African American Male Veterans’ Illness Representation and Reported Self-Management Practices of High Blood Pressure

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AFRICAN AMERICAN MALE VETERANS’ ILLNESS REPRESENTATION AND REPORTED SELF-MANAGEMENT PRACTICES OF HIGH BLOOD PRESSURE

by

TAMMIE BRODIE

A dissertation submitted to the Graduate Faculty in Nursing Science in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2017
African American Male Veterans’ Illness Representations and Reported Self-Management Practices of High Blood Pressure: A Case Study

by

Tammie Brodie

This manuscript has been read and accepted for the Graduate Faculty in Nursing Science in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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ABSTRACT

African American Male Veterans’ Illness Representations and Reported Self-
Management Practices of High Blood Pressure: A Case Study

by

Tammie Brodie

Advisor: Donna Nickitas

High blood pressure (HBP) is a common condition in the United States, affecting one in four American adults. Forty-one percent of African Americans have HBP compared to 27% of White Americans. African Americans develop high blood pressure at an earlier age and suffer more complications compared to other ethnic groups. Numerous studies have been conducted to find the causes and treatment for HBP in African Americans.

The purpose of this research is to explore self-management practices of African-American male veterans, who have positive HBP representation and controlled HBP. A mixed-methods approach guided the study to gain quantitative and qualitative explanatory knowledge of self-management practices. The Common-Sense Model (CSM), based on Leventhal’s self-regulation model, guided the research. The CSM hypothesizes that perceived health threats cause individuals to develop a commonsensical representation of the threat which guides their coping behavior. In this study, a mixed methods sequential explanatory design consisting of two distinct phases — quantitative followed by qualitative— was applied. All participants (N = 74) completed the Brief
Illness Perception Questionnaire (Brief-IPQ) to determine their illness representations of HBP. Participants with positive illness representation and controlled HBP were invited to participate in the qualitative phase of the study which consisted of semi-structured interviews. The participants in the qualitative phase of the study (N = 8) were asked to report on the ways in which they modified their lifestyles to control their HBP.

Several themes emerged from qualitative analysis of the semi-structured interviews, including: motivation, independence, personal control, accessibility and adherence to HBP treatment. The findings from this study can be used to guide and motivate patients with HBP to achieve healthier outcomes. All participants expressed a commitment to controlling and sustaining their HBP. The study’s findings suggest participants with positive illness perceptions who are motivated and committed to controlling their HBP through self-management practices may have controlled and sustained HBP.
ACKNOWLEDGMENTS

I would like to express my sincere gratitude to my advisor Dr. Nickitas for the continuous support of my Ph.D. study and related research, for her patience, motivation, and immense knowledge. Her guidance helped me in all the time of research and writing of this thesis.

I would like to express my special appreciation and thanks to another advisor Professor Dr. K. Frederickson, you have been a tremendous mentor. I would like to thank you for encouraging my research. Your advice on both research as well as on my career has been invaluable.

Besides my advisors, I would like to thank the rest of my thesis committee: Dr. C. Georges, Dr. W. Gallo, and Dr. N. Reynolds, for their insightful comments and encouragement, but also for the hard question which stimulated me to widen my research from various perspectives. My sincere thanks also go to Dr. K. Nokes, who at the start of my journey provided me with her wisdom and support.

I thank my classmates for the discussions, feedback, and support. I thank the nurses, clerks, physicians and research participants in the following institution Veteran Administration Medical Center for your support and encouragement. I thank my coworkers for their endless support and encouragement.

Last but not the least, special thanks to my family. Words cannot express how grateful I am to my mother and father for all of the sacrifices that they have made on my behalf. I would also like to thank Thomas and Steven for their continued support. Thank you for providing the initial encouragement and support during my journey. To my
daughter Samantha and son John I would like to express my thanks for the both of you for being understanding and good sports. Also, I would like to say thank you to my brothers William and Amin for always putting everything in perspective and making me laugh when I couldn't see past the irony of things.

Finally, I thank God, for letting me persevere through all the difficulties. You had guided me when I thought I could no longer continue the journey. Thank you.

“Of all the forms of inequality, injustice in health is the most shocking and inhumane.”

Martin Luther King JR
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Chapter I: Introduction

The World Health Organization (WHO) estimated that high blood pressure (HBP) causes 7.5 million deaths per year worldwide, representing approximately 12.8% of all deaths (World Health Organization, 2014). Complications of HBP can include heart failure, peripheral vascular disease, renal impairment, retinal hemorrhage, and visual impairment. When left untreated or undertreated, HBP can lead directly to cerebrovascular disease, ischemic heart disease, and cardiac/renal failure. Known contributors to cardiovascular disease are tobacco use, physical inactivity, unhealthy diet, and the harmful use of alcohol (World Health Organization, 2014).

The US Department of Health and Human Services (2004) classified HBP as a modifiable risk factor for heart disease and stroke. Its prevalence and association with cardiovascular disease make the condition, also known as hypertension, a primary concern of healthcare professionals (World Health Organization, 2014). Globally, the prevalence of HBP among adults aged 25 and older was approximately 40% in 2008 (WHO, 2014). In the United States, HBP affects approximately one out of every three adults or 76.4 million people aged 20 and older (Go et al. 2013). In 2008, HBP was listed on death certificates as the primary cause of death for 61,005 Americans, and as a primary or contributing cause of death for 347,000 Americans (Roger et al., 2012).

Many people suffering from HBP are unaware of their condition until they seek medical attention for other health concerns (American Heart Association, 2011). As HBP can only be diagnosed through the direct measurement of the blood pressure, it is known as the silent killer (American Heart Association, 2011). HBP is the most common
primary diagnosis in the United States, accounting for 35 million office visits each year (Chobanian et al., 2003). In 2009, 579,000 people diagnosed with HBP were discharged from short hospitals stays (Roger et al., 2012). The combined direct and indirect cost of HBP was estimated as $51 billion in 2010, and is projected to increase to $343 billion by 2030 (Go et al., 2013), indicating a 76% increase in the cost of HBP.

Measured by an automatic blood pressure machine or a sphygmomanometer, an appropriate or normal blood pressure reading or range is 120/80 mmHg or lower (Chobanian et al., 2003). The upper number of the ratio is the systolic blood pressure (SBP), and the lower number of the ratio is the diastolic blood pressure (DBP). Systolic pressure refers to the pressure in the arteries when the heart beats, while diastolic pressure refers to the pressure in the arteries between heartbeats when the heart is at rest (Roger et al., 2012). Blood pressure can be accurately measured only after a patient has been in a seated position for three to five minutes. A systolic pressure of >140 mmHg and diastolic pressure of >90 mmHg measured on two or more consecutive visits or when patients are on antihypertensive medication is indicative of HBP (Chobanian et al., 2003). HBP is also defined as at least twice a healthcare provider is telling a person that he or she has a blood pressure higher than 120/80 mmHg. Evidence suggests that lowering one’s blood pressure to less than 140/90 mmHg can result in a reduction of cardiovascular complications (World Health Organization, 2014).

**Statement of the Problem**

HBP affects all races, but it is more prevalent and causes greater morbidity among African Americans than Whites (Roger et al., 2012). African Americans comprise 12.6%
of the total US population, according to results from the 2010 US Census (US Census Bureau, 2010). HBP will be only more pervasive and affect an increasing percentage of African Americans. Among African Americans, women have a somewhat higher rate of HBP than men (45.7% and 43%, respectively) (Mozzafarian et al., 2015). While these rates are alarmingly high, the prevalence of HBP may be even higher than reported, as a large proportion of these individuals may live with the disease undiagnosed (Graham et al., 2006). In the Jackson Heart Study, a study on cardiovascular disease from 2000 to 2004 among African Americans in Mississippi, men were less likely than women to be aware of their high blood pressure, to receive treatment for high blood pressure, and have their blood pressure under control (Wyatt et al., 2008). With regard to mortality among Americans with HBP, the rate is higher among African Americans versus White Americans. As of 2010, the overall US death rate from high blood pressure for African American men and women (37.1 per 100,000 and 50.2 per 100,000, respectively) was significantly higher than that of white men and women (17.2 per 100,000 and 15.0 per 100,000, respectively) (American Heart Association, 2014). Among women, African-Americans have a 38.6% rate of mortality from HBP as compared to 14% of White-Americans (Roger et al., 2012).

**Background and Rationale**

There is an extensive body of medical research and literature which underscores the importance of investigating HBP, particularly among African Americans. One such study was conducted by the U.S. Department of Veterans Affairs (VA) operates one of
the largest integrated healthcare systems in the nation, providing health care services to more than 6.6 million veterans as of fiscal year (FY) 2014 (US Department of Veterans Affairs, 2014). The VA is also known for its groundbreaking research in improving the health of active service personnel and veterans, and it continues to conduct original and innovating studies. An assessment of stroke mortality in the veteran population was performed on 4,008 medical records in the state of Georgia and five western states. Researchers focused on participants that had death certificates for which the cause of death was listed as non-traumatic cerebrovascular disease; approximately 29% of these deaths were attributed to stroke (Heyman, Nefzger, & Acheson, 1973). Another study conducted by the VA found HBP to be the most common chronic health problem among veterans, affecting 37% of that population (Yu et al., 2003).

Furthermore, there exists a body of literature on the different ways in which HBP is best managed. Bex et al. (2011) evaluated the effectiveness of programs that managed hypertension care provided by clinical pharmacists among 573 veterans with hypertension, 433 of which completed the program. Researchers found that the participants had significant reductions in blood pressure (p < 0.001), and 75% met their blood pressure treatment goal at the final visit. Vincze et al. (2008) conducted a retrospective cohort analysis of the type, duration of, and adherence to antihypertensive therapy by examining electronic medical and pharmacy records. The research suggested that medication adherence was lower among participants who received medication therapy for
An incidental finding of HBP during a routine medical examination could easily overwhelm an unsuspecting patient. Without warning, a patient is expected to follow the provider’s treatment plan, adhere to a medication regimen, schedule ongoing appointments, change exercise habits, and adhere to a new and possibly unfamiliar diet. Moreover, the provider expects the patient to manage his or her own illness based on the provider’s recommendations.

Patients do not acquire the knowledge and skills of managing a disease or illness on their own but with the assistance a healthcare provider. Clark, Becker, & Janz (1991) defined self-management as tasks and strategies that are performed in the community to improve and maintain the quality of life. These factors are coupled with the ability to cope with the psychosocial problems associated with illness or disease and with the attempt to control or reduce the impact of illness on the patient’s physical health status. These “at-home” tasks and strategies are performed in collaboration with and under the guidance of the patient’s healthcare providers and others. Common self-management tasks include adhering to medication and treatment protocols, following recommended nutritional and dietary guidelines, abstaining from smoking, exercising, and maintaining medical appointments. Previous studies of chronic illness self-management (Hinder & Greenhalgh, 2012; Lomundal & Steinsbekk, 2012) have revealed positive outcomes.

Several organizations and agencies, such as the American Heart Association (AHA) and the National Institutes of Health (NIH) have initiated and contributed to programs that reduce the prevalence of HBP among African Americans through education and preventive interventions. The ongoing federal initiative Healthy People
2020 was implemented to improve the health of Americans on a number of evidence-based, 10-year national benchmarks by seeking input and collaboration from a group of diverse individuals, governmental agencies, and profit and non-profit organizations, such as the Centers for Disease Control and Prevention (CDC) and the Federal Interagency Workgroup (FIW). Healthy People 2020 seeks to identify, and ultimately reduce, health disparities among different populations and has identified HBP as a significant public health problem in this country. Heart disease ranked among one of top ten causes of death among African-American males between the ages of 45 to 54 years (National Center for Health Statistics, 2011).

In an attempt to address the prevalence of HBP, Healthy People 2020 has planned to improve cardiovascular health and quality of life through the prevention, detection, and the treatment of risk factors for heart attack and stroke. The program has developed objectives and goals to address heart disease and stroke in an effort to reduce disease prevalence, some of which directly address hypertension. (US Department of Health and Human Services, 2011). Table 1 shows the three objectives of the initiative that specifically address hypertension.

Table 1

<table>
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<th>Healthy People Heart Disease and Stroke 2020 Objectives</th>
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<td>HDS-5 Reduce the proportion of persons in the population with hypertension.</td>
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<tr>
<td>HDS-11 Increase the proportion of adults with hypertension who are taking the prescribed medication to lower their blood pressure.</td>
</tr>
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Increase the proportion of adults with hypertension whose blood pressure is under control.

In addition to Healthy People 2020, other clinical and public health programs aim to target and reduce the prevalence of HBP. Several agencies, including the National Heart Lung and Blood Institute (NHLBI) and the International Society on Hypertension in Blacks (ISHB), have issued guidelines for clinicians that treat hypertensive patients. The AHA has developed a website specifically geared toward African Americans, with the goal of informing and educating this population about HBP and its health effects (AHA, 2011).

Many community-level programs are designed to appeal to vulnerable populations and therefore offer HBP screening, education, treatment recommendations, and referrals through venues in predominantly African-American neighborhoods, including barbershops and beauty salons, niche-specific credit unions, and small retail outlets (Bragg, 2011; Hess et al., 2007; Victor et al., 2009). Additionally, some African American churches offer free walk-in tests for blood pressure assessment and advice (Hatch & Lovelace, 1980; Kumanyika & Charleston, 1992). These programs have had a positive effect by increasing African Americans’ awareness of HBP and ways to prevent and treat this condition. Increasing the promotion of screening and aggressive treatment programs is one strategy for improving the prevention, detection, and treatment of HBP among African-American men. The present study explores the illness representations and
self-management health behaviors of hypertensive, middle-aged, African-American male veterans who exhibit successful blood pressure management.

**Theoretical Framework**

Leventhal’s Common Sense Model of Self-Regulation (CSM) (Leventhal, Meyer, & Nerenz, 1980; Leventhal, Nerenz, & Steele, 1984) is the main theoretical framework used to guide this study. According to the CSM, individuals develop cognitive and emotional representations of an illness or health threat that influence their behaviors and actions in coping with and managing their illness (Leventhal et al., 1980). Table 2 shows the five domains of cognitive representation (Leventhal et al., 1980): *identity* (a label or name given to the condition and or symptoms by the individual); *cause* (the belief of about why the condition exists); *timeline* (determining how long the condition will last); *consequences* (the impact the condition will have on the individual socially and physically); and *control/cure* (the belief that the condition can be cured or controlled).

