could provide valid conclusions concerning the

total population (Moore & McCabe, 2006). Medium effect size was chosen to ensure that the scores of participants were compared statistically, without being too strict or too lenient. The level of significance is defined as the probability of rejecting a true null hypothesis, which is usually defined as being equal to 5% (Moore & McCabe, 2006). As a result, it is ensured that there is at least 95% confidence in the results of the statistical tests. Using a software for power calculation, G*Power 3.1, it was necessary to determine the type of analysis to be used. For the purpose of this study, I utilized an independent samples T test. To achieve 80% power at a 95% confidence interval considering a medium effect size, it was necessary to gather at least 64 participants, where 32 participants adhered to a recommended diet to reduce BP, and 32 did not adhere to a recommended diet to lower BP.

Data Collection and Measures

When I received Institutional Review Board (IRB) approval concerning the conduct of this project, the data collection procedure, as discussed in the permission letter, was implemented. During this process, I sent an invitation letter to potential participants who conformed to the selection criteria, the participants' contact details were obtained through the Clinic Director who coordinated permission from the patients. The invitation letter contains a request to the potential participant to participate in the study as well my contact information, should the individual opt to participate. When potential participants replied in the affirmative, I provided project schedules and activities in which the participants were required to participate.

An informed consent form has been sent to participants, which recorded their willingness to participate in the study once IRB approval was obtained. Participants were

informed that the completed informed consent form would be collected prior to the scheduled start of the project. The informed consent form included research study information and its nature, so that participants could gain an understanding of the research, prior to agreeing to participate. Participants were informed that participation in the study was voluntary and that all personal information would be kept confidential. The informed consent form included information regarding participants' right to withdraw from the study at any time, as well as any possible harm or benefit that may result from study participation.

Prior to beginning of the study, the collection of participant background data and information has been conducted to construct the initial database. Upon receipt of the informed consent forms, the demographic questionnaire served as a screening to ensure appropriate participant eligibility (Champion, 1999). The demographic questionnaire was a tool to gather background data and facilitated the creation of study variables. The selected demographic characteristics were selected to determine the relevance of the participants' perspectives to that of their demographics (Parker, 2012).

In this project, direct observation and documentation of food intake of the sampled population was used. Participants kept food diaries that provided data on the kinds of food they consumed. The food consumption of the participants was recorded and presented at the clinic in order to capture the participants' eating patterns and food behaviors. This data aided in the development of information to guide participants regarding dietary changes and adherence. The data also provided information necessary to develop strategic ways to educate participants. The benefit of having participants keep food journals or diaries was that participants recorded the type of food they ate, including

caloric content and individual food consumption. Keeping track of food intake helped them to make appropriate portion choices and improved adherence with dietary restrictions (Parker, 2012).

Protection of Human Subjects

It is important that the protection of human participants be recognized for the purpose of this project. The goal was to ensure that all risks were minimized, the risks identified were acceptable in relation to the possible benefits and those participants' rights to privacy and confidentiality was protected. Throughout the data collection stage, the data were handled through confidential methods and members made aware of when data were collected and how it was used (Burns & Grove, 2009).

There were no known anticipated risks involved in this project, and potential psychological or social risk was minimized. The researcher ensured that participants were protected from potential emotional or social risk during the data collection stage and that they could not be personally identified (Burns & Grove, 2009). Once the project was reviewed and approval granted by the committee for Protection of Human Subjects (CPHS) and IRB, I could commence with the research. Face-to-face interviews and food diaries were the primary method of data collection. Interviews included a broad range of questions regarding hypertension, health beliefs, health care practices, and lifestyle changes (Friis & Sellers, 2009).

Data Analysis

For the statistical analysis of this study, the data were tabulated in SPSS 17.0. I managed and processed the data by inputting demographic responses and BP readings for each participant to generate an SPSS dataset file. Raw data were organized into two

groups, specifically into those hypertensive African Americans who did not adhere and those who did adhere to the recommended diet to reduce BP. Demographic data were collated and categorized considering numeric values that were used to represent each characteristic in the data analysis portion of the study.

Descriptive, non-parametric statistics included frequencies measured by sum, mean, mode, and standard deviation. Data had been analyzed as a total sample and by subsets of participants using independent samples *t* tests considering adherence and demographics as the independent variables. Independent-samples *t* tests were appropriate, since the purpose of this analysis was to compare the responses of the two groups (Cooper & Schindler, 2003). A significance level of .025 was utilized in each of the independent-samples *t* tests performed on the two subsets (Creswell, 2009).

Project Evaluation

When evaluating this project, the focus was on the impact of educational workshops that included peer support group discussions on increased adherence with diet modification among African American adults with HTN. Through these discussions, it became easier to devise strategies that could successfully facilitate adherence among patients with HTN. Discussions involved shared decision methods between patients and health professionals. The project was also evaluated to determine whether the research questions were answered adequately. An evaluation model appropriate to evaluating this program was the logic model, which has been widely used to assess interventions and outcomes. Program evaluation began as the planning process started and continued throughout to program completion.

While there are many ways in which the logic model can be used, the purpose in

this instance was to assess relationships between the elements of the program and the proper flow of activities of the program. This acted as a template for evaluating the program's outcomes (Hodges & Videto, 2011). The advantages of using this model were that it aided in clarity of thinking and planning, and allowed for the visualization and understanding of how human and financial resources could contribute to achieving the goals, and with the use of the logic model, gaps in the program could be identified (W. K. Kellogg Foundation, 2004).

Participants were presented with all analyzed data and the outcomes of the program. If BP had decreased significantly, the goal was to encourage health care practitioners to incorporate education on dietary consumption for all African American adults upon physical examination. Patient empowerment through the implementation of peer group discussions and contact with physicians and consultants using a knowledge based program in small groups, along with providing education of hypertensive disease facilitated the improvement of HTN treatment. The shared decision-making intervention used in group discussions and consultations with physicians and health care providers helped through cooperation and trust of both patients and the health care providers involved (Deinzer et al., 2009).

Research Ethics

Conducting research puts an ethical responsibility upon the researcher to recognize and protect the rights of their subjects (Burns & Grove, 2009). The moral responsibility should ensure confidentiality of data and also allow the ability to delve into the information to make sure that the goals of the study are met.

Researchers have an ethical responsibility to protect the rights of all participants.

The human rights at play are the right to self-determination, privacy, anonymity and confidentiality, the right to fair treatment, and the right to protection from discomfort and harm (ANA, 2011). All data had to be kept anonymous and confidential. Ultimately, this research should be beneficial to African American adults with HTN.

In order to achieve this, the researcher obtained written informed consent from all participants prior to the commencement of the study. Participants were provided with the reason for and goals of the project and a description of the actions, benefits, and risks involved. All participants had the capacity to make individual decisions and information was kept confidential. Potential for emotional or social risk was eliminated by assuring that data could not be personally identified (Burns & Grove, 2009). The written informed consent forms provided participants with the assurance of confidentiality, protection from possible risks, personal safety, and privacy.