**Table 2**

*Domains of Leventhal’s Common Sense Model of Self-Regulation*

<table>
<thead>
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<th>Domains</th>
<th>Description</th>
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<td>Identity</td>
<td>A label or name given to the condition and or symptoms by the individual</td>
</tr>
<tr>
<td>Cause</td>
<td>Beliefs about why the condition exists</td>
</tr>
<tr>
<td>Timeline</td>
<td>Determining how long the condition will last</td>
</tr>
<tr>
<td>Consequences</td>
<td>The social and physical effects of the condition on the individual</td>
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The CSM proposes that when individuals obtain information about an illness, they form a mental representation of the illness. The model assumes that individuals are critical thinkers who attempt to solve problems, and their beliefs have a strong influence on determining behavior in response to health issues (Leventhal, Meyer, & Nerenz, 1980). As part of the model developed by Leventhal and colleagues, the role of self-regulation as a precursor of self-management is described as a dynamic process.

According to the CSM, patients will monitor the outcomes of their efforts in coping with the illness, which may feedback on their representations of the illness (Leventhal, et al., 1984; Meyer, Leventhal & Guttman, 1985).

Because of partial and often erroneous information, however, individuals may develop incorrect notions about a particular illness, which may hinder their seeking care, treatment, or both. People obtain information about an illness through several modalities, including communicating with others informally, developing knowledge over time about the illness, obtaining information from a healthcare provider, and knowing someone with the illness (Leventhal et al., 1984). Additionally, patients often obtain medical knowledge in second- or third-hand social interactions. In such situations, what they think they know is based on hearsay rather than upon empirical data or evidence. In particular, when their knowledge of physiology and disease is limited, patients’ conclusions tend to be unreliable (Petrie & Weinman, 2006).
**Purpose of the Study**

The aim of this study is to explore the day-to-day self-management practices and health behaviors of African-American male veterans diagnosed with HBP who have positive illness representations. Patients are expected to follow treatment plans to monitor and control their blood pressure as outlined by their primary care providers, but their perceptions and beliefs may interfere with the prescribed treatment plans. The ultimate goal of this study is to yield some valuable insights into possible reasons why some African-American men are successful in managing their HBP. The identification of these factors is essential in designing appropriate interventions to address HBP and improve the health of the African-American population. Figure 1 shows the key relationships of the illness representations of HBP found in the study.

*Figure 1. Illness representation of high blood pressure*
Significance of the Study

There have been numerous quantitative and qualitative studies investigating HBP among Americans across various fields of study. The majority of these studies have focused generally on medication adherence, treatment, prevention, and barriers to the successful management of HBP (Feldman, et al. 2009; Graham et al., 2006; Lukoschek, 2003; Moulton, 2009; Ogedegbe, et al., 2004), while a sub-set have investigated the influence of positive beliefs on self-management among middle-aged African Americans with HBP (Kronish, Leventhal, & Horowitz, 2012; McBane & Halstater, 2011; Scholmann & Schmitke, 2007).

Given the high prevalence of HBP among middle-aged African Americans, it is important to identify the common-sense beliefs of those individuals with positive illness representations in an effort to increase the number of patients with a healthy outlook on their HBP. Patients with positive illness representations adhere to treatment and self-management strategies resulting in normal, or lower, blood pressure. According to the guidelines of the Joint National Committee (JNC) on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, it may be advantageous to adhere to these efforts to determine the best interventions for promoting self-management among this population (Chobanian, et al. 2003). As such, this study aims to determine predictors and characteristics of positive illness representation and effective self-management of HBP among African Americans. Incorporating patients’ points of view into treatment plans is essential for success as measured by the effective control and treatment of HBP. Information and lessons learned could inform patients and their families, and thus reduce
morbidity and mortality. The findings from this study may contribute to the elimination of barriers perceived by African Americans in achieving normal blood pressure, thus reducing the complications related to HBP.

**Research Questions**

The following three questions guided the investigation:

RQ1. What are the differences in the means of illness perceptions between patients with controlled HBP and uncontrolled HBP?

RQ2. What are the differences in the means of emotional representations between patients with controlled HBP and uncontrolled HBP?

RQ3. What are the day-to-day self-management practices and perceptions among middle-aged, African American male veterans with controlled HBP and positive illness representation?

**Assumptions**

The primary objective of this research is to explore the day-to-day self-management practices of middle-aged, African-American male veterans with controlled HBP and positive HBP representation through a mixed method approach. It is assumed that participants do not rely solely on prescribed antihypertensive medications to control their blood pressure, and may have incorporated other activities to aid in the process, such as smoking cessation, decreased alcohol consumption, consumption of herbal supplements, or some combination of these or other actions.
Limitations

This mixed-methods study has limitations with regard to sampling and external validity. The purposive sample was homogeneous with regard to race and gender, as well as receipt of medical treatment from the same health care system, which included insurance and access to medication. One cannot assume that the population is representative of the larger population of African American men who have HBP due to lack of randomization and post-intervention sampling. Furthermore, the sample was not representative of all middle-aged, African-American male veterans because recruited participants were from only one treatment site.

Definition of Terms

Several terms used in this study require additional explanations and operational definitions:

African Americans. Individuals who self-identified as having origins in any black racial group of African descent as measured by self-report (please see ‘Item 4’ on the screening questionnaire).

Brief Illness Perception Questionnaire (Brief-IPQ). The Brief-IPQ is a tool used to assess individual perception of illness based on Leventhal’s Common Sense Model (CSM) (Leventhal et al., 1980). There are five dimensions the model that attempt to measure individual's perception: identity, cause, timeline, consequences, and controllability/cure. The Brief Illness Perception Questionnaire (Brief IPQ) (Broadbent, Petrie, Main, & Weinman, 2006) measures participant perceptions of HBP. Participants were selected based on having a positive HBP representation, scored one standard
deviation below the mean on the Brief IPQ and blood pressure < 120/80 (E. Broadbent, personal communication, March 13, 2012). Participants with a score above the mean on the Brief IPQ and blood pressures of < 120/80 were viewed as not having positive commonsense beliefs, and thus were excluded from the study.

**Hypertension/high blood pressure.** An elevation of the SBP or DBP. HBP is defined as the presentation of a systolic pressure ≥ 140 mmHg and a diastolic pressure ≥ 90 mmHg (NHLBI, 2011 NIR). Blood pressure for this study was measured by sphygmomanometers on site in the clinic where participants were recruited.

**Middle-aged:** The US Census Bureau defines individuals ranging in age from 45 to 64 years as middle-aged (US Census Bureau, 2010)

**Self-management.** According to Oxford University of English 3rd edition (2010), self-management is “management of or by oneself; the taking of responsibility for one’s own behavior and well-being” (p. 1616). Self-management can pertain to tasks and strategies that are performed in the community in order to improve and maintain the quality of life. At-home tasks and strategies are performed in collaboration with and under the guidance of the patients’ healthcare providers and others. Common self-management tasks include adhering to medication, following recommended nutritional and dietary guidelines, abstaining from smoking, exercising, and maintaining medical appointments (Clark et al., 1991; Lorig & Holman, 2003).

**Self-Regulation.** Described by Leventhal et al. (1980) as the “common sense model of illness of representation”. The self-regulation of illness representation attempts
to understand how individual symptoms and emotions experienced during a health threat or diagnosis influence perception of illness and guide subsequent coping behavior.

*Veteran:* A person who has served on active duty in the armed forces of the United States is a veteran. An individual who has served in the active military in some capacity and was discharged or released under any condition other than ‘dishonorable’ is considered to be a veteran for the purposes of VA health service eligibility.

**Summary**

In sum, Chapter I detailed the introduction, background, purpose, significance, theoretical framework, research questions, limitations, and assumptions of the study. The CSM was applied as the theoretical framework used to guide the mixed methods approach used in this study. Concerns about HBP were discussed in the context of middle-aged, African-American males in the US, who were the focus of this study. To follow, Chapter II provides a review of the relevant literature.
Chapter II: Literature Review

Introduction

Chapter II provides a more detailed overview of Leventhal’s Common Sense Model (CSM) of illness representation (Leventhal, Meyer, & Nerenz, 1980), the current knowledge about the illness representations of HTN, and the relationship of illness representation to the self-management of HBP. The review encompasses timely and relevant literature found in journals, electronic databases, books, and Internet sources. The electronic databases used to gather this information were the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, EBSCO-Host, PubMed, and ProQuest. The keywords used to search for literature included: African American; high blood pressure; hypertension; beliefs; identity; causes; consequences; cure; controllability; and, self-management. For all searches, keywords were utilized independently, as well as in combination using Boolean operators.

As outlined in chapter I, the management of HBP is considered one of the most important steps in lowering the risk of cardiovascular disease. The self-management of HBP is essential to improve the quality of life of patients with the condition. In addition, understanding how patients with positive, commonsense beliefs and with optimal blood pressure control manage their HBP on a day-to-day basis could provide insights into how best to decrease the prevalence of uncontrolled HBP among African Americans.

Illness Representation

Leventhal et al. (1980) developed the CSM to understand illness-related behavioral concerns of patients with poor treatment outcomes. According to this model,
individuals construct mental representations based on concrete and abstract information obtained from different sources in the attempt to understand and regulate their illness (Leventhal et al., 1980). This information can be derived from knowledge already acquired from social networking, cultural context, healthcare providers, relatives, significant others, and from personal experience with an illness (Diefenbach & Leventhal, 1996; Leventhal et al., 1980). The information obtained from an illness, whether factual or not, assists patients in making sense of and managing their illness (Leventhal et al., 1980).

The common sense model has five domains that assess different perception of an illness. The domains are: identity–symptoms and names; causality–beliefs about causes of health threats; timeline–duration, or the length of time that a condition lasts; consequences–severity of symptoms or influence on a person’s life; and cure/controllability–whether the symptoms are seen as being preventable, curable, or controllable (Leventhal et al., 1980).

**Illness Representation and Hypertension**

The CSM has been utilized in research to understand the illness perceptions of individuals across a variety of diseases such as asthma, HIV, and breast cancer (Hekler, et al., 2008; Kemppainen, Kim-Godwin, Reynolds, & Spencer, 2008; Leventhal & Diefenbach, 1991; Leventhal et al., 1980; Meyer, Leventhal, & Gutmann, 1985; Royer, Phelan, & Heidrich, 2009). HBP and illness perception have been researched using the CSM (Hekler et al., 2008; Meyer et al., 1985); although HBP is an asymptomatic chronic illness, patients develop representations of HBP based on concrete and abstract
symptoms. These developed representations of HBP influence patients’ coping behavior based on their beliefs (Meyers, Leventhal, & Gutmann, 1985).

Several studies have supported the relationship between illness representation and coping health behaviors. In one study, Meyer et al. (1985) reported the variables that affected failure to adhere to HBP treatment regimens and sought to determine whether lay cognitive models affect compliance behaviors. Participants (n = 230) were recruited from primary, renal, and hypertension clinics in Milwaukee; 60% were Black, and 55% were male. Four different groups of patients were interviewed at various stages of their diagnosis and treatment. The patients were grouped into the following categories: (a) normotensive clinic controls (n = 50) with normal blood pressure; (b) newly treated (n = 65), patients in treatment for HBP for the first time; (c) continuing treatment (n= 50) patients who had been in continuous treatment for 3 months to 15 years; and (d) re-entry (n = 50), patients who had dropped out and then returned for treatment.

Participants in the study reported they were able to recognize when their blood pressure was elevated. In addition, participants were able to detect an elevated blood pressure in 46% of the normotensive patients, 71% of the newly treated group, 92% of the continuing treatment group, and 94% of the re-entry group (Meyer et al., 1985). Participants with a diagnosis of HBP for a longer duration reported symptoms associated with their HBP. The reported associated symptoms from participants in the different groups were dizziness (12%) and warmth (12%) among the normotensive. The newly treated participants reported headache (20%) and dizziness (17%). Participants under continuing treatment reported headache (24%), warmth (22%), and dizziness (18%).
Finally, re-entering participants reported dizziness (34%), headache (28%), and nervousness (15%). With regard to disease acuity, HBP was considered to be a chronic illness among 43% of participants; 40% of the participants in the newly treated group reported HBP to be an acute rather than a chronic illness compared to 64% of those in the continuing treatment group; and 43% of those in the re-entry group considered their HBP to be a chronic illness (Meyer et al., 1985).

There were also measurable differences among the groups in their perceptions of the cause of their condition. For example, 31% of the newly treated participants perceived that food and drink were a cause of their HBP, as compared to 24% of the continuing treatment group, and 34% of the re-entry group (Meyer et al., 1985). The study revealed that 36% of the continuing treatment group had a poor understanding of HBP, while 12% of the re-entry and 11% of the newly treated participants were able to link the cause, symptoms, and physiological mechanisms of their disorder (Meyer et al., 1985). The data suggested that the participants took their medication based on the presence or absence of symptoms that they perceived as indicative of elevated blood pressure.

Hekler et al. (2008) conducted a cross-sectional study of 102 African Americans with HBP in an effort to develop lay models of medication adherence, lifestyle behaviors, stress-reducing behaviors, and blood pressure control. The data were obtained from patient interviews medical charts. An initial analysis of cause and control items produced six factors. Further analysis of factor loading and scree plots revealed two main factors: cause and control (eigenvalues = 3.0 and 2.0, respectively). In this study, a loading of
0.30 was the cut-off for inclusion. Factor 1 (7 items) reflected individuals’ endorsement of a medical belief model (MBM). Factor 2 (4 items) reflected a stress belief model (SBM) with causal beliefs related to stress and control beliefs related to stress reduction. Other dimensions of common sense illness beliefs included in the analysis were identity (eigenvalue = 1.9) and consequences (eigenvalue = 2.2). Medication adherence was categorized in adherent and non-adherent patient groups: 50% of the participants reported taking their medication. Older age was associated with greater medication adherence (t = -2.4, df = 100, p<.05, Madh = 64.0, Mnonadh = 59.1).

**Five Domains of the Common Sense Model**

To follow is a review of the five domains of the CSM which is necessary to understand the commonsense beliefs of African Americans about HBP.

**Identity**

‘Identity’ refers to the meaning ascribed to the illness derived from conditions and symptoms experienced. Wilson et al. (2002) conducted a qualitative study of lay beliefs about HBP among African Americans aged from 18 to 74 years in Dallas County, Texas. The symptoms associated with HBP reported by participants were headaches and dizziness. In Lukoschek’s (2003) study, both adherent and non-adherent hypertensive African Americans (n = 106) reported symptoms of dizziness, lightheadedness, and headaches. African Americans who diagnosed with HBP and experienced no associated symptoms, they did not believe it was related to HBP. Participants did not accept that they had diagnosed HBP (Lukoschek, 2003).
Victor et al. (2009) found similar results among African American men (n = 1514) aged 18 to 64 years in Dallas County, Texas. Approximately 88.6% of participants believed HBP caused their headaches, dizziness, or rapid heartbeat. This finding is noteworthy because HBP is an asymptomatic condition, yet the participants reported that they were able to detect the elevation of their blood pressure without a diagnostic test.

**Causality**

‘Causality’ refers to what individuals believe is the cause of their illness. Studies have shown that African Americans maintain certain beliefs about the causes of HBP. In Lukoschek’s (2003) qualitative study of beliefs and attitudes among hypertensive African Americans, participants reported that the causes of HBP included emotional triggers, stress, and a diet heavy in fats. They also cited so-called “thick blood” as another source, believing that the thickening of the blood caused the reduced efficiency of the heart in circulation.

Okonofua, Cutler, Lackland, & Egan (2005) conducted a national telephone survey of 1,503 Americans aged 50 years and older with a demographic breakdown of 880 White Americans, 290 Hispanic Americans, and 313 African Americans. The purpose of the study was to determine levels of awareness, knowledge, and beliefs about HBP. The results revealed that African Americans were more likely than White Americans to indicate that HBP could cause kidney failure (64.2% vs. 46.3%, p <.0001). The findings also showed that African Americans, as well as White Americans, were well informed about the definition of HBP, though African Americans demonstrated greater awareness of systolic HBP. In general, African Americans mainly obtained information
about HBP from television; however, 22% of African Americans obtained information regarding HBP from doctors or hospitals, as compared to 16.4% of White Americans and 30.5% of Hispanic Americans. Seventy-five percent of the African Americans reported that, after implementing lifestyle changes, they had seen an improvement in their blood pressure.

A qualitative study conducted by Peters, Aroian, & Flack (2006) explored attitudes and beliefs about HBP among African Americans between the ages of 27 to 60 years (n = 34). The primary causes of HBP reported by the participants were diet and stress. Participants specifically mentioned ingestion of salt and fat as a major contributor to HBP. Interestingly, participants did not indicate increased weight or the lack of physical activity as causative factors.

Savoca et al., (2009) conducted a qualitative examination of hypertension among young African Americans (n = 58). The participants were limited to adolescents between the ages of 15 to 18 years. The study found that most adolescents understood that a diet high in fried foods, pork, and fast food contributed to HBP. Half of the participants reported salt and stress as causes of HBP. Participants were unaware that being overweight, male, African American, and advanced age were risk factors for developing HBP.

Victor et al. (2008) found results similar to those reported by Savoca et al. (2009): 94.7% of non-Hispanic Black Americans (n = 1194) reported that stress caused HBP and 87.6% reported that ingesting too much pork was also a cause of HBP. Some of the individuals who participated in the research believed that there was a difference between
the terms ‘high blood pressure’, and ‘hypertension’. Hypertension was viewed as a condition developing from stress, anxiety, and anger, while HBP was seen as a disease developing from eating high-fat foods that caused the blood to thicken and move slowly (Lukoschek, 2003; Wilson et al., 2002).

Wexler, Elton, Pleister, & Feldman (2009) conducted a qualitative study utilizing three focus groups to collect data on the attitudes, beliefs, and barriers of African Americans regarding HBP. The study was conducted at Ohio State University with 26 African American participants. The researchers ultimately sought to develop educational protocols to improve HBP control among African American patients. In general, the results of the study indicated that African Americans tend to have a fatalistic attitude about HBP. The participants believed that HBP was passed down from generation to generation, and they expected that they would eventually develop HBP. The underlying feelings included attitudes that questioned why they should follow a special diet, exercise, or take medication that could cause side effects when they would ultimately develop HBP. The participants also reported fatalistic views of contributors to untreated HBP, which led them to accept HBP as a way of life and an unavoidable illness that also contributes to cardiovascular conditions. Participants felt that they were powerless to do anything other than what they have been doing.

In addition to the fatalistic views presented in this study, African-American men also rarely seek help for mental or physical problems (Addis & Mahalik, 2003; Neighbors, 1988). The reasons for African-American men’s lower utilization of the healthcare system have been found to range from lack of awareness to cultural and
linguistic differences (Ravenell, Whitaker, & Johnson, 2008). Previous results also showed that African American men were negatively affected by failing to seek out medical care for screening, prevention, or treatment.

Racial discrimination is a psychosocial stressor that may also contribute to HBP among African Americans (Brondolo, et al., 2003; Clark, 2003). Kronish et al. (2012) sought to explain gaps in communication between patients and clinicians, and conducted a qualitative study to understand beliefs among racial minorities about hypertension. The participant population consisted of Latinos (n = 47) and African Americans (n = 53); 77% were female, and 55% had Medicaid and lived in poverty. African-American participants reported HBP as a cause of poverty, pollution, racism, and stress.

**Timeline**

‘Timeline’ is the perceived duration of acute, chronic, or episodic HBP. In general, African Americans do not perceive HBP as a chronic illness but as an episodic illness (Kronish et al., 2012; Numerous studies have revealed that African Americans feel they are able to gauge when their blood pressure is elevated and that they have symptomatic relief after taking antihypertensive medication. As such, the perceived duration of HBP appears to relate to the experience of the illness among African Americans, and subsequent relief from taking antihypertensive medication Lukoschek, 2003; Meyer et al., 1985).

**Consequences**

‘Consequences’ refer to the severity of the symptoms experienced, as well as the social and physical effects that the individual experiences as a result of the condition. In a
study on perceived consequences conducted by Okonofua et al. (2005), the authors found that African Americans were aware that HBP could cause kidney failure and related cerebrovascular disease. Similar studies have supported that African Americans understand that, if left untreated, HBP can lead to stroke or myocardial infarction and may potentially be life-threatening (Savoca et al., 2009). However, there is a dearth of studies that have investigated the perceived consequences of HBP among African-American male veterans, specifically.

**Control/Cure**

The last domain of this model is ‘control/cure’. Control/cure refers to how controllable an illness is believed to be and whether the person believes the illness can be cured. African Americans have reported several home remedies, such as parsley, cayenne pepper, fish oil, potassium, garlic, raw onion, honey, lemon juice, beer blended with tuna water, and vinegar, as ways to control high blood pressure (Arcury, et al., 2009; Gunn & Davis, 2011; Lukoschek, 2003). These remedies mentioned by participants in various studies are often items found in the home.

These home remedies appear to be more trusted in the African-American population for high blood pressure than conventional pharmacological therapies. In a study conducted by Lukoschek (2003), antihypertensive medication was not the first treatment option reported by participants for the control of HBP (Lukoschek, 2003). Instead, patients reported believing in the self-treatment of HBP with home remedies passed down from generation to generation in their families. In a study conducted by Victor et al. (2008), a high percentage of African-American male participants reported
that garlic, herbs, or vitamins (88.4%), avoiding stress (94.5%), and praying (90.2%) were effective treatments for high blood pressure.

Research has revealed that participants’ beliefs are divided regarding the effectiveness of antihypertensive medication. Okonofua et al. (2005) conducted a telephone survey to assess ethnic differences in awareness, knowledge, and beliefs about hypertension. The study also found that 50% of African Americans (n = 313) believed that medication was the only way to control HBP. This finding was supported by Savoca et al. (2009), who conducted a similar study of 58 African Americans ranging in age from 17 to 20 years.

Warren-Findlow & Seymour (2011) explored the self-care activities of African-American adults (n=186) diagnosed with HBP. Their research revealed that over 50% of participants performed self-care activities that included medication adherence, physical activity, and abstention from smoking and alcohol. However, the participants reported low compliance with self-care activities in adopting a low-salt diet and attention to weight reduction.

Cooper (2009) presented a case study of a 41-year-old African-American man with poorly controlled hypertension. The patient’s blood pressure was as high as 240/180 mm Hg during one clinical encounter. The patient reported experiencing episodes of epistaxis, headache, and occasional palpitations. He did not view HBP as a disease because he was not able to see or feel it; rather, he believed the cause of his HBP was stress, poor diet, and the lack of physical activity. The patient also said that he had
developed a proclivity for self-delusion and that his body had adjusted to having HBP. He understood that HBP is a so-called silent killer.

Even though his blood pressure was elevated, the patient felt well most of the time. He realized that because of his elevated blood pressure, he was a “walking time bomb”. The medication that he was prescribed was either ineffective or produced adverse side effects. The patient reported trying at least 30 different types of antihypertensive medications within a one-year period. He attempted to control his blood pressure by acupuncture, an alternative medical procedure, but was unsuccessful. He was uncertain whether any medication would be able to control his blood pressure. This case study is representative of Leventhal et al.’s (1980) five domains as theorized in the CSM. The study also supports the illness representations of African Americans with HBP, reported in the literature.

**Self-Regulation of HBP**

This section provides a review of the factors related to the self-regulation of HBP among African American males. It also identifies factors that may contribute to the development of interventions that effectively address HBP and, ultimately, lead to an improvement in the health of African Americans. A review of the relevant literature yielded numerous articles on self-management programs, self-management and education, self-management and diabetes, as well as self-management and chronic illness (Barlow, Bancroft, & Turner, 2005; Lorig, Sobel, Ritter, Laurent, & Hobbs, 2001; Norris, Engelgau, & Narayan, 2001). Most of the information about self-management and HBP are presented in articles more broadly investigating self-management and chronic illness.
Few articles focused specifically on self-management and HBP (Brown, Bartholomew, & Naik, 2007); and even less explored the self-management of HBP among African Americans (Boutin-Foster, Ravenell, Greenfield, Medmim, & Ogedegbe, 2009).

The day-to-day management of a disease is a burden to which patients must commit themselves. One’s ability to self-manage their illness is essential to the optimization of quality of life. Clark et al. (1991) define self-management as the tasks and strategies performed at home to improve and maintain an individual's quality of life. This process involves the ability to cope with the psychosocial problems associated with an illness or disease, as well as the attempt to control or reduce the effects of a disease on physical health. These at-home tasks and strategies are performed in collaboration with, and under the guidance of, the patients’ healthcare providers and others.

According to Clark et al. (1991), several criteria should be met to ensure successful self-management of a chronic illness. First, to make informed decisions, patients must be knowledgeable about their illness and its subsequent treatment. Second, they must perform activities to support the management of their illness. Finally, patients must apply the skills that are necessary for maintaining adequate psychosocial functioning. These behaviors aim to reduce the negative effects of illness on patients’ daily lives and improve their quality of life.

Previous studies that explored how individuals self-manage their chronic illnesses provide insights into how individuals carry out their day-to-day activities. The self-management of HBP does not rely solely on taking prescribed antihypertensive medication. It also requires increasing physical activity, maintaining a healthy weight,
increasing fruit and vegetable intake, and maintaining a low sodium intake (DHHS, 2012).

McDonald, Pezzin, Peng, & Feldman (2009) examined the sociodemographic, clinical, and self-management characteristics of urban African Americans with uncontrolled hypertension (n = 498) to determine the extent of factors associated with disease severity. Data were obtained on blood pressure, knowledge of hypertension, self-management preparedness, and adherence to hypertension care (which included medications and dietary restrictions). The researchers found that higher education and older age were associated with better blood pressure management. A limitation of this study was that the sample population had been newly admitted to a large, Medicare-certified, non-profit, urban home health agency and thus was not representative of the general population.

Boutin-Foster et al. (2009) examined the beliefs of hypertensive African Americans (n = 60) to inform the development of an educational workbook for the representative population. This qualitative study explored the attitudes, values, and illness management of Black American hypertensive patients (n=182). The mean age of the participants was 60 years. Seventy-seven percent of the participants were female and 90% had graduated from high school. The average duration of their hypertension was 12 years. The workbook included sections on strengthening the participants’ ability to take control of and manage their hypertension, and provided knowledge and health behavior techniques. The findings showed that 73% of the participants reported that the workbook
was somewhat or considerably helpful. A limitation of Boutin-Foster et al.’s (2009) study to this research study is that a large percentage of the participants were female.

As previously noted, HBP is a chronic illness. The following review examines the self-management of a chronic illness broadly, to gain insight and understanding of issues regarding both chronic illness and self-management. Kralik, Koch, Price, & Howard (2004) conducted a qualitative study (n = 9) to obtain the meaning of self-management as perceived by people with chronic illnesses. The researchers found that having a chronic illness involved adjusting, adapting, planning, and learning new strategies. The study population consisted of nine community-dwelling people with arthritis: six women and three men between the ages of 48 and 75 years who had been living with arthritis for between 4 and 52 years. The following four themes emerged from this study: recognizing and monitoring boundaries; mobilizing resources; managing a shift in self-identity; and balancing, pacing, planning, and prioritizing. The participants reported recognizing and monitoring the boundaries of having pain and managing the restrictions that limited their movements. A major concern expressed by participants was maintaining control and independence through available resources. They reported that the key to living with and managing their condition was a combination of: balancing, pacing, planning, and prioritizing their activities. The study showed that self-management is a “process that involves identifying one’s psychological and physical responses to illness and constantly planning, pacing and managing daily life as a means of creating order” (Kralik, et al., 2004). Based on the findings, the study concluded that: “living with chronic illness is a constant process that includes being vigilant of bodily responses, careful planning of
daily activities, and learning new strategies” (p. 260). However, this statement may not apply to all chronic illnesses because some chronic illnesses are dormant or asymptomatic and do not present as a constant reminder to the patient. In the case of HBP, there are no symptoms to act as constant reminders of the illness.

A qualitative study conducted by Johnson, Warner, Lamantia, & Bowers (2016) identified barriers to the management of HBP. The study was conducted among thirty-eight young adults between the ages of 19-39 years. Researchers found that participants viewed having a diagnosis of HBP as an advanced illness despite being younger in age as compared to the participants in the current study. Additionally, participants reported a range of emotions in response to their diagnosis, including: surprise, fear, and anger when first diagnosed with HBP.