To proceed with the study, the researcher had different options to collect the data and develop an understanding of the study matter. The researcher could have used primary research methods or secondary research to obtain the necessary information. However, it was important for the researcher to ensure that the data had been analyzed effectively and efficiently. The researcher analyzed the literature available through secondary research. In addition, the researcher collected data through primary research. All data collected were confidential and individual participants were informed of what data were collected and how it was used. Patients' right to privacy of all records, beliefs, or behaviors were strictly maintained.

Section 4: Results and Analysis

Results and Analysis

The purpose of this comparative research study is to determine whether attending the workshops on peer support education can help reduce the BP of 64 underserved hypertensive African Americans in Brooklyn aged 20-65 years within a 1-month period of participating in a peer support education program. This was achieved by comparing BP changes in African Americans who adhered or did not adhere to the recommended diet over a period of 1-month. There is probably great significance in the effects of adherence to treatment of HTN and adherence to treatment of HBP. In this study, I used BP readings from hypertensive African Americans taken during their weekly meetings with a registered nurse or nutritionist. The study sample included 64 African American adults aged 20-65 years old in Brooklyn, NY. These samples were divided into two groups. One group consisted of 32 hypertensive African Americans who adhered to the prescribed diet during the month and another 32 hypertensive African Americans that did not adhere to the recommended diet during the month. The participants were first interviewed regarding their adherence to the treatment suggested to them.

This was guided by the following research questions and hypotheses:

RQ1. What is the difference in BP for African Americans with HTN who participate in a peer group healthy heart diet educational program versus African Americans who do not participate in a peer group healthy heart diet educational program?

$H1_0$: There are no significant differences between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month.

$H1_a$: There are significant differences between the BP of hypertensive African

Americans who adhered and did not adhere to the recommended diet within a month.

RQ2. What is the relationship between BP and age among African Americans who participate in a peer group healthy heart diet educational program?

$H2_0$: There are no significant relationships between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month and their age.

$H2_a$: There are significant relationships between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month and their age.

This part of the study begins with a summary of demographic information and normality testing of the study variables. This is followed by the descriptive statistics of the study variables, separated by the treatment groups, which were included in the statistical analysis. The results of the independent sample *t* test and Pearson correlation test were used to address the research questions of the study. These presented in this section.

Summary of Demographic Information

Table 1 summarizes the descriptive statistics of the age of the sample, segregated into the two groups of hypertensive African Americans who adhered and did not adhere to the prescribed diet during the month. The mean age of the hypertensive African Americans who adhered to the recommended diet within a month was 44.31 years old, while the average age of the hypertensive African Americans who did not adhere to the recommended diet within a month was 43.00 years old. The samples of hypertensive African Americans who adhered to the prescribed diet within a month were slightly older

than those who did not adhere to the recommended diet. This difference is to be considered significant.

Table 1

Descriptive Statistics Summary of Age by the Independent Grouping

Grouping	*M*	*n*	*SD*
Adherence to hypertension diet	44.31	32	12.27
Non-adherence to hypertension diet	43.00	32	13.35
Total	43.66	64	12.73

Normality Testing of the Data of Study Variables

Prior to conducting the statistical analyzes of independent sample *t*-test to address the research questions and hypotheses, I performed normality testing of the study variables to ensure that the data of the study variables follows a normal distribution. This is because one of the required assumptions of a parametric statistical test such as the *t* test is that the data should be regularly distributed. The study variables included the pre and post-test systolic and diastolic blood pressures.

To determine whether the data follows a normal distribution, skewed statistics greater than three indicate strong non-normality, while kurtosis statistic between 10 and 20 also indicate non-normality (Kline, 2005). Looking at Table 2, the skewed statistic values of the study variables enumerated ranged between -0.68 and 0.62, while the kurtosis values ranged between -0.88 and 0.34. The skewed and kurtosis statistics of all study variables fell within the criteria enumerated by Kline (2005), indicating that the data for the pre and post-test blood pressures were normally distributed.

Table 2

Skewed and Kurtosis of Study Variables

		Skewed		Kurtosis	
Pre and Post BP Readings	*n*	Statistic	*SE*	Statistic	*SE*
Systolic BP (Pre)	64	0.41	0.30	-0.88	0.59
Diastolic BP (Pre)	64	-0.68	0.30	0.34	0.59
Systolic BP (Post)	64	0.62	0.30	-0.13	0.59
Diastolic BP (Post)	64	0.16	0.30	-0.42	0.59

Histograms were also generated for the BP data in order to investigate whether the data follows normal a distribution or not (see Figures 1-4). It can be observed from the various histograms that the allocation of data formed an approximate bell-shaped curve, similar to normal distribution, in all of the four graphs shown for the pre and post-test systolic and diastolic BP data, although the bell-shaped pattern formed in the chart was not a perfect representation of the desired pattern. The average distribution of the results of the normality testing through the skewed and kurtosis of the data in each study variable was also revealed during the study. Thus, the *t* test could be conducted, since data of the study variables exhibited a normal distribution.