Summary

Chapter II provided a review of the literature relevant to this study, highlighting the use of the CSM dimensions in relationship to HBP. There are few quantitative or qualitative studies on HBP self-management, and there are even less focusing on African American males, specifically. Understanding HBP self-management among African-American males is pertinent to healthcare providers to decrease the prevalence of the condition, cardiovascular disease risks, and mortality among this vulnerable sub-population. Controlling and treating high blood pressure can reduce the effects of mortality and morbidity caused by HBP, as well as improve quality of life for those with the condition. Chapter 3 discusses the methodology used in this study.
Chapter III: Methodology

The purpose of this mixed-methods study was to investigate the experiences of African-American male veterans with positive illness perceptions of controlled HBP and the Brief-IPQ regarding HBP. Quantitative methods were employed to screen for eligibility for participation. Additionally, a survey assessing participant demographics and health behaviors was disseminated. Semi-structured, in-depth interviews were conducted to explore the participants’ day-to-day self-management of HBP. Questions focused on personal and professional experiences, as well as self-management practices. This chapter describes the methodology employed and the rationale supporting this approach.

Research Design

The research design consisted of two phases as shown in Figure 2 (Creswell, 2009).

Phase 1

Quantitative Data Collection & Analysis

Follow up

Phase 2

Qualitative Data Collection & Analysis

Interpretation (based on qual. results)

*Figure* 2. Explanatory sequential design

Phase I: Quantitative

In phase I, quantitative descriptive methods including screening for eligibility and a survey assessing demographics and health behaviors were employed. The results of a questionnaire about illness representation were used to obtain subjects for participation in
Phase II. Participants that received a score below one standard deviation, from the mean on the illness representation questionnaire identified as having more positive illness representations and were asked to participate in phase II. In phase II, in-depth interviews framed by the CSM were conducted. Questions were designed to give additional context and meaning to the quantitative data obtained in phase I.

**Protection of Human Subjects**

The Department of Veterans Affairs New York Harbor Medical Center Administration (Appendix A) and Hunter College of the City University of New York (Appendix B) approved of the study. Participants were informed of the study’s design purpose, associated risks, and intention to publish via script (Appendix D). Informed consent was obtained from all participants before each phase of the research (Appendix D). There were three separate consent processes for participant screening, quantitative survey data collection, and qualitative interviews. Participant contact information was part of the consent and enrollment process in phase I, and was used to determine whether the participants would be interested in taking part in the semi-structured interviews conducted in phase II. Those who agreed to participate in the study were informed that the study would not interfere with their scheduled appointments and other activities. A master list of participant contact information including participants' first and last initial, as well as a double digit identifier were kept separate from informed consent materials to minimize the risk of any disclosure or loss of confidentiality. The master list corresponded with research packets kept in a separate location and also included participant contact information for follow-up. All participant information and data are
maintained in a secured computer located in an office. The screening, demographic data, and the results of the Brief IPQ are kept in a locked cabinet in a locked room that is accessible by the PI; in addition, computer files related to the study were password-protected and accessible by the PI. Data will be retained for five years from the initial IRB approval of the study and then destroyed, as stipulated by the facility. The audiotapes will be destroyed by recording over the original recording, and files containing data will be erased by overwriting the original data.

**Setting**

The study was conducted in outpatient clinics of a medical center in New York City. The medical center offers a wide variety of ambulatory care centers and outpatient clinics to veterans. The cardiac and primary clinics were targeted to obtain participants with HBP who met the inclusion criteria of the study. The clinic hours were Monday through Friday, 8:00 a.m. to 5:00 p.m.; clinics are not operational on holidays and weekends.

**Sample**

The purposive sample included middle-aged, male veterans who had self-identified as African Americans were diagnosed with HBP, and eligible for treatment by the VA health system. With this pool of potential participants, there was no need to control for health insurance coverage or access to medical care and medication since all participants accessed care within the VA health system. Each potential participant’s medical record was checked to verify whether the blood pressure (BP) was within normal range at the time of the study and during the visit immediately before the study.
The participants were middle-aged (i.e., 45-64 years) African American male veterans who:

- had been diagnosed with HBP for more than one year and less than five years;
- had been taking prescribed anti-hypertension medication(s) for at least six months at the time of the survey to allow for psychological adjustment, diagnosis stabilization, and development of controllability and self-management skills;
- had blood pressure readings of < 120/80 at the time of the screening and normal blood pressure as reflected in the medical record;
- were under the care of a healthcare provider (HCP);
- had been seen in the clinic during the previous 12 months; and,
- were able to read, write, and speak in English.

The exclusion criteria included: 1) a diagnosis of secondary hypertension, and 2) severe mental disease or disorder.

Cohen’s technique for Pearson’s Chi-square test for independence determined the sample size, based on an alpha of .05, degrees of freedom of .5, a large effect size of .50, and the desired power of .80 (Cohen, 1988). Based on this calculation, it was determined that a sample size of 51 subjects was necessary to obtain a valid analysis. The sample size was increased to 74 participants to ensure that the sample size was adequate.

The staff in the outpatient clinics received a brief description before the beginning of the study. Two weeks before the start of the study, flyers describing the nature of the study were posted in the outpatient clinics (see Appendix C). Flyers of the study titled, “African American Male Veterans with Controlled HBP”, outlined the purpose of the
research study which was to gather information about commonsense beliefs and the self-management of HBP. The flyers included a description of the eligibility criteria, and the researcher’s name and telephone number printed on tear-off strips. The picture of a healthcare provider measuring a patient’s blood pressure was visible on the right side of the flyer.

Receptionists and nurses in the outpatient clinics agreed to place the flyers around the facility to alert potential participants to the study. Those who volunteered to participate in the study were required to provide informed consent and were screened for eligibility prior to participation (Appendix E). Using the contact number on the flyer, two potential participants contacted the researcher to inquire about the study. A description of the study and inclusion of criteria were provided. One of the participants did not attend the scheduled meeting, and there was no notification of cancellation. The other participant was unable to keep the scheduled meeting, because of a conflict with his scheduled clinic appointment and decided not to reschedule.

Potential participants were approached during clinic’s normal business hours. The PI approached potential participants after their appointments and explained the study to them. All potential participants were required to give their informed consent to complete the screening questionnaire. Participants who had completed the six items and met the criteria of the study were asked to sign an additional consent form after which they completed the demographics and health-related characteristics questionnaire (Appendix F) and the Brief IPQ (Appendix G). Staff in the clinic's verified participants had controlled BP at the time of administering the survey packet and the researcher accessed
the participants’ medical records to view current and immediately prior blood pressure taken by staff in the clinic at a later time.

Among the candidates, 127 veterans were invited to participate; 35 declined for various reasons including lack of time, complicated paperwork, or lack of interest in the study. Ninety-two participants completed the screening survey; 74 participants completed Phase 1, and 8 participants completed Phase 2.

In the qualitative phase of the study, participants were selected based on their scores on the Brief IPQ. To be eligible, participants needed to score one standard deviation below the mean or lower on the Brief IPQ (mean score = 21). Participants who were eligible to participate in phase II were contacted via telephone and given a brief explanation of the next phase of the study, and asked to participate. During the second meeting with the participants, the purpose of the study was reviewed, and informed consent as well as specific consent to record the interview were obtained. The audiotapes and transcripts, coded with a study identification number, are kept in a locked file cabinet located in the PI’s office. The informed consent forms are kept in a separate and locked file cabinet in the PI’s office.
**Instruments**

**Screening survey.** The screening survey was used to determine if a potential participant met the inclusion criteria for the study. The questionnaire consisted of six questions about gender, veteran status, ethnicity, race, age, and length of time having HBP.

**Demographic and health-related characteristics.** The questionnaire consisted of 13 items including demographic questions regarding education, employment status, and health-related behaviors. Exercise, dietary habits, smoking history, alcohol use, and medication to treat hypertension were also assessed.

**The brief illness perception questionnaire (Brief IPQ)**

Devised by Broadbent et al. (2006), the Brief IPO was used to measure illness perceptions of HBP. The questionnaire measures the dimensions of cognitive and emotional representations of illness, which are derived from the CSM formulated by Leventhal et al. (1984). The first eight items assess beliefs about the following: Consequences of the illness (i.e., How much does your illness affect your life?); timeline (i.e., How long do you think your illness will continue?); personal control (i.e., How much control do you feel you have over your illness?); treatment control (i.e., How much do you think your treatment can help your illness?); identity (i.e., How much do you experience symptoms of your illness?); concern (i.e., How concerned are you about your illness?); understanding (i.e., How well do you feel you understand your illness?); and, emotional response (i.e., How much does your illness affect you emotionally?)
These items discussed are measured using a Likert-type response scale ranging from 0 (no effect at all) to 10 (severely affects my life). The ninth item assesses causal beliefs through an open-ended question that asks participants to list, in order, the three most important factors that they believe are the causes of their illness. Following Broadbent et al.’s (2006) recommendations, the word "illness" was replaced with the name of the illness or condition (i.e., high blood pressure) under study. The score for the Brief IPQ was obtained by reversing the scores on items 3, 4, and 7, and added to the scores for items 1, 2, 5, 6, and 8 (Broadbent et al., 2006). A categorical analysis of the open-ended responses to the causal item on the Brief IPQ was performed to identify the participants’ most commonly reported causes of HBP. Dr. E. Broadbent (personal communication, June 9, 2011) gave permission via email to use the Brief IPQ in this present study. A study published by Broadbent et al. (2006) was executed to test the validity of the psychometric properties of the Brief IPQ. Participants with six different illnesses were included: myocardial infarction (MI) (n = 103), renal disease (n = 132), type-2 diabetes (n = 119), asthma (n = 309), minor illnesses (allergies, colds, headaches) (n = 166), and a group diagnosed with chest pain (n = 62). MI patients were recruited from Auckland Hospital in Auckland, New Zealand. The renal, diabetes, and stress exercise groups were recruited from outpatient clinics of Auckland Hospital. The Brief IPQ was mailed to asthma patients recruited from general practitioner clinics in the UK. The minor illness groups were recruited from undergraduate classes at the University of Texas in the US. The mean of 6.1 was obtained for patients with diabetes (n = 119), asthma (n = 309), and discharged MI patients (n = 103) for a total sample of 531, which
was derived from the reported sample (Broadbent et al., 2006). The mean was calculated by using the results from Broadbent et al.’s research and computing the total sample mean for each group as 6.5 for diabetes, 5.7 for asthma, and 6.1 for discharged MI.

**Reliability**

Broadbent et al. (2006) assessed the test-retest reliability of the Brief IPQ in a sample of 132 renal patients. After three weeks and six weeks, respectively, a follow-up questionnaire was mailed to half of the participants and then to the other half. The Pearson’s correlations demonstrated that the items had good test-retest reliability over the periods ($r = .42$ to $.75$).

In this study, test-retest reliability was not assessed because the Brief IPQ was administered only once. Cronbach’s alpha was used to determine internal consistency of items on the Brief-IPQ. The Cronbach alpha for this sample was .615. The alpha coefficient was acceptable at 0.70 according to the standards recommended by George and Mallery (2003) which are: $>.9 =$ Excellent, $>.8 =$ Good, $>.7 =$ Acceptable, $>.6 =$ Questionable, $>.5 =$ Poor, $<.5 =$ Unacceptable.

**Validity**

As previously referenced, a study of renal, diabetic, and asthma patients was carried out to test the concurrent validity of the Brief-IPQ instrument (Broadbent et al., 2006). The patients were asked to complete both the Brief IPQ and the Revised Illness Perception Questionnaire (IPQ-R). The results showed acceptable correlations with values ranging from 0.32 to 0.63. The validity of the causal items was established by comparing the Brief IPQ with the causal factors that were endorsed by the IPQ-R list. For
example, the top rank-ordered causes of asthma in the Brief IPQ were heredity, respiratory virus, pollution, and allergies (Broadbent et al., 2006).

The predictive validity of the Brief IPQ was assessed in the post-MI patients. A multivariate analysis of variance was conducted for the participants who attended rehabilitation classes after a MI. The study found that participants had a higher identity score at hospital discharge (mean = 3.37, S.E. = .47) than the non-attenders (mean = 1.67, S.E. = .59) \( [F (39,1) = 5.11, \ = .03] \). In addition, a slower return to work associated with higher concern \( (r = .43; P = .03) \) and higher treatment control beliefs \( (r = .44; P = .03) \) (Broadbent et al., 2006).

Several studies have been conducted to validate the use of the Brief IPQ to assess illness representations. Petricek et al. (2009) conducted a study that utilized the Brief IPQ among 250 patients diagnosed with type-2 diabetes; 235 participants had hypertension. One hundred participants were treated with antihypertensive medications. The study found that the patients viewed their diabetes as chronic and believed that treatment could control their illness. The participants also reported a great understanding of their illness and the ability to control their disease. The mean score for the Brief IPQ items was 6.375.

Dean, Hudson, Hay-Smith, & Milosavljevic (2011) conducted a mixed-methods study using the Brief IPQ among rural workers (n = 33) who experienced lower back pain. The results showed that the participants had a clear understanding of lower back pain and believed it was a chronic illness. The mean score for the Brief IPQ was 5.79.
In the first phase of the study, quantitative data were obtained from the screening questionnaire, the demographic and health behaviors questionnaire, and the Brief IPQ. The Brief IPQ addressed the research question RQ1 and RQ2. This questionnaire collected self-reported data on HBP representations. The participants were given a copy of the consent form and had the opportunity to ask questions. Participants were not offered any incentive to complete the questionnaires and were not penalized in any way if they chose not to participate. Ninety-two potential participants completed the screening questionnaire, 74 of whom met the eligibility requirements. Participants deemed eligible were asked to complete the demographic/health-related questionnaire and the Brief IPQ (BIPQ).

**Quantitative Data Collection and Analysis**

The first phase of the data collection and analysis, which was quantitative in nature, was designed to answer the following research questions:

RQ1. What are the differences in the means of illness perceptions between patients with controlled HBP and uncontrolled HBP?

RQ2. What are the differences in the means of emotional representations between patients with controlled HBP and uncontrolled HBP?

Descriptive statistics were used to summarize and describe the illness representations of HBP in the participants (Table 1). The PI approached potential participants and provided an explanation of the study. Potential participants gave informed consent for the screening, and were then asked to complete the six-item
screening questionnaire. Their electronic healthcare records were assessed by the VA staff to determine if the participants’ BP readings were in the normal range. If a participant’s blood pressure was < 120/80, they were asked to complete a demographic and health behavior questionnaire and a Brief IPQ. The criteria for the selected blood pressure range are based on recommendations from the AHA. In the data analysis, an independent t-test was performed to examine the difference in the means of illness perception of African American male veterans, as well as to examine the differences in the means of emotional representation of African American veterans, by whether their HBP was controlled or uncontrolled.

**Phase II: Qualitative**

Participants with positive HBP representation and a confirmed diagnosis of controlled HBP were invited to participate in semi-structured interviews (Appendix H) to discuss their HBP self-management practices. These semi-structured interviews helped to explain and expand upon the quantitative results. After the completion of semi-structured interviews, all interviews were transcribed and then analyzed.

**Qualitative Data Collection and Analysis**

The second phase of the data collection and analysis, which was qualitative in nature, was designed to answer the following research question:

RQ3. What are the day-to-day self-management practices and perceptions among middle-aged, African American male veterans with controlled HBP and positive illness representation?
The one-on-one, semi-structured interviews took place at the VA in a private area. They were conducted to obtain information on health behaviors related to self-management of participants with positive commonsense beliefs.

Creswell & Plano Clark (2007) suggested that in sequential data collection, “the qualitative data collection should be derived from a smaller sample than the quantitative data collection” (p. 123). Guest, Bunce, & Johnson (2006) determined minimum sample size thresholds for achieving saturation of themes in qualitative research; thus, the sample size in the qualitative phase of this study was eight participants. These individuals had a mean Brief-IPQ score of 17 and participated in the quantitative phase. These individuals showed positive illness perceptions on the Brief IPQ. Also, a review of their medical records showed that all participants had a blood pressure of <120/80 mm Hg, meeting the inclusion criteria of having a sustained, controlled blood pressure.

The qualitative phase began after the quantitative data were analyzed. Open-ended questions were asked in one-on-one, semi-structured interviews to collect qualitative data. The interview questions are based on the five domains of Leventhal’s CSM and the self-management of HBP (see Appendix H). All participants provided written permission for audiotaping the interviews. Each interview lasted between 10 and 20 minutes, depending on differences in the respondent's pace and direction of the answers to the open-ended questions. Each participant’s initial responses were reviewed with the individual and additional probes were utilized as needed, in an effort to elaborate and validate responses given. A notebook was kept to record field observations, body
language, and personal responses. The notebook, audiotapes, and interview transcripts are securely placed in a separate, locked file in the PI’s office.

Thematic analysis was employed to analyze qualitative data in phase II of this study. Thematic analysis is a research method used to identify, analyze, and report themes found in qualitative data. According to Boyatzis (1998), themes are patterns in coded responses that can be found in qualitative data which can aid in the description, organization, and subsequent interpretation of observed phenomena in research (p. vii). This method requires that the researcher be an active participant in the process of the analysis and interpretation of theme identification throughout the data collection process (Braun & Clarke, 2006).

The purpose of utilizing thematic analysis for this current research is to examine and record common themes within the data that represent participants’ experience related to their self-management of their HBP.

In conducting the thematic analysis, the PI followed the six-step process proposed by Braun and Clarke (2006). The steps were as follows: (a) familiarization with the data; (b) generation of initial codes; (c) searching for themes among codes in the data; (d) reviewing of themes; (e) defining and naming themes; and, (f) production of the report. Step one of the process required several read-throughs of the data to become familiar with the data given by study participants. After each interview, all data was transcribed verbatim by the PI; transcription of each individual helped to further generate an understanding of what information was contained in the data for the study. Step two of the process involved the creation of initial codes that were generated from patterns in the
data. Codes identify notable findings of interest to a research through basic descriptors (Boyatzis, 1998: 63). After each transcript had been coded, the codes were carefully assessed for commonalities and then subsequently grouped together based on their similarities (e.g., diet).

In step three, the scope of the analysis broadened to begin assessing the grouping of codes from step two into categories that served as potential themes. Careful consideration was taken to ensure that related combinations of codes were intelligently assessed for potential overarching themes (Braun & Clarke, 2006). All potential themes in this phase were equally considered as candidate themes and sub-themes in order to allow for proper assessment of complex combinations of findings during the next phase. During phase four, identified themes were refined to ensure that all themes were distinct from one enough and had enough supporting data in relation to the breadth of the collected data as well as overall aim of the research study. At this point of the analysis, some codes became main themes, others became sub-themes, and a few were discarded. Candidate themes were then clearly delineated and appropriately named, with relation to the purpose of the research, to generate the results presented during the final phase of the analysis.

In Phase I of this research, data from the demographic questionnaire and the Brief-IPQ helped identify the participants who held positive, commonsense beliefs about HBP and engaged in positive self-management practices. The results of the qualitative data analysis in Phase II allowed for an understanding of the commonsense beliefs of middle-aged, African-American male veterans and their self-management of HBP. The
mixed-methods design provided a broad and complete range of information that yielded insights used to answer the research questions. In contrast, a single-method design might have not achieved similar results (Creswell, 2013; Johnson & Onwuegbuzie, 2004), as the data may not have been as rich or thorough in scope.

**Credibility**

Credibility must be established to ensure authenticity of findings in qualitative research (Neuman, 2006). Lincoln & Guba (1985) recommend several techniques to aid in the establishment of credibility in a qualitative research study: prolonged engagement; persistent observation; triangulation; peer debriefing; negative case analysis; progressive subjectivity checks; and, member checking. Two of these techniques—peer debriefing and member checking—were employed to enhance the credibility of the study results. Regarding peer debriefing, the researcher documented potential biases in a journal that arose during the collection of data during phase II. After completion of the interviews, the PI reviewed the notes with a colleague and her advisor.

Regarding member checking, two participants were asked to review transcripts to verify accuracy, clarity, and transferability of the data. The credibility of the current research was augmented through the participants’ judgments of the accuracy of data collected during the interview process (Creswell, 1998; Lincoln & Guba, 1985). In addition, all participants were asked to review their recorded interviews as well as the subsequent generated themes for accuracy. All eight participants expressed that their interviews and the generated themes were accurate. The ultimate purpose of employing
these techniques was to ensure that interviews would provide rich and robust data that had transferability and applicability to the source population of middle-aged, African-American male veterans.

**Summary**

The purpose of this mixed-methods design was to explore middle-aged, African-American male veterans’ beliefs about HBP self-management. The sample size determined by Cohen’s technique for power analysis using an independent t-test. In the quantitative phase of the research, the Brief IPQ was used to examine the commonsense beliefs of middle-aged, African-American male veterans with HBP. In the qualitative phase, semi-structured interviews were conducted to explore the relationship between the five domains of Leventhal’s CSM and the self-management of HBP, as reported by the participants. Chapter IV discusses the findings of Phase I and Phase II of the research.
Chapter IV: Analysis and Results

Introduction

The purpose of this study explores the self-management practices of middle-aged African-American male veterans with positive HBP representations with controlled HBP. This chapter begins with a description of the participants. The study’s findings are presented, and the results from the study are discussed. The central themes and sub-themes related to self-management practices of African-American male veterans with controlled HBP will be described. The study was conducted in two phases to obtain enriched data. In the quantitative phase 1, the participants completed surveys and a questionnaire. In the qualitative phase 2, a subset of participants from the quantitative phase was invited to participate in one-on-one semi-structured interviews.

Description of Sample

Seventy-four middle-aged African-American male veterans participated in the quantitative phase of this study. Participants were recruited from outpatient clinics in a metropolitan city part of a medical center in New York. All participants are diagnosed with HBP and were prescribed one or more antihypertensive medications. The participants’ average age was 56.85 years (SD = 6.015), and their ages ranged from 45 to 64 years. The average length of time since being diagnosed with HBP was 4.81 years (SD = 1.143, and ranged from one to five years.

Nearly half of all participants (48.6%) had a high school diploma or general education diploma (GED), and over one-third (37.8%) had attended college for two years. The majority of participants either had full-time employment (41.9%) or were
retired (29.7%). Nearly two-thirds reported regular exercise (67.6%), and half of all participants reported being on a diet for HBP (50%). A significant proportion of the study population reported that they did not smoke or use alcohol (62.2%).

A subset of the participants from the quantitative study was invited to take part in interviews for the qualitative phase. Eight of the ten participants who were deemed eligible to participate in the qualitative portion of the study were interviewed; two declined because of inclement weather. The average age of the eight participants in the qualitative portion of the study was 53 years (SD = 6.459), and their ages ranged from 45 to 64 years. The length of time since being diagnosed with HBP varied from one year to five years; the average was four years (SD = 1.195). Half of the participants (50%) had attended college for two years and reported full-time employment. The majority of participants exercised (75%), did not smoke (75%), did not use alcohol (50%), and did not follow a special diet for HBP (62.5%). The participants in the qualitative sub-sample with positive illness representations and controlled HBP tended to be younger, have more education, and had less time since being diagnosed with HBP, compared to those in the larger sample. They also were less likely to adhere to a special diet for HBP and to smoke, and were more likely to work full-time and exercise than the larger study sample.

**Analysis of Data from the Brief Illness Perception Questionnaire (Brief-IPQ)**

The participants were given the Brief-IPQ and asked to circle the number that best corresponded to their views on having HBP (see Table 2). The Brief-IPQ assessed eight concepts of illness perceptions: (a) identity, (b) cause, (c) timeline, (d) consequences, (e) cure-control, (f) coherence, (g) emotional representation, and (h) concern. Participants
ranked causal attributions of HBP according to their order of preference. According to scoring instructions on the Brief IPQ, a lower score after reversing items 3, 4, and 7 of the survey and adding these to items 1, 2, 5, 6, and 8 reflect a less threatening view of HBP; conversely, a higher score on these items reflects a more threatening view of HBP. Participants who scored one standard deviation or lower below the mean for this sample on the Brief IPQ were considered to have the most positive illness representations of living with HBP of participants in this study. The respondents (N = 74) were then asked to identify the three most common causes of HBP. The most common reported causes of HBP, were stress and diet, each reported by 20% of the study population. The other two most commonly reported causes were salt intake (14.7%) and lack of exercise (12.0%). The three least commonly reported were genetics, illegal drugs, and age, all of which were only reported by 1% of the population.
Table 3

*Sample Characteristics*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Phase 1 sample (N = 74)</th>
<th>Phase 2 sample (N = 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent (n)</td>
<td>Percent (n)</td>
</tr>
<tr>
<td><strong>Years living with HBP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 years</td>
<td>71.6 (53)</td>
<td>50.0 (4)</td>
</tr>
<tr>
<td>4 years</td>
<td>13.5 (10)</td>
<td>12.5 (1)</td>
</tr>
<tr>
<td>3 years</td>
<td>8.1 (6)</td>
<td>25.0 (2)</td>
</tr>
<tr>
<td>2 years</td>
<td>5.4 (4)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>1 year</td>
<td>1.4 (1)</td>
<td>12.5 (1)</td>
</tr>
<tr>
<td><strong>Highest Level of Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high school</td>
<td>4.1 (3)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>High school or GED</td>
<td>48.6 (36)</td>
<td>25.0 (2)</td>
</tr>
<tr>
<td>Two-year college</td>
<td>37.8 (28)</td>
<td>50.0 (4)</td>
</tr>
<tr>
<td>Four-year college or higher</td>
<td>9.5 (7)</td>
<td>25.0 (2)</td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time</td>
<td>1.4 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Full-time</td>
<td>41.9 (31)</td>
<td>50.0 (4)</td>
</tr>
<tr>
<td>College/university student</td>
<td>1.4 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Self-employed</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Retired</td>
<td>29.7 (22)</td>
<td>12.5 (1)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>25.7 (18)</td>
<td>37.5 (3)</td>
</tr>
<tr>
<td>Disabled veteran</td>
<td>1.4 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Exercise</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td></td>
<td>31.1 (23)</td>
<td>25.0 (2)</td>
</tr>
<tr>
<td></td>
<td>67.6 (50)</td>
<td>75.0 (6)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special diet for HTN</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50.0 (37)</td>
<td>62.5 (5)</td>
</tr>
<tr>
<td></td>
<td>50.0 (37)</td>
<td>37.5 (3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Currently use tobacco</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>62.2 (46)</td>
<td>75.0 (6)</td>
</tr>
<tr>
<td></td>
<td>37.8 (28)</td>
<td>25.0 (2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alcohol use</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>62.2 (46)</td>
<td>50.0 (4)</td>
</tr>
<tr>
<td></td>
<td>37.8 (28)</td>
<td>50.0 (4)</td>
</tr>
</tbody>
</table>

Note. All participants in Phase 1 were veterans who completed the demographic and health-related survey and the BIPQ; all participants in Phase 2 were veterans who had positive illness representations and were selected from the larger sample.
Table 4

Means and Standard Deviations for Illness Perception Subcategories in the Brief Illness Perception Questionnaire (BIPQ) (N = 64)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIPQ 1 Consequences</td>
<td>4.67</td>
<td>3.04</td>
</tr>
<tr>
<td>BIPQ 2 Timeline</td>
<td>5.93</td>
<td>3.54</td>
</tr>
<tr>
<td>BIPQ 3 Personal Control</td>
<td>4.16</td>
<td>2.73</td>
</tr>
<tr>
<td>BIPQ 4 Treatment Control</td>
<td>2.65</td>
<td>2.83</td>
</tr>
<tr>
<td>BIPQ 5 Identity</td>
<td>4.89</td>
<td>2.69</td>
</tr>
<tr>
<td>BIPQ 6 Concern</td>
<td>8.28</td>
<td>2.39</td>
</tr>
<tr>
<td>BIPQ 7 Coherence</td>
<td>2.62</td>
<td>3.01</td>
</tr>
<tr>
<td>BIPQ 8 Emotional</td>
<td>2.62</td>
<td>3.01</td>
</tr>
</tbody>
</table>
Table 5

Means and Standard Deviations for Illness Perception Subcategories in the Brief Illness Perception Questionnaire (BIPQ) (N =10)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIPQ 1 Consequences</td>
<td>.80</td>
<td>1.14</td>
</tr>
<tr>
<td>BIPQ 2 Timeline</td>
<td>8.50</td>
<td>1.27</td>
</tr>
<tr>
<td>BIPQ 3 Personal Control</td>
<td>1.00</td>
<td>.82</td>
</tr>
<tr>
<td>BIPQ 4 Treatment Control</td>
<td>.80</td>
<td>.93</td>
</tr>
<tr>
<td>BIPQ 5 Identity</td>
<td>.20</td>
<td>.63</td>
</tr>
<tr>
<td>BIPQ 6 Concern</td>
<td>1.40</td>
<td>2.07</td>
</tr>
<tr>
<td>BIPQ 7 Coherence</td>
<td>.20</td>
<td>.42</td>
</tr>
<tr>
<td>BIPQ 8 Emotional</td>
<td>.10</td>
<td>.32</td>
</tr>
</tbody>
</table>
Quantitative Study of Illness Representation

Seventy-four African-American male veterans with HBP took the Brief IPQ questionnaire, which yielded a mean score of 4.34 (SD = 1.67). Both RQ1 and RQ2 were assessed with an independent two-sample t-test. There were no significant difference in mean scores for controlled HBP (M=35.40, SD=14.00) and uncontrolled HBP (M=33.05, SD=12.03) conditions; t(72)= -.676, p = .501. There was a minimal difference in scores; this may indicate that illness perception in African American male veterans does not appear to vary by whether or not HBP is controlled.