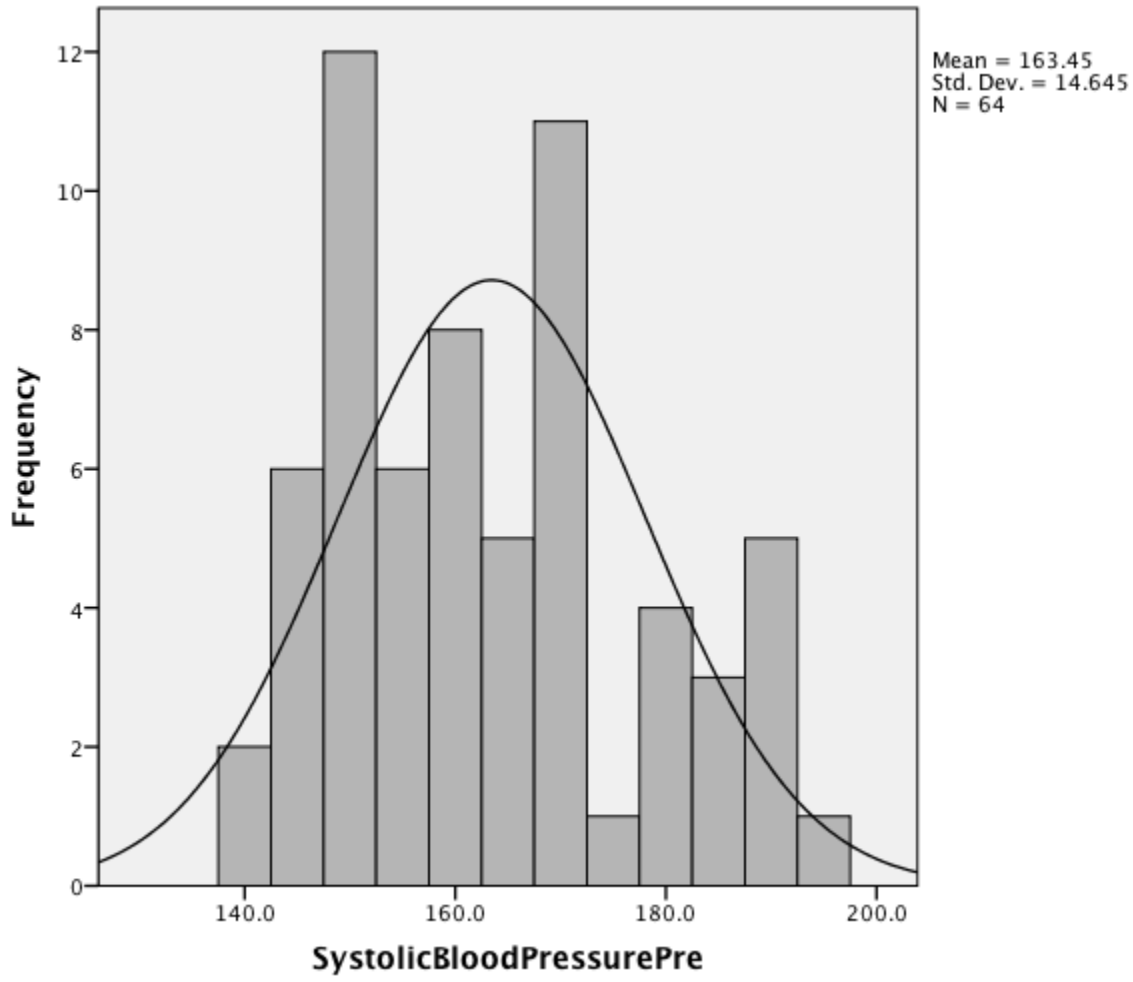

Figure 1. Histogram showing participants' initial Systolic blood pressure prior to the start of the study.

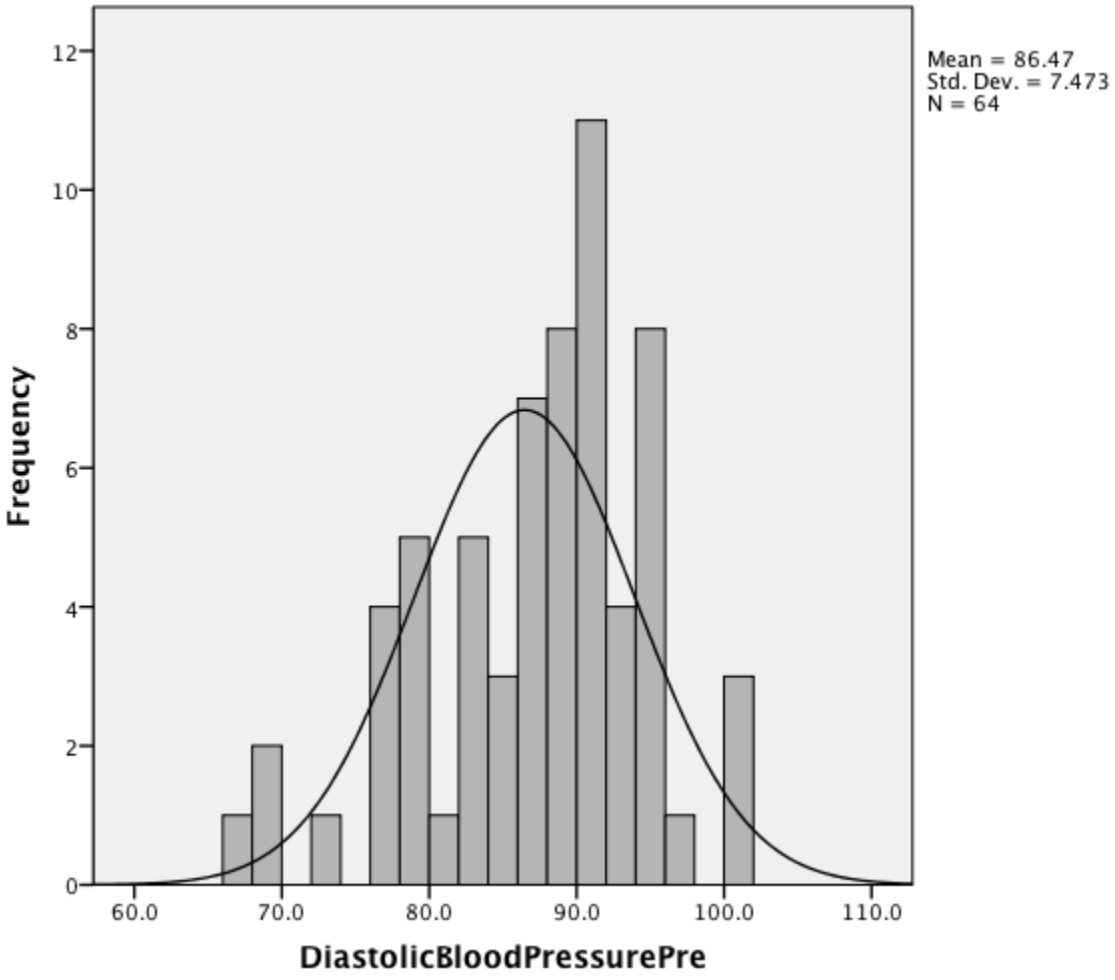

Figure 2. Histogram showing participants' initial Diastolic blood pressure prior to the study.