Regarding the results of the t-test performed for RQ2, there were also no significant differences found in the scores for controlled HBP M=5.41, SD=3.69) and uncontrolled HBP (M=4.57, SD=3.58) conditions; t(72)= -.893, p = .375. As there was a minimal difference in scores, emotional representation in African-American male veterans does not appear to vary by whether or not HBP is controlled. The assessment of significant differences between groups regarding illness perception and emotional representation by HBP control status, respectively, may have been hampered by the lack of heterogeneity of participants regarding age, ethnicity, and the site where individuals were receiving their health care.

Qualitative Phase

Ten participants were invited to participate in the qualitative phase; eight agreed to participate in the second phase of the study. The participants were asked interview questions (Appendix G) based on Leventhal’s (1980) CSM to explore the participants’ perceptions and lived experience of their HBP and self-management practices.
As recommended by Braun & Clarke (2006), a thematic analysis was employed to address RQ3; this approach allowed the researcher to answer the qualitative research question, RQ3. The transcripts were coded and then subsequently aggregated into themes and sub-themes. The predominant theme throughout the qualitative data was motivation, and the identified sub-themes were personal control, accessibility, and adherence to HBP treatment. Both the predominant theme and sub-themes are discussed extensively below.

**Motivation**

‘Motivation’ is defined as a general desire or willingness of someone to do something (Oxford University Press, 2015). Regarding the overall theme of motivation, participants conveyed that they had regularly considered their goals and choices when they discussed their day-to-day activities of HBP self-management practices. Participants appeared motivated by goals that they had set to lower and sustain their blood pressure.

In addition, participants reported adhering to various healthy diet and exercise regimens in an effort to control their HBP; these individuals often expressed strong motivation to control their HBP for engaging in healthy eating and exercise practices. As such, it appeared that motivation was positively associated with participants adhering to positive lifestyle changes and health behaviors. Below are two separate quotes that help characterize the predominant theme of ‘motivation’ for this study:

“\textbf{I wake up. I take my medication, my heart medication. Then I eat breakfast. Then I go to the gym. I exercise for about an hour and a half. I come home. I relax. I take some more heart medication then I go to sleep.}” (Bill)
“Wake up, go to the gym. Wake up at five in the morning, go to the gym, exercise for an hour, ah take a shower. Start work around 6:30 am. Work until 5:30 pm. Ahhh, come home. Ahhhh, cook dinner and then relax. Watch TV and then go to bed, around 10:30, 11:00.” (Peter)

**Personal Control**

‘Personal control’ is defined as a locus of control and personal mastery beliefs, reflecting individuals’ beliefs regarding the extent to which they can control or influence outcomes (Schultz, Heckhausen, & O’Brian, 1994). Study participants reported developing a lifestyle regimen that allowed them to control and sustained their normal blood pressures successfully. Individuals who had successfully integrated positive health behaviors in their lives reported that it was difficult to achieve controlled blood pressure in the beginning, either because of the fact that HBP is asymptomatic, or their lack of knowledge of actually having HBP. Those that appeared to exhibit a significant level of personal control, related to positive health behaviors to control their HBP, often reported the belief that having uncontrolled HBP would lead to health complications and death. These participants often discussed the various strategies that they developed to control their HBP. Below are three examples of quotes from participants related to the sub-theme of ‘personal control’:

“Well, I am trying to live. I just made 60, and I am trying to be a 120 if I can. That’s why I want to be here (laughing).” (Bill)

“Because I do not want to ahh…have problems or die of a heart attack. Die of a stroke or have a stroke...concern for wellbeing.” (Michael)
“Well you know, just trying to prolong my life for as long as I can, just trying to maintain some sort of health so I won’t wind up in the hospital.” (Participant 3)

**Accessibility**

‘Accessibility’ is defined as able to be used or obtained (Merriam-Webster, 2015). Many participants reported using various materials to gain general knowledge and/or a better understanding on HBP. These resources appeared to aid participants in their efforts to control and sustain their HBP. The two most commonly reported resources that individuals suggested helped them to control and sustain their HBP were the internet and their healthcare providers. Both of these resources appear to intertwine, as participants can navigate the internet to answer questions they may have, which they can then discuss with their healthcare providers. In addition, as technological advancements and access continues to grow, patients can reach out to healthcare providers in a variety of ways at a time convenient for them. Below are two separate quotes that help to characterize the sub-theme of ‘accessibility’:

“I did my own research. I asked my doctor questions. I read a couple of books, and I did an internet search on HBP. If I did not understand something, I would ask my doctor. I used the internet. I used Google and WebMD…. I am working closely with my primary care doctor, and I try to cut down on fast foods…. I see my doctor every three months. If I have any questions, I can send a message to her through my HealtheVet. If I have a question, I log on to the site and send her my question. She or a nurse sends me a response that evening or the next day.” (Paul)
“I have a small blood pressure monitor that I use to gauge where I am. I use it two to three times a day. I can tell when my blood pressure is elevated, and I can do something about it.” (Henry)

**Adherence to HBP Treatment**

Adherence to HBP treatment reveals how participants follow recommended medical advice. For the purposes of this study, adherence referred to activities such as maintaining appointments, medication compliance, following a recommended lifestyle change, and limiting unhealthy activities. Participants expressed common treatments and activities to which they adhered to in order to promote blood pressure control: taking their medication; refraining from salt and salty foods; controlling their weight; getting enough sleep; and, monitoring their blood pressure with home blood pressure equipment. Below are two separate quotes that are related to the sub-theme of ‘adherence to HBP treatment’:

“HBP management means to me…eating right, staying away from salt, losing weight, sleeping for at least seven hours, and medication..... I try to jog at least three times a week, and I try to take the kids out to the park on the weekends. But as you can see the weather has been not cooperative for past two months.” (Peter)

“Discipline, that’s what it is about, self-control, exercise, trying to watch what I eat. I take my medication.., and I try not to let my prescription run out because then I would have to wait a couple of days for my refill. I know that if I don’t have my medication my blood pressure will go up.” (Jack)
Another participant said he was in a state of disbelief when after being told he had HBP. After he had been informed of the severity of his diagnosis, he was provided with blood pressure monitor and antihypertensive medication. After doing research and asking his primary care provider questions, he was then able to understand his blood pressure machine readings. Below is a quote from this participant regarding his lived experience:

“At first when I was told my blood pressure was high, I had no clue. My doctor sat me down and said to me, this is not good. I believe my blood pressure was 158/90 at the time. She asked me if my parents had high blood pressure. She gave me a prescription for blood pressure medication. I was told to stay away from salty foods and to lose weight. I was also given a blood pressure machine. I was told to come back in three months. In the beginning, I used to check my blood pressure three times a day because I did not believe it. I started taking the medication, and I noticed a difference in the numbers. My blood pressure was no longer 158/90 but 124/80.” (Henry)

Summary

Chapter IV presented the results of the quantitative and qualitative phases of the study. Data from the quantitative phase of the study did not reveal significance differences in either illness perception or emotional representation by HBP control status (i.e., uncontrolled vs. controlled). Data collected during the qualitative phase of the study described the self-management practices of eight African-American male veterans with controlled and sustained HBP. Overall, participants took the initiative to learn about HBP, feared complications of HBP, and chose to be more active in managing their HBP. Common themes reported by participants often suggested that participants had a purpose
in managing their HBP. Each participant with controlled and sustained HBP described an individualized and personal self-management practice. The major themes revealed by the data analysis were motivation, personal control, accessibility, and adherence to treatment. Chapter V will discuss the implications of the findings of this study and provide the conclusion to this research.
Chapter V: Discussion and Conclusion

This study assessed factors associated with positive illness representation, disease self-management, and controlled HBP among middle-aged, African-American male veterans. The information garnered through this study can assist both healthcare providers and hypertensive patients to address and reduce mortality and morbidity of HBP.

A discussion of the findings from the quantitative phase followed by the qualitative phase is presented. The CSM, which has been the theoretical framework that guided this study, was used to examine HBP representations and assessments of HBP knowledge which may have influenced HBP self-management. This study looked at what qualities may have guided participants with well-controlled BP to perform specific activities that contributed to their successful management of their HBP. To date, this study is the first known to explore positive HBP perceptions among individuals with controlled and sustained HBP by using a mixed-methods approach. Overall, the findings of this study suggest middle-aged, African-American male veterans with sustained, controlled HBP appear to exhibit a positive illness representation of HBP; are motivated to manage their HBP; have strong personal control in adhering to positive dietary and exercise-related health behaviors; routinely access information about HBP to inform themselves about their condition; and, adhere to HBP treatment. African Americans experience earlier onset of HBP with a greater rate of severity and complications (Rogers et. al., 2013). Numerous previous studies on HBP and African Americans have ascertained various risk factors related to the onset of HBP and poor disease management (Flack, et al., 2010;
a gap remains in the literature regarding how members of this vulnerable sub-population successfully control their HBP. As the incidence of HBP among African Americans continues to increase, proper management of the disease among African Americans has become a primary concern. The International Society on Hypertension in Blacks (ISHIB) issued a Consensus Statement on the “Management of High Blood Pressure in African Americans” in both 2003 and 2010 recommending treating HBP sooner and more aggressively in African Americans with HBP, along with adding multiple hypertensive medications to improve disease control (Douglas, Bakris, Epstein, Ferdinand, Ferrario, Flack, & Ofili 2003; Flack et al., 2010). In addition, the Healthy People 2020 initiative issued national objectives that focus on preventing and improving the management of high blood pressure for all Americans (DHHS, 2010).

Sample

Participants for this study ranged from 45–64 years, had been diagnosed with HBP for five years or less, and were taking prescribed, anti-hypertensive medication at the time of study recruitment. All participants in this study received their healthcare at a medical center located in a metropolitan city. The highest level of education among the participants in phase one was high school diploma or graduate equivalency degree (GED) (48.6%), followed by two years of college (37.8%). The highest education completed for the eight participants in the qualitative phase II of the study was two years of college (50%), followed by high school or GED (25%) and four years of college (25%). The majority of participants in Phase I reported being either employed or retired at 41.9% and
29.7%, respectively. The participants in Phase II reported their employment status as full-time (50%) and unemployed (37.5%).

The theoretical framework used to guide this study was Leventhal, Meyer, and Nerenz’s (1980) common sense model (CSM) of illness representation. Based on the CSM, individuals are active problem solvers who attempt to address or seek out answers in addressing their health concerns and issues. People obtain information to solve their health problems in different methods and forms, from their family and friends, to their healthcare provider, and to the internet. Access to healthcare, medication, and other resources is not enough for patients to improve their HBP; patients must also have concern for their well-being or an interest in wanting to improve his or her health. The process by which individuals attempt to address their illness or health care starts with a symptom and diagnosis that prompts the patient to define or construct a cognitive representation of the illness. After a patient has tried to connect their symptoms to an illness or diagnosis, it is then followed by acting and attempting to cope with the illness or health threat. In the final step, the individual appraises his or her actions and adjusts their plans, routine, and care accordingly (Leventhal et al., 1980). Throughout this process, individuals assess their performance and outcome to determine if their goal of improving their health has been met (Leventhal, 1980). Participants in this study demonstrated a commitment to improving their health by controlling and sustaining their HBP.
Phase I Quantitative Research

Two research questions were the focus of the quantitative phase of the study. Leventhal’s et al. (1980) Common Sense Model (CSM) is based on individual’s cognitive and emotional perception of an illness. Several different versions of the IPQ were developed based on the CSM. The Brief-IPQ was used for this study specifically. The Illness Perception Questionnaire (IPQ) (Weinman, Petrie, Moss-Morris & Horne, 1996) was developed to assess five domains of illness perception; identity, consequences, timeline, control/cure and cause. The questionnaire was later revised to include a domain for illness coherence. The version of the IPQ that contained questions on illness coherence was renamed, Illness Perception Questionnaire-Revised (IPQ-R) (Moss-Morris, et al., 2002). The questionnaire was revised for brevity and renamed, the Brief-IPQ (Broadbent et al. 2006); this version of the questionnaire was used for the purposes of this study.

Specifically, the PI administered the Brief-IPQ to participants who reported having controlled HBP to assess illness perceptions; those with positive illness perceptions as determined by their score on the Brief-IPQ were recruited to participate in the qualitative phase 2 of the study. The qualitative phase set out to explore how individuals with controlled, sustained HBP adopted and carried out positive HBP self-management practices in their daily lives, based on the CSM. Applying Leventhal’s et al. (1980) CSM theory to the current study, individuals obtained and processed information and adopted coping skills that were adjusted accordingly to their needs.
Independent two-sample t-tests were conducted to answer RQ1 and RQ2 to determine if there were any differences in illness perception and emotional management between veterans with controlled and uncontrolled HBP. There were no statistically significant differences related to these two domains by HBP control status. According to Broadbent et al., (2006), a higher score on the Brief-IPQ reflects a more threatening view of the illness. There are no similar populations to compare these findings; however, an explanation for these findings may be that participants recruited from this medical center received medical care that is consistent with national recommendations related to HBP.

RQ1. What are the differences in the means of illness perceptions between participants with controlled HBP and uncontrolled HBP?

RQ2. What are the different means of emotional representations of participants between participants with controlled HBP and uncontrolled HBP?

There were no significant differences in the reported means of illness perceptions between participants with controlled HBP vs. uncontrolled HBP. The research questions for the study were based on the assumption that individuals construct mental representations based on concrete and abstract information obtained from different sources in the attempt to understand and regulate their illness (Leventhal et al., 1980). It is difficult to determine if the theory was not supported by the current research or if there were issues related to sample size, population, and/or the instrument.

**Qualitative Phase II**

A purposeful sampling approach was used to obtain participants in the qualitative phase of the study. A subset of participants from the quantitative phase I of the study was
invited to take part in the qualitative phase based on the collective, mean scoring of the Brief IPQ.

The qualitative phase II of the study focused on eight male informants to explore their positive illness representation and HBP self-management activities to better understand contributing successful self-management practices. The day-to-day self-management activities of individuals with controlled HBP are relatively unknown. In Phase II, the activities and experiences of middle-aged, African American male veterans with positive HBP representation and self-management practices were explored. The purpose was to gain an understanding of HBP self-management knowledge, positive HBP behaviors, self-management practices, and positive HBP outcome goals that are successful in controlling HBP among African Americans, to potentially apply some of these “lessons learned” for those in this population with uncontrolled HBP.

Lorig (1993) defined self-management as “learning and practicing skills necessary to carry on an active and emotionally satisfying life in the face of a chronic condition” (p. 11). Self-management refers to the individual’s ability to manage symptoms, treatment, physical and psychosocial consequences, and lifestyle changes which are characteristic of living with a chronic condition (Barlow, Wright, Sheasby, Turner, & Hainsworth, 2002, p.178). Efficacious self-management encompasses the ability to monitor one’s condition and to have the cognitive, behavioral, and emotional responses necessary to maintain a satisfactory quality of life. Thus, a dynamic and continuous process of self-regulation are established (Barlow et al., 2002, p.178).
The medical center where participants were recruited from serves a diverse population and is located in the Northeast region of the US. All participants reported having a standing appointment with their healthcare provider from three to six months during the year. This study found that the majority of participants with controlled HBP had adopted positive health behaviors and lifestyle activities to manage their HBP. These particular activities allowed participants to achieve obtainable controlled blood pressure by incorporating activities into their daily lives such as adherence to medication, use of low salt, physical activity, abstaining from smoking, limiting the use of alcohol, and weight management strategies. The Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC-7, 2014) endorses all aforementioned positive lifestyle behaviors, as reported by study participants, to control and reduce HBP. In addition, previous studies have provided strong evidence about significant lifestyle changes aided in reducing and controlling HBP (Warren-Findlow, Seymour & Huber, 2011; Hekler et al., 2008).

**Summary of Themes**

Informants who chose to participate in this study shared their experience of self-managing their HBP. In doing so, themes emerged in the areas of motivation, personal control, treatment adherence and access to care. A discussion of these four themes follows. The themes were determined based on the frequency of responses and the content reported.
Motivation

In the current study, participants expressed that they wanted to be present and active for their family by performing certain activities; this would increase their life expectancy. Individuals reported that they had to develop a routine and plan based on the information obtained from their provider or other resources. The activities carried out by participants included taking their medication first thing in the morning, increasing their physical activity, and changing their diet. Some studies found that motivation plays a key factor in sustaining lifestyle changes (Kähriäinen et al., 2015; Warren, Smalley, & Barefoot, 2016).

Participants described their motivation behind controlling HBP by discussing their personal areas of concern. Two apparent reasons to control their HBP that participants reported were to be around for their family and not to be a burden to their family from complications of having uncontrolled HBP. Participants largely spoke about being motivated by both individual needs as well as concerns of their family and support circle; these reasons were largely discussed in the context that they felt controlling their HBP would be beneficial.

Personal Control

Participants reported that by setting and achieving small goals consistently, they were able to achieve and maintain optimum blood pressure control by implementing a plan that was developed and defined by their lifestyle. In maintaining independence, this allowed participants to achieve the health goals and maintain independence from the confines of enduring the complications of uncontrolled HBP. There are limited studies
addressing personal control and HBP. A recent study conducted by Kidd et al. (2016) regarding associations between health-related control beliefs and coronary artery bypass graft (CABG), among patients 6–8 weeks following surgery reported that patients with low perceived personal control over their cardiac illness predicted elevated levels of depression symptoms and poorer physical and mental quality of life. There is a gap in the literature regarding personal control and HBP outcomes.

**Adherence to HBP Treatment**

Participants believed that they benefitted from adhering to medication and lifestyle changes in their efforts to control their BP. Participants were able to set goals and adjusted their goals regularly while viewing their blood pressure reading on their portable blood pressure machine. By actively managing their condition, participants had the ability to see the results of adhering to a treatment plan regularly.

Exercise is an important part of treating HBP, as exercise is effective at lowering HBP (JNC 7, 2014). The American Heart Association (AHA, 2014) recommends that patients get 40 minutes of moderate to vigorous physical activity 3 to 4 times per week to lower blood pressure. Along with medications and exercise, a healthy diet is an integral part of HBP regimen. A healthy diet can significantly reduce the risk of HBP and associated comorbidities. A recommended natural source of 4,700 milligrams per day of potassium for adults is important in controlling blood pressure because potassium lessens the effects of sodium (AHA, 2014). Study participants that had well-controlled BP often exhibited positive health behaviors related to healthy exercise and dietary habits.
Accessibility

The final theme was based on participants reporting their ability to contact their provider via telephone or sending an electronic message to their provider while at home and receive a response within twenty-four hours. Participants were seen every three to six months, had their medication delivered to home or picked it up at the pharmacy, and reported having a positive relationship with their healthcare provider. In addition, participants had access to HBP equipment and understood how to use equipment and blood pressure readings; the ability to look at a blood pressure reading often and in the home setting allowed participants to adjust their lifestyle activities to control their HBP regularly.

Participants also routinely accessed the internet to read about HBP and its short-term and long-term negative health effects. Participants were aware of numerous factors that could contribute to the development of HBP; for example, participants frequently reported that a lack of sleep and snoring were contributory factors in having HBP. Other studies identified similar factors reported by participants to manage their HBP (Flynn et al., 2013).

Study participants were motivated to incorporate self-management practices to eliminate undesired complications from having uncontrolled HBP. The fear of losing their vision, kidney failure, stroke, heart attack, or death was a significant motivator for participants to strive to control their HBP. In addition, the fear of being a burden to their loved ones and the inability to care for their family or themselves were also reported as a
motivator in controlling their HBP. These findings are consistent with other studies (Jolles, Padwal, Clar, & Braam, 2013; Khatib et al., 2014).

In the present study, individuals reported setting small, achievable goals within their lifestyle. They mentioned performing various healthy activities on a daily basis, which suggested that participants had integrated positive health behaviors into a routine within their daily lives. These activities included exercising, medication compliance, monitoring of HBP, and diet and weight maintenance, all of which are related to lifestyle modification. The JNC-7 (2014) recommended positive lifestyle changes for appropriate management of HBP. In addition, literary evidence has demonstrated the positive effects of incorporating lifestyle changes in maintaining healthy blood pressure levels (Warren-Findlow & Seymour, 2011).

Study participants developed a working partnership with their healthcare providers, which they felt helped them obtain and maintain a healthy blood pressure. Similar studies have reported that effective working relationships between providers and their patients are essential in providing quality and effective care (Jones, Carson, Bleich, & Cooper, 2012; Holman & Lorig, 2000).

Study participants also shared stories about managing and controlling their high blood pressure. Not only did individuals in the study report a general understanding of HBP and its seriousness, they also emphasized how controlling and managing their HBP could prevent them from developing serious complications, such as heart attack, stroke, renal failure, retina damage, and even death.
The reported lived experiences and meanings related to the discussion of HBP and self-management practices were similar across participants’ narratives. Individuals conveyed to the PI through their action and speech that they were comfortable in discussing chronic illness and self-management activities. The subset of participants that participated in the qualitative phase of the study reported experiencing no symptoms of HBP to having symptoms of headaches, dizziness, and fatigue. HBP is an asymptomatic condition, and this is consistent with research by Wilson et al. (2002). All participants understood that HBP was a chronic illness, and they believed that their medication(s) helped them to control their HBP. Interviewees did not report that living with HBP affected their emotional well-being.

Participants generally reported both accepting and allowing conventional care recommendations for self-management of HBP; however, each participant negotiated the health behavior changes that they were willing and able to make, often through determining their exercise and diet regimen. They also described how they complied with treatment recommendations and the personal steps that they incorporated into their daily activities regarding their management of their HBP, such as placing medication nearby where they slept so they could take it when they woke up.

Participants’ narratives included examples of strategies that they had taken, which were also recommended by the American Heart Association (AHA) and the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC-7). Individuals often reported steps that they took in lowering their elevated blood pressure, which were often consistent with recommended lifestyle
Modification suggestions in the literature that may help to reduce HBP risk, such as relaxing, reducing stress, meditating, and obtaining eight hours of sleep (Chobanian et al., 2003). Study participants with controlled HBP had more perceived control over their health and had higher subjective well-being when they engaged in self-management activities.

Additionally, study participants reported learning about HBP through various ways to assist them in self-managing their HBP, such as talking to their healthcare provider, accessing the internet, and reading pamphlet/magazines on the topic. They commonly reported several activities that they used in their day-to-day self-management to control their HBP, such as:

- The use of a home monitoring blood pressure machine;
- Access to a healthcare provider;
- Access to the internet to research HBP;
- Understanding the importance of obtaining enough sleep;
- Exercise;
- Medication;
- Importance of supplements; and,
- Elimination of fried foods and salt from their diet

The fifth and last research question explored the common elements in the description of interviewees with controlled HBP and their positive illness representations in the self-management of HBP. The results revealed that the subset of participants had
very good access to healthcare and medication. In addition, they were motivated and purposeful with their self-management activities. Furthermore, participants appeared to be resourceful in their goal to control and maintain their healthy BP levels, by seeking out information about HBP and alternative treatments. They are committed to lifestyle modifications as a way to control their HBP. Participants demonstrated that they were proactive in the self-management practices to control their HBP.

It has been reported that there is an association between social, economic status and systolic blood pressure, as individuals who are socially disadvantaged face job and neighborhood stressors, lower educational attainment, and limited resources. Individuals of low socioeconomic status tend to consume low-cost, high-calorie fast food which results in obesity and other medical conditions (Lam, 2011).

**Findings**

Overall, participants reported that they self-managed their HBP through various activities, such as monitoring their blood pressure with a home blood pressure machine, eating healthy, engaging in exercising, and managing their stress. Individuals were often proactive and motivated in controlling their HBP by initiating changes. Study participants reported their primary motivation to control their HBP was because they were concerned about their future well-being. The participants were motivated to control their HBP because they wanted to live for their families, and they did not want to burden them with the complications of uncontrolled HBP.

Furthermore, the results of this study revealed African-American male veterans with controlled HBP understood that HBP is a chronic illness and were likely to take
antihypertensive medication for their condition that they understood would be for the rest of their lives. They often reported that stress was the primary cause of their HBP. One participant expressed that aging (Pinto, 2007) and lack of sleep were contributors to HBP, which this is supported in the research as a contributor of HBP (Gangwisch et al., 2006). All participants believed that changes in their lifestyle, such as diet, exercise, and adhering to prescribed medication, had positive effects on controlling their HBP. Individuals’ overall perception generally pertains to the connection between the consequences of not incorporating changes in one’s lifestyle and the risk of developing health-related complications from HBP, such as stroke, heart attack, renal failure, and visual disability. Strategies to control HBP used by participants manage their condition did not reveal anything out of the ordinary which has not already been recommended or proposed from healthcare providers.

Leventhal’s et al. (1980) CSM provided some insights into African-American male veterans with controlled HBP and positive illness representation, coping behaviors, and appraisal about their HBP. These findings could assist health care providers in understanding the illness perceptions and emotional representations of African-Americans male veterans with HBP concerning their self-management practices. The CSM could be used to explore African-American male veterans with controlled HBP and positive illness representations. The CSM could also be used to assist healthcare providers in developing specific and individualized interventions, which would help individuals with HBP to monitor and manage the disease.
Implications for Nursing Practice

Lifestyle modification and self-management practices have a substantial impact on HBP control. The Brief-IPQ explored beliefs of participants with HBP cognition and emotions and reflected participants with positive representation; this allowed the study to identify controlled and sustained participants with HBP. This study may provide nurses with an understanding of self-management behaviors among African-American males with controlled and sustained HBP. In addition, the findings of the current research may help clinicians treat people with both optimal and suboptimal representations of HBP. In this study, several individuals with positive HBP representation and self-management activities had controlled HBP.

Patients with HBP often have a poor understanding of complications from having uncontrolled HBP (Johnson et al. 2016). This poor understanding can lead to poor self-management activities and uncontrolled HBP (Johnson et al. 2016; Kronish, et al., 2012). Positive HBP perception, motivation, personal control and access to healthcare may help improve HBP self-management behaviors among African-American males with HBP. This education may provide patients with an understanding of the reason why incorporating lifestyle modifications in their day-to-day activities improves blood pressure control. In the clinical setting, hypertensive patients need to be educated by health care providers about what HBP is, how to live with HBP, and how to make lifestyle modification and self-management strategies to optimize their chances of obtaining controlled HBP.
Healthcare providers need to assess patients’ HBP cognition and emotions to determine their perceptions of having HBP. Even though HBP is a chronic illness and it is an asymptomatic illness, patients place it on the back burner because it is not acute. HBP is not an intrusive disease; there are no signs and symptoms associated with this disease compared to another chronic illness such as congestive heart failure (CHF).

Assessing HBP representations of patients provide a baseline for healthcare providers to determine at what level to approach a patient when providing treatment. There is a great need for research on illness representation and HBP self-management practices among African-American males to reduce complications from uncontrolled HBP. The key to obtaining controlled and sustained HBP among African American male veterans with HBP is provide education and support while planning interventions based on their needs and assisting individuals in establishing achievable day-to-day goals.

Based on findings from this research, tailoring appropriate nursing interventions for patients with HBP could assist patients in controlling their HBP. The participants in this study reported adhering to their antihypertensive medication, but this behavior alone cannot control HBP among African-American males (Pickett, Allen, Franklin & Peter, 2013). The JNC-7 recommends the following self-care activities: adhering to antihypertensive medication regimens, maintaining weight or losing weight, following a low-salt diet, limiting alcohol, engaging in a regular physical activity, and eliminating alcohol.