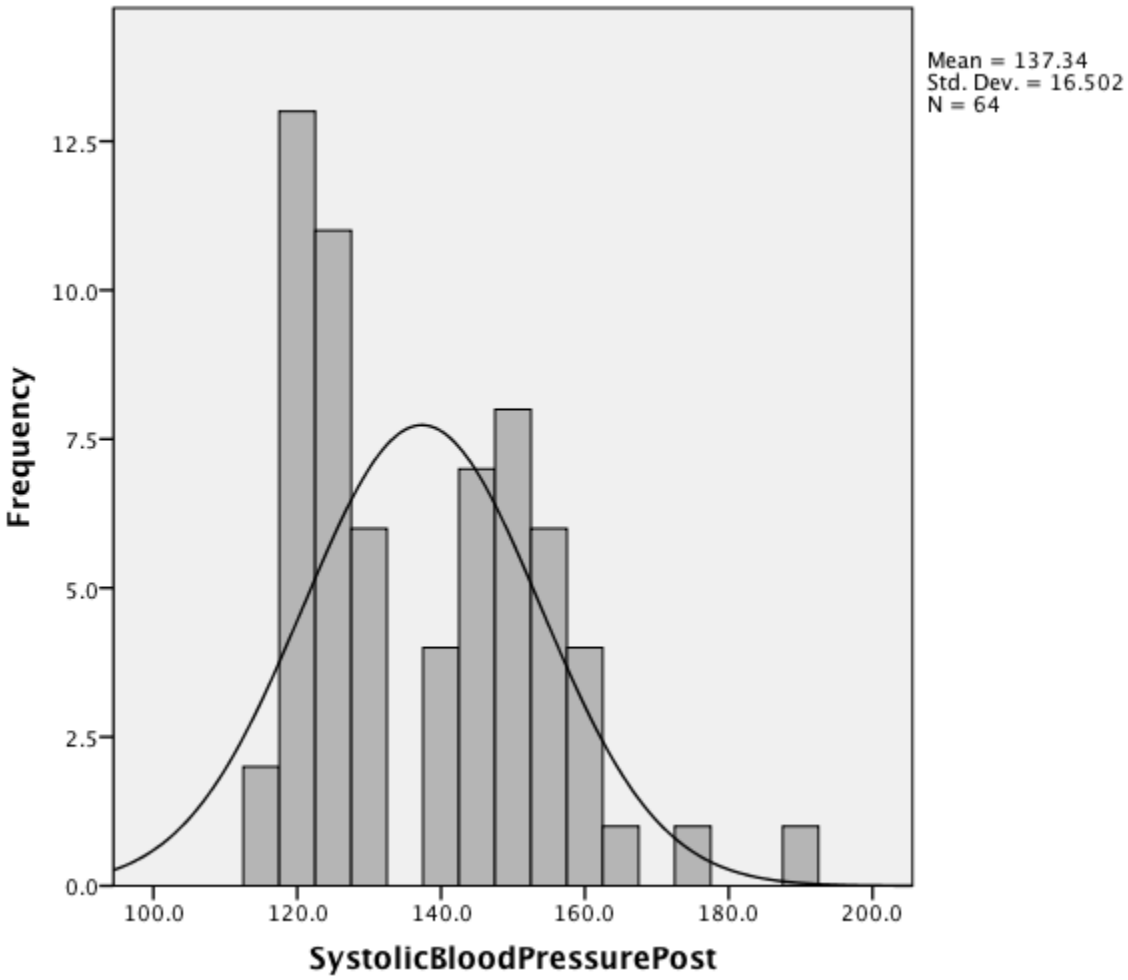

Figure 3. Histogram showing participants' Systolic blood pressure at the start of the study.

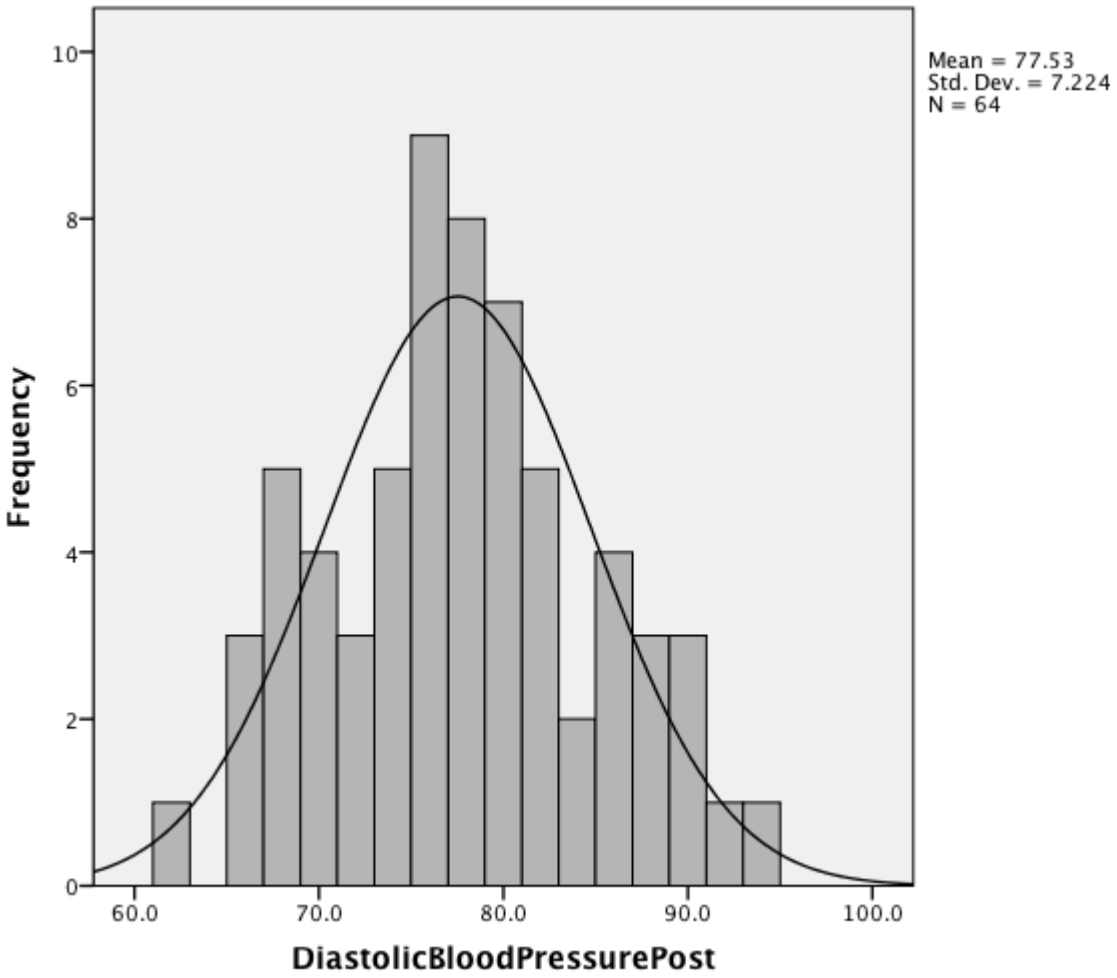

Figure 4. Histogram showing participants' Diastolic blood pressure at the end of the study.

Independent Sample *T*-Test Result to Address Research Question One

I conducted the independent sample *t* tests to determine whether there is a difference in blood pressure of African Americans with HTN who participated in a peer group healthy heart diet educational program versus African Americans who did not participate in a peer group healthy heart diet educational program. Investigations were conducted on the pre and post-test systolic and diastolic blood pressures. A level of

significance of 0.05 was used in the *t* test analysis. A significant difference is observed if the *p*-value of the *t*-statistics does not exceed the critical value of the level of significance set at 0.05.

Table 3 showed the group descriptive statistics of the pre and post-test systolic and diastolic BPs between those African Americans with HTN who participated in a peer group healthy heart diet educational program and those African Americans who did not participate in a peer group healthy heart diet educational program. Mean comparisons were conducted to determine the difference between the pre and post-test blood pressures between the two groups. From Table 3, it can be observed that the African Americans with hypertension who participated in a peer group healthy heart diet educational program had higher systolic (M = 165.94) and diastolic (M = 87.09) blood pressure as compared to the systolic (M = 160.97) and diastolic (M = 85.84) BP of those African Americans who did not participate in a peer group healthy heart diet educational program during the pre-test, or the period when the intervention of dieting had yet to occur. This means that those African Americans with hypertension who participated in a peer group healthy heart diet educational program had higher BP compared to those African Americans who did not participate in a peer group healthy heart diet educational program prior to when they started dieting. However, the African Americans with HTN who participated in a peer group healthy heart diet educational program have both lower systolic (M = 122.97) and diastolic (M = 73.53) BP compared to the systolic (M = 151.72) and diastolic (M = 81.53) BP of those African Americans who did not participate in a peer group healthy heart diet educational program during the post-test, or the period when the intervention of dieting had already occurred. The mean comparison suggested

that those African Americans with HTN who participated in a peer group healthy heart diet educational program had lower blood pressure after they underwent the diet regimen compared to those African Americans who did not participate in a peer group healthy heart diet educational program. The difference was further validated by the *t* test of difference to see if the difference is significance or not based on the *t*-statistics at the level of significance of 0.05.

Table 3

Descriptive statistics of participants' pre and post Blood Pressures

Pre and Post BP Readings	Adherence or Non-adherence to Hypertension Diet	*n*	*M*	*SD*	*SEM*
Systolic Blood Pressure (Pre)	Adherence to HYPERTENSION Diet	32	165.94	15.80	2.79
	Non-adherence to HYPERTENSION Diet	32	160.97	13.17	2.33
Diastolic Blood Pressure (Pre)	Adherence to HYPERTENSION Diet	32	87.09	6.66	1.18
	Non-adherence to HYPERTENSION Diet	32	85.84	8.27	1.46
Systolic Blood Pressure (Post)	Adherence to HYPERTENSION Diet	32	122.97	4.48	0.79
	Non-adherence to HYPERTENSION Diet	32	151.72	10.33	1.83
Diastolic Blood Pressure (Post)	Adherence to HYPERTENSION Diet	32	73.53	5.92	1.05
	Non-adherence to HYPERTENSION Diet	32	81.53	6.16	1.09

The resulting statistics of the *t* test were summarized in Table 4. First, the Levene's test for equality of variances was conducted to test whether the variances of the two independent groups, those African Americans with hypertension who participated in a peer group healthy heart diet educational program, and those African Americans who did not participate in a peer group healthy heart diet educational program, were equal in

each of the study variables of pre and post-test systolic and diastolic blood pressures.

The Levene's test for equality of variance table showed that the variances in the pre systolic BP ($F = 2.86$, $p = 0.10$), pre- ($F = 1.72$, $p = 0.19$), and post-test ($F = 0.22$, $p = 0.64$) diastolic BP were equal since the *p*-values were greater than the level of significance of 0.05, implying equality of variance. On the one hand, the variance in the post-test ($F = 8.16$, $p = 0.01$) systolic BP was not equal, since the *p*-values were less than the level of significance of 0.05.

Analysis of the independent sample *t* test in Table 4 revealed that there were statistically significant difference in the post-test systolic (t (42.24) = -14.44; $p < 0.001$) and diastolic blood pressure (t (62) = -5.30; $p < 0.001$) between African Americans with hypertension who participated in a peer group healthy heart diet educational program and African Americans who did not participate in a peer group healthy heart diet educational program. The mean difference statistics showed that the systolic blood pressures of those African Americans with hypertension who participated in a peer group healthy heart diet educational program were lower by 28.75 after they underwent the diet regimen compared to the systolic BPs of African Americans who did not participate in a peer group healthy heart diet educational program.

On the other hand, the mean difference statistics showed that the diastolic BPs of those African Americans with HTN who participated in a peer group healthy heart diet educational program were lower by 80 after they underwent the diet regimen compared to the diastolic BPs of African Americans who did not participate in a peer group healthy heart diet educational program. The results suggested that there are significant differences between the BPs of hypertensive African Americans who adhered and did not adhere to

the recommended diet within a month, based on the post-test comparison.

To be specific, the BP was lower for those African Americans with HTN who participated in a peer group healthy heart diet educational program versus African Americans who did not participate in a peer group healthy heart diet educational program. When comparing the pre-test blood pressures, which is the period before the intervention of dieting, the *t*-test results showed that there were no statistically significant difference in the pre-test systolic (t (62) = 1.37; p = 0.18) and diastolic blood pressure (t (62) = 0.67; p = 0.51) between those African Americans with HTN who participated in a peer group healthy heart diet educational program and those African Americans who did not participate in a peer group healthy heart diet educational program. Thus, this means that the BP of the two sample groups was the same prior to when they started their respective interventions.

Table 4

T-Test of Difference Results of Participants' Pre and Post Blood Pressures

Pre and post BP readings		Levene's test for equality of variances		*t*-test for equality of means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean difference	Std. error difference	95% Confidence interval of the difference	
									Lower	Upper
Systolic BP (Pre)	Equal variances not assumed	2.86	0.10	1.37	62	0.18	4.97	3.64	-2.30	12.24
Diastolic BP (Pre)	Equal variances assumed	1.72	0.19	0.67	62	0.51	1.25	1.88	-2.50	5.00
Systolic BP (Post)	Equal variances not assumed	8.16	0.01	-14.44	42.24	0.00*	-28.75	1.99	-32.77	-24.73
Diastolic BP (Post)	Equal variances assumed	0.22	0.64	-5.30	62	0.00*	-8.00	1.51	-11.02	-4.98

Note. F = F-statistic of the Levene's test, Sig. = probability value of significance of the test statistic

Pearson Correlation Test Result to Address Research Question Two

I also conducted the Pearson correlation test to determine the relationship between the BP and age of African Americans who participated in a peer group healthy heart diet educational program. A level of significance of 0.05 was also used in the hypothesis testing. The results of the Pearson correlation test were presented in Table 5.

The results of the correlation test showed that none among the pre-test systolic BP (p = 0.23, r = 0.07), pre-test diastolic BP (p = 0.71, r = -0.05), post-test systolic BP (p = 0.57, r = 0.07), and post-test diastolic BP (p = 0.14, r = -0.19) were significantly related with the age. This was because the p-values were all greater than the level of significance value of 0.05 indicating the insignificance of the correlations. The results of the correlation test failed to reject a null hypothesis for research question two that there are no significant relationships between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month and their age.