The findings of this study may be useful in the development of future intervention programs aimed at improving HBP self-management among African American males.
with HBP. Exploring and evaluating patients’ illness representations and the goals surrounding the management of their illness could provide pathways to improving hypertension management in African Americans.

**Recommendations for Future Research**

The purpose of this study was to explore the self-management practices of African American male veterans with controlled HBP and positive illness representation. The primary goal of this research was to provide findings that might help to improve treatment outcomes among African American males with HBP. Based on the findings from this study, future research is imperative for continuing the exploration of self-management practices of individuals with controlled and uncontrolled HBP with positive HBP representation. Research on illness representations of people with controlled HBP and self-management practices should include patients at different stages of their diagnosis and treatment of HBP. Also, further research should examine healthcare providers’ perceptions and interactions with HBP patients. Interactions between patients and healthcare providers may have a significant impact on a patient's response to therapy. Positive cues in successful office visits can enhance the care of patients who have difficulty achieving optimum blood pressure control.

Characteristics of patients with positive illness perceptions who have controlled HBP should be further studied. These findings could be used to promote controlled HBP among African Americans. The themes derived in the present study form the basis for further research and are a starting point to assist future patients with controlling and sustaining their HBP.
Replication of this study of African-American males with HBP receiving healthcare in different facilities may help determine if the findings are generalizable to other African-American males diagnosed with HBP. Also, replication of this mixed method study in order to explore self-management practices among diverse populations would be beneficial to ascertain if the findings of this study are generalizable to other sociodemographic populations.

Future research also could use the Hypertension Self-Care Activity Level Effects (H-SACLE) scale to measure self-care activities among African Americans and to assess the behavioral activities recommended for the optimal management of HBP (Warren-Findlow & Seymour, 2011). The H-SCALE determines the activities related to HBP, as outlined in the JNC7. The H-SCALE includes questions about the following items: medication usage, low salt diet, physical activity, smoking, weight management, and the use of alcohol. All of these items were mentioned by the participants in the subset that participated in the qualitative portion of the study.

Finally, exploring illness representations with pre-hypertensive patients who receive health education for HBP and pre-hypertensive patients who do not receive health education for HBP could provide further knowledge in the areas of health promotion and disease prevention along with reducing barriers.

Limitations of the Study

There were several limitations associated with this study. First, because convenience sampling was used, the data is likely not representative of all middle-aged, African-American male veterans. Second, the sample size was small, and the participants
were recruited from a single medical center, which further hampers generalizability. Third, the use of self-reported measures could have affected the results because of the potential of socially desirable response sets. Fourth, this study’s cross-sectional design limited the ability for causal inferences to be drawn. Finally, this current study was cross-sectional, and the Brief IPQ was measured at a single time. It would be helpful if the study were designed to be longitudinal because it would allow the examination of changes in illness representations in patients HBP over time.
IRB APPROVAL - Initial Review

Date: August 3, 2012
From: Maried T. Cruz, RN, Ed.D., Co-Chairperson
Investigator: Tammie Brodie
ID: 01328  Prom#: N/A  Protocol#: N/A

The following items were reviewed and approved through Expedited Review:
- Request for Expedited Review - Initial (08/02/2012)
- Request to Review Research Proposal/Project (07/10/2012)
- Abstract (07/10/2012)
- Consent Form (08/01/2012)
- Authorization for Release of Protected Health Info (08/01/2012)
- Page 16: Investigator Data Sheet - Tammie Brodie, MSN (07/10/2012)
- Human Studies Questionnaire (07/30/2012)
- Safety Form 16-0198 (08/01/2012)
- Advertisement/Flyer (08/01/2012)
- African American Male Veterans with Controlled High Blood Pressure Please Read on...
  - Protocol (07/10/2012)
  - Receipt of All Mandatory Certificates - Tammie Brodie

Expedited Approval was granted on 08/02/2012 for a period of 12 months and will expire on 08/01/2013. Your Continuing Review is scheduled for 06/03/2013. This Expedited review will be reported to the fully convened Subcommittee for Human Studies on 09/10/2012.

Expedited approval is granted in accordance with the requirements set forth in 38 CFR 16.110 (appendix B VHA Handbook 1200.5) expedited review procedures.

This protocol does not identify the potential of including vulnerable subjects in the research. The approval is granted based on consideration of risk in relation to benefit. The IRB determined the approval period to be 365 days.

No flagging of medical CPRS records is required.

Approval by each of the following is required prior to study initiation:

Human subjects research conducted in this institution operates under the terms of its Federalwide Assurance [FWA #0001881]. The program is accredited with the Association for the Accreditation of Human Research Protection Programs, Inc. All human subjects research must be conducted in accordance with the provisions of VHA Handbook 1200.05.
Appendix B

DATE: October 25, 2013
TO: Tammie F. Brodie, MSN
FROM: Hunter College (CUNY) HRPP Office
SUBMISSION TYPE: Continuing Review/Progress Report
ACTION: APPROVED
APPROVAL DATE: October 24, 2013
EXPIRATION DATE: October 23, 2014
RISK LEVEL: Minimal Risk
REVIEW TYPE: Expedited Review
REVIEW CATEGORY: Expedited review category # 4.6.7

Thank you for your submission of Continuing Review/Progress Report materials for this project. The University Integrated IRB has APPROVED your research. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission. Stipulation: Please note, approval is contingent upon approval from the VA Subcommittee for Human Subjects and Research and Development Committee per letter attached in this package. Also, please be advised that the CUNY UI-IRB has approved the use of the VA consent forms.

Please remember that informed consent is a process beginning with a description of the project and assurance of the participant’s understanding, followed by a signed consent form(s). Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any modifications/changes to the approved materials must be approved by this IRB prior to implementation. Please use the appropriate modification submission form for this request.

All UNANTICIPATED PROBLEMS (UPS) involving risks to subjects or others, NON-COMPLIANCE issues, and SUBJECT COMPLAINTS must be reported promptly to this office. All sponsor reporting requirements must also be followed. Please use the appropriate submission form for this report.

This research must receive continuing review and final IRB approval before the expiration date of October 23, 2014. Your documentation for continuing review must be received with sufficient time for the IRB to conduct its review and obtain final IRB approval by that expiration date. Please use the appropriate continuation submission forms for this procedure. PLEASE NOTE: The regulations do not allow for any grace period or extension of approvals.

If you have any questions, please contact the HRPP Office at (212) 650-3053 or hrpp@hunter.cuny.edu. Please include your project title and reference number in all correspondence with this committee.
Appendix C

African American Male Veterans with Controlled High Blood Pressure
Please Read on...

- Research Study to find out what your beliefs are about on how you control your high blood.

- You may be eligible to participate if you:
  - Are African American/Black
  - Have high blood pressure that is controlled
  - Diagnosed with high blood pressure for 1 – 5 years
  - Taking high blood pressure medication
  - Are 45-64 years old

- Ask your healthcare provider to see if you are eligible for this research study.

- Participants will complete questionnaires and may be invited to take part in an interview at a late date
Appendix D

CONSENT FORM

My name is Tammie F. Brodie and I am student in the doctoral nursing of science program at The Graduate Center of the City University of New York (CUNY), and Principal Investigator of this project, entitled “Middle Age African American veteran males with high blood pressure.” This is a research study of African American veteran males with high blood pressure. The study is expected to describe common sense beliefs of African American veteran males with high blood pressure.

I would like permission to interview you about your beliefs. There are several phases to this study. I would like for you to fill out a 2-page demographic survey. Then I will take your blood pressure to determine if you meet the criteria for the study. I will then look in your medical record to see if your blood pressure has been controlled. If you meet the criteria you will be given a 1-page Brief Illness Perception Questionnaire (Brief IPQ) to complete.

This questionnaire should take approximately 10 minutes to complete. The questionnaires will be viewed only by me and my advisors. All information gathered will be kept strictly confidential, and will be stored in a locked file cabinet, to which only I will have access. At any time you can refuse to complete any questions or end the interview.

I will then score the Brief IPQ, if you score high on the Brief IPQ I will ask to interview you. The interview consists of several opened questions about your blood pressure. The interview may last from 30 to 60 minutes. At any time you can refuse to complete any questions or end the interview.

The risk involved in this study, are no more than encountered in everyday life. The benefits of your participation will be that health care providers will understand common sense beliefs of African American males with high blood pressure, this will add to the generalized knowledge of high blood pressure. There will be approximately 20 participants taking part in this study.

I may publish results of the study, but names of people, or any identifying characteristics, will not be used in any of the publications. If you would like a copy of the study, please provide me with your address and I will send you a copy in the future.

If you have any questions about this research, you can contact me at TBrodie@gc.cuny.edu, or my advisor Dr. K. Nokes at knokes@hunter.cuny.edu. If you have questions about your rights as a participant in this study, you can contact Kay Powell, IRB Administrator, The Graduate Center/City University of New York, kpowell@gc.cuny.edu.
Thank you for your participation in the study. I will give you a copy of this form to take with you.

I agree to have this interview audio-taped please [circle one]:
Yes     No

<table>
<thead>
<tr>
<th>Participant’s signature</th>
<th>Date</th>
<th>Investigator’s signature</th>
</tr>
</thead>
</table>
Appendix E

Screening Questionnaire

Participant ID:

Please circle all questions and fill in all blank spaces where indicated.

1) What is your gender?
   - Male
   - Female
   - Transgender

2) Are you a veteran?
   - Yes
   - No

3) Please specify your ethnicity
   - Hispanic or Latino
   - Not Hispanic or Latino

4) Please specify your race.
   - American Indian or Alaska Native
   - Asian
   - Black or African American
   - Native Hawaiian or Other Pacific Islander
   - White

5) What is your age?_________

6) How long have you had high blood pressure? __________years
Appendix F

CHARACTERISTICS QUESTIONNAIRE

Demographic Questionnaire

Participant ID:

Please circle the answer that applies to you or fill in the correct answers

Are you a Veteran?
- Yes
- No

What is your gender?
- Female
- Male

What is your age? _________

What is your marital status?
- Single, never married
- Married
- Separated
- Divorced
- Widowed

How many people, including yourself, are in your household? ____________

What is the highest level of education you have completed?
- Some High School
- High School or GED
- 2-year College
- 4-year College

What is your employment status?
- Part-time
- Full-time
- College/University Student
- Self-employed
- Retired
- Not Employed

What was your household’s total annual income for the most recent calendar year?
- Less than or equal to $10,000
- $10,000-$49,999
• Greater or equal to $50,000
How much do you weigh? ______________

How tall are you? ______________
Have you ever used tobacco/cigarette/snuff/pipe (Circle all that apply) ____________
• Yes
• No

If you have used tobacco/cigarette/snuff/pipe, how much per day ____________

Do you still use tobacco/cigarette/snuff/pipe?
• Yes
• No

Do you drink alcohol?
• Yes
• No

If you drink alcohol, how much do drink ____________

Have you ever been told by a doctor or other health professional that you had hypertension, also called high blood pressure?
• Yes
• No

Because of your (high blood pressure/hypertension), have you ever been told to take prescribed medicine?
• Yes
• No

Are you now taking a prescribed medicine?
• Yes
• No

How long have you had high blood pressure? ____________

Do you have or have you ever had diabetes?
• Yes
• No

Do you currently on medications for diabetes?
• Yes
• No

How long have you had diabetes?
## Appendix G

**Brief Illness Perception Questionnaire**

For the following questions, please circle the number that best corresponds to your views:

<table>
<thead>
<tr>
<th>Question</th>
<th>0</th>
<th>1</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much does your high blood pressure affect your life?</td>
<td>no affect at all</td>
<td>severely affects my life</td>
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<tr>
<td>How long do you think your high blood pressure will continue?</td>
<td>a very short time</td>
<td>forever</td>
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<tr>
<td>How much control do you feel you have over your high blood pressure?</td>
<td>absolutely no control</td>
<td>extreme amount of control</td>
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<td>How much do you think your treatment can help your high blood pressure?</td>
<td>not at all</td>
<td>extremely helpful</td>
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<tr>
<td>How much do you experience symptoms from your high blood pressure?</td>
<td>no symptoms at all</td>
<td>many severe symptoms</td>
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<tr>
<td>How concerned are you about your high blood pressure?</td>
<td>not at all concerned</td>
<td>extremely concerned</td>
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<tr>
<td>How well do you feel you understand your high blood pressure?</td>
<td>don’t understand at all</td>
<td>understand very clearly</td>
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<tr>
<td>How much does your high blood pressure affect you emotionally? (e.g. does it make you angry, scared, upset or depressed?)</td>
<td>not at all affected emotionally</td>
<td>extremely affected emotionally</td>
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</table>
Please list in rank-order the three most important factors that you believe caused your high blood pressure.
The most important causes for me:
1. ________________________________
2. ________________________________
3. ________________________________
Appendix H
Interview Guide Questions

My name is Tammie Brodie. I am a doctoral nursing student at the Graduate Center, City University of New York. I would like to know more about how African American veteran males with high blood pressure (HBP) take care of themselves. Your information will be helpful to health providers who care for African American patients with HBP.

I would like to understand what you think about HBP and how you manage your HBP. Please respond to the following questions in as much detail as you can and provide any additional information that you feel appropriate.

This interview will last about one-and-a-half hours and will be audiotaped. I will turn the tape recorder off any time you do not want me to record certain portions of our interview.

1. Please tell me what HBP is. Could you tell me about how well you feel you understand your HBP?
2. What are some words to describe HBP?
3. Please tell me whether you experience any symptoms from your HBP. Do you think you can tell if you have HBP?
4. Please tell me about any signs or symptoms that you have when your HBP is elevated more than usual?
5. Could you tell me about what you believe caused your HBP?
6. How concerned you are about the cause of your HBP?
7. How long do you think your HBP will last?
8. How long do you think you will need treatment?
9. Could you tell me about the kind of problems you are experiencing now because of your HBP?
10. Could you tell me about the kind of problems you think you will have in the future because of your HBP?
11. Please tell me what you think would happen if you did not take care of your HBP.
12. Please tell me why you do take care of your HBP.
13. What does HBP management mean to you? Who are the major people involved in caring for your HBP?
14. How is your HBP monitored? How often? By whom?
15. Please tell me about how much you think your medication/treatment can help your HBP.
16. Could you tell me about what you do when your blood pressure is elevated? Describe activities or treatments.
17. Please describe to me a typical day in your life starting with when you first wake up and ending with when you go to bed?
18. Is there anything that you would like to mention regarding your HBP?
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