Table 5

Pearson correlation test results for the relationship of BP and age

		Age
Systolic BP (Pre)	Pearson correlation	0.23
	Sig. (2-tailed)	0.07
	N or n	64
Diastolic BP (Pre)	Pearson correlation	-0.05
	Sig. (2-tailed)	0.71
	N	64
Systolic BP (Post)	Pearson correlation	0.07
	Sig. (2-tailed)	0.57
	N	64
Diastolic BP (Post)	Pearson correlation	-0.19
	Sig. (2-tailed)	0.14
	N	64

Summary and Evaluation of Findings

The purpose of this comparative study quantitative approach was to determine the impact of educational workshops on dietary lifestyle of underserved African Americans presenting at a clinic in Brooklyn with HTN. This was achieved by making a comparison of BP changes of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month. This study utilized the actual BP reading from the hypertensive African Americans during their weekly meeting with a registered nurse or nutritionist. The study sample included 64 African American adults aged 20-65 years old in Brooklyn. These samples were divided into two groups of 32 hypertensive African Americans each that adhered to the prescribed peer group healthy heart diet educational program within a month and another 32 hypertensive African Americans that did not adhere to the recommended peer group healthy heart diet educational program within a month. The study was guided by the following research problems and hypotheses:

RQ1. What is the difference in BP for African Americans with HTN who participate in a peer group healthy heart diet educational program versus African Americans who do not participate in a peer group healthy heart diet educational program?

$H1_0$: There are no significant differences between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month.

$H1_a$: There are significant differences between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month.

RQ2. What is the relationship between BP and age among African Americans who participate in a peer group healthy heart diet educational program?

$H2_0$: There is no significant association between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month and their age.

$H2_a$: There is a significant relationship between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month and their age.

The goal of this project was to decrease HTN with education on dietary changes of the participants. The results of the study are significant in order to begin awareness on the importance of dietary changes to HTN. In line with Walden University's mission, this DNP project will encourage positive social change and have a vital impact for African American adults by creating and applying ideas, strategic plans, and interventions to promote the worth, dignity, and development of individuals, communities, and cultures to improve their human and social conditions. The group discussions and contact with participants will affect how African American adults with HTN ultimately make lifestyle changes, for example, by consuming more healthy foods integrated with fresh fruits and vegetables. The participation of participants will, hopefully, create an impact, even to those who did not directly participate in the study. Morbidity and mortality among African Americans are greatly affected by a common progressive health problem, which is chronic disease (Maeda, Shen, Schwarz, Farrell & Mallon, 2012). In addressing this common morbidity and mortality cause among the African Americans, the study can be a source of preventive mechanism for the people who belong to the class and even to those who are not African American.

Healthcare providers must be proactive in detecting HTN in an effort to decrease and

prevent mortality and morbidity in African American adults with this disease. Utilizing EBP to promote optimum health and well-being should be at the forefront of practice. Determining the significance of this disease is vital to the prevention, education, awareness, and equal access to health care among the African American adult population with HTN. It is important to recognize that it is always important to consider that HTN management starts with a sufficient level of awareness. This was highlighted by the findings of this study. Utilizing research, EBP on non-pharmacological and pharmacological treatment options is necessary to enhance the quality of life and decrease the HTN rate within this population.

Discussion of Findings in Context of Literature and Frameworks

The objective of this comparative study quantitative approach was to determine the impact of a peer group healthy heart educational program on the dietary lifestyle of African Americans presenting at a clinic with HTN. The summary of the findings illustrated below reveals that the framework, initially discussed in the literature review and in the conceptual framework of the study, worked and was proven by the results of the study. The results indicated that both the post-test systolic and diastolic blood pressures of African Americans with HTN were lower than those who did not participate in the peer support educational workshops.

The results of the study were able to answer the research questions and the hypotheses were mostly affirmed by the findings. The results of the *t*-test showed that there were statistically significant differences in the post-test systolic and diastolic BP among those African Americans with hypertension who participated in a peer group healthy heart diet educational program and those African Americans who did not participate in a peer group healthy heart diet educational program. The results also showed that both the post-test systolic and diastolic BPs of those

African Americans with hypertension who participated in a peer group healthy heart diet educational program were lower, after they underwent the diet regimen, as compared to the post-test systolic and diastolic BPs of those African Americans who did not participate in a peer group healthy heart diet educational program. This means that the BP of those African Americans with HTN who participated in a peer group healthy heart diet educational program were better when compared to those African Americans who did not participate in a peer group healthy heart diet educational program after doing their own regimen.

The results of the correlation test for research question two showed that there were no significant relationships between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month and their age.

The quantitative study was utilized to explore the change in BP of underserved hypertensive African Americans in Brooklyn within a one month period. Selected underserved hypertensive African Americans were given a program that specifies a diet to reduce BP. The adherence to the prescribed diet was measured once a week for one month. Quantitative data was collected from the underserved hypertensive African Americans, which included their BP, adherence to the recommended diet and demographics such as age, education, and income level.

It is to be noted that "self-efficacy is important and describes the influence of social support and depression on treatment adherence" (Maeda, Shen, Schwarz, Farrell & Mallon, 2012). Self-efficacy may also be a vital factor in making sure that there is a crucial target for interventions to improve disease management and self-care behaviors for the patients (Maeda et al., 2012). The mean age of the hypertensive African Americans who adhered to the prescribed diet within a month was 44.31 years old, while the mean age of the hypertensive African

Americans who did not adhere to the prescribed diet within a month was 43.00 years old. The samples of hypertensive African Americans who adhered to the recommended diet within a month were slightly older than those who did not adhere to the recommended diet.

Health disparities of CVD, type 2 diabetes, HTN, and cancer rates have continually been on the rise for African Americans. For example, African American women had disproportionate rates of obesity, CVD, type 2 diabetes, and breast cancer in the US, with nearly 53% being obese in 2006. Additionally, in California, a health statistics report in 2005 revealed that 10% of the African American population was diagnosed with type 2 diabetes. The experience of the researcher in the small hospital clinic in Brooklyn showed that, indeed, the condition of HTN among African Americans is a serious concern that must be considered in terms of planning a sustainable diet and adherence to the planned diet, as well as medical needs.

The guidelines on HTN illustrate health behaviors towards achieving a healthy lifestyle as secondary preventive intervention and the use of drugs as an immediate intervention (Elder et al., 2012; Noheria, Mosley, & Kullo, 2010). The former covers cessation of smoking, healthy food choices, and physical activity, while the latter deals with controlling the BP, blood levels of cholesterol, and glucose (Noheria et al., 2010).

The results revealed that it was necessary for a patient with HTN to adhere to a specially planned diet. Further, being involved with a peer group can also be a significant influence on the improvement and betterment of the health condition of the patient.

Lifestyle modification has shown significant positive effects in the treatment and prevention of comorbid diseases such as CHD. According to Rosenson (2010), the risk of developing chest pains, heart attacks and strokes are greatly increased by high cholesterol and

lipid levels (Albarran, Durham, Gowers, Dwight, Chappel, 2002). Because of the significant effect of lifestyle modification to the general performance of the patients, it should be encouraged. Further, it must be noted that it is not just the patients' awareness that matters. Family members and relatives should also be convinced of the significant effects of lifestyle modification so that they can convince their families who are suffering from HTN.

Implications

The histograms were presented in Figures 1 to 4. It can be observed from the various histograms that the distribution of data formed an approximate bell-shaped curve, similar to normal allocation, in all of the graphs shown for the pre- and post-test systolic and diastolic blood pressure data, although the bell-shaped pattern formed in the chart was not a perfect representation of the desired pattern. This is acceptable since the results of the normality testing through the skewed and kurtosis of the data of each study variable were generally distributed. Thus, the *t*-test could be conducted, since the data in the study variables exhibited a normal distribution.

The results suggested that there are significant differences between the blood pressures of hypertensive African Americans who adhered and did not adhere to the recommended peer support healthy heart diet education program within a month, based on the post-test comparison. Makinde and Babalola (2011) noted the relationship between diet pattern, anthropometry and HTN. It was found that there was a significant correlation between body mass index (BMI) and BP levels (diastolic and systolic) in both male and female (Makinde & Babalola, 2011). Both health and religious reasons were also important factors for dietary pattern (Makinde & Babalola, 2011). Thus, as a unique class, there are certain factors that affect the conditions of African

Americans in relation to HTN.

To be specific, the blood pressure was lower for those African Americans with hypertension who participated in a peer group healthy heart diet educational program versus African Americans who did not participate in a peer group healthy heart diet educational program. There is increasing evidence that patient-centered care, including communication skills, is an essential component of chronic illness care (Roumie, Greevy, Wallston, Ealsy, Kaltenbach, Kotter, Dittus & Speroff, 2010). Roumie et al. (2010) aimed to evaluate patient-centered primary care as a determinant of medication adherence. Adherence can be more prevalent if there is a peer group that supports an HTN patient to realize the value of adherence to the full recovery and treatment.

The result also showed that both the post-test systolic and diastolic BP of those African Americans with hypertension who participated in a peer group healthy heart diet educational program were lower, after they underwent the diet regimen, compared to the post-test systolic and diastolic blood pressures of African Americans who did not participate in a peer group healthy heart diet educational program. This could lead to a faster recovery and to the attainment of the necessary knowledge on how to address certain conditions.

The design of interventions in health promotion and programs to prevent obesity should take into account the important finding that peers have an effect on the physical activity of a person, but no effect on the dietary intake (Finnerty, Reeves, Dabinett, Jeanes & Vogele, 2009). This finding may be significant, since it has been established that low physical activity levels could be a chief contributing factor to the persistence of the condition (Finnerty et al., 2009). It is implied by the findings of the study that, as much as possible, a hypertensive patient would

benefit from finding peers who suffer the same ordeal, in order to deal with the condition courageously and efficiently.

The results of the correlation test for research question two showed that there were no significant relationships between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month and their age.

Patterns in food intake of a person have an important contribution in the development of obesity and diet-related chronic disease (Sofianou, Fung & Tucker, 2011). A constant effort to avoid consuming food related to HTN should be made (Sofianou et al., 2011). Efforts may include societal support coupled with relevant studies regarding the harmful effects of the food to be avoided. It is implied by the findings that the efforts to convert non-adherence to adherence will be the same regardless of the age of the HTN patient. Thus, a general encouragement on the part of the patients may seem to work, despite the absence of explicit consideration about the age of the patient.

Project Strengths and Limitations

The project was conducted with a non-probability convenience purposive sample of 64 African American adults in Brooklyn. The number of the participants is part of the limitation of the study, because it may affect the generalization of the results of the study. It is to be noted that 64 African Americans is not enough to conclude fully that the findings of the study will be applicable to other African Americans who did not participate in the study. The study was limited to participants who have a health history of HTN, individuals at risk for the disease due to family history, and of the same cultural background. It is to be noted that not all patients who had HTN were already advised of the status. Thus, the choice of participants in the study was

limited to the knowledge of the researcher that the patient has HTN. The study only used participants within a small hospital clinic in Brooklyn. These limitations affect the generalization of the findings of the study.

In this study, one of the limitations was regarding the post-presentation questionnaire [Appendix C] conducted. A post-presentation questionnaire using a 5-point scale was distributed to 20 professionals, including four primary care physicians, two nutritionists, three nurse practitioners, six registered nurses and five African Americans. A total of 19 responses were received. One African American failed to return the questionnaire in a timely manner. This poses a weakness in the study since time was of the essence to ensure that the deciding mind of the participant is not influenced by external factors. In responding to the questionnaire, the responses by the participants were done with paper and pencil. The responses of the participants were all listed as a 4 or 5 on the post-presentation-questionnaire.

Analysis of the Self

This section of the study presents the recommendation based on the results and the limitations of the study. It is recommended that adherence be the priority of the patients with HTN. Both the patient with the condition, as well as the family members and the relatives of the patient should prioritize adherence. It is always important to note that there is a social factor related to having HTN. The social factor cannot be disregarded as it may have an effect that is as significant as the impact of the individual and personal factors.

It is recommended that there be a formal peer group and an educational awareness campaign among African Americans. African Americans are presented with special health and physiological conditions that should always be considered. The special conditions are not always

apparent. Most often, the conditions can only be determined if there is a formal process to educate the persons affected. It should not be discounted that the presence of a peer group is necessary among those who are suffering from HTN. This is to emphasize the significance of the social factor, in addition to individual factors.

Another recommendation is the provision of an individually planned diet for patients with HTN. A particular diet would consider not just the physiological relevance, but also the cultural and social implications of the type of food that can be consumed by the patient. With the provision of a dietary plan, it will be easier for the HTN patient to recover and avoid the food detrimental to his/her health. The cultural implications must also be considered due to the fact that the African Americans' culture may not be totally the same as white Americans.

In terms of the methodology used in the study, it is important to note that another method may also be significant. For example, the utilization of the qualitative method may be beneficial in terms of finding specific root causes of the HTN condition among patients. The consultation of a bigger hospital may also alter the results. Further, a larger number of populations can also be considered.

Summary and Conclusions

The results of the statistical analysis conveyed here was intended to address the research question and hypothesis. The objective of this comparative study quantitative approach was to determine the impact of a peer support healthy heart diet educational program on the dietary lifestyle of African Americans presenting at a clinic with HTN. The results of the *t*-test showed that there were statistically significant differences in the post-test systolic and diastolic blood pressure among those African Americans with HTN who participated in a peer group healthy

heart diet educational program and African Americans who did not participate in a peer group healthy heart diet educational program.

The result also showed that both the post-test systolic and diastolic blood pressures of those African Americans with HTN, who participated in a peer group healthy heart diet educational program were lower, after they underwent the diet regimen when compared to the post-test systolic and diastolic blood pressures African Americans who did not participate in a peer group healthy heart diet educational program. The blood pressure was better for those African Americans with HTN who participated in a peer group healthy heart diet educational program compared to the African Americans who did not participate in a peer group healthy heart diet educational program after doing their own regimen.

The results of the correlation test for research question two showed that there were no significant relationships between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month and their age.

Hypertension is a significant chronic health burden, as it affects not only the individual, but also communities and society. African Americans suffer disproportionally from hypertension-related morbidity and mortality. This chapter provided the discussion, implications, and recommendation. It started with the review of the research problem, purpose, and significance. In addition, this also presented the analysis synthesis and evaluation and related the findings to the literature on the study. Afterward, the study presented the recommendations on the results and on the primary methodology employed in the study.

Section 5: Scholarly Product

PRACTICAL MANAGEMENT

Peer Support Education for Uncontrolled Hypertension among Adult African Americans

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Objective. The purpose of this project was to examine the effectiveness for a peer support education program through determining the change in blood pressure of 64 underserved hypertensive African Americans in Brooklyn aged 20 to 65 years old within a month of participating in a peer support educational program.

Method. A comparative study research design was used to compare two groups of participants' actual blood pressure reading from hypertensive African Americans during weekly meetings with a registered nurse or nutritionist and adherence of the participants to the recommended diet to reduce blood pressure.

Participants. To achieve 80% power at 95% confidence interval considering a medium effect size, it was necessary to gather at least 64 participants, wherein 32 participants adhered to a recommended diet to reduce BP, and 32 did not adhere to a recommended diet to reduce BP.

Results. The results of the correlation test for research question one showed no significant differences among African Americans who adhered and those who did not adhere to the recommended diet within a month. Question two showed that there were no significant relationships between the BP of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month and their age.

Conclusions. The project encouraged positive social change for African American adults by creating and applying the necessary, updated strategies and interventions to promote the worth, dignity, and development of individuals, communities, and cultures to improve overall well-being, which started with the information presented to the participants.

INTRODUCTION

Adult African Americans with HTN have higher rates of heart failure, stroke, end-stage renal disease, and greater heart disease mortality than Caucasians (Kathryn et al., 2011). The ultimate goal of the study was to find concrete evidence to validate those African American adults with HTN that helped to make great strides in the reduction of this disease through education on diet adherence targeted to HTN. To address dietary lifestyle and help reverse HTN rates among

African-Americans, lifestyle modifications are essential for the prevention of HTN, and are generally the initial step in managing the disease (Eskridge, 2010).

GUIDELINE EVALUATION

METHODS - STAGE 1

Questionnaire. What is the difference in BP for African Americans with HTN who participate in a peer group healthy heart diet educational program versus African Americans who do not participate in a peer group healthy heart diet educational program?

The independent sample *t*-tests were conducted to determine whether there is difference in blood pressure for African Americans with hypertension that participate in a peer group healthy heart diet educational program versus African Americans who do not participate in a peer group healthy heart diet educational program.

RESULTS - STAGE 1

The mean comparison suggested that those African Americans with hypertension who participated in a peer group healthy heart diet educational program had lower blood pressure after they underwent the diet regimen as compared to those African Americans who did not participate in a peer group healthy heart diet educational program.

METHODS - STAGE 2

Questionnaire. What is the relationship between BP and age among African Americans who participated in a peer group healthy heart diet educational program?

A Pearson correlation test was conducted to determine the relationship between the BP and age of African Americans who participated in a peer group healthy heart diet educational program. A level of significance of 0.05 was also used in the hypothesis testing.

RESULTS - STAGE 2

The blood pressure was better for those African Americans with hypertension who participated in a peer group healthy heart diet educational program when compared to the African Americans who do not participate in a peer group healthy heart diet educational program after doing their own regimen.

SUMMARY OF RECOMMENDATIONS

Recommendation 1. It is recommended that adherence be the first priority of the patients with HTN. The patient with the condition, as well as family members and relatives should prioritize adherence.

Recommendation 2. It is recommended that there be a formal peer group and an educational awareness campaign among the African Americans. African Americans present with special health and physiological conditions that should always be considered.

Recommendation 3. Another recommendation is the provision of a specifically planned diet for the patients with HTN. A specific diet would consider not just the physiological relevance, but also the cultural and social implications of the type of food that can be eaten by the patients. With the provision of a dietary plan, it will be easier for the HTN patients to recover and avoid the detrimental effects to their health.

DISCUSSION

The results showed that both the post-test systolic and diastolic blood pressures of those African Americans with hypertension who participated in a peer group healthy heart diet educational program were lower, after they underwent the diet regimen, as compared to the post-test systolic and diastolic blood pressures of African Americans who did not participate in a peer group healthy heart diet educational program. The blood pressure was better for those African Americans with hypertension who participated in a peer group healthy heart diet educational program as compared to the African Americans who did not participate in a peer group healthy heart diet educational program after doing their own regimen. The results of the correlation test for research question two showed that there were no significant relationships between the blood pressure of hypertensive African Americans who adhered and did not adhere to the recommended diet within a month and their age.

CONCLUSION

The results also showed that both the post-test systolic and diastolic blood pressures of those African Americans with hypertension who participated in a peer group healthy heart diet educational program were lower, after they underwent the diet regimen, as compared to the post-test systolic and diastolic blood pressures of African Americans who did not participate in a peer group healthy heart diet educational program. The blood pressure was better for those African Americans with hypertension who participated in a peer group healthy heart diet educational program as compared to the African Americans who do not participate in a peer group healthy heart diet educational program after doing their own regimen.

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Appendix A: 1- Month food Intake Log

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Appendix B: 1 – Month physical activity log

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Appendix C: Post-presentation Questionnaire Using a 5-point Scale

Post- presentation questionnaire using a 5-point scale
QUESTIONS ABOUT THE PRESENTER
Please state the extent to which you agree or disagree with the following statements, where 1 is strongly Agree and 5 is Strongly Disagree (tick one per statement).

Q1.	SA				SD
	1	2	3	4	5
A. The presenter communicated the information clearly.	✍	○	○	○	○
B. The presenter engaged the audience.	○	○	○	○	○
C. The presenter made the subject matter compelling.	○	○	○	○	○
D. The presented was able to answer questions.	○	○	○	○	○
E. The content was presented in a well-structured manner.	○	○	○	○	○
F. The pace of the presentation was right for me.	○	○	○	○	○

QUESTIONS ON THE EFFECTIVENESS OF THE PRESENTATION AND IN AGREEMENT WITH PROJECT
Please state the extent to which you agree or disagree with the following statements, where 1 is strongly Agree and 5 is strongly Disagree (tick one per statement).

Q2.	SA				SD
	1	2	3	4	5
A. The proposed project was relevant and informative.	○	○	○	○	○
B. I will recommend this proposed project to other clinics.	○	○	○	○	○
C. The proposed project was meaningful to me.	○	○	○	○	○
D. The proposed project met my expectation and purpose in attending.	○	○	○	○	○
E. The proposed project relates to the skills and knowledge I needed.	○	○	○	○	○
F. The proposed project made me think about my own actions in practice.	○	○	○	○	○

G. The proposed project motivated me to take action.	○	○	○	○	○
H. I will inform other colleagues of the proposed project presented.	○	○	○	○	○
I. I will use the knowledge gained from the proposed project in my practice.	○	○	○	○	○
J. I would like to see this proposed project implemented at other institutions.	○	○	○	○	○

What did you like most about the project?

What did you like least about the project?

Do you have any other comments, questions or concerns? Please indicate below